

Solar Wizard Overview

G-Cloud 15 Service definition document
January 2026

Who we are





The Centre for Sustainable Energy

We're a charity supporting people and organisations across the UK to tackle the climate emergency and end the suffering caused by cold homes.

We do this by sharing our knowledge, practical experience and policy insights. For over 40 years, we've supported people to take effective action on energy in their homes.

We help communities and local councils to understand energy issues, set priorities, and put plans into action. Our research and analysis focuses on making the energy system greener, smarter and fairer.

Find out more at www.cse.org.uk or watch our [impact highlights](#) from 2024-2025.



Supporting local delivery for net zero

We support local authorities of all types and sizes, to lead and drive forward energy-related net zero goals in a timely, socially just and locally resonant way.

We provide access to the knowledge, data and expertise required to drive forward decarbonisation. We pioneer new approaches and analytical techniques for local energy decision-makers.

CSE has pioneered open access, net zero planning tools used extensively by local actors such as [Solar Wizard](#) [Future Energy Landscapes](#) and [Impact Tool](#) - combining rigorous technical modelling with proven engagement processes, ensuring support is robust and socially grounded.

What is Solar Wizard



Evidence-based solar potential planning

Solar Wizard calculates the potential to generate electricity from rooftop solar panels for homes in England, Scotland and Wales.

Designed for use by local authorities, individual households and communities, [Solar Wizard](#) uses multiple datasets to generate building-specific estimates for power generation, installations costs and savings on bills, as well as how much carbon could be saved per year. It considers factors such as roof orientation and pitch, and the potential for overshadowing from nearby features like tall buildings or trees.

The outputs from Solar Wizard will allow you to understand the solar pv potential for your area and will inform climate action plans and solar engagement campaigns for residents as well as support local installers and green jobs through increased solar pv take up.



Key benefits of annual subscription

- Rapid analysis of rooftop solar potential across whole areas using real data with estimated outputs on:
 - power generation per year
 - installation costs
 - electricity bills savings
 - annual carbon saving
 - most suitable positioning for the panels.
- Export data into other software packages for further review.
- Trusted data to inform:
 - inform the develop of your climate action plan and solar pv installation campaigns
 - investment priorities and funding bids using localised evidence.



Solar Wizard's main functionalities

There are two main functionalities:

1. Multiple building analysis – available through annual subscription. Compare the solar potential across multiple buildings and run financial modelling.
2. Individual building look-up – available free of charge to residents. View the potential of any building for which we have data by inputting the postcode.

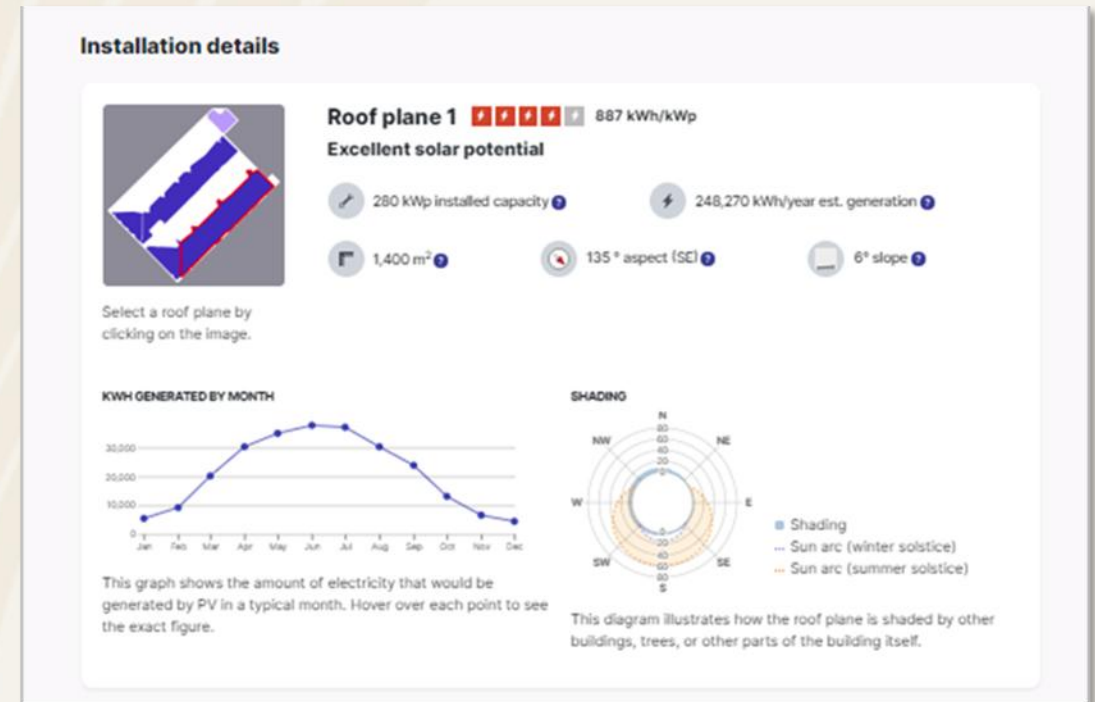
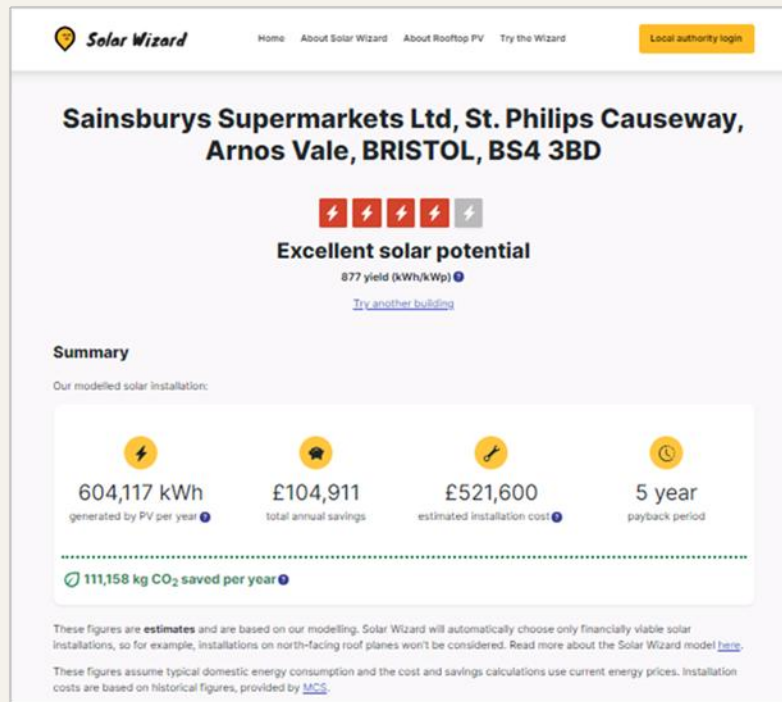
The functionality of Solar Wizard is explained in more detail below.



Quick and easy individual building analysis

Solar Wizard is a free tool available to all, look up an address and find out whether their home or community building is suitable for rooftop solar PV free of charge.

The tool calculates the potential annual electricity generation, installation costs, annual carbon savings and financial savings and anticipated payback period.

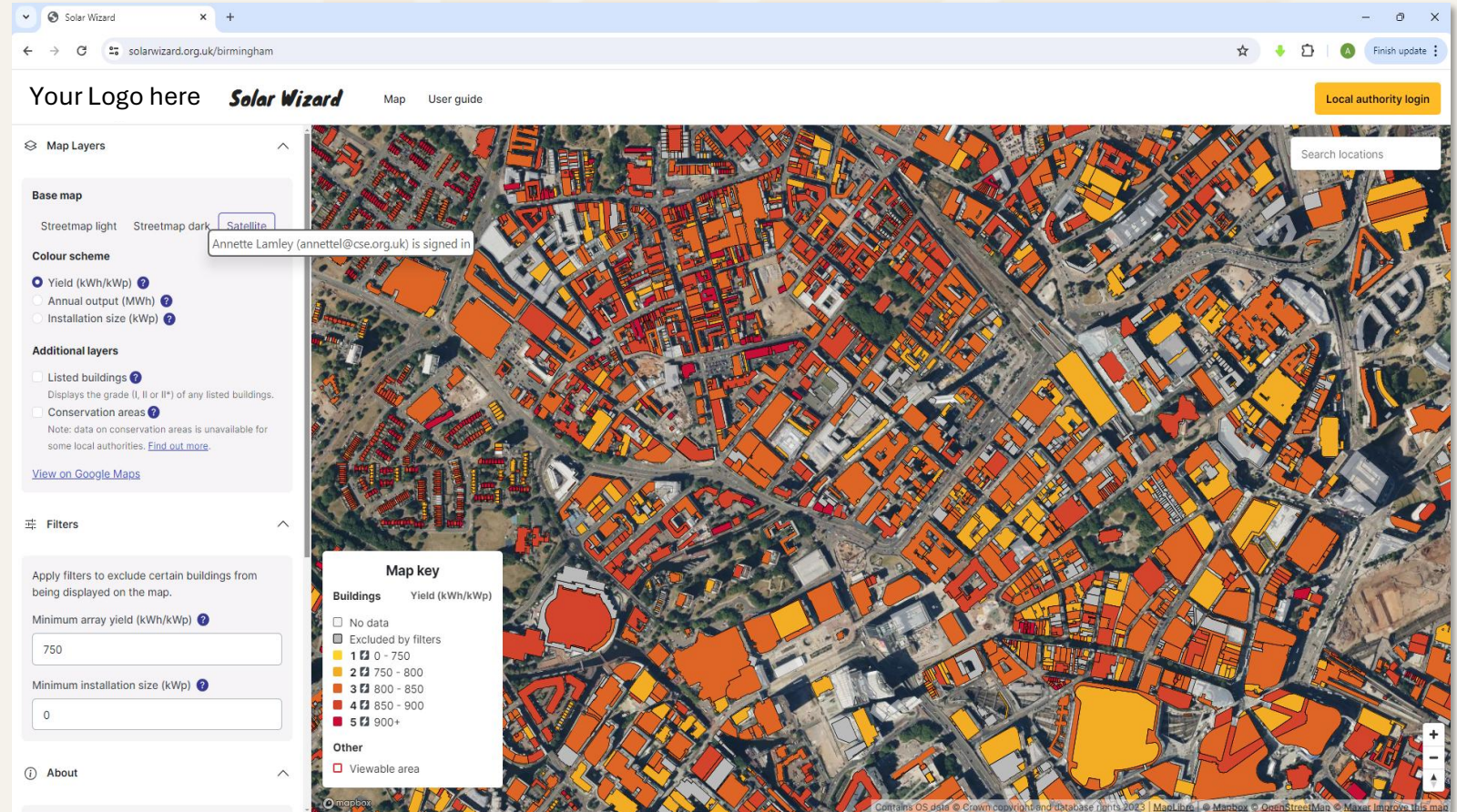




Clear and informative map driven interface

The map-based interface provides more functionality and makes it easier to explore opportunities for rooftop solar PV projects across an area. The map shows solar potential across an area, using a colour scale to identify buildings offering the best, annual output (MWh/year), installation size (kWp), yield (kWh/kWp), or per-panel yield (kWh/kWp).

Additional map layers can be overlaid to denote Listed Building status and Conservation Areas.





Independent financial analysis

Buildings

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Is residential	Est. annual solar potential (kWh)	Nominal peak (kWp)	Yield (kWh/kWp)	Installations	Panel area (m²)	Height (m)
✓	81,467.25	97.21	☀️☀️☀️ 838.05	3	486.04	11
✗	4,578.87	5.32	☀️☀️☀️☀️ 860.69	1	26.6	10.6
✓	26,903.26	32.12	☀️☀️☀️ 837.59	4	160.65	9.6
✓	139,146.16	159.72	☀️☀️☀️☀️ 871.19	3	798.57	14.6
✓	32,715.3	36.21	☀️☀️☀️☀️ 903.49	2	181.04	11.4
✓	97,756	120.56	☀️☀️☀️ 810.85	5	602.84	14.3
✓	149,670.22	178.25	☀️☀️☀️ 839.66	6	891.29	9.3
✓	8,921.15	10.3	☀️☀️☀️☀️ 866.13	1	51.52	5
✓	3,533.59	4.54	☀️☀️ 778.32	2	22.7	8.9
✓	9,623.54	12.22	☀️☀️ 787.52	2	61.11	8.8
✓	2,125.79	2.66	☀️☀️ 799.17	1	13.28	8.6
✓	7,967.72	8.32	☀️☀️☀️☀️ 957.66	1	41.59	5.9
✓	5,530.24	6.22	☀️☀️☀️☀️ 889.11	2	31.09	7

This interface allows you to select multiple buildings at once and see headline results for all selected buildings.

A data table is displayed, and the performance of each building can be ranked to easily identify those with the greatest modelled potential. The data table can be exported in .csv format for further analysis.



Supports data driven decision making

The model evaluates multiple buildings and their roof areas, selecting the best panel array configurations based on your priorities and thresholds. These can be net present value, return on investment or payback period.

Other parameters can also be adjusted to give you better indicative figures for business planning, including minimum yield and array size; time period; discount rate; electricity prices (retail and export); proportion of onsite consumption; and installation costs.

[Data attribution and licenses](#) [Export as csv](#)

Is residential	nominal peak (kWp)	Panels	Installation cost (£)	Est. annual solar potential (kWh)	IRR (%)	NPV (£)	RO
✓	3.97		£8,319.04	3,460.49	7.46	£3,943.3	125
✓	3.56		£7,608.92	3,039.16	7.01	£3,160.42	114
✓	2.84		£6,361.88	2,463.18	6.67	£2,366.46	106
✓	3.77		£7,972.64	3,266.89	7.29	£3,603.67	120
✓	2.46		£5,703.72	2,132.87	6.29	£1,854.16	100
✓	3.51		£7,522.32	3,043.43	7.15	£3,262.15	117
✓	2.4		£5,599.8	2,013.37	5.88	£1,534.63	93
✓	2.47		£5,721.04	2,143.81	6.31	£1,875.61	101
✓	2.83		£6,344.56	2,434.24	6.57	£2,281.23	106
✓	3.56		£7,608.92	3,089.13	7.19	£3,337.49	118
✓	3.25		£7,072	2,735.4	6.65	£2,620.96	107
✓	4.21		£8,734.72	3,646.5	7.51	£4,186.75	124
✓	3.42		£7,366.44	2,961.99	7.08	£3,129.45	116
✓	3.3		£7,158.6	2,859.05	7.01	£2,972.52	114
✓	4.17		£8,665.44	3,627.29	7.54	£4,187.96	124
✓	4.13		£8,596.16	3,562.28	7.42	£4,026.87	122
✓	1.75		£4,474	1,510.51	5.23	£878.53	81
✓	5.82		£11,523.24	4,933.72	7.8	£5,959.52	130
✓	3.48		£7,470.36	3,012.87	7.12	£3,205.82	116
✓	5.35		£10,709.2	4,636.92	7.93	£5,721.84	132

1 - 20 of 516 buildings

First

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Last



Easy to follow workflow methodology

1

Model Horizons

2

Detect roof planes

3

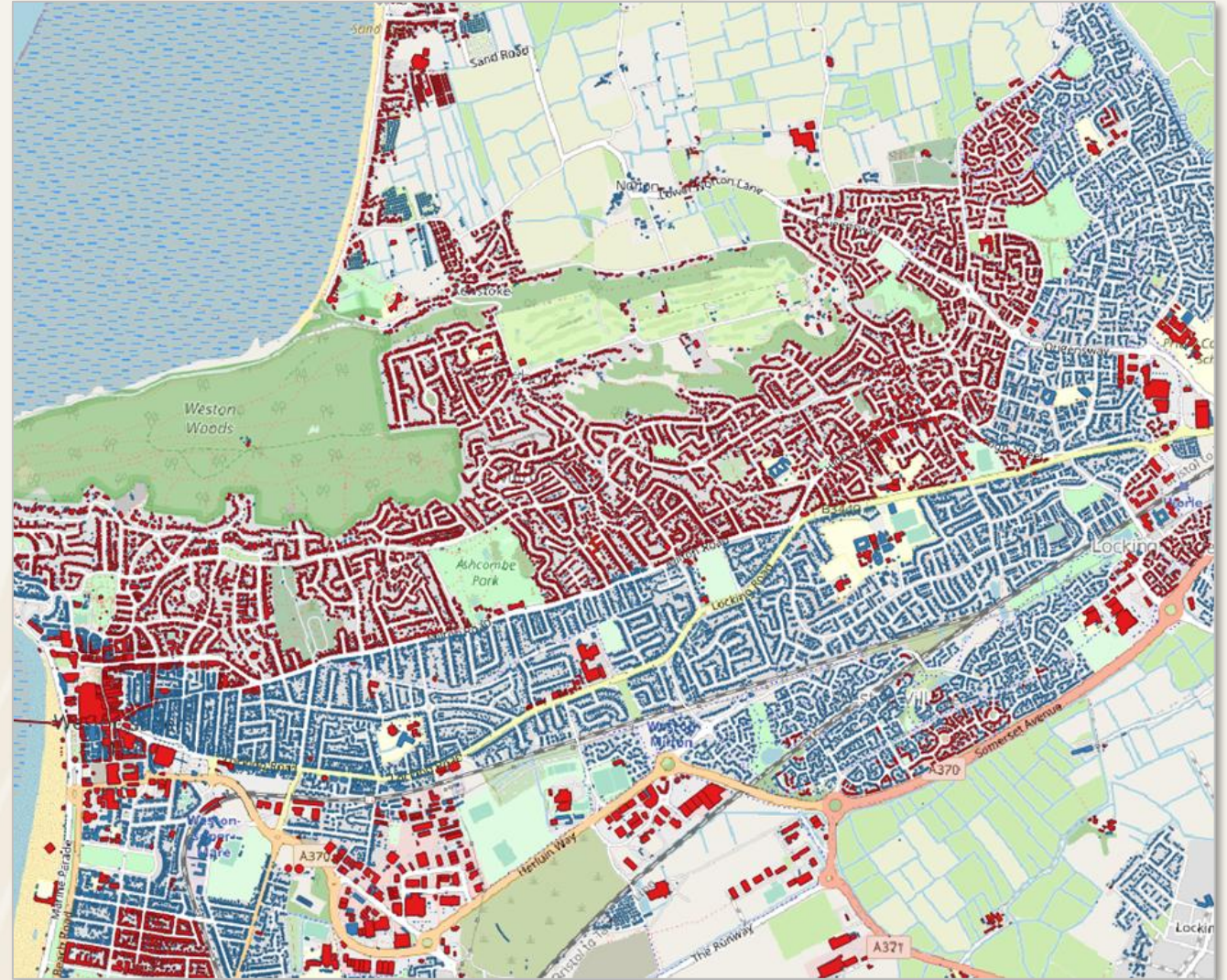
Exclude unsuitable sections

4

Calculate PV output

5

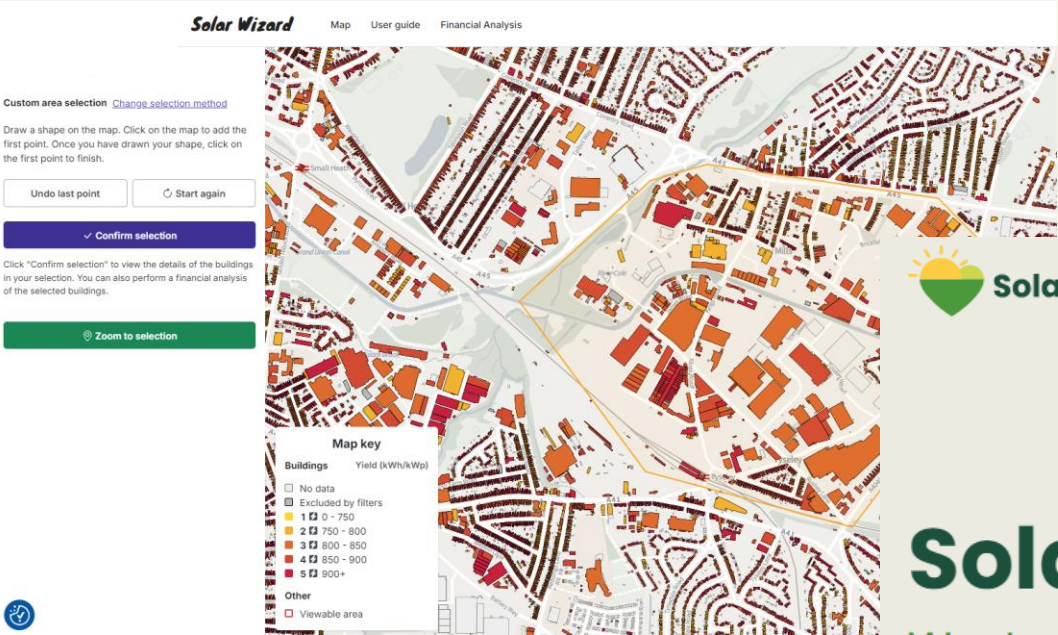
Perform cost benefit analysis





Use cases

Promoting the take up of solar



Driving community engagement

**Solar Together**

Solar Together

West of England Combined Authority

Group-buying for solar PV and battery storage systems. Better offers together!

Accurate financial modelling

Analysis "Untitled run"	
Summary	Model Parameters
Model run completed on 2024-08-02 at 10:22:50	
Selected LSOA: North Somerset 008E (E01014784)	
Total installations	494
Total excluded	0
Total NPV	£ 9,732,100
Total IRR	10.07%
Total ROI	176.81%
Total payback period	9 years



Keep in touch



[Centre for Sustainable Energy](#)



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cse.org.uk

Sign up for our monthly e-newsletter
at cse.org.uk/newsletter.

**Get in touch to find
out how we can help
you achieve your
energy-related goals**



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