Working towards a zero carbon Cumbria by 2037

FEBRUARY 2024

BUILDINGS

Emissions reduction action plan

ZERO CARBON CUMBRIA

Towards Zero Carbon Cumbria
CAfS
Cumbria Action for Sustainability

COMMUNITY FUND

CONTENTS

Aim, targets and benefits **3**

Strategic Priority 1: Energy demand reduction **4-7**

Strategic Priority 2: Replace fossil fuel heating and electricity generation **8-10**

Strategic Priority 3: Improve environmental standards of new buildings **11-13**

Strategic Priority 4: Finance, evaluation and communication **14-15**

What success might look like **15**

Links **16**

If you would like a large text version or have difficulties distinguishing between any of the colours, please contact us.

BUILDINGS

Aim:

To achieve sufficient energy demand reduction across the range of Cumbrian buildings and decarbonise the whole life cycle of buildings to meet the 2037 emission reduction target whilst optimising benefits for people's wellbeing through prioritising warm homes, energy security and resilience.

Targets:

- 50% of buildings assessed for heating efficiency by 2026, 100% by 2029.
- 95% of homes which require energy efficiency measures to have been improved by 2030.
- 75% of homes with heat pumps by 2030, 95% homes with renewable systems by 2037.
- 50% of homes with renewable energy sources by 2030.

Risks, dependencies and challenges:

To ensure the action plan is realistic and resilient, the Sector Group have highlighted potential risks, dependencies and challenges associated with the strategic priorities. Some will be mitigated through delivery of other actions within the plan, but others will require further work to overcome.

- Risk - an outcome of delivering an action.
- Dependency - required for successful implementation of the action.
- Challenge - complexities to delivering an action.

Emission saving rating

The sector group have used this key to give an indication of the potential carbon that could be reduced by completing the action. These are not based on accurate carbon counting and further work will be undertaken to give a better understanding of the impacts. Enabling actions do not directly reduce emissions but are required to facilitate the delivery of other actions in the plan or support the achievement of the overall strategic priority.

Benefits to business, individuals and the environment:

- Sustainable jobs, skills and training opportunities.
- Reduced costs to business for energy and longer term resilience.
- Business innovation, supply chain and circular economy opportunities to meet stakeholder and customer expectations.
- Reduction in fuel poverty due to reduced energy demands.
- Improved personal financial position.
- Community connectivity and societal benefits.
- Improved health, well being through warm, comfortable homes.
- Improved air quality.
- Buildings protected and conserved for the future.
- Enhanced building value.

E	L	M	H
Enabling Action	*Low*	*Medium*	*High*

STRATEGIC PRIORITY 1: *Energy demand reduction*

Improve energy efficiency of existing Cumbrian building stock so that space heating and hot water demand is reduced to agreed energy use intensity targets.

Use Low Energy Transformation Initiative (LETI) standards as the baseline for building energy intensity and develop more appropriate Zero Carbon standards as more information becomes available for local buildings.

		How	Challenges	Prospective Partners
B1.1		**ACTION: Increase the knowledge and understanding of the existing building stock to ensure appropriate retrofit measures are implemented.**		
	E	Commission a Cumbria Building Energy Profile and Opportunities Assessment report to phase and target upgrades (to include retrofit, heating and energy systems) in the most optimal areas.	• Potential for some data gaps for Cumbrian buildings, therefore may be based on assumptions.	• Local Authorities (LAs) • Cumbria Observatory • Social Housing landlords
		Develop typologies with sample specifications to help ensure appropriate works are carried out - including those complex to decarbonise, etc.		• Historic England • Low Energy Transformation Initiative (LETI) • Cumbria Action for Sustainability (CAfS)
		Develop a framework for delivery of assessments/audits/advice service for all buildings.	• Insufficient energy assessors. • Willingness of building owners/ occupants.	• CAfS • Groundworks
		Improve the knowledge and capability of those with the responsibility for advising and policing standards: Building Control, Environmental Health, landlords.	• Changing building regulations and Building Safety Act. • Limited capacity/resource for training.	• LAs • Letting Agents
B1.2		**ACTION: Increase resource, knowledge and skills across Cumbria.**		
	E	Work with the National Retrofit Hub to develop a Cumbria Retrofit Hub to bring together training and practical guidance.	• Keeping up with changes in advice, initiatives, technology and best practice guidance. • Connectivity between training providers and contractors.	• Further Education (FE); Lakes College • Retrofit Academy Community Interest Company (CIC) • National Retrofit Hub • People Powered Retrofit
		Train sufficient retrofit advisors, assessors and coordinators to meet the target for number of assessed buildings.	• Up to date data on number of buildings already completed.	• CAfS • Cumbria Local Enterprise Partnership (CLEP) • Retrofit Academy CIC

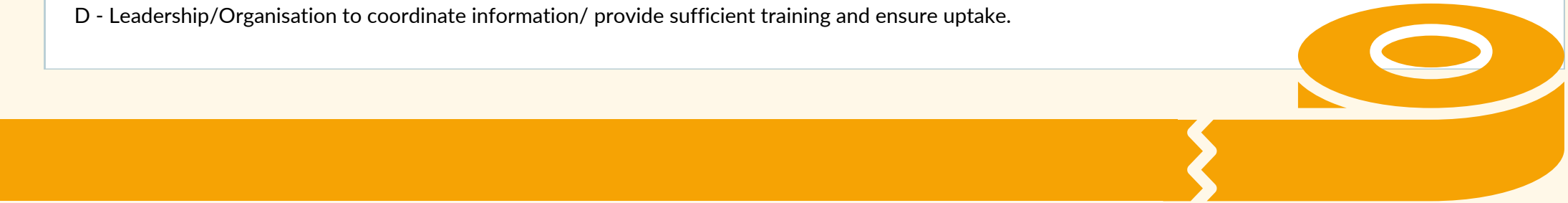
		How	Challenges	Prospective Partners
B1.2		**ACTION: Increase resource, knowledge and skills across Cumbria (continued).**		
	E	Review and deliver green skills actions in the Cumbria Local Skills Improvement Plan (Retrofit skills provision) and the Cumbria Apprenticeship Strategy 2023 and develop specific skills pathways for energy reduction in buildings.	• Strategic and practical leadership. • Reliant on employers having time and willingness. • That the strategy is not kept up to date with appropriate training. • Limited training providers. • Cost to businesses of retraining staff.	• Cumbria Chamber of Commerce (CoC) • Construction Industry Training Board (CITB) • CAfS • Lakes College • Carlisle College • Chartered Institute of Architectural Technologists (CIAT) • CLEP • Federation of Master Builders • Historic England
		Connect businesses with higher education and skills providers to build the supply chains for buildings retrofit.	• Limited access to supply chains that are low carbon.	
B1.3		**ACTION: Increase the number of properties being upgraded across all uses, ownership and occupation types.**		
	H	Use the LETI building type standards as a base line and update as more building information is collated to review and develop Cumbria Intensity Use targets.	• Limited local traders currently working to these standards creating a lag in progress.	• Cumbria Association for Environment Conscious Building (AECB) • CAfS
		Maximise existing and future energy saving initiatives for homes and businesses: • Cumbria Sustainable Warmth Scheme Green Home Grant. • Local Authority Delivery Programme and Home Upgrade Grants. • Referrals to the ECO4 and Great British Insulation Schemes. • CAfS retrofit services.	• Policy is not aligned to the urgency. Uncertainty of funding initiatives. • Unwillingness from building owners/tenants to reduce energy demand. • Proportion of vacant/second homes in Cumbria.	• LAs • CAfS • Cumbria Fuel Poverty/Housing, Homelessness and Wellbeing Group (including Housing Associations) • Public Health

		How	Challenges	Prospective Partners
B1.3		**ACTION: Increase the number of properties being upgraded across all uses, ownership and occupation types (continued).**		
	H	Improve the energy efficiency of existing social housing through current retrofit plans.	• Housing Associations may not be engaged in the process for energy efficiency. • Current schemes may not include occupant consultation or choice leading to resistance to engage.	• Social Landlords • LAs
		Create a toolkit for upgrades for all the different buildings types, ownership, tenure retrofit services and stages.	• Availability of building data. • Resource to bring it together and roll out.	• Building owners/Community Groups • Landlords • Property Managers • Residents Associations • LETI
		Mandatory efficiency assessments on building developments (where appropriate) triggered by planning permission or building regulation compliance.	• Cost of assessment to building owner.	• LAs
		Ensure policies (e.g. local plans, planning guidance) are aligned to assist appropriate retrofit measures are easy to implement and actively encouraged.	• Local authority knowledge and support towards retrofitting upgrades as part of building control powers.	• LAs
		Local authorities and public sector services to develop ambitious improvement plans for their own properties. The plans should include local procurement strategies to help kickstart demand across the supply chain with flagship schemes.	• Conflicting priorities within public sector services. • Local Authority budgets often set in advance, could create lag in roll out.	• LAs • National Health Service (NHS) • Schools
		Increase knowledge and awareness of the process and benefits of retrofit upgrades through promotion and information campaigns.	• Consistent messaging.	• CAfS • Retrofit Hub • Cumbria Sustainability Groups • ACTion with Communities Cumbria (ACT) • Construction trades and suppliers • Financial lenders

		How	Challenges	Prospective Partners
B1.4		**ACTION: Promote use of smart technology, supplier incentives and energy saving sessions and energy buy back schemes for businesses**		
	E	Key organisations keeping abreast of suppler initiatives and promoting to the general public as well as directly to appropriate partners supporting those who are most in need.	• Not all suppliers have schemes that encourage reduced consumption. • Some occupiers having limited control over suppliers.	• CAfS • Energy Saving Trust • Financial advisors • Suppliers of goods • Utility companies • Community sustainability groups • Health and wellbeing coordinators
		Promote sustainable behaviors, including use of efficient appliances with top energy ratings and embedding habits that reduce heat, electricity and water use.	• Potential increased cost to occupant.	

Key risks (R) and dependencies (D):

R - Lack of continuity due to mixed messaging on retrofit as a national priority, affects market demand and creates uncertainty around policy and funding which can limit local authorities capacity to be proactive.
R - No assessment of Embodied Carbon of materials used could result in increased emission impact.
R - Upgrades are not holistic in terms of energy efficiency measures and homes still have high energy demand. Few 'universal' solutions even within similar types of buildings.
R - Over reliance on Building Control for building improvement guidance could result in lower efficiency standards being delivered depending on council and/or individual officers position on energy efficiency.
D - Monitoring of progress in efficiency standards should be in both energy intensity and SAP/EPC in the short term, to allow owners/tenants/leaseholders to transition to the more desirable energy intensity metrics.
D - Few of these actions can be delivered without significant funding and continued commitment from LAs to administer grants.
D - Effective engagement with building owners (and occupants) especially those who do not believe the issues are relevant to them.
D - Leadership/Organisation to coordinate information/ provide sufficient training and ensure uptake.



STRATEGIC PRIORITY 2:

Replace fossil fuel heating and electricity generation with cost-effective, low carbon technologies

		How	Challenges	Prospective Partners
B2.1		**ACTION: Phase out the use of fossil fuels; oil, gas, coal heating systems. Replace with electric or renewable heat and hot water from a decarbonized grid or renewable sources. This includes local and community-based initiatives.**		
	H	Develop a suite of approaches for the different building types with a showcase of tried and tested use of renewable alternatives in a range of properties in Cumbria.	• Resistance to change over from one system to another. • Upfront costs of schemes is prohibitive.	• Supply Chain • AECB
		Follow criteria outlined in the Lake District National Park Planning Authority Planning Guide (implemented 20.09.23) as current best practice.	• Governments U-turn on their target phase out dates. • Limited market supply of pumps.	• Electricity North West Limited (ENWL) • Building owners/occupants • Community groups
		Provide guidance on the balance between fabric improvements and electric based heating and the importance of assessing for upgrades needed prior to new heating install.	• Limited by the pace at which assessments can be done.	• CAfS • Utility companies (e.g. British Gas, Octopus) • AECB • Heating/plumbing trades
		Explore the opportunities for suitable community based schemes (where and how they could be applied). E.g. wind, hydro, tidal, heat networks, PV. Including in principle support from regulatory bodies.	• Management of multiple stakeholders.	• Local/regional leaders in supply and installation • Trade organisations
B2.2		**ACTION: Increase installation of renewable technologies for energy on buildings, in particular solar PV and solar thermal (including storage).**		
	H	Increase knowledge and awareness of options through promotion and information campaigns.	• Buildings warranties (roof) can become invalid if panels installed.	• CAfS • LAs • Agricultural Renewables • ENWL

		How	Challenges	Prospective Partners
B2.2		**ACTION: Increase installation of renewable technologies for energy on buildings, in particular solar PV and solar thermal (continued).**		
	H	Explore opportunities for more flexible use of local levelling up grants (and others) to support renewable energy schemes for high energy use buildings including hospitals, schools, prisons, leisure centres and large scale community led district schemes.	• Government grants constrained by conditional, competitive processes.	• LAs • CAfS • CLEP • NHS
		Mandatory installation on any developments (where appropriate) triggered by requirement for planning permission.	• Cost of install prohibitive to building developments.	• Planning Authorities
		Develop policies which support renewable installations in conservation areas and on heritage buildings.	• Building heritage and conservation to be considered.	• LAs • Historic England
		Explore group buying projects to support householders to install solar photovoltaics/battery storage.		• CAfS • ENWL • Residents Associations • Community sustainability groups • ACT
B2.3		**ACTION: Find solutions for hard to adapt buildings (smaller/terraced houses and occasionally occupied buildings not compatible with PV/heat pumps).**		
	H	Identify the buildings, and the issues around them and develop solutions - e.g. direct electric heating, radiant heating, district heating and solar options.	• Number of different building owners to connect. • Potentially significant infrastructure requirements.	• AECB • LETI • People Powered Retrofit • Academia - University of Cumbria • Historic England • Society for Protection of Ancient Buildings (SPAB) • Sustainable Traditional Buildings Alliance (STBA)
B2.4		**ACTION: Maximise existing and future heating and energy supply support initiatives for homes and businesses to support the above actions.**		
	E	Promotion of government and local incentives.		• LAs • CAfS • CLEP

Key risks (R) and dependencies (D):

R - Lack of information and advice around agreed standards and best practice for production and supply of renewable heat systems.
R - risk of creating more emissions from removal and waste management of working boilers outside natural replacement cycles.
D - Concerted effort to develop market and supply chains, as it is difficult to provide meaningful local supply chain action without significant seed funding.
D - Electricity infrastructure being able to keep up with the pace of installations.
D - Having the right information from building assessments and the sequence of retrofitting.
D - Up to date on new guidelines and technology.

STRATEGIC PRIORITY 3: *Improve environmental standards of new buildings*

		How	Challenges	Prospective Partners
B3.1		**ACTION: Reduce space heating and hot water demand in new dwellings to 15 kWh/m2a. Ensure heat is provided by electric heating or renewables.**		
	H	Campaign for acceleration of national building regulations to prioritise low carbon and fabric standards.	• People being priced out of the housing market if increase in build costs is prohibitive. • Delivering the lowest carbon impacts when embodied carbon is seen as a lower priority than operational energy.	• CLEP • LAs • Developers • CSN
		Set specific local low carbon planning conditions for all new builds. Use the Lake District National Park Planning Authority Planning Guidance as the right approach for the County wide new build standard.	• Insufficient skilled contractors. • Limited supply chains. • Resistance from contractors due to limited experience and evidence in some of the technology and increased costs.	• LAs • Developers
		Provide local authorities, housing associations and housebuilders, and their supply chains with the knowledge and tools to deliver net zero housing and get ahead of the incoming national regulations (LETI archetypes for newbuilds).	• Attitudes of planning teams. • Inconsistencies across the four planning authorities.	• AECB • Developers • LAs
		Set up a working group with Cumbrian developers/construction trades.		
B3.2		**ACTION: Reduce the embodied carbon and whole life carbon associated with new buildings using the LETI targets.**		
	H	Educate and inform building buyers and occupiers on the benefits of improved standards and increase the demand for more sustainable buildings through more scrutiny on planning applications/development panels.	• Current lack of understanding of the importance of embodied and whole life carbon. • Accurately measuring and reporting on embodied carbon is one of the main challenges faced in achieving net zero carbon buildings.	• Alliance for Sustainable Building Products (ASBP) • Developers • Social Housing developers • Self builders • LAs • Community groups • LETI/Royal Institute of Architects (RIBA)

		How	Challenges	Prospective Partners
B3.2		**ACTION: Reduce the embodied carbon and whole life carbon associated with new buildings using the LETI targets (continued).**		
	H	Provide access to training for all sections of the supply chain including quantity surveyors and development project managers.	• Incentivising uptake of training.	• AECB
		Planning policies to mandate and include targets for embodied and whole life carbon. Assessments to be carried out using Royal Institute of Chartered Surveyors (RICS) whole life carbon assessment standard.	• Governments recent retraction of embodied carbon recording and reporting in the design process.	• LAs
B3.3		**ACTION: Work with Local Authorities to develop Local Plans from 2027 that align to the 2037 target**		
	E	New or updated planning policy and building conditions should allow for low carbon, climate solutions - spatial design, building and road orientation, 15 minute neighbourhoods, climate adaptation.	• Push back from developers over project viability.	• LAs • Community Groups • CAfS
		Prioritise retention and reuse of existing buildings over new build.	• Develop better criteria for judging if a justification for demolition and new build is reasonable.	• LAs
		Ensure new development protects and enhances the natural environment with specific targets to be included in all planning policies.	• Environmental cost is seen as less of a priority within planning assessments.	• Cumbria Local Nature Partnership
B3.4		**ACTION: Ensure high levels of energy efficiency in new non residential buildings where appropriate**		
	L	Agree a set of standards for each building type using BREEAM Outstanding/NABERS or equivalent standard.		• Architects • Supply chain • CLEP • LAs

		How	Challenges	Prospective Partners
B3.5		**ACTION: Train designers (architects, engineers etc.), contractors and authorities (local authorities, highways, sewers) in carbon literacy that is specific to buildings and construction.**		
	E	Develop and deliver a sector specific course (adapted from existing carbon literacy training) with sector experts.	• Willingness to engage in programme while demand is still limited.	• LETI • Passive Haus Trust • Green Register • AECB • Developers • RIBA • Lancaster University • Centre for Alternative Technology (CAT)

Key risks (R) and dependencies (D):

R - Drop in new builds if costs/demands become prohibitive.
D - Commitment from developers to keep abreast of new technology and solutions.
D - Alignment with current priorities for local authorities - economic, health, natural environment.

STRATEGIC PRIORITY 4: *Finance, evaluation and communication*

		How	Challenges	Prospective Partners
B4.1		**ACTION: Develop a finance framework for delivery of the above actions.**		
	E	Identify the potential capital investment costs required and where possible, include potential return on investment from implementing low carbon schemes.	• Fluctuating/inconsistent costs • Expectation management of returns	• Retrofit hub • Cumbria AECB
		Review and explore current and future finance options that can support owners, tenants, leaseholders and businesses to undertake building upgrades. Examples should include: • Sustainable green loans/mortgages. • Local and national grant schemes. • Exploit economies of scale on schemes with large numbers such as community projects. • Seek private investment opportunities. • Spend to save advice for those who are able to pay. • Local investment schemes - where people who have the means, invest to help those who can't afford it. • Local Authority schemes like Section S106.	• Uncertainty and inconsistent funding schemes • Funding still insufficient for full schemes	• ACT • CLEP • CAfS • LAs • Cumbria Business Growth Hub • Rural Growth Network • Financial advisors • Living Places • Cumberland Building Society and other lenders
B4.2		**ACTION: Continue to develop the local data and the tools for measuring progress.**		
	E	Develop a carbon budget for Cumbria buildings that is compatible with the action plan targets and the overall GHG for Cumbria pathway to net zero.	• Inconsistency of data collection. Accountability for data collection and storage.	• Zero Carbon Cumbria Partnership (ZCCP) • Cumbria Observatory

		How	Challenges	Prospective Partners
B4.3		**ACTION: Develop a Communication and Engagement plan.**		
	E	Use engagement support tools to target engagement and raise public awareness through campaigns across the county, working with the communities residents, businesses and public and 3rd sector organisations.	• Delivering appropriate and consistent messaging to all audiences. • Inability to respond to the demand due to the increased awareness could lead to disengagement. • Public awareness campaigns are costly.	• CAfS • LAs • Energy providers • Residents associations • CSN
		Raise awareness of the long-term benefits and potential cost savings associated with sustainable home improvements.		• CAfS
		Deliver demonstrator programmes and celebrate good practice through examples like a Net Zero Carbon building festival.	• Resource to deliver projects.	• Cumbria AECB Network
		Understand the societal relationships with buildings to maximise engagement.		• Climate Outreach • Institute of Public Policy Research (IPPR) North

What success might look like

- A new Cumbria Retrofit Hub established.
- Development of a delivery model for prioritisation of domestic and non domestic properties.
- More building assessors trained.
- Development of a monitoring tool that can show the impact of action delivery.
- Local planning policy rolling out phase out of use of fossil fuelled heating for new developments.

LINKS

A list of strategies and schemes referred to in the action plan as well as those that have been developed by some of the prospective partners identified who are already working towards or supporting more sustainable activity as of January 2024, can be found below. Click here for a full list of all references used in the development of the Buildings Emissions Reduction Pathway.

Organisation	Strategy
Castle and Coasts	CCHA Corporate Strategy 2022 - 2027 by CastlesandCoasts - Issuu
Cumbria Joint Public Health Strategy	Cumbria Joint Public Health Strategy 2019
Cumbria Local Enterprise Partnership Net Zero	https://www.thecumbrialep.co.uk/net-zero/
Cumbria Local Enterprise Partnership Apprenticship Strategy	Creating the future workforce with jobs, skills and unemployment support in Cumbria | Skills | Cumbria LEP (CLEP) (thecumbrialep.co.uk)
Cumbria Local Skills Plan	Cumbria-Local-Skills-Improvement-Plan-August-2023.pdf (cumbriachamber.co.uk)
Energy Saving Trust	Financial support for energy at home - Energy Saving Trust
Home Group	Environmental sustainability at Home Group (umbraco.io)
Lake District National Park Authority Planning Policy	Policy 20: Renewable and low carbon energy : Lake District National Park
LETI Design Guide	Criteria based on The London Energy Transformation Initiative (LETI) Climate Emergency Design Guide.
LETI Retrofit Guide	LETI Retrofit Guide https://www.leti.uk/_files/ugd/252d09_c71428bafc3d42fbac34f9ad0cd6262b.pdf
National heat and buildings Strategy	HM Government – Heat and Buildings Strategy (publishing.service.gov.uk)
National Retrofit Hub	https://nationalretrofithub.org.uk/
Riverside Housing	Retrofit.pdf (riverside.org.uk)
South Lakes Housing Sustainability Strategy	SLH-Sustainability-Strategy.pdf (southlakeshousing.co.uk)
Westmorland and Furness Climate Action Plan Part one	https://legacy.westmorlandandfurness.gov.uk/elibrary/Content/Internet/535/6004/45120122242.pdf