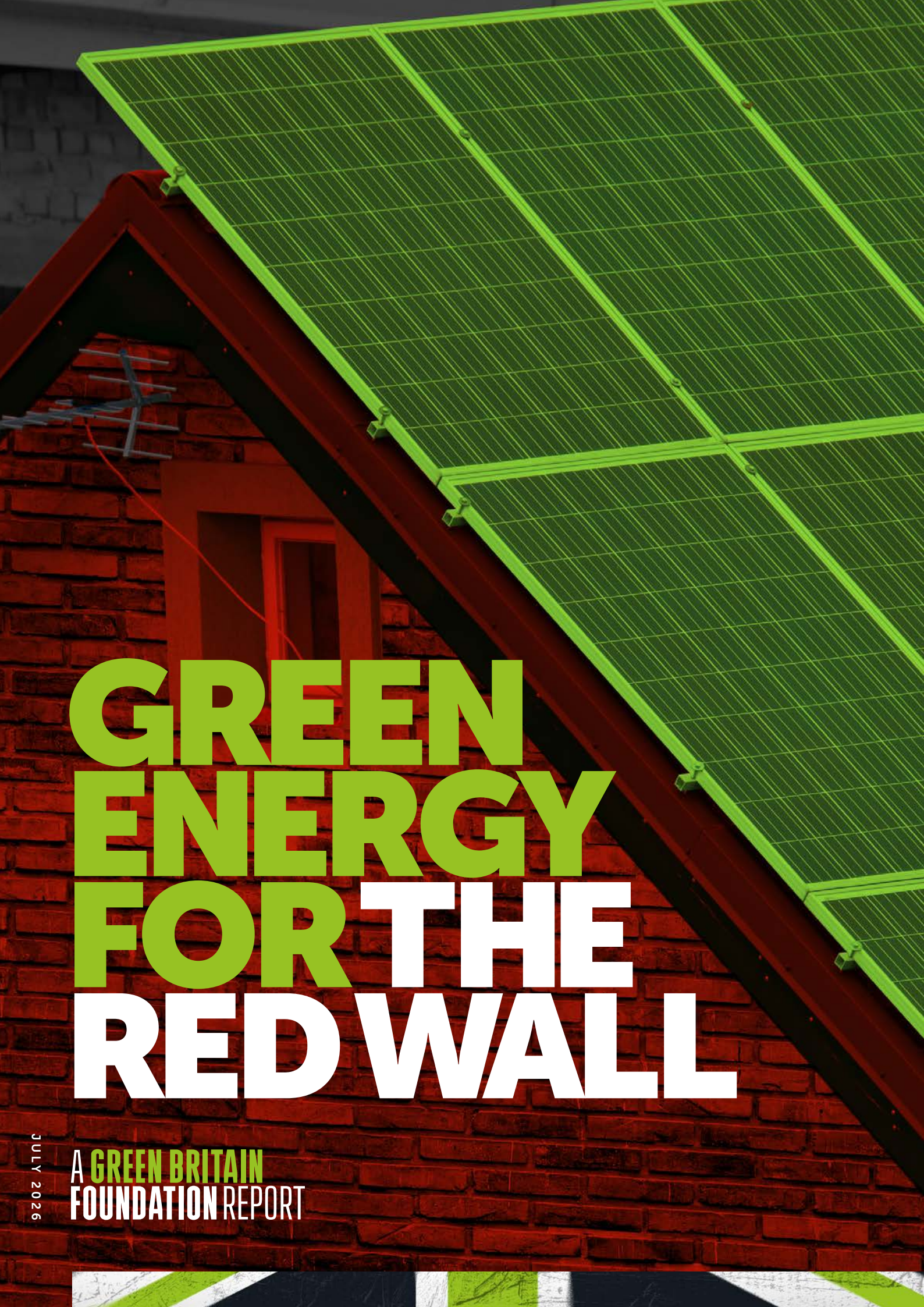


A photograph of a red brick house with a gabled roof. The roof is covered with several large, rectangular solar panels that have a grid pattern. A television antenna is visible on the left side of the roof. The background is a clear blue sky.

GREEN ENERGY FOR THE RED WALL

JULY 2026

A **GREEN BRITAIN**
FOUNDATION REPORT

CONTENTS

Page 3	————	Foreward
Page 4	————	Executive Summary
Page 5	————	The political pressure is mounting
Page 5	————	A national rooftop solar programme for social housing
Page 6	————	Lower bills and a financial return for the government
Page 7	————	Wider benefits
Page 9	————	Methodology
Page 10	————	Sources



FOREWORD

Cutting our energy bills is of vital national importance — high bills don't just harm people on lower incomes, they impair our entire economy, stifling growth, pushing up inflation, bank lending rates and housing costs - energy bills are at the heart of Britain's cost of living crisis. Millions of Britons face the disarmingly poetic choice of heating or eating every winter while energy debt is at an all time record high.

At the same time, Labour is under constant attack from right wing media and politicians, twisting the facts, blaming green energy for high bills. It's a false narrative but attractive to people fed up with high energy bills — Labour needs to bust this myth, it threatens our national interests.

There is a real opportunity to tackle all of these issues - right above our heads. Our rooftops. Through a national rooftop solar programme, funded by government we can end the energy poverty of millions of homes, give millions of voters a taste of and stake in the green economy, we can make significant amounts of clean power with no grid queue and make a return.

The numbers stack up. In this report we look at the outcomes from the installation of one million solar roof tops. We found an annual energy bill reduction of over £530.93 per home and a return to government of nearly £8 billion over 25 years. A solar rooftop revolution on this scale alone could also generate 50,000 jobs, boost GDP and help reduce the national debt.

Those living in social housing with a solar roof - would significantly and persistently benefit in real terms. Our macro-economic modelling also shows that inflation would not erode this income boost.

And of course, we'd also cut emissions, strengthen energy security, boost our economy and speed up the shift to clean power.

Starting with public sector housing makes sense. It helps the people who need it most, boosting disposable income where it's needed most, and tackling energy poverty in the most effective way - by making each home an energy generator. And because public sector housing is often owned by a single landlord across whole streets or estates, it's faster and cheaper to roll out. The cost of one million solar roofs would be in the region of £3 billion. That money is returned to the taxpayer twice over - and could be re invested.

Start in the Red Wall, where Reform's false messaging cuts through the most. Give people there their own stake in the green economy, their own experience of how it really works. We'll change lives and attitudes - for the better.

Dale Vince OBE

Founder of Ecotricity

EXECUTIVE SUMMARY

This report outlines an opportunity for the UK government to bring down bills, ease the cost-of-living crisis, generate a financial return for the taxpayer, and increase energy security through a national rooftop solar programme for England's social housing stock.

The proposed initiative involves GB Energy, the government state-owned energy company, installing solar panels across 1 million social houses in England, delivering significant economic, political, social, and environmental benefits.

These households could save £530.93 on energy bills per year, while the government stands to gain a profit of up to £7.83 billion over 25 years from administering the scheme.

The project would simultaneously reduce emissions, enhance energy security, and support the UK's transition to clean power. The project also offers the opportunity to increase impact by rolling out to additional homes.

THE POLITICAL PRESSURE IS MOUNTING

The UK government has a 2030 Clean Power target, which would mean 95% clean energy on the grid. Labour has also promised to bring down energy bills using homegrown green energy.

At the same time, it faces pressure by parties on the right, with the Conservative Party and Reform criticising the move to net zero and blaming this for higher bills. To fight back, the government needs to show how net zero policies can be used to bring down bills, ease the cost-of-living crisis, generate a financial return for the government and increase energy security. There is mounting pressure for the government to demonstrate this, and to do so before the next election.

This report outlines how a national rooftop solar rollout, delivered through GB Energy, can do exactly that, with financial, political, social and environmental benefits.

A NATIONAL ROOFTOP SOLAR PROGRAMME FOR SOCIAL HOUSING

To address this challenge, the UK government should direct GB Energy to install 5 kW non-battery solar panel systems across 1 million social housing units in England.

Installing rooftop solar panels so that energy is consumed where it's generated reduces system losses, avoids lengthy grid connection delays and the need for new pylons, as well as further lowering dependence on energy companies and fossil fuels.

Most importantly, these systems would provide clean energy directly to households, which would lower bills by reducing the amount they need to purchase from energy companies.

It would also provide a financial return for the government by selling the excess energy they produce back to the grid through the Smart Export Guarantee (SEG). By doing this, the government could earn up to £430 million in revenue each year.

We know that rooftop solar works – GB Energy is already providing solar to NHS trusts across the UK, with the initiative expected to save these trusts up to £65 million in energy costs over the lifetime of the new installations.

By starting the rooftop revolution with social housing, the government also has the opportunity to support low-income households, making the largest difference to disposable income and energy poverty. The ownership structure of public sector housing, with just one landlord for hundreds or thousands of properties on entire streets or estates, makes it faster and cheaper to start here.

This could also start in Red Wall constituencies where the threat from Reform is greatest to show the benefits of the Net Zero agenda ahead of the next election.

GB Energy is the perfect vehicle to deliver this policy and it aligns with GB Energy's 3 pillars:

Powering Britain with clean energy – installations across 1 million homes could add up to 5 TWh of domestically produced clean energy each year.

Investing in local communities – by installing the solar panel systems on the rooftops of social housing, the policy would give households a direct stake in the clean energy revolution.

Creating jobs and strengthening supply chains – the policy will create more green jobs in the installation and maintenance industry.

LOWER BILLS AND A FINANCIAL RETURN FOR THE GOVERNMENT

A national rooftop solar programme for 1 million social houses administered in this way would save money on household bills and make financial returns for the government

FOR HOUSEHOLDS

Households will see significant reductions in energy bills, with an estimated average annual saving of £530.93 based on the current market price – this translates to as much as £13.3 billion in savings across 25 years.

This not only eases financial pressures on low-income households and addresses the cost-of-living crisis but also gives these households a stake in the green economy.

FOR THE GOVERNMENT

On average, 60% of energy generated by household rooftop solar systems is exported back to the grid. This creates a revenue stream for the government by selling excess energy back to the grid through the SEG.

By doing this, the government stands to generate up to £430 million in annual revenue. The project pays for itself in as little as 7 years and delivers a profit of up to £7.83 billion across 25 years.

As shown by the below table, modelling the returns based on both current average SEG tariff rates or wholesale prices show the strong financial case for the policy.

	Returns based on exporting at average SEG tariff rate	Returns based on exporting at wholesale price of electricity
Upfront cost (£ Billion)	£2.97	£2.97
Annual revenue for the government (£ Billion)	£0.43	£0.25
Total revenue over 25 years (£ Billion)	£10.80	£6.14
Approx. Gov surplus/profit at 25 years (£ Billion)	£7.83	£3.17
Project pays for itself in X years	Cira 7 years	Circa 12 years

The numbers provided show a clear case for progressing with the policy and further defining the overall implementation approach, costs and extensive net benefits at the earliest opportunity.

WIDER BENEFITS

THE ECONOMICS

The National Institute of Economic and Social Research (NIESR) simulated the macroeconomic effects of, installing solar panels across 1 million social houses in England.

NIESR found that the proposed policy would provide a boost to GDP in the short term, a sustained reduction in the government debt-to-GDP ratio, and a sustained increase in the Real Personal Disposable Income (RPDI) of the beneficiaries of the savings.

In the first year, there is a positive boost to real GDP, by about 0.08%. This is equivalent to a nominal increase of £3bn. There would be about a 0.075% increase in the real GDP growth rate in the first year, driven by the increase in investment.

As a result of this demand-side stimulus, there is a small boost to inflation of 0.015 percentage points in the first year, and 0.032 in the second. There is a small counterreaction in real GDP in the following years, driven by the slightly higher inflation and interest rate expectations, but the response is neutral in the long run.

The additional energy production supports the supply-side of the economy, offsetting any negative GDP corrections from the demand-side boost. RPDI increases by 0.02% on average across the entire simulation period, with an initial boost at the start. This is equivalent to a £500 million boost per year distributed across households. Although this is small compared to the whole economy, it is consequential that it is persistent and that the benefits would be concentrated. That is, receivers - those in social housing - would significantly benefit in real terms, and inflation would not erode the income boost.

The government deficit-to-GDP ratio lowers by about 0.015 percentage points on average, as the government deficit falls because of the additional income. There is an initial rise as the government spends on the solar panel installation, but this is balanced by the additional income from selling the energy through the SEG scheme and nominal growth in the economy. The debt to-GDP ratio decreases consistently through the simulation period; after 25 years, it will have decreased by 0.27 percentage points.

This is as a result of the persistent additional income received by the government, which helps to lower the debt stock against the cost of the initial investment; there are further confounding effects because lower debt leads to lower interest payments on the debt.

JOB CREATION

The policy would create more jobs in the green economy, in the installation and maintenance space.

Research compiled by 3Keel, an Oxford-based firm of sustainability advisors who specialised in working with food systems, supply chains and landscapes estimated that every £1 billion invested in solar industries generated 16,400 jobs.

The cost of one million solar roofs would be in the region of £3 billion, so potentially generating almost 50,000 jobs .

A national rooftop solar programme would also bring multiple wider benefits for the public and the government.*

ENERGY SECURITY

The UK has the potential to generate more than 13% of its electricity needs through domestic rooftop solar – that includes not just homes, but of business needs too.

Across 1 million homes, up to 5 TWh of domestically produced clean energy could be generated. And this is a scalable example - across the whole social housing stock, rooftop solar could add up to 23 TWh of domestic renewable energy capacity, increasing domestic energy supply by 8%. This significantly increases the country's resilience to unpredictable international energy markets and fossil fuel pricing.

SPEED AND EFFICIENCY

Generating electricity directly where it is consumed avoids system losses and reduces our dependence on energy companies and the global fossil fuel market. This saves a significant amount of energy from being wasted as well as enhancing the country's energy security.

Speed is another big advantage of rooftop solar as it can be deployed very quickly in contrast to large-scale generation projects, which often have to wait up to 15 years just to connect to the grid.

Take the Sizewell C nuclear power plant as an example, which isn't projected to be up and running until mid to late 2030. That's too slow to combat climate change. Rooftop solar installations on the other hand are much faster to deploy.

*[The Rooftop Revolution We Need](#) report 2023

EMISSION REDUCTIONS

This project will result in significant emissions reductions - it could save up to 1.69 million tonnes of CO₂e compared to fossil fuels each year and 985 thousand tonnes compared to the current grid mix. This supports the government's environmental commitments, such as reaching Clean Power by 2030.

PUBLIC SUPPORT

The policy directly addresses attacks from right wing parties claiming that green energy is to blame for higher bills for households, by demonstrating that it can in fact be used as a tool to directly lower bills. There is also the benefit of speed – the policy could have impact ahead of the next election.

The technology is ready, the rooftops are available, and the returns speak for themselves. What's needed now is decisive government action.

METHODOLOGY

This report analyses the impact of a government-led solar rollout across 1 million social housing units in England.

The cost of installing a 5 kW non-battery system is calculated using current market prices which have been discounted to reflect the expected bulk purchasing power of the government.

We estimated the installation cost per household to be £2970, based on a ~65% discount rate. For 1 million homes, that makes the total upfront cost for the government to be £2.97 billion.

Solar generation estimates use European Commission data on typical energy generation rates of solar panels and UK government data on the location of social housing dwellings across England.

Energy exports per household are estimated based on industry research conducted by Good Energy.

Headline government financial returns are calculated using an average SEG rate across energy companies in the UK, as well as being model using the wholesale price.

For the purpose of this report, wider economic benefits or specific policy and maintenance cost have not been modelled, as this would depend on the implementation approach.

Household savings are calculated using Ofgem data on average household energy consumption and the current market price of electricity in the UK.

The increase in domestic energy capacity is projected by multiplying the number of social housing dwellings by estimated rooftop solar output, compared against existing national capacity.

Emissions savings are based on conversion factors provided by the Department for Energy Security and Net Zero (DESNZ), comparing solar generation with the current electricity mix on the grid and fossil fuel sources.

SOURCES

Number of social housing dwellings in England – [UK Government Regulator of Social Housing 2023](#)

Location of social housing dwellings in England – [UK Parliament, House of Commons Library, Local authority data: housing supply 2025](#)

Energy produced by solar panels – [European Commission Photovoltaic Geographical Information System \(PVGIS\)](#)

Solar panel installation cost – [Solar Panels, Energy Saving Trust](#)

SEG Tariffs – [Smart Export Guarantee rates: the best SEG tariffs for solar panel owners, Which](#)

Wholesale price of electricity – [System price of electricity, ONS](#)

Energy exported to the grid – [Solar export percentage findings, Good Energy](#) [National potential of rooftop solar – Green Britain Foundation, The Rooftop Revolution We Need 2023](#)

National potential of rooftop solar – [Green Britain Foundation, The Rooftop Revolution We Need 2023](#)

UK electricity emissions data – [Department for Energy Security & Net Zero, Greenhouse gas reporting: conversion factors 2025](#)

UK energy mix – [Department for Energy Security & Net Zero and Department for Business, Energy & Industrial Strategy, Electricity statistics 2025](#)



Green Britain Foundation
[The Green Britain Foundation](#)
provide data, insight and
information to enable the
changes that need to be made
— in pursuit of a truly green
Britain.