One Planet Cardiff

Cardiff Council

Green Growth Proposition









This document is available in Welsh / Mae'r ddogfen hon ar gael yn Gymraeg

CRYFACH TECACH GWYRDDACH | STRONGER FAIRER GREENER

CARDIFF CAERDYDD

One Planet Cardiff | **Green Growth Proposition**

Setting the scene







Cardiff is on a journey to become a carbon neutral city as outlined in One Planet Cardiff, the Council's strategic response to the Climate Emergency. To turn ambition into action, we have developed a Local Area Energy Plan (LAEP). This evidence based process quantifies future energy demand and what energy solutions need to be delivered to work towards a Net Zero city by 2050.

Whilst the One Planet Cardiff Strategy has already delivered a step change in our strategic approach to, and delivery of carbon reduction, the LAEP's quantification of the scale of change still required across the city to reach net zero is significant. To meet these targets the LAEP concluded that Cardiff must deliver:

Cardiff aims to be a Net Zero city by 2050

- **The equivalent of 12 Lamby Way solar farms**
- **The equivalent of 115,000 domestic roofs with PV solar panels**
- **The equivalent of 9 wind turbines developed**
- **Increase in grid capacity by 2.5 times**
- **Around 26,000 electric vehicle chargers**
- **Around 160,000 heat pumps to replace gas and other fossil fuel heat**
- **91,000 homes retrofitted to improve energy efficiency and reduce overall demand**

We continue to make progress on key work streams and strategies for sustainable development, such as the Local Transport Plan, waste management and estate decarbonisation, domestic energy retrofit, renewable energy and tree planting. But we've also been clear and honest that much more effort is needed and that we cannot reach our goals acting alone.

In response we have developed a Green Growth Proposition to help accelerate and intensify our actions, and to identify where additional support and partnership is required. The Green Growth Proposition focusses on two broad areas where the Council is in a strategic position to lead and enable change – these focus on local renewable energy generation and domestic energy retrofit.

These actions, if positioned correctly will drive carbon reduction, but will also create green jobs, improve quality of life and competitiveness, and position Cardiff as a leader in sustainable development. Recognising that the costs of our actions could be high we've tried to focus and capitalise on quick wins, resolving blockages, and demonstrating clearly how climate actions will bring linked benefit in other key socio-economic areas. Above all, we recognise that the eventual cost of doing nothing to address the climate emergency is likely to be even higher.

GREEN
GROWTH
PROPOSTION

Local Renewable Energy Generation



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Developing the Case for Action

Cardiff's journey to Net Zero cannot be achieved without a major transformation in how we generate and distribute energy and heat. The LAEP sets out clear recommendations for achieving this, including aims to:

- **Maximise deployment of ground-mounted and rooftop solar PV and onshore wind.**
- **Expand heat networks supported by relevant zoning policy where needed.**
- **Reduce transport emissions through widespread uptake of electric vehicles.**

These priorities highlight the scale of change required and the urgency of action. Renewable energy is not simply about reducing carbon emissions; it is fundamental to Cardiff's energy security, resilience, and affordability. By generating power and heat locally, we can reduce reliance on imported energy and volatile global markets, while creating opportunities for local businesses and jobs. This is a shared challenge - Cardiff Council cannot deliver this alone. Our role is to lead, enable, and collaborate with partners across the public and private sectors to unlock investment and accelerate delivery.





Equivalent of **12** Lamby Way Solar Farms

Equivalent of **115,000** domestic roofs with PV

Increase in grid capacity by **2.5 times**

Equivalent of **9** wind turbines

Around **26,000** EV chargers

Around **160,000** heat pumps

Building the co-benefits case

The benefits of scaling up renewables go far beyond carbon reduction. These projects could also help to deliver economic growth through job creation and supply chain development, help to stabilise energy costs for businesses and public services, and improve energy resilience in times of global uncertainty. Specific examples include:

- **The proposed Lamby Way Solar Innovation Hub, which has the potential to generate significant financial returns, cost savings and decarbonisation for direct Council operations at the site. Modelling indicates that up to £2 million per year in gross benefits through energy export and waste Electric Vehicle (EV) fleet offset could be realised, helping to ease pressure on council budgets.**
- **The Cardiff Heat Network is already delivering low-carbon locally sourced heat to major buildings in Cardiff Bay which both reduces their fossil fuel consumption and could significantly ease pressure on the electricity grid in the area. Phase one alone is expected to save over 10,000 tonnes of CO_2e annually - equivalent to heating 3,700 homes with gas boilers - while reducing carbon emissions for connected buildings by around 80% compared to traditional gas heating. Construction of the network also created local employment, with approximately 30 people working on site daily over a four-year period, supporting the local economy alongside decarbonisation efforts.**

We are also looking to utilise innovative funding mechanisms such as Local Climate Bonds and other potential corporate sponsorship routes, which will enable Cardiff's citizens and businesses to invest directly in renewable projects. This approach not only helps finance infrastructure but also strengthens community engagement and ensures that the benefits of the energy transition are shared locally.

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Grid Capacity

One of the most significant barriers to scaling up renewables is grid capacity. The existing electricity network was never designed for the level of distributed generation and electrification required for Net Zero. Reinforcement of the grid is essential to connect new solar and wind projects, support electric vehicle charging, and enable low-carbon heating. Without these upgrades, even well-developed renewable projects cannot proceed.

Cardiff Council is actively engaging with the National Energy System Operator (NESO) and local Distribution Network Operator, National Grid, to understand the investment needed and to influence future planning. These conversations are critical to ensure that Cardiff's proposed developments such as the Lamby Way Solar Innovation Hub, the Large-Scale Renewables Pipeline - as well strategic growth areas like St Mellons Parkway and the new Arena - are factored into regional grid upgrade plans.





Reinforcement of the grid is **essential to connect new solar and wind projects**



We need substantial investment in both **generation and grid infrastructure**

Leadership and Collaboration

Our approach focuses on areas where the Council can lead and enable change. This includes self-delivery on Council-owned land, creating a portfolio of investable sites for solar and wind generation, and supporting businesses to decarbonise through initiatives like Smart Solar for Businesses and Commercial Rooftop Solar. Regional collaboration is also key, with Cardiff sharing best practice and working alongside partners such as the Cardiff Capital Region to maximise impact.

The benefits of scaling up renewables are clear: significant carbon reduction, improved energy resilience, and economic growth through job creation and supply chain development. These projects will also help stabilise energy costs for businesses and public services, reducing exposure to volatile fossil fuel markets.

To deliver this vision, we need substantial investment in both generation and grid infrastructure. Cardiff is committed to working with partners to secure funding and grid investment certainty to ensure that the city is ready for the energy system of the future. The following pages provide overview of our current and planned workstreams to accelerate renewable energy deployment

PROJECT
PROSPECTUS

Local Renewable Energy Generation

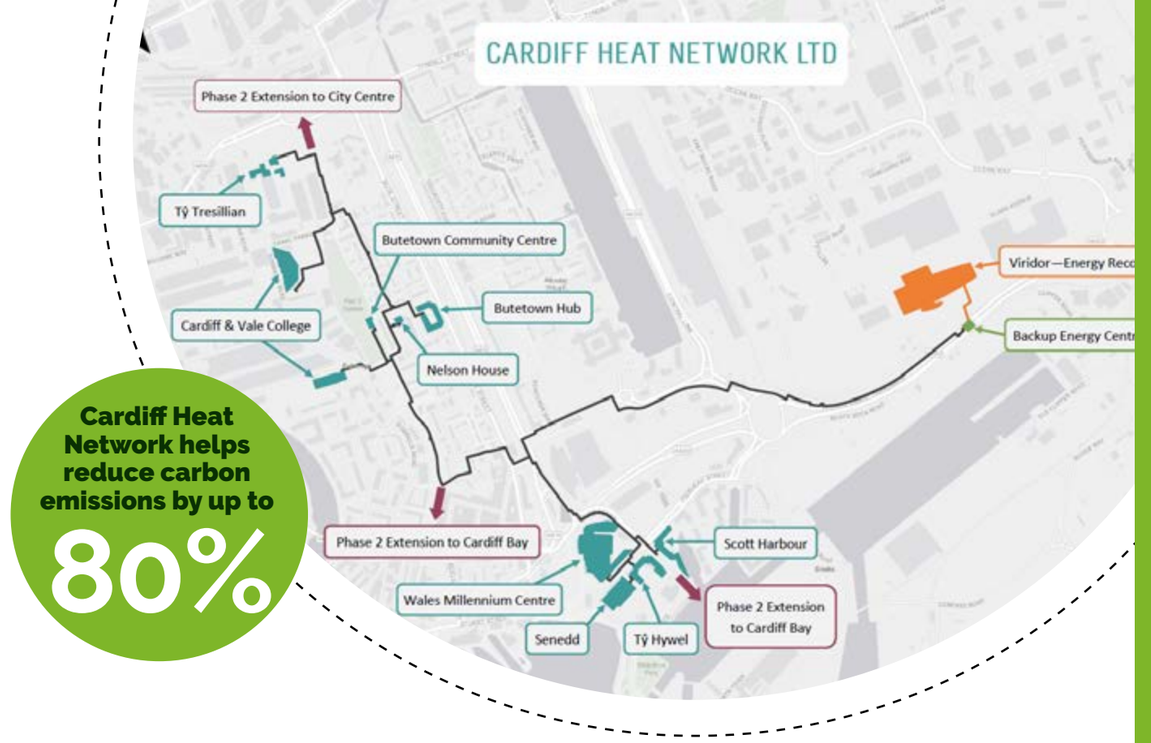


One Planet Cardiff | **Project Prospectus**

Cardiff Heat Network

AMBITION

- **Consolidate Phase One of the Cardiff Heat Network and promote connection opportunities to neighbouring buildings and developments.**
- **Complete a business case and funding applications for a major expansion through to the City Centre and beyond.**



Cardiff Heat Network helps reduce carbon emissions by up to

80%

Description

Cardiff Heat Network is Wales' first city-scale low-carbon district heating system. It captures residual heat from Viridor's Energy Recovery Facility and distributes it via insulated pipes to major buildings in Cardiff Bay, replacing fossil-fuel boilers and reducing carbon emissions by up to 80%. Phase one is live, supplying heat to customers including Cardiff and Vale College, Scott Harbour, Nelson House, Tresillian House, the Huggard Centre and Butetown Community Centre, with connections to the Senedd and Wales Millennium Centre due imminently. Future phases will expand into the city centre and beyond, creating a scalable, heat-source-neutral network.

Strategic Fit

- **One Planet Cardiff (OPC):** Central to OPC's ambition to decarbonise heat and deliver long-term infrastructure for net zero.
- **Local Area Energy Plan (LAEP):** Supports Cardiff's LAEP by reducing reliance on gas heating and enabling large-scale carbon savings.

Key Benefits

- **Carbon:** Up to 80% reduction vs gas; potential savings of 10,000 tonnes CO_2e annually (equivalent to heating ~3,700 homes).
- **Cost:** Provides predictable, competitive heat pricing; reduces exposure to volatile gas markets.
- **Jobs:** Local employment during construction; ongoing maintenance and expansion opportunities.
- **Energy Resilience:** Diversifies Cardiff's energy mix and reduces grid strain.

Key Partners

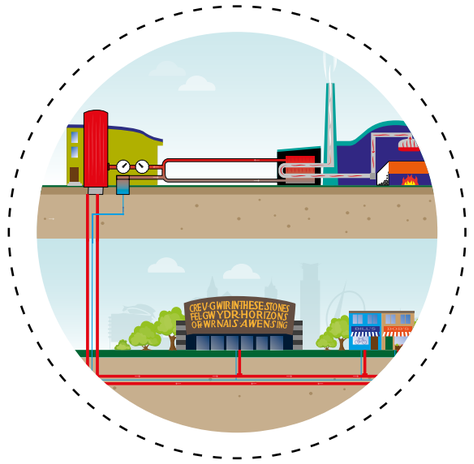
- Viridor
- Welsh Government (policy development and financial support mechanisms)
- UK Government Heat Networks Investment Project (grant funding)
- Hemiko (delivery partner)
- Local subcontractors and supply chain

Status / Timeline

- **Phase 1 Complete:** £15.5m has been invested by a HNIP grant and Welsh Government loan; from November 2025, heat is being supplied to the first customers.
- **Phase 2:**
  - Outline Modelling for a potential Phase 2 in the city centre has been undertaken, showing a promising business case, subject to funding support applications.
  - We've also secured funding from Central Government (Heat Network Delivery Unit) to do more detailed feasibility and route planning work to support Phase 2 expansion funding bids.
  - An Interim grant funding application has also been made to ensure that routes through to the city centre can be future-proofed whilst other major development, including the Crossrail tram / train project, proceeds.

Next Steps

- Complete customer onboarding for phase one.
- Continue to engage with prospective customers along the current network
- Develop a fully costed business case for Phase 2 expansion.
- Secure investment and funding for Phase 2.
- Assess integration of alternative heat sources for longer term expansion and futureproofing.



One Planet Cardiff | **Project Prospectus**

Energy Generation: Lamby Way Solar Innovation Hub



AMBITION

- To secure an approved business case for a new 14MW Solar farm with integrated battery storage and direct electricity supply to Council Waste operations.

Description

A flagship renewable energy development on council-owned land at Lamby Way, delivering clean electricity through a 14MW solar array. The project proposes the development of a 14MW solar farm, integrating battery storage and direct EV charging infrastructure to support Cardiff Council's growing electric waste fleet and enhance energy resilience at the operational site. A holistic energy systems step towards Cardiff's net zero future, combining innovation, infrastructure, and impact.

Strategic Fit

- **One Planet Cardiff (OPC):** Aligns with OPC's ambition to self-deliver renewable energy projects on council land and accelerate local energy generation.
- **Local Area Energy Plan (LAEP):** Directly contributes to Cardiff's LAEP targets for ground-mounted solar PV — potentially contributing around 30% of the LAEP target to secure 37MW of local renewables by 2030.

Key Benefits

- **Financial Return:** Potential for significant benefit through combination of energy export and fleet cost offset.
- **Local Jobs:** Construction and maintenance will support skilled employment in Cardiff, with potential for apprenticeships and SME involvement.
- **Grid Resilience:** Battery storage improves local energy stability, reducing risk of outages and supporting emergency services.
- **Cost Efficiency:** Powers the waste fleet with cheaper electricity, reducing fuel costs and improving service resilience.
- **Carbon:** Significant and accelerated reduction in emissions through clean energy generation.
- **Health:** Supports cleaner air and reduced pollution.

Key Partners

- Welsh Government Energy Services
- Grid connection providers
- Waste fleet operations team

Status / Timeline

- Site identified and concept developed.
- Financial and technical modelling for waste fleet transition to EV undertaken.
- Council funds committed to secure:
  - A price for grid connection
  - Ecology and biodiversity assessment
  - Early stage planning application preparation
- Planning application targeted for early 2026.
- Outline Business Case expected Spring 2026 subject to suitable grid connection confirmation.
- Development of full tender specification and procurement activities to inform final prices for final business case for cabinet approval to commence development end spring 2027.

Next Steps

- Finalise grid and battery cost assessments.
- Complete pre-planning work and stakeholder engagement.
- Submit planning application in early 2026.
- Develop full business case and funding strategy.

14MW

solar farm at Lamby Way will help deliver clean and renewable energy

One Planet Cardiff | **Project Prospectus**

Energy Generation: Large Scale Renewables Pipeline



Early stage engagement and analysis of site suitability has begun

AMBITION

- To develop and market a portfolio of potential sites for third-party investment in local renewable energy generation.
- Support this through early stage engagement and analysis of site suitability, planning context and grid connection potential.

Description

A strategic programme to identify and develop a portfolio of sites across Cardiff suitable for large-scale solar and wind generation. The aim is to attract private investment, accelerate renewable energy deployment, and strengthen local energy resilience.

Strategic Fit

- **One Planet Cardiff (OPC):** Enables faster and more assured implementation of renewables on council (where possible) and third-party land.
- **Local Area Energy Plan (LAEP):** Contributes to Cardiff's ambition for 37MW ground-mounted solar PV by 2030 and 120MW by 2050.

Key Benefits

- **Carbon:** Significant contribution to Cardiff's renewable energy targets and net zero ambitions.
- **Cost:** Attracts private capital, reducing reliance on public funding.
- **Jobs:** Stimulates local supply chain and green employment opportunities.
- **Energy Resilience:** Diversifies energy sources and strengthens grid stability.
- **Economic Growth:** Positions Cardiff as a leading city for renewable energy investment.

Key Partners

- Energy Systems Catapult
- Welsh Government Energy Service
- Private sector investors and developers

Status / Timeline

- Mapping data provided by Energy Systems Catapult used to identify theoretically suitable sites.
- Shortlisting process commenced, considering land ownership, planning context, and grid connection feasibility.
- Large scale sites totalling 118MW shortlisted for solar potential.
- Further smaller scale opportunities still to explore.
- Bespoke policy now included in Replacement Local Development Plan
- Potential opportunities flagged in principle to National Energy Infrastructure Bodies

Next Steps

- Finalise prioritisation of early delivery sites.
- Engage with District Network Operator, planners and land owners to determine more detailed feasibility.
- Test market appetite amongst potential investors and developers.
- Explore partnership models for delivery and revenue sharing.
- Promote a portfolio of potential investment sites for renewables.



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Project Prospectus

Energy Generation: Smart Solar for Businesses



Smart Solar will increase local renewable regeneration & reduce energy costs

AMBITION

- To secure an approved business case for the installation of solar panels and other energy technology on non-operational, tenanted council workshops and industrial units.

Description

A project to install solar PV, battery storage, and EV charging infrastructure at council-owned workshops and industrial units across Cardiff. The scheme aims to increase local renewable generation, improve asset value, reduce energy costs and increase decarbonisation for tenants, creating a scalable model that could expand to other local business parks. The approach leverages private wire connections and potential Council anchor tenancy to derisk business cases and will explore options for battery storage, onsite EV charging and "collective purchasing" approaches to maximise benefits.

Key Benefits

- **Carbon:** Significant emissions reduction through renewable generation and electrification of transport.
- **Cost:** Lower energy bills for tenants; potential income stream for the Council through roof rental or energy sales.
- **Jobs:** Supports local installers, maintenance teams and supply chain development.
- **Asset Value:** Makes council-owned workshops more attractive to tenants and future-proofed for low-carbon requirements.
- **Scalability:** Model can be expanded to wider private sector businesses and local business parks.

Strategic Fit

- **One Planet Cardiff (OPC):** Supports OPC's ambition to decarbonise the council non-operational estate and enable local tenant businesses to cut carbon and costs.
- **Local Area Energy Plan (LAEP):** Contributes to Cardiff's renewable energy generation targets and supports commercial decarbonisation.

Key Partners

- Strategic Estates / Economic Development
- Local businesses and tenants

Status / Timeline

- Feasibility study underway; initial site list identified.
- Two Cardiff sites shortlisted for next stage:
  - Capital Business Park – Cardiff Business Technology Centre 2
  - Lamby Workshops
- Economic Development team suggested additional priority sites for exploration:
  - Willowbrook Workshops (St Mellons)
  - Royal Stuart/Douglas Building (Bay)
  - Fairwater Workshops

Next Steps

- Gather additional data for Cardiff priority sites – energy consumption data, structural surveys, installer quotes.
- Consult with NGED on local grid capacity.
- Develop procurement strategy and financial model for installations.
- Develop business case for Cabinet Approval to proceed with a first phase, and paving the way to further schemes if successful.



One Planet Cardiff | **Project Prospectus**

Energy Generation: Commercial Rooftop Solar



AMBITION

- **To secure an approved delivery model and business case to incentivise and upscale the installation of solar panels and other energy technology on privately owned commercial premises in the city.**

Description

Developing a quality-assured route for large-scale rooftop solar installations across Cardiff's business sector, following on from the proposed pilot covering the council owned industrial units. The model will draw on best practice from existing successes such as West Suffolk's Solar for Business scheme, where the council runs the scheme internally, using approved subcontractors to install solar PV on private commercial properties. Cardiff could use this model to develop a local approach following installations on its own industrial estate, potentially enhancing this with collective purchasing and marketing approaches that have been successful in our housing work (see "Switch Together" below, previously known as Solar Together).

Strategic Fit

- **One Planet Cardiff (OPC):** Supports OPC's ambition to accelerate renewable energy generation and decarbonise the commercial sector.
- **Local Area Energy Plan (LAEP):** Contributes to Cardiff's rooftop solar targets and wider net zero goals.

Key Benefits

- **Cost:** Lower energy bills for businesses. The project has the potential to be run internally, providing a direct income stream for the Council.
- **Jobs:** Supports local installers and supply chain development.
- **Business Growth:** Improves resilience and attractiveness of Cardiff's commercial sector.
- **Carbon:** Significant emissions reduction through large-scale rooftop solar deployment.
- **Customer confidence:** potential to attract higher installation standards and guarantees through public sector procurement routes

Key Partners

- Welsh Government Energy Services
- Potential delivery partners (similar to Switch Together)
- Local businesses and property owners

Status / Timeline

- Initial discussions held with West Suffolk Council to learn from their delivery model.
- Plans to undertake feasibility and financial modelling for Council-led or partner-led delivery.

Next Steps

- Complete feasibility and financial modelling.
- Decide on delivery model: Council-led vs partner-led.
- Engage potential partners and businesses.
- Develop procurement strategy and timeline.

We aim to install solar panels across privately owned premises in Cardiff



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Domestic Energy Retrofit



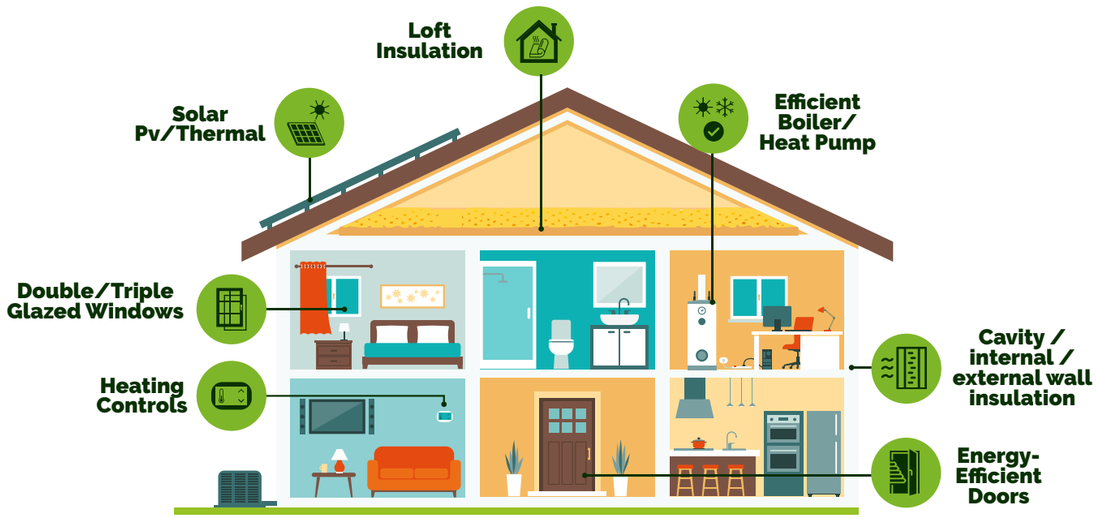
Domestic Energy Retrofit

Why domestic energy retrofit?

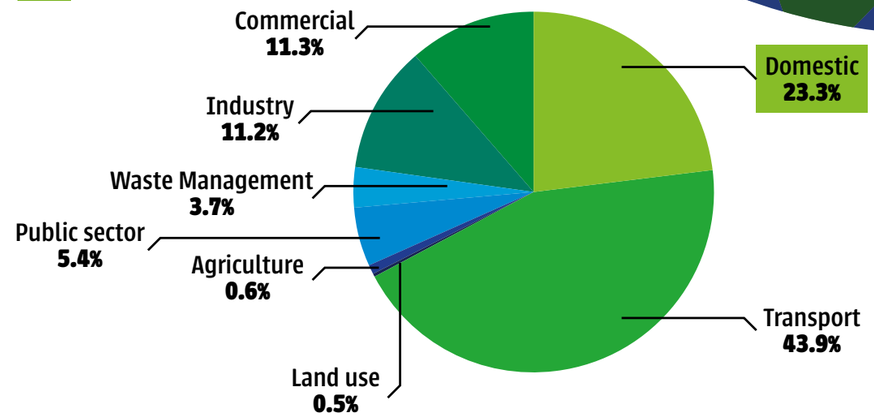
Carbon emissions from the residential sector account for 23%[1] of the city's total emissions. Whilst our residents can reduce their emissions to a certain extent with changes in behaviour, to attain significant reductions we also need to reduce the energy demand of homes via energy retrofit measures.

Domestic energy retrofit measures broadly fit into two categories – energy efficiency measures (such as insulation, new windows or lower carbon heating) and renewable energy measures (such as solar panels). These range from relatively cheap, less invasive measures through to costly and disruptive measures.

There are approx. 158,700 homes in the city. To achieve Net Zero the majority of Cardiff's homes will require some form of energy retrofit. The LAEP identifies that we need the equivalent of 115,000 domestic roofs with PV solar panels installed plus many homes will need to make the shift to low carbon heating (such as a heat pump). It is estimated that 91,000 homes will require some form of energy retrofit, considering future predictions of the speed of grid decarbonisation. These figures were informed by considering the current energy efficiency of the city's housing stock. The average energy efficiency of all homes in Cardiff is SAP 65, which is equivalent to an Energy Performance Certificate (EPC) rating of D. However, there is a difference between tenures, with social housing being on average more energy efficient (EPC C) than private tenure housing (EPC D)[2]. This underlined the need for a renewed focus on private tenure housing, both private rental and owner occupied homes.



Cardiff % of Emissions by Sector
From 2023 DESNZ Data



Progress so far

To date the Council has facilitated and delivered many successful domestic energy retrofit schemes. The Welsh Housing Quality Standard has driven forward work on our own housing stock with approx. 600 homes upgraded every year. Private tenure homes do also have various forms of government support for energy efficiency but in general have fewer policy requirements and mechanisms to stimulate these improvements, in particular owner-occupied and privately rented homes.

We have delivered multiple Welsh Government Arbed schemes, as well as facilitating access to other government schemes such as Energy Redress, Energy Company Obligation, Great British Insulation Scheme and Welsh Government Nest. The average number of private tenure homes upgraded through these mechanisms is approx. 450 per year.

Additionally, we have facilitated upgrades across the private rental sector via the Minimum Energy Efficiency Standards[3] and across all tenures of housing from Building Control requirements where works of certain magnitude trigger consequential energy efficiency improvements.

These achievements are excellent given the available funding environment. However, to meet our Net Zero targets we clearly need considerable acceleration of retrofit work, and to achieve this we also need a corresponding increase in funding and innovative funding mechanisms to support and encourage uptake.

It is estimated that the cost to retrofit homes is between £30-69K[4,5] per property to reach Net Zero emissions. This would equate to £3-6 billon to improve all the homes in Cardiff that require retrofit works over the period to 2050.

[1]Department of Energy Security and Net Zero annual statistics - UK local authority and regional greenhouse gas emissions statistics, 2005 to 2023 - GOV.UK
[2]Social housing average is SAP 71 (EPC C) and private tenure housing average is SAP 62 (EPC D)
[3]Currently private rental properties must be EPC E and above (without an exemption)
[4]University of Nottingham (2022) – Retrofitting the UK's housing stock for carbon neutrality will require significant investment
[5]Green et al. (2020) – Decarbonising the Welsh housing stock: from practice to policy

One Planet Cardiff | Domestic Energy Retrofit

Challenges beyond finance

Domestic energy retrofit is complex. This is further complicated by the varied housing stock across the city, spanning differing build types and comprising of many older pre-1919 solid wall properties. We need to take a 'whole house' approach to ensure that if single measure upgrades are delivered that they do not preclude other measures being taken later on.

There is also a history in the retrofit industry of poor quality installs amidst a background of lack of consistent enforcement of standards. There is an observed shortage of construction workers and a skills shortage for install of new products and technologies in the field, and a perception that residents lack the required frameworks, such as robust quality assurance and a valid guarantee for works, to enable them to be confident in taking on energy improvement work.

Residents do not necessarily prioritise energy retrofit investment given the upfront costs involved, cost-of-living pressures and competing priorities for household budgets. Many do not know where to start due to the complexities of retrofit and the difficulty in finding reliable contractors. The inconvenience of complex paperwork, intrusive works and waiting for costs to drop, all provide further reasons for residents to put off undertaking works until a crisis point occurs. At that point, some of the more innovative solutions available are difficult for cold households to contemplate and organise.

These challenges are appliable to both owner occupied and private rental homes, but the latter layers on the need for landlord engagement, finance and action in a situation where the benefits are not necessarily directly felt by the property owner. It is clear that the stimulation of action in the private rented sector will therefore need a bespoke and targeted approach.







Fuel poverty focus

Given the magnitude of the issue, from the number and variety of homes that require upgrades and the cost to undertake these retrofits, there is need to prioritise work going forward. Households are deemed to be in fuel poverty if they spend more than 10% of their income on all household fuel use in order to maintain a satisfactory heating regime. According to recent Welsh Government fuel poverty statistics[6] we estimate that approx. 41% of Cardiff's households are either in, or at risk of being in, fuel poverty.

Households in fuel poverty will evidently be far less able to upgrade their homes without some form of financial support or grant funding, and therefore the Proposition seeks creative ways to prioritise these households in fuel poverty first. However, in order to offer support to all private tenure households in the route to Net Zero, and to fully support the local job creation and supply chain benefits that could arise, there will also need to be a focus on ways to stimulate uptake in the 'able to pay' demographic.

There are multiple benefits of undertaking retrofit works on fuel poor households beyond the Carbon reduction effect, specifically:

- **Physical and mental health improvements to occupants, particularly those with health conditions exacerbated by cold and damp homes –** there are estimated to be 40 deaths each year in Cardiff attributable to cold homes[7]
- **Reducing degradation of the building fabric of properties –** making homes warm and weathertight
- **Educational improvements –** children in fuel poor homes often have no warm quiet space to study as frequently only the main living areas are heated
- **Stimulation of supply chain –** a pipeline of retrofit works gives surety to manufacturers and installers
- **Training and jobs –** more work opportunities in a specialist energy retrofit environment
- More resilience to volatile energy costs

[6]Welsh Government – Fuel poverty modelled estimates for Wales (2024)
[7]Bankers without Boundaries (2025) – Quantifying the Benefits of Green Investment in Large-Scale Residential Net-Zero Retrofits at a City Scale

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Domestic Energy Retrofit



Each £1 invested in retrofit could result in **£5 of health and economic co-benefits**



Building the co-benefits case

To evidence the co-benefits of domestic energy retrofit and build a case for upscaling of works, we commissioned several pieces of research and held workshops with stakeholders.

Bankers Without Boundaries[7] quantified the co-benefits of domestic energy retrofit. They found that each £1 invested in retrofit in Cardiff could result in £5 of health and economic co-benefits. "Payback" via cost savings in the NHS alone could take as little as 7 years, along with measurable positive impact on asthma cases and excess winter deaths. The economic benefits include an increase in jobs, GDP, productivity and tax revenue. These findings support previous reports published by Public Health Wales.

Both the National Wealth Fund[8] and Wales Centre for Public Policy[9] confirmed that a fuel poverty focus was the best approach, alongside a 'nudge' and other support for the 'able to pay'. It was noted that local authorities are well placed to deliver area based schemes and establish trusted delivery models, with One Stop Shops seen as the gold standard.

3Ci (Cities Commission for Climate Investment) [10] undertook a review of the domestic retrofit work contained in this Proposition. They noted the significant ongoing cost to the NHS and social care from the current condition of housing. It was stated that 'the urgency for targeted grant funding has never been clearer' and that 'Cardiff Council should aim to secure long term government investment' for domestic energy retrofit at scale.

We also held a series of workshops with Cardiff's Affordable Warmth Partnership and Local Health Board public health team, both undertaking a Health Impact Assessment[11] with Public Health Wales and a community engagement roundtable with Involve. There was strong support for the Proposition and a clear message that vulnerable groups need a community led approach alongside hearing from 'seldom heard' residents.

There is a significant ongoing cost to the NHS from the current condition of housing

[6]Welsh Government – Fuel poverty modelled estimates for Wales (2024)
[7]Bankers without Boundaries (2025) – Quantifying the Benefits of Green Investment in Large-Scale Residential Net-Zero Retrofits at a City Scale

[8]National Wealth Fund (2025) – Cardiff Council and National Wealth Fund Advisory Engagement: Domestic Energy Retrofit
[9]Wales Centre for Public Policy (2026) – Domestic retrofit: Driving green growth and social equity
[10]3Ci (2025) – Briefing Note: Building the Case for Domestic Retrofit in Cardiff's Most Vulnerable Homes
[11]Public Health Wales (2024) – Rapid Health Impact Assessment (HIA) of the Domestic Energy Retrofit Strategy for Cardiff Council

One Planet Cardiff

Domestic Energy Retrofit

Funding and engagement

To achieve Cardiff's Net Zero targets and alleviate fuel poverty we must dramatically accelerate the scale and pace of domestic energy retrofit. Whilst the co-benefits of domestic energy retrofit are compelling, upscaling of retrofit comes at a significant financial cost. Historic and current grant funded schemes, while valuable, are limited in their reach and duration. This has resulted in the collapse of supply chains when new schemes are not confirmed in a timely manner. Continuity and certainty of funding are essential to maintain momentum, forward plan and build confidence across the sector.

We participate in the Cardiff & Vale College Retrofit Roundtable – a forum between higher educational institutions, Welsh Government, local authorities in the region and supply chain actors, to identify skills gaps and plan how to alleviate these challenges via education and training. A key message from this group is that contractors are reluctant to give up earning time to take up free training available for new heating technologies as they don't see a clear market for these products in the near future. This presents an obvious problem, and an opportunity to be addressed.

The following project summary pages illustrate current and future planned workstreams to continue our domestic energy retrofit journey. However, there is a demonstrable urgency to upscale this work to alleviate fuel poverty, reduce carbon emissions, improve residents' health and stimulate the local economy.

This Green Growth Proposition is not a traditional investment vehicle – it does not offer direct financial returns. Instead, it delivers significant social, economic and environmental co-benefits. These outcomes present a compelling case for public investment.





To alleviate fuel poverty **we must accelerate** the pace of domestic energy retrofit.

To unlock these benefits, we need to argue for substantial and stable fuel poverty grant funding from Welsh and UK Governments, beyond existing schemes such as ECO, the upcoming Warm Homes Plan and Welsh Government Nest. We are also exploring the feasibility of securing supplementary funding through innovative means such as corporate sponsorship, leveraging Environmental, Social and Governance (ESG) commitments and contractual community benefits. However, while corporate contributions may provide useful support, they cannot match the scale of investment required.

The UK wide ECO scheme is due to end soon, and whilst we will engage with the new Warm Homes scheme when launched, we also have to adapt to this ever changing funding landscape including any voids that may be left. We need to utilise our co-benefits evidence base alongside our experience of partnerships and scheme delivery to be in a position to lobby strongly for a scheme to address the domestic energy retrofit requirements and upscaling we have identified. One funding route we are exploring is an area based pilot scheme and initial discussions with decision makers have been positive. The pilot aims to focus on households in fuel poverty, whilst also opening up opportunities to support the 'able to pay' demographic, and will aim to capture and monitor the co-benefits outlined in this Proposition.

Cardiff Council is well positioned to lead this effort. Our experience in domestic energy retrofit combined with a diverse housing stock and strong regional partnerships, makes us an ideal test bed for large scale implementation. Cardiff Council won't achieve this alone, but we feel we are in a position to take a strong and impactful leadership role. The work we have undertaken with our partners around community engagement highlights the need for such work and the keenness of our partner organisations to work with us on progressing this important agenda should funding be secured. With government support and collaboration from partners, we believe we can deliver a transformative retrofit programme.

We have the ambition – what we need now is to secure the funding, partnership structures and certainty to turn this vision into reality. The following portfolio of potential work shows our thinking and progress to date.

PROJECT
PROSPECTUS

Domestic Energy Retrofit



One Planet Cardiff

Project Prospectus

Domestic Retrofit:
Area Based Pilot Project



AMBITION

- **To secure a delivery and funding partnership with Welsh Government to implement a bespoke area based pilot scheme. This will aim to integrate and test our goals to stimulate wider uptake, control installation standards and quality assurance, draw renewed interest from the installer and supply chain community, quantify the health and social co-benefits of our work, and provide a clear pathway and justification for future upscaling.**



Support for both fuel poor and **'able to pay'**

Description

We're close to finalising Welsh Government partnership arrangements and funding to develop options and trial an area based approach to energy retrofit to complement existing demand led government schemes. The Cabinet Secretary for Housing and Local Government and the Cabinet Secretary for Social Justice, Trefnydd and Chief Whip have both agreed to support this partnership project next year, subject to Cardiff Council Cabinet approval.
We have also secured the interest of National Grid whose Engagement team are considering if and how they might join a delivery partnership for this project.
Our aim is to target households in fuel poverty primarily, with a supporting offer to 'able to pay' households who will then be able to benefit from the strong project management and trusted processes used and controlled by the Council and Welsh Government. Our ambition is to bring the contractor community and health and social experts along with us, and to focus on capturing and monitoring the linked benefits that we've identified in our stakeholder engagement exercises.

Key Benefits

- To ensure vulnerable households in Cardiff can access funding for energy efficiency measures, at no additional cost to the householder, and via vetted installers through a partnership pilot.
- To provide a supporting offer to 'able to pay' households of accessing vetted installers.
- To further evidence co-benefits of domestic energy retrofit, including for health, educational outcomes, energy security and local economic development.
- To realise economies of scale and neighbourhood regeneration from taking an area based approach.
- To accelerate resident uptake of funding opportunities via area based community engagement.
- To alleviate fuel poverty and reduce carbon emissions.
- To stimulate the local supply chain and energy retrofit jobs in the region.
- Pilot partnership models provide replicability and scalability for future work across Wales.

Strategic Fit

- **One Planet Cardiff (OPC):** commitment to 'accelerate partnership programmes to deliver mass retrofit of buildings across the city with measures to reduce energy demand'
- **Cardiff LAEP:** supports need for 91,000 homes with domestic energy retrofit measures, with energy generation equivalent to 115,000 domestic roofs with solar PV and 160,000 heat pumps across all sectors, to achieve net zero by 2050.

Next Steps

- **Seek formal confirmation of Welsh Government Support**
- Project plan to be finalised – identifying stakeholders, recipients, delivery partners, procurement and implementation routes, customer care options, monitoring and quality assurance processes.
- Model to be developed with a compelling argument for embedding the approach and action to provide continuity of schemes.

Status / Timeline

- Project scoping meetings held with officers from Welsh Government.
- Initial project scoping document in draft.
- Stakeholder engagement complete and feedback integrated into our plans

Key Partners

- Welsh Government
- Local Partnerships
- Cardiff Affordable Warmth Partnership
- National Grid

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Domestic Retrofit: Switch Together

AMBITION

- **To build on the success of the first Switch Together rooftop solar project by launching and promoting a second phase in partnership with the Cardiff Capital Region.**

Description

Switch Together (previously known as Solar Together) is an initiative to support and accelerate the installation of rooftop solar panels to generate electricity on domestic properties, with options for battery storage and EV charging. It operates as a 'collective purchasing scheme' where residents are invited to register to express interest. This collective customer opportunity is then taken to market via a 'reverse auction', generating competitive prices through economies of scale. Registrants then receive a preliminary offer and can proceed to survey following a small deposit. Schemes are implemented for residents proceeding with the offer using vetted installers with strong installation standards applied and reliable insurance backed guarantees.

A phase one pilot scheme has delivered a significant step change in the uptake of domestic solar across the Cardiff Capital Region with over 2.3MW of new renewable energy generation installed across the Region last year, a third of which is in Cardiff itself. This stimulated £3.9m of spend amongst the residents who participated with feedback that the Council involvement and collective approach provided an extra degree of confidence.

Based on this success we have recently launched round 2 and are exploring ways to apply similar models to other energy retrofit technologies and to commercial premises as set out earlier.

Key Benefits

- To provide 'able to pay' households an easy to access, competitively priced offer with customer confidence from vetted installers with guarantees.
- To increase amount of renewable energy generated and reduce carbon emissions.
- To stimulate local supply chain and renewable energy jobs in the region.
- Whilst the scheme is mainly aimed at households, small businesses can also access the offer.

switch together.



Strategic Fit

- **One Planet Cardiff (OPC):** commitment to 'work with partners to promote and facilitate access to schemes to deliver property upgrades and retrofit'
- **Cardiff LAEP:** supports need for energy generation equivalent to 115,000 domestic roofs with solar PV to achieve net zero by 2050

Status / Timeline

- Procurement of phase 1 scheme provider facilitated by Cardiff Council for Local Authorities in the region (scheme requires scale for success).
- Scheme promoted to residents via a targeted mailout (based on household income levels), social media, press releases and website promotion.
- Installation phase of phase 1 complete:

	Cardiff	All CCR
Completed solar arrays to date	163	470
Total solar KW installed to date	790	2.320
Completed batteries to date	162	474
Total Investment to date (householder)	£1,3m	£3,9m

- 40 locally-based individuals employed on the project
- Phase 2 scheme provider procured by Cardiff Capital Region for all local authorities in the region.

Key Partners

- Local Authorities in the South East Wales Region
- Cardiff Capital Region
- Local Partnerships

Next Steps

- Round 2 timescales: registration open late January to early April 2026, with installs completed by November 2026.
- Investigate the potential for adding air source heat pump installation to the offer for future rounds. Viability of this depends in part on linking to available grant funding (eg Boiler Upgrade Grant) and finance options (eg Green Homes Wales loan scheme).

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Domestic Retrofit: Warm Homes for Health



AMBITION

- **Formalise a partnership with the Local Health Board to target and monitor referrals for energy advice and available funding to residents with health conditions exacerbated by cold and damp homes.**

Description

A fuel poverty alleviation partnership with health professionals to target those with health conditions exacerbated by cold and damp homes using medical data sources. Living in a cold home can worsen respiratory illness such as asthma and increase the risk of heart disease and cardiac events. It can also worsen musculoskeletal conditions such as arthritis. Additionally damp homes can lead to mould growth, the spores of which further impact on respiratory health. Cold or damp homes can have a significant impact on residents' mental health, with both depression and anxiety more common amongst people living in such conditions.

The project aims to proactively identify patients who suffer from such chronic illness, and that also live in poor housing conditions, to better target fuel poverty interventions. Interventions are both to increase household income via financial inclusion checks and to improve the energy efficiency of the home via energy retrofit schemes. This project aims to ensure that limited energy retrofit scheme funding is targeted to the most vulnerable residents to maximise outcomes. The project also seeks to put into place mechanisms to measure these health outcomes.



Key Benefits

- To improve the health of residents with health conditions exacerbated by cold and damp homes.
- To explore a model where investment in energy efficiency produces co-benefits in health.
- To ensure vulnerable households in Cardiff can access funding for energy efficiency measures via available government schemes.
- To alleviate fuel poverty and reduce carbon emissions.
- To increase household income, with a focus on increasing the uptake of Pension Credit, a gateway benefit.
- To stimulate the local supply chain and energy retrofit jobs in the region.

Strategic Fit

- **One Planet Cardiff (OPC):** commitment to 'work with partners to promote and facilitate access to schemes to deliver property upgrades and retrofit'
- **Cardiff LAEP:** supports need for energy generation equivalent to 115,000 domestic roofs with solar PV to achieve net zero by 2050

Key Partners

- Cardiff and Vale University Health Board
- Vale of Glamorgan Council
- Warm Wales
- Cardiff Affordable Warmth Partnership

Status / Timeline

- Project initiated with colleagues in Cardiff and Vale University Health Board, Vale of Glamorgan Council and Warm Wales, all committed to work together to realise and monitor the multiple co-benefits of closer links between health and fuel poverty.
- Involvement from local public health team and clinical aspects of the Health Board.
- Mapping of key stakeholders and referral routes underway.

Next Steps

- Workshop to be held with key stakeholders to develop and progress project.
- Evaluation of the benefits to be scoped.
- Formal commitment to progress to be documented via a Memorandum of Understanding between key partners.

Cold, damp homes can have **a significant impact** on residents' **mental health**

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Domestic Retrofit:
Engagement and Partnerships



AMBITION

- **To create and promote a 'retrofit hub' approach to provide up-to-date support and guidance to citizens interested in domestic energy retrofit. This would consolidate existing best practice and advice, signpost to funding and support resources, and promote live opportunities as they emerge and develop.**

Description

Providing access to reliable information on domestic energy retrofit to Cardiff's residents, with a focus on those households in fuel poverty. Signposting to trusted partner organisations and promoting available government schemes, in particular working with Cardiff's Affordable Warmth Partnership.

Strategic Fit

- **One Planet Cardiff (OPC):** commitment to 'work with partners to promote and facilitate access to schemes to deliver property upgrades and retrofit'
- **Cardiff LAEP:** supports need for 91,000 homes with domestic energy retrofit measures, to achieve net zero by 2050.

Key Benefits

- To ensure low-income and vulnerable households in Cardiff can access funding for energy efficiency measures along with access to financial inclusion checks.
- To also ensure that the 'able to pay' households can access reliable and trusted information on energy retrofit and promotion of applicable schemes.
- To alleviate fuel poverty and reduce carbon emissions.
- To stimulate the local supply chain and energy retrofit jobs in the region.
- Proven partnership model with Cardiff's Affordable Warmth Partnership.

Key Partners

- Cardiff Affordable Warmth Partnership
- Nest
- Warm Wales
- EON Energy

Status / Timeline

- Cardiff Affordable Warmth Partnership active with membership from approximately 30 organisations from public, third and private sectors across the city, demonstrating joint working with common purpose.
- Information and signposting to partner organisations on the Council website.
- Promotion of schemes via website, targeted mailouts and social media campaigns.
- Ongoing partnership with Welsh Government demand led Warm Homes Nest scheme to promote uptake of the scheme to suitable households across the city. Targeted mailout distributed at regular intervals to households likely to meet Nest funding criteria.
- Final phase of partnership with EON Energy to deliver ECO4 installs to fuel poor households across the city, including a referral partnership with Warm Wales (note ECO will terminate at end 2026).

Next Steps

- Investigate mapping tools to better identify households in fuel poverty so that promotion of schemes can be further targeted.
- Ongoing promotion and facilitation of available government schemes.

We aim to provide more information and advice about home energy retrofit



One Planet Cardiff

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