City Leap Community Engagement

Report by Bristol Energy Network

9th July 2021

Client: Engie

This report is to be embargoed and seen only by the client until the date when the City Leap bidders have submitted their full bid to Bristol City Council. After this date Bristol Energy Network is free to share the report and the background information with its stakeholders and to put information into the public domain, as part of Bristol Energy Network's purpose and community accountability.

Executive summary

City Leap is Bristol's answer to the challenge of investment in the infrastructure, skills, and participation needed to reach Bristol's ambitious Net Zero target by 2030. Community participation can make a significant contribution to City Leap delivering on its objectives.

This report:

- identifies community priorities and how these intersect with the City Leap project;
- establishes a pipeline of projects that the community energy sector and wider communities in Bristol could deliver in partnership with City Leap;
- gives an indication of the local appetite for investment in community or City Leap projects.
- It also identifies the resources that would be needed to deliver these projects, and the value that this would bring to the City Leap programme as a whole.

Communities have a track record in innovating to deliver the demonstrator projects which, if supported by the local authority via City Leap, can scale from street to street and community to community. To achieve this will involve investment in the early stage community development work which lays the foundation for energy projects which are truly inclusive, accessible and reflect the full diversity of Bristol's residents.

Community Energy Journey

We outline a community energy journey, from initial engagement establishing contact and building relationships to completed projects generating an income. Support is needed at each step along the way, and investment in the early stages across the 34 wards of Bristol can lead to an increased pipeline of projects being brought forward, and a greater diversity of participation in that pipeline.

Community priorities

Community plans in Bristol identify jobs and skills; housing and homes; transport; inclusion and accessibility as their top priorities.

Context of Covid

It's important to acknowledge through the collaboration with communities in the energy transition, the unprecedented impact the pandemic has had on so many of their lives over the past year. Many of these communities are already experiencing multiple levels of deprivation and have been at the front line of the Covid response and able to step in where the Government hasn't, demonstrating their commitment and ability to tackle such challenges together. The financial, health and wellbeing implications as a result, has left them in a state of recovery, which requires careful consideration of the scale, speed and willingness at which the communities can practically and positively operate. As part of supporting and enabling community climate action, is a necessity to meet people where they are at and work collaboratively to achieve realistic climate action.

Pipeline estimate

The pipeline of projects that can be delivered by communities has the potential to reach every part of the city with the right support. This potential pipeline overlaps with the technical potential for renewable energy and energy efficiency in Bristol, and is limited by the capacity of community organisations and the resources available to support them.

Some of the larger renewable energy projects, such as hydropower, wind turbines and solar farms, require specific types of site and are therefore of limited number within the Bristol area boundary. Others however need to be replicated in every part of the city: solar PV on roofs; retrofit of homes; microgrid development with new builds; connection to District Heat network; energy efficiency installation and education. We have also included skills development and education projects within these recommendations

There is potential for significant investment in community energy projects. This includes capital projects with a financial return and capacity-building investment that will have value for the overall delivery of the Net Zero agenda. On the assumption that project capital will be raised by community shares, loans and or bonds, the funding required to develop community energy projects is what Bristol communities need to get them investment ready. There are projects that require funds to get them investment ready and a good deal of capacity building required to feed the pipeline. Communities will also require development services to help them raise project finance and manage project construction and could be provided by existing community developers in the city.

A rough estimate of the type of funds that might be needed over the next five years is outlined in Cost of Delivering the Pipeline These figures are based on assumptions and extrapolations which are outlined in Section 2 - Pipeline of Projects which describe the following community energy activities that currently exist in the city:

- Solar PV and microgrid battery projects

- Capital investment in onshore wind and solar PV farms developed by communities near Bristol.
- Capacity-building for pipeline projects through Community Climate Action Plans (CCAP)
- Skills development projects[1]
- Retrofit One-Stop-Shop with host high street entry points hosted by community organisations and citywide delivery[2]

The role of community energy

Bristol's neighbourhoods and communities are as diverse as they are dynamic and full of contradictions. Given time and monetary constraints this means that any incoming City Leap delivery team will need to "hit the ground running". It is only by working in partnership with the existing Bristol community energy sector as outlined in this report, this can be achieved.

Community energy projects, organisations and companies are the brokers of trust between the newly arrived, anonymous City Leap team and Bristol's public, SMEs and community organisations. Community energy groups are the buffers, the translators and the One-Stop-Shops within their respective communities and are the enabling elements of a successful contract delivery in the true spirit of the City Leap contract. Working together with the consortium as co-delivery partners of City Leap will make this a leading energy transformation programme in the UK and will give the City Leap partner huge learning insights into how to deliver future successful programmes. There are some Community energy groups in Bristol which are investment ready and looking forward to being part of creating a carbon zero 2030 Bristol. It is shown that with resource, there is an appetite for local delivery of projects.

[1] Additional funding needed
[2] Additional funding needed

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1. Introduction

This report aims to estimate the potential pipeline of community energy projects in Bristol over the next 20 years, the duration of the City Leap JV contract.

It draws on a decade of experience of Bristol Energy Network in walking alongside the community energy sector developing in Bristol. This in-depth experience is supplemented by analysis of recent community plans, climate footprint analyses created for the six Community Climate Action Project groups, focus groups with Neighbourhood Energy Groups and Community Anchor organisations, and 1:1 interviews conducted in May and June 2021.

The brief was to:

- Identify community priorities and how these intersect with the City Leap project
- Establish a pipeline of potential projects that could be taken forward by communities and other city organisations once City Leap is launched. This includes the following types of project:
    - Generation/heat/carbon reduction projects (investable)
    - Carbon reduction projects (non-investable)
    - Educational projects
    - Other
- An indication of local appetite for investment in community or City Leap projects and under what terms
- Identify what resources communities need to develop their own projects.

City Leap is a delivery vehicle for the energy part of Bristol City Council's commitment to Net Zero emissions by 2030. Achieving this will only be possible with the participation of communities of Bristol. This goes beyond the need for 'meaningful public consent' identified by Simon Roberts, to include active participation in investing, having building works and technical changes in homes, making behavioural and lifestyle changes, and directly contributing their labour and skills to building the new infrastructure required. Supporting the emerging community energy pipeline in the ways this report outlines will bring widespread engagement and communications benefits to the successful delivery partner, as well as unlock greater participation and impact across the city's communities.

Bristol Energy Network is a member organisation which brings together neighbourhood energy groups, who have a specific interest in clean energy, citywide energy groups with the necessary technical and innovation skills, and community anchor organisations who know and serve the communities of place and of demographics which they are part of.

This report has been produced by Bristol Energy Network on behalf of the Community Energy Propagator Consortium.

The Community Energy Sector and Communities

The Community Energy Sector refers to community organisations with a focus on energy saving, energy generation and education. Some are purely voluntary, while others have developed into social enterprises with a return on investment. Many successful community energy groups and projects have relied on significant volunteer contributions of time, expertise, labour, and energy. This is only possible for those who have the time to give, such as the retired or those with enough resource, and for those with the education and skills to make participation possible.

This is a hugely valuable asset, but the social value expected of City Leap will need people who are working full time, raising families, focused on other issues, and those who are marginalised in society in some way, to also be involved, as described below. The community anchor organisations are therefore an essential part of identifying the potential pipeline of projects and the resources needed for community participation.

The roles of each of these in democracy in the city are explored in more detail in the Democracy in City Leap report by Praxis Research.

Value for City Leap

Achieving the aims of City Leap will involve the active participation and meaningful consent of the residents of Bristol. The Bristol Quality of Life Survey shows that 88% of residents care about climate change and 57% have reduced their home energy use in response. This is evident from the willingness to invest in renewable energy projects, and the huge amount of voluntary time and energy that Bristol residents put into all kinds of environmental initiatives. There is also a latent desire to participate in climate solutions from people who do not have the time and resources to make significant voluntary contributions. Training and employment opportunities in green jobs will enable this broader participation.

Risk of not engaging with communities:

Unsupportive public opinion could disrupt and slow down the City Leap project through:

- Lack of engagement with home retrofit programmes or suspicion of quality and trust in the programme
- Risk of negative comments on planning leading to slowing down of the planning process
- Resistance to disruption caused by new infrastructure e.g. digging up roads for district heating construction.

Opportunities from engaging with communities:

On the other hand, there is an opportunity for the positive value of City Leap to be significantly extended in the communities of Bristol through active participation. If the residents of Bristol feel a sense of ownership of City Leap, this could lead to:

- Positive local reception to the initiative, leading to supporting the planning process

- Increased uptake of domestic retrofit programmes and word of mouth recommendations
- Increased connection to district heating networks by households
- Financial investments from residents into City Leap projects and community owned energy projects
- The development of more marginal energy projects by community energy organisations making use of volunteer time input, lower costs of capital, and strong non-financial values, thus leading to greater impact
- The development of a skilled labour force of people throughout the city to deliver the major infrastructure investments of City Leap.
- Identification and delivery of co-benefits e.g:
    - Community development and reducing inequality of voice in the city through energy-project funded community development income streams
    - Future-proofing of retrofit for accessibility of buildings
    - Local biodiversity improvements in conjunction with district heat, and retrofit e.g. planting trees and wildflowers;
    - Local street changes e.g. liveable neighbourhoods infrastructure constructed alongside district heat networks – this also needs meaningful engagement and consent.

- Innovation developing learnings and case studies that could be applied to similar projects in other cities, developing the wider National net zero energy transition.

Community Journey

Bristol Energy Network has developed an approach to accompanying communities in their journey from energy not being on their agenda, to developing their own energy projects. This journey takes time and investment in long term relationships by a trusted organisation. Our experience shows that with the necessary investment the pipeline of potential community owned energy projects is significantly greater than it appears at the surface. This study has estimated the size of the potential below the tip of that iceberg. Figure 1 below shows this community journey. This is described in detail in section 4 on resource needed.

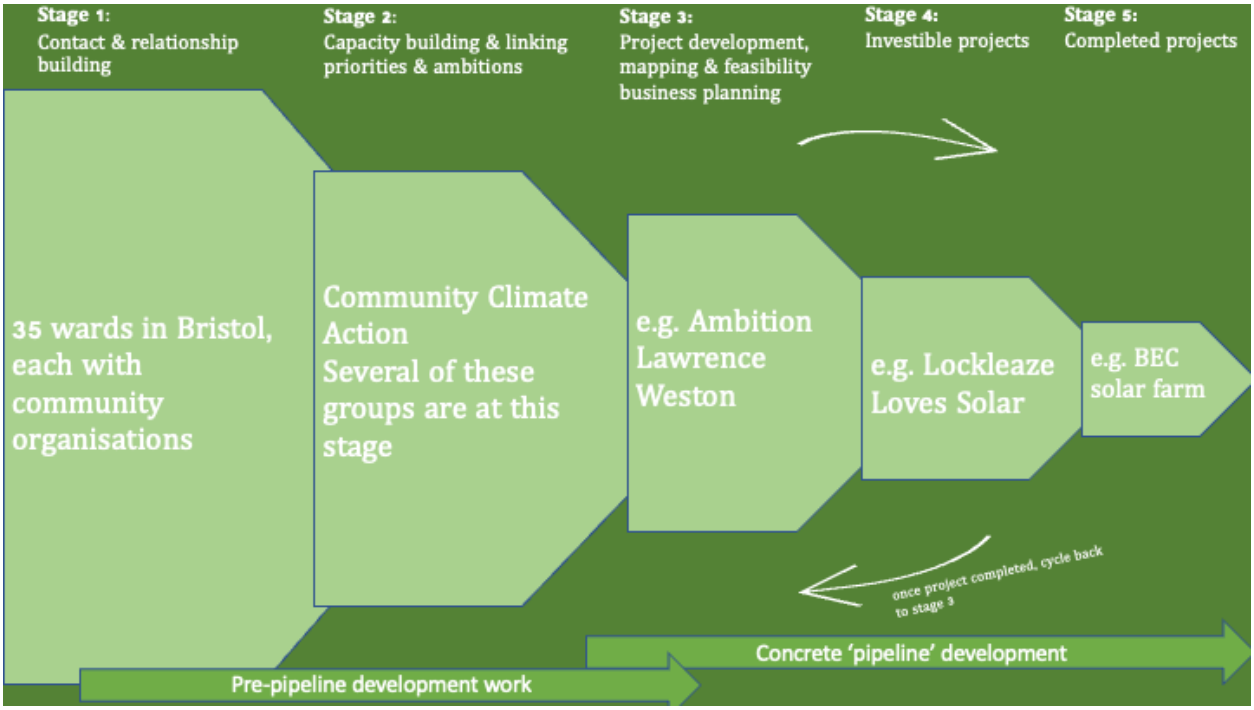


Figure 1: Community Journey

Some of the stages in the community journey map onto the five parts of the community energy proposition made by the [Community Energy Propagator Consortium] as described below, and shown in Figure 2.

Figure 2: Community Energy Proposition

Stages 1 and 2, the pre-pipeline development work, are crucial to enabling diverse **Governance Representation** through building relationship with people in all parts of the city and developing energy skills and knowledge.

Stage 1: Contact and relationship building.
In this stage, we need to meet communities where they are to understand community priorities and start to build trusted and reciprocal relationships with organisations and leaders in communities.

Stage 2: Capacity building, linking priorities and ambitions.
This stage builds on the initial relationships to systematically connect community priorities and ambitions with energy projects, and build the capacity of organisations to plan and deliver both

energy projects and more formal engagement within their own communities in order to remain accountable.

Stage 3: Project development, mapping and feasibility business planning
At this stage, the ideas and community needs coalesce into actual projects which can be developed with community members and other partners, with business plans or applications for funding. This is where the **Development Grant Funding** is needed.

Stage 4: Investible project delivery
This stage takes a project from feasibility to implementation, including full business planning, surveying, permitting, planning, and securing a site if applicable, and raising the necessary capital to go ahead. The **Match Funding Facility** comes in at this point.

Stage 5: Completed projects
Completed projects need maintenance, ongoing financial management, and monitoring and evaluation. Income from projects may be re-invested into the community in the form of a **Community Benefit Fund**.

In addition to directly investible energy projects, community participation is essential to developing the skilled and engaged local workforce that City Leap will need. Employing skilled tradespeople locally will contribute to the social value of City Leap, as well as creating resilience and cost savings for the project overall. This will also increase enthusiasm and understanding of retrofit among the family and friends and wider networks of tradespeople employed, and therefore improve the general energy literacy of the population. The EnergREV research project has explored future skills needs in Bristol.

In relation to retrofit, the FutureProof project has found that while there is a strong market for owner-occupied households wanting energy efficient retrofit of their homes, recruiting builders to attend training is more challenging. The most competent builders are busy, and have very little incentive to start offering new, unfamiliar services that they don't have the experience to cost accurately, or to take time out for training.

Community organisations are well placed to identify local contractors – Bristol Energy Network supported the FutureProof Program in its early setup stages. It helped to identify builders from communities with trust and long term relationships in their communities to build relationships and recruit among local builders. Our open meeting in September 2019 captured some early input here into the programme. Further investment in communities and skills development projects are therefore included in the pipeline of education projects as part of this study.

Community Climate Action

The Community Climate Action Project (CCAP) project funded by National Lottery Community Fund and coordinated by Bristol Green Capital Partnership is currently making a valuable contribution to building the capacity of some communities in Bristol to act on climate change. Each of the six participating communities will coproduce a community climate action plan, based on input from people in their communities, which will be published in December 2021. These plans will provide much more detail that could feed into an estimate of a community energy pipeline

than can be provided at this time. As part of the project each community has been provided a bespoke carbon footprint report by Centre for Sustainable Energy. These reports have been analysed as part of this study and are included in the assessment of pipeline potential. The CCAP itself is discussed in more detail as a case study in the 'resources needed' section (section 4).

Community Priorities and City Leap

City Leap project

The City Leap project will involve investment in a number of different streams of work. Their value is estimated in the (date) City Leap prospectus as below:

Potential investment opportunity	Estimated investment opportunity over ten years
Heat Networks	£300m
Smart energy system	£125m
Domestic energy efficiency	£300m
Commercial energy efficiency	£100m
Renewable energy	£40m
Monitoring, dissemination and evaluation	£10m
Transport, Hydrogen and Marine Energy	Additional

This list is taken as an outline of the City Leap project against which to compare community priorities.

Community priorities and City Leap

Several communities in Bristol have developed their own community plans. These are non-statutory documents developed through consultation with community members, often carried out by a trusted community anchor organisation, involving surveys, workshops and several opportunities for feedback. Some of these have been drawn on by community organisations to produce statutory documents called Neighbourhood Development Plans.

A full assessment of all community plans in the city is beyond the scope of this report, however a full assessment could be made when developing this proposal with City Leap.

We reviewed community plans in four communities, two of which are part of the Community Climate Action Project, and the Bristol Disability Equality Forum (BDEF) manifesto:

- Lockleaze Neighbourhood Trust (part of CCAP)

- Ambition Lawrence Weston (part of CCAP)
- Windmill Hill
- Southmead
- BDEF manifesto (part of CCAP)

A full list of communities that are or have been active in energy, and their plans, is in Appendix 1.

The plans were chosen for review as they are the culmination of a big piece of community-led work, centerting the voice and priorities of local residents. Not all communities have gone through this process yet and not all the CCAP groups have been included in this section as they do not all have community plans. Only Ambition Lawrence Weston (ALW) has an integrated 'Community Energy' section within their plan due to the experience and relationship with Bristol Energy Network and now employs David Tudgey directly as their Community Energy Project Development Manager to develop and deliver community energy projects. A community energy plan with project development support is something that would be beneficial to other communities who are not as far along the 'Community Energy Journey' to pipeline projects as ALW. Providing this development service is a key ask of City Leap in order to deliver more projects of this scale and quality.

All of the community plans reviewed show that housing, jobs and training, and transport are top priorities across all communities. The three top community priorities intersect with City Leap's five main investment opportunities as shown in Figure 3 below, which shows that transport concerns are relevant to the smart energy system and renewable energy objectives of City Leap, housing and homes is relevant to both of these plus domestic energy efficiency and heat networks, and that jobs and skills are relevant to all five of the headline City Leap investment opportunities.

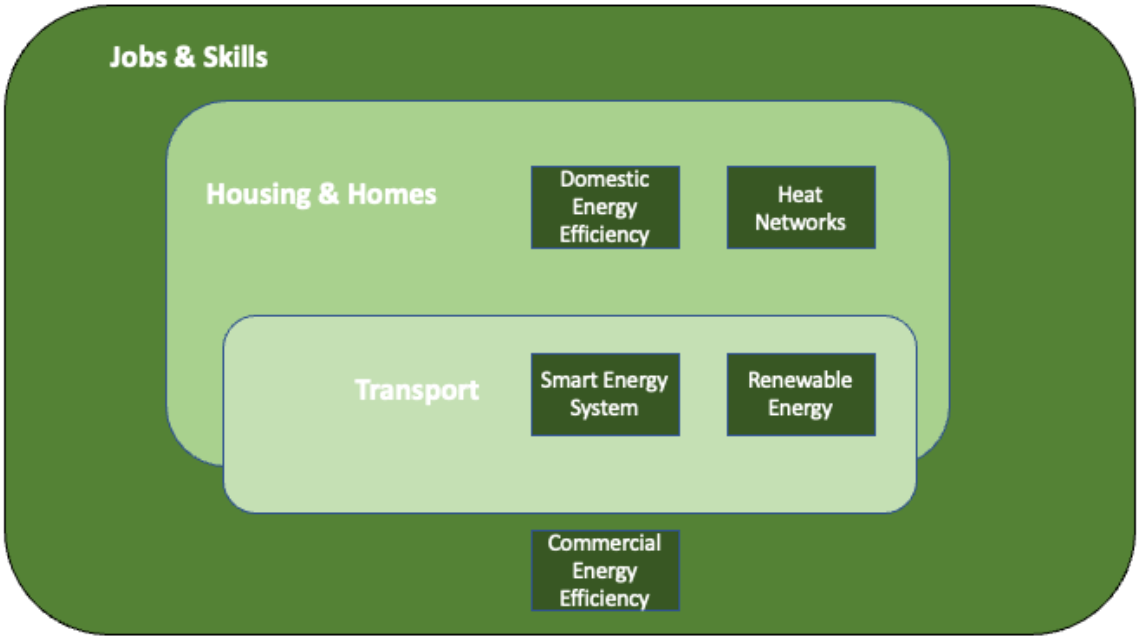


Figure 3: Community priorities and City Leap

Jobs and skills

Jobs and skills are relevant to all five investment opportunities, and the importance of developing a skills pipeline of local people able to do the work of building the new energy system, as staff or contractors to City Leap, should not be underestimated[3]. This needs to be invested in from the outset.

The challenge of transport was mentioned by a number of the community organisations we interviewed as a barrier to accessing skills training. Many parts of Bristol are not well connected by public transport, and for young people, or people who are not currently in employment to access training which takes place in the city centre or across the city is not feasible. Training therefore needs to be delivered locally in all neighbourhoods of the city. The project opportunities relating to skills are therefore essential and discussed in detail in section 2.

Housing

Housing is the top priority for the community plans reviewed. Within this, priorities include quality of housing (addressing damp issues) affordability (of heating homes and of purchasing/renting), priority given to local residents, accessibility of homes to Disabled people and the not yet Disabled[4].

[3] See University of Bristol EnergyRev study.

[4] The phrase 'not yet Disabled' refers to the fact that many of us are likely to become Disabled in some way over the course of our lives, and that futureproofing buildings for accessibility needs is therefore of benefit to all people, not just the currently Disabled population.

Transport
Transport is mentioned as an issue by all the community plans we reviewed. For some this was about access to places of employment or training, for others it was about air quality,, and others it was about active travel and accessibility of pavements. There are many opportunities for City Leap to engage with transport as it intersects with the energy system, particularly in relation to electric vehicles and charge points, and including electric wheelchairs, mobility scooters, e-bikes and public transport in the smart energy system and to be charged using renewable energy.

Accessibility
The importance of access has been mentioned in several community plans and is a central aspect to the Bristol Disability Equality Forum's manifesto. Though the locality based plans mention access in terms of aging and disability, BDEF frame their thinking on access to include the 'not yet disabled'. This forward planning lends itself to the Retrofit process where accessibility should be considered alongside the changes being made to homes and buildings for energy efficiency, avoiding the need to go back to make a home accessible at a later date.

Inclusion
All the plans made reference to forms of community inclusion in the ongoing development of their neighbourhoods. It is clear that communities want to be heard and want to be empowered to make choices about the changes and improvements that will happen in their area. They specifically mentioned the importance of co-design with any project or development in the neighbourhood and the desire to be listened to by developers. They also stated the need for joined up services and linking community plans to local schools and SMEs to make sure everyone is on board, has a sense of ownership and is contributing. Lastly, some of the groups we have spoken to feel like they have been forgotten in the development of Bristol and this is echoed in some of the published community plans. In order to engage with local communities, it is vital to engage with each community's needs and priorities and map the co-benefits of any projects taking place in their neighbourhoods and link those to the city-wide benefits.

A more detailed table of priorities identified in community plans is shown in Appendix 2.

2. Pipeline of potential projects

The pipeline of potential energy projects for community owned or initiated energy projects overlaps with the full technical potential for projects in Bristol, as in theory, any viable energy project could be owned by communities in Bristol. This report does not assess the total potential for and viability of investible energy projects in Bristol, as this is already available elsewhere (e.g. CSE 2009, CSE 2019, BuroHappold 2012), and no doubt the City Leap bid has assessed this in detail.

Instead, this study gives some insight in to the community ecosystem in Bristol in terms of the capacity to deliver and develop renewable energy or carbon saving projects, the interest and appetite to do so, and the resource needed to build that capacity. As per the limit to scope, other than identification of projects and estimates of development funding required, there is no financial assessment of project value or development of a business model for the fund (this work will be undertaken later with the preferred bidder). A list of energy projects already completed by communities in Bristol is shown in Appendix 3.

Community ownership of energy can provide communities with a stable income which can enable them to build capacity for participation, skills development and services within their own communities. The assets which make such projects viable and profitable are also the ones which would provide the greatest value to community groups. However, when communities do not have the capacity to receive funds, or are expected to spend over a short timescale, this can cause conflict (Emily Creamer 2015). Generous timescales for spending, such as the National Lottery Community Fund which gave communities a budget of £1m to spend over 10 years, however, can provide a context for capacity building and accountable participatory spending decisions, as has been seen with Lawrence Weston. This is an opportunity for the energy transition to help create, establish and enhance communities in Bristol and to support inclusion and equality of voice and participation.

Access to land is also important for the development of community energy projects. For example, Bristol Energy Co-operative's Lawrence Weston solar farm, and Ambition Lawrence Weston's wind turbine have both relied on agreements to use land owned by Bristol City Council.

The following section outlines the potential pipeline of projects, drawing on experience and case studies of actual community led energy projects in the city, and discussing their potential to be replicated or to scale up, or their stage of development.

The projects include:

- Generation/heat/carbon reduction projects (investible)
- Carbon Reduction Projects (non-investible)
- Education and skills projects
- Other projects

Generation/heat/carbon reduction projects (investible)

Rooftop solar PV is the most abundant and straightforward renewable energy source in Bristol. This is also a technology where the community energy sector has a strong track record of completed projects on community and commercial roofs (Bristol Energy Co-operative), and an almost ready to invest model for private homes (Lockleaze Loves Solar).

Non-domestic solar rooftop sites

Bristol Energy Co-operative are developing a number of rooftop PV projects across Bristol, typically around 100 kW. These include arts organisations, community centres, commercial properties and schools.

The business model is well-established and works without FiT provided that the roof, lease and energy use are suitable. BEC has good experience in the relationship building/contract discussions with building owners/managers, as well as developing the actual projects.
According to CSE (December 2019), rooftops across Bristol have potential for 500 MW of new financially-viable solar PV. Community energy has a valuable role to play in developing these sites, as for many organisations it is a very attractive solution: low hassle, no upfront costs, and local social benefits. The community can offer long-term PPA agreements for the power, which offers a stable income for the community and a long-term guaranteed electricity price for the building user.

To date, Bristol Energy Co-op has developed 542kWp of non-domestic rooftop solar PV. This is a well-established business model which has adapted to reductions in Feed in Tariff over the last 10 years and continues to work without Feed in Tariff under the right conditions.

With active participation of local community organisations around Bristol, working in collaboration with organisations like BEC, this figure could be doubled over the next 10 years. CSE (2019) estimate a potential for a further 500MW of financially viable solar PV at a cost of £600m across domestic and non-domestic roofs.

Domestic solar PV

Solar PV on domestic roofs is technically straightforward and permitted development in most cases. However, in the owner occupied sector many people do not have the funds to invest in solar panels, or may not be intending to stay in their property for long enough to fully benefit. In the private rental sector tenants do not have the power to install solar PV, and landlords do not benefit from the use of the free electricity. There is also the challenge of generation during the daytime when many people are away at work, although that may be different in a post-covid world for some people who are able to work from home. The 'rent a roof' business model also encounters challenges when people want to sell their property.

Lockleaze Loves Solar has developed a business model which is close to working. For this model to work it will have to be at scale. This is a good example of where City Leap and the community can work together. By using the transition to Net Zero as a call to action, communities could come together and use their collective buying power to deliver a feasible project.

Case study: Lockleaze Loves Solar

Stage of development: investible project - stage 4

This is a project aiming to put solar panels on homes with a roof leasing model and provide the energy to the residents with a combination of a power purchase agreement and an agreement to provide self-consumed electricity back to households at a reduced price through the supplier in the power purchase agreement. This project had made an agreement with Bristol Energy before the company was sold by Bristol City Council. The first phase of the project would develop 1MW of solar PV on the roofs of 300 homes.

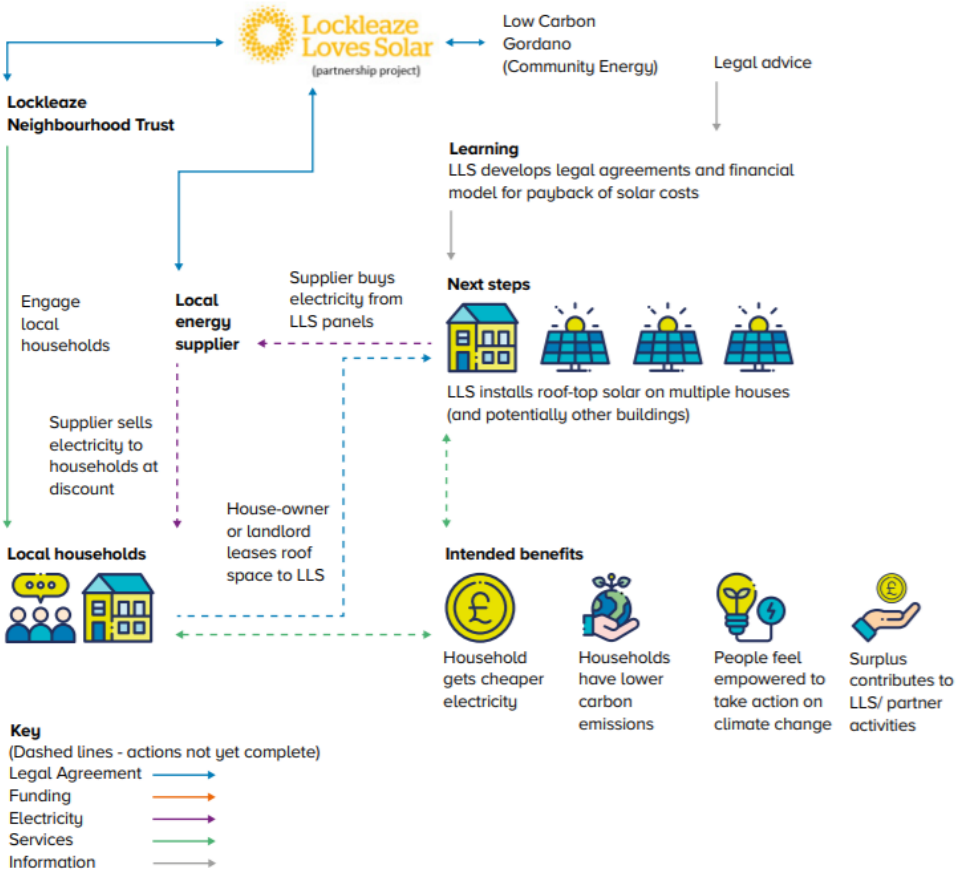


Image reference: [Report to Power to Change]

In the next year the Lockleaze Loves Solar project aims to develop 1MW of solar PV on 300 household roofs, which is 5.8% of the total households in the ward.

In the next three years this project could be extended to all four of the geographical communities involved in the CCAP. This would lead to a total of 7MW on the roofs of 2100 households, if we assume that the same proportion of households are willing and technically suitable to participate across the city.

In the next five years, assuming that early stage development work is invested in the other 34 wards in the city, this could lead to a pipeline of up to 40MW of solar PV on the roofs of 11,600 households across Bristol, plus additional roofs in the neighbourhoods that are already further along the journey.

The capital investment required per household will depend on the cost of rooftop PV at the time of installation.

Wind Turbine Projects

Ambition Lawrence Weston - investible, stage 4
Other wind turbines - stage 2 or 3 - very early stage development and mapping

Ambition Lawrence Weston has obtained planning permission for a wind turbine which will be the biggest onshore turbine in England. This is on Bristol City Council owned land within the Avonmouth and Lawrence Weston neighbourhood ward. Several other communities in Bristol are interested in building wind turbines/wind farms, e.g. on Purdown (near Lockleaze) or Dundry (near south Bristol). It is not clear whether any of these sites can be developed, due to the near-urban character, but if they are to be developed for wind, community ownership is likely to be essential to achieving sufficient public support. South Bristol sites are likely to meet objections from Bristol Airport.

It could be possible for a Bristol community to develop a wind site outside of the Bristol boundary. Achieving sufficient public support in the community local to the wind turbine would be more challenging in this case, and careful relationship development would be needed from the outset. The model to apply in this case is a community benefit model where all the profits are for local community benefit but where investment (whether through bonds or capped shares) is prioritised locally but largely comes from the wider Bristol community.

Bristol Energy Co-operative, Low Carbon Gordano and Bath and West Community Energy all have track records in raising funds through community shares for energy projects of varying complexity, and could also be partners in such projects. Bristol Energy Co-operative is assessing a potential MW-scale onshore wind project in the Bristol area. The potential for onshore wind is constrained by the Local Plans and 2015 ministerial statement, however the experience of Ambition Lawrence Weston shows that with strong community support this can be overcome.

Hydroelectric generation

Stage of development: stage 4 and stage 5.

Bristol Energy Co-operative is developing a hydro power project at Netham Weir. This is:

- 300 kW hydro project generating enough to power around 250 homes
- Fish pass providing ecological improvements
- Bringing £1.15m of EU grant funding into Bristol
- Scheduled for construction in 2022

The only other nearby place with similar potential is Keynsham. Keynsham Community Energy have looked into it but this would also need a big grant fund from somewhere. The waterwheel on the Snuff Mills site on the river Frome could be restored, but this would be a small project that could be of interest with a heritage grant. Bristol Energy Co-operative has done a feasibility assessment for this project. It is therefore unlikely that there would be any significant hydro projects in the pipeline within Bristol.

Microgrids

Sharing energy between households within a new build housing development can enable the viability of smart local energy systems and use of renewable energy. Microgrids, where households are physically connected, are one approach to this which get around regulatory barriers to local supply.

Any new build site eligible for microgrid although a certain minimum scale will be required for it to be viable.

Case study: Microgrid foundry

Microgrid Foundry is a joint venture between Bristol Energy Cooperative, Clean Energy Prospector and Chelwood Community Energy. This new business model for Net Zero microgrids provides a low-risk way for housing developers to decarbonise their developments. And after a few years of operation, the local residents will have an option to take ownership of the system.

Water Lilies, a new build housing site in Lawrence Weston, is the first Microgrid Foundry site and is due to be completed later this year. It will provide electricity, heating and hot water to 21 houses, 12 flats and a community hub, using a combination of solar PV (117 kWp), battery storage (223 kW / 446 kWh) air-source heat pumps and a microgrid. This combination means that electricity imported from the grid is outweighed by export from the PV panels, making it net zero overall.

Around £300,000 of community share offer funding is going into the Water Lilies microgrid, alongside a contribution from the housing developer. Over the next 10 years, Bristol is expected to build 24,000 new homes. If 2% of these had a similar microgrid system this would be 3MW/6MWh battery capacity - so the investment opportunity could be worth around £10m, although there should be significant economies of scale and reduction in costs, as the current project is an innovation project.

Case study: Owen Square

Photo: Owen Square & Easton Community with OSCE Energy Centre in the top left corner & associated solar panel array installed 2016

Owen Square Community Energy (OSCE) is a co-operative local energy supply company run for Easton Community Centre, with a technical board and Eastside Community Trust representative as directors. It is a demonstrator of an urban community energy centre in Bristol, and managed by microgrid developer Clean Energy Prospector.

OSCE's mission is to supply low-carbon heat and electricity to homes and businesses in the surrounding area of Easton Community Centre and the adjacent Owen Square Park, to promote the uptake of low-carbon energy, and support energy efficiency amongst their customers.

In 2016 the project team constructed a pilot all-electric OSCE Energy Centre, a hybrid air/ground source heat pump system rated at 140kW that supplies local community buildings and will be extended to local homes. The OSCE Energy Centre currently supplies the community centre with its heat demand but needs further investment to adapt and connect to the surrounding properties to fully utilize the capacity of the demonstor project. Completing the project would allow Eastside Community Trust, who have upgraded their building with the heat network and improved the buildings fabric, to extend an invitation to their community to participate in NetZero activities.

Electric vehicle charging points could then be added to the car park where residents could charge their vehicles, and potentially host a car club vehicle too. Details of the project's innovation can be found here.

Stand alone battery storage

Bristol Energy Co-operative has plans to develop MW-scale grid-servicing battery storage in the Bristol area. The value of this pipeline is as yet unknown but could be significant.

Renewable heat and energy efficiency as investable projects

So far community energy groups in Bristol have not been able to establish a good business case for renewable heat or energy efficiency projects. However, they hope to do so in the near future as this is a key area where progress needs to accelerate in Bristol. The wider government policy context for energy efficiency retrofit has not enabled this, and these projects require stable policy backing to be investible.

We hope to use the development fund to investigate the feasibility of installing local heat distribution networks that tap into the heat transmission ring main that is being proposed by City Leap. The idea would be to work with communities to install the local heat networks and heat exchangers in people's homes. The idea is for the distribution infrastructure could be owned and operated by a local co-operative (as is common in Denmark). This option can be discussed with City Leap once a partner has been decided and plans for the heating networks have been developed further.

Carbon Reduction Projects (non-investible)

The following projects are currently being undertaken by communities in Bristol and should be considered in the delivery of Social Value by City Leap. These projects can be funded by the Community Benefit Fund that has been asked for by the Community Consortium, but may also be matched with public funds. There is some capacity to deliver, but with a lot more support they could be rolled out around the city.

Energy Efficiency retrofit of homes

Status: stage 2

There are already a number of projects for energy efficiency of homes in Bristol, including the Futureproof project which aims to establish a market and pipeline for owner-occupied, able to pay households. Bristol City Council (BCC) have been able to access central government funds for energy efficiency projects e.g. the Bright Green Homes Project for homeowners under the Green Homes Grant Local Authority Delivery scheme. BCC also has a direct relationship with an Energy Companies Obligation scheme provider where they access funding, then take on the delivery of retrofit improvements themselves.

Community energy organisations could also build capacity to deliver retrofit projects successfully, and there are already some community owned elements of the supply chain that have been demonstrated. However, this would require policy to recognise the community energy sector in delivery of energy projects, and eligibility of community groups for funding streams. The recent change to eligibility for the Energy Redress Fund to include CICs … is a step in the right direction.

The carbon footprint reports produced by the Centre for Sustainable Energy for the Community Climate Action Project groups show the number of houses in each of these neighbourhoods needing energy efficiency improvements. The table below shows these figures for the four neighbourhood-based groups, where housing EPC levels and tenure could be assessed.

	Lawrence Weston	**Lockleaze**	**Easton and Lawrence Hill**	**BS13**
Total number of homes	3,083	5,167	14,526	13,663
Number of houses in owner occupied housing that is in EPC of D-G	749	2202	4500	5129
Number of houses in social housing that is in EPC of D-G	573	893	2562	2045
Number of houses in private rental housing that is in EPC of D-G	70	262	1575	480
Total number of houses needing energy efficiency improvements	**1392**	**3357**	**8637**	**7654**

There are additionally 42,377 households in Bristol with at least one Disabled person resident. Ashley Community Housing (ACH), one of the sixth Community Climate Action Project groups involved in the project, is a charity which owns 30 homes and houses refugees.

Communities have the potential to participate in delivering energy efficiency programmes:

- The Futureproof project found that persuading tradespeople and builders to attend their retrofit training programme was difficult - builders with a good reputation are busy. Community organisations who are deeply engaged in their communities and have a track record of delivering community priorities are likely to be in a better position to encourage skilled builders and tradespeople to develop retrofit skills, especially if this is provided on the job as part of community-led retrofit projects.
- Organisations such as Bristol Energy Co-operative have shown the potential for community investment in low risk energy projects. This business model could be applied to home energy efficiency if there was a stable and government/CityLeap backed investment model. The SONNET project has also shown the appetite for investment in a local authority backed bond for community building energy efficiency projects. This could be extended to home energy efficiency with the right business model, if the national policy context changes to enable viable business models to be developed.

- Capacity building of community organisations to provide coordination of retrofit within their communities would leave a lasting legacy of skills, local income, and local trusted delivery and quality control.

The pipeline of projects for energy efficiency development is therefore dependent on capacity building of community organisations. Some of the ingredients are already there.

CHEESE Project

Status: stage 5

The Cold Homes Energy Efficiency Survey Experts (C.H.E.E.S.E.) Project is a Bristol-based not-for-profit CIC that aims to reduce domestic energy losses. It provides thermal imaging surveys of homes using thermal imaging cameras and blower-door equipment to pressurise the home and identify air leakage points. This low cost approach shows people where the issues are in their home, based on actual performance of the building as built. The CHEESE project has recently been awarded funding to develop a franchising company to replicate the approach around the UK (https://cheeseproject.co.uk/replication. Surveys start at just £100 and are free to people in poor housing conditions and in fuel poverty where funding has been identified to offer free surveys such as the recent Warm Up Skill Up (WUSU) Project. Supporting the C.H.E.E.S.E project to offer free surveys as part of the WUSU project will inform retrofit plans reducing heat demand & improve the quality of retrofits undertaken with a follow up assessment to ensure measures are installed correctly - see here for recent industry recognition National Future Build award for Innovation 2020.

SME Energy Efficiency Support

Status: stage 3

West Bristol Climate Action group previously ran an unfunded pilot project to support local SMEs with energy efficiency in their buildings. This included an offer of an energy audit and recommendations. The project found it difficult to get responses from the organisations they were liaising with, as energy efficiency is rarely top of the agenda for busy SME operators. However with funding, the group would have the capacity to engage SME operators, and build on the lessons learned from this pilot project. Neighbourhood energy groups have the potential to deliver energy efficiency support and liaison to SMEs throughout Bristol. Further investment in a community energy demonstrator pilot, in partnership with other local agencies e.g. Bristol Energy Network, West of England Combined Authority, Bristol City Council, CSE, is required to enable the project's success.
Education and skills

Green Doors/Green Open Homes

Status: stage 5

Bristol Green Doors runs open house weekends where the public can visit homes that have been made more energy efficient, talk to the homeowners and learn about their experience of the retrofit process.

From 2010 Bristol Green Doors CIC was an independent social enterprise. Since 2018 it has been run by the Centre for Sustainable Energy as part of the Futureproof project. Lack of supportive government policy for the retrofit market (see Bristol Green Doors report 2016) affected the financial sustainability of Bristol Green Doors CIC. This report also shows the impact that Bristol Green Doors has had - with over 50,000 different users accessing the website from 2010 to 2016, over 2000 people signed up to the newsletter, and 10,000 visits from the public in the seven events run from 2010-2016.

Green Open Homes should be recognised as an essential part of building a retrofit market.

Skills pipeline

Status: stage 2

The need for a skilled local workforce who are able to manage, build and monitor the infrastructure to be built for the energy transition is an essential part of providing social value from City Leap. There is a real opportunity to provide:

- Retraining for the people whose jobs will become obsolete as part of the zero carbon agenda e.g. gas boiler servicing to retrain to service heat pumps
- Training and jobs for the generation whose employment prospects have been disrupted by the Covid-19 pandemic
- Ways into employment and career pathways for people who are long term unemployed or have had setbacks in their work life
- Inclusive employment practices for Disabled people
- Secure long term jobs for those skills, therefore motivating talented people to develop relevant skills

The EnergyREV research project is looking at the skills and training needed to support the Smart Local Energy System of the future. A case study looked at Bristol and the subsystems that make up the local energy system and recommended that skills are needed within sectoral systems (including community energy) as well as in integrating across systems. These skills group into the generic areas of:

- Managerial skills including building consortia and partnerships, financial management, risk management,
- Policy and regulation skills - mostly within the local authority and in order to support cross-system working
- Engineering skills - software, data analysis, infrastructure

- Trades skills - particularly in installation eg of EV chargepoints, heatpumps, retrofits, energy infrastructure such as heat networks
- ‘Soft’ skills in communication and engagement

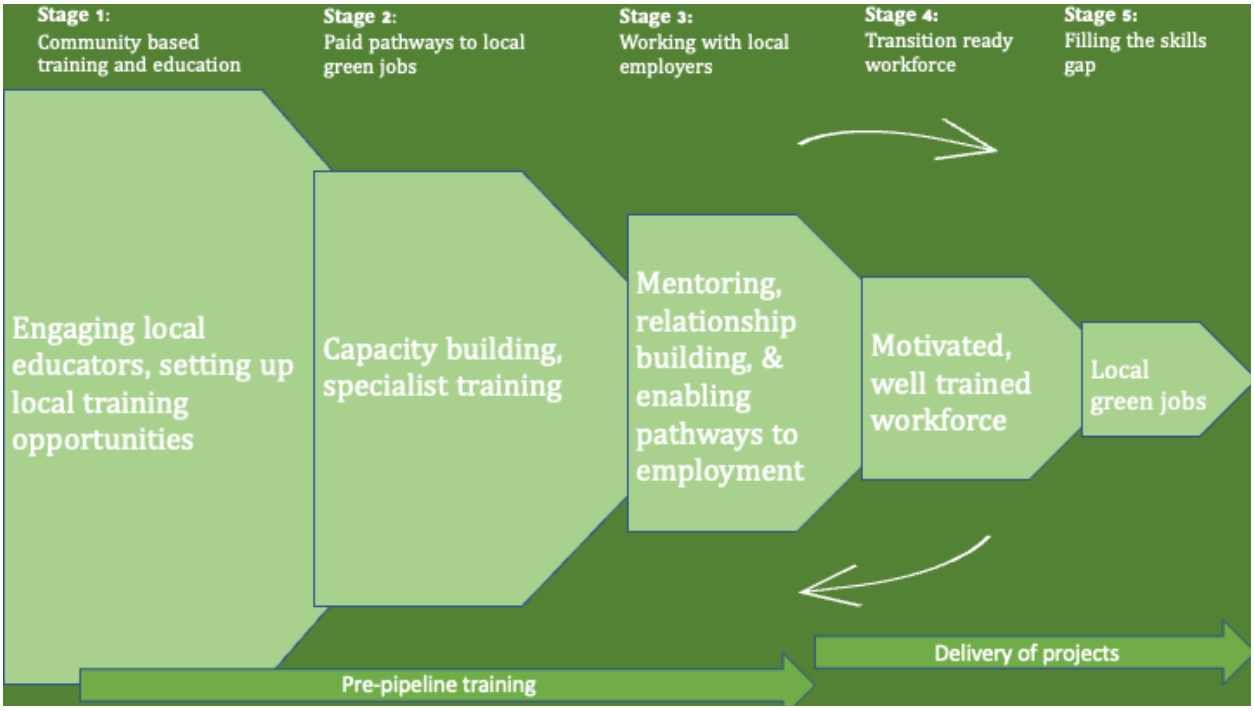
In all of these skills areas, community approaches have a role and thus a need for these skills - upskilling the local workforce to meet future challenges will pay dividends across communities.

Young people have suffered from mass unemployment due to the Covid-19 pandemic and are at risk of carrying that economic burden through their working lives. The West of England Climate and Nature Network, supported by Friends of the Earth, created an open letter, prior to the city and West of England Combined Authority elections, calling for the large skills gap in training for green transition jobs to be met as a solution to youth unemployment. An integrated approach to training for low-carbon jobs would provide the necessary workforce for the large transition to Net Zero whilst benefiting those who have been economically affected by the pandemic. The letter garnered support from trade unions, business groups, and environmental organisations across the South West.

City Leap itself can make commitments to provide apprenticeships and a percentage of local employment as part of its social value commitments. However, working with communities and educators on the early stages of education and skill development will ensure that this social value impact is achievable, and that the base of skilled people to fulfil the local employment needs are available and developed.

Community plans throughout Bristol put skills and employment at the top of their list of priorities. We have also heard in interviews with several community organisations about the triple bind of accessing training when this is only available on the other side of the city, public transport is inadequate or expensive, and lack of skills and therefore income makes paying for transport to get to training unaffordable.

Developing the skills for participation in the energy transition is like the community journey - the support at the early stages of the skill development journey is essential to ensuring that the later stages are fully inclusive and make the most of the potential talent, commitment and participation of communities in Bristol.



The following three projects are examples of approaches that contribute to this agenda of community based skill development feeding into a motivated, well trained and committed workforce for building heat networks, retrofitting homes, fitting heat pumps, assessing the energy efficiency potential of non-domestic buildings and more.

Skills for a Net Zero Bristol

Bristol Energy Network in partnership with Ashley Community Housing (ACH), Centre for Sustainable Energy (CSE) and Re:work has submitted a bid to the Bristol Impact Fund for a skills development programme that would feed into a pipeline of skilled people available to work on the energy projects that City Leap aims to deliver. This project and approach is specifically focused on the communities of Knowle West, where Re:work is based, and of refugee communities served by ACH, but could be replicated to other parts of the city. It is designed to weave into the other projects (WUSU and Energy Learning Zone) described below.

This project would draw on ACH's significant expertise in delivering training programmes for refugee communities which support their successful pathways into employment, and Knowle West's extensive work with young people in the neighbourhood who have an appetite for learning new skills but are unable to access relevant training that is not provided in the local college. Re:work has provided DIY draught-proofing training to local residents for many years, and is building on this experience working with Bristol Energy Network and Bristol City Council on the Warm Up Skill Up project (below).

The project will support low-income households in Knowle West and Bristol's refugee community to address energy issues and actively participate in:

- Energy advice and/or installing small/ “shallow” retrofit measures that can be integrated into a whole house retrofit plan.
- Training people to learn skills and job opportunities.
- Deciding external support needed to reduce fuel poverty in their community.

The detailed programme will be developed in collaboration with local people through a nine-month development phase, to ensure that it is fully embedded with local needs and priorities and is designed in a way that is appropriate, accessible and appealing. The long term relationships that Re:work and ACH have with their communities will be essential to carrying out these conversations.

Working with local employers, including large contractors who employ people locally, will be a key part to building relationships that enable people to access jobs. As such, a collaboration with City Leap would be a welcome partnership for this project, and additional sponsorship would enable the impact to extend. There would also be an opportunity for volunteer days from City Leap staff to participate in training and mentoring as part of this project.

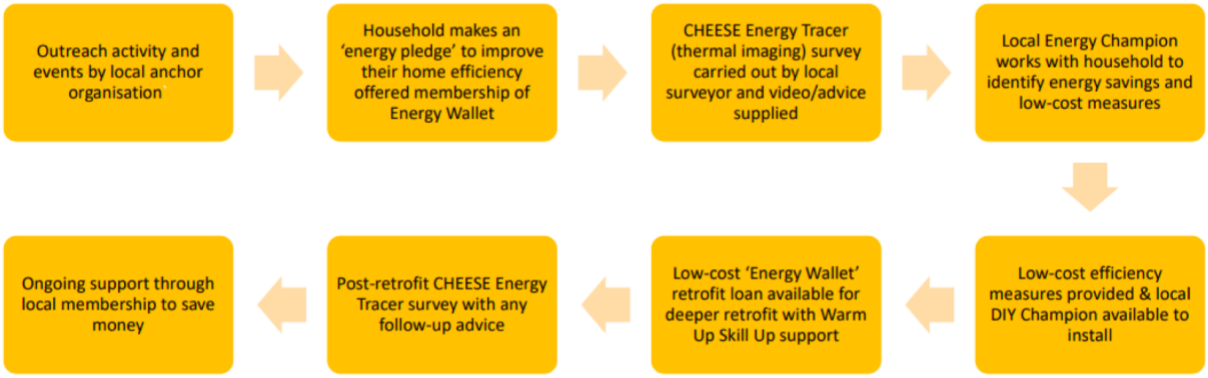
Warm Up Skill Up

Status: stage 4

Bristol Energy Network have pioneered a response to this national issue by proposing the Energy-Pledge-to-Action programme alongside the Energy Wallet and Warm Up Skill Up project (WUSU) to enable energy retrofits for communities throughout Bristol. There is an opportunity with the Pledges to explore options for creating a platform to track pledges and inspire local action throughout communities with use of this platform. These projects, whilst separate in their conception, are interconnected with one another so as to provide support to Bristol homes and help to integrate efficient retrofit measures to reduce energy waste and subsequently help Bristol in becoming carbon neutral by 2030.

This diagram helps to visualise how the WUSU programme can be manifested in practical terms and how it can enable us to reach wider strategic objectives of increasing sustainability throughout

the community.



Bristol Energy Network (BEN) has been working closely with Bristol City Council (BCC) to develop the Warm Up Skill Up pilot project which will provide a fully-funded service: providing energy-saving measures, such as insulation, double glazing and much more to homes in Bristol. Eligible households earning <£30,000 a year can receive up to £10,000 of fully-funded energy-saving measures designed and delivered by Bristol City Council to the new PAS2035 standard. The project is targeting homes with a household income of less than £30,000 per year with low energy efficiency ratings. Using the thermal imaging assessment "Energy Trace" undertaken by The C.H.E.E.S.E project to allow Energy Tracers C.I.C. to inform a retrofit plan for each household.

Additionally for all residents who apply, The Warm Up Skill Up project partners (Energy Tracers C.I.C, Re:Work, BEN, BCC) will also be offering training and support sessions to improve DIY skills and enable better shallow retrofit savings to local homes.

Energy Learning Zone

Status: stage 3

The Ambition Lawrence Weston wind turbine will be the focal point for an Energy Learning Zone for Bristol, and is proposed in their 2018 Community Plan. This concept combines tours of the wind turbine and a learning centre at its base with a 'virtual Energy Learning Zone' providing entry points to energy learning throughout the city. The need for an accessible and local 'front door' for energy training in every part of the city was very clear from several community anchor organisations who cited the barriers to learning caused by lack of transport links to centres of education.

Ingredients for a successful energy learning zone:

- Make use of existing renewable energy assets for site visits and training - the solar farm in Lawrence Weston, the heat pump at Easton Community Centre/Owen Square, the wind turbine in Lawrence Weston and hydropower at Netham Weir when these are built.

- Provide classroom and workshop training in accessible community venues in all parts of the city, so that people can attend regular classes without having to travel far, e.g. Re:work's shopfront; Hartcliffe Farm; Ambition House; Easton Community Centre, St Paul's Learning Centre, The Hub Lockleaze.
- Build in relationships with employers so that there is a clear pathway toward jobs, including City Leap, support and advice service providers, tradespeople and SME builders.
- Include training for the full range of retrofit and energy skills required so people can find out where their aptitudes lie, including outreach support for people in fuel poverty, advice service provision, retrofit coordinator, energy assessment, heat pump fitting, insulation and retrofit construction skills, low cost energy efficiency and more.
- Ensure there is a paid work pathway within local communities.
- Make the programme inclusive of all - young people who care about climate change and don't necessarily know what job/course they will do next, adults who have been unemployed for a long time and need to build their confidence, experienced and competent tradespeople who could add a retrofit and zero carbon element to their skill base, and ensure it is accessible to all.
- Work with embedded community organisations to build on existing trusted relationships with their communities and engage people to participate in training and see the value of it for them. All of the community organisations mentioned in this report can play a role in this.

Citywide schools education toolkit

Status: stage 1

Neighbourhood energy groups and community anchor organisations (see 'resource needed' section) alike have expressed an interest in energy and climate oriented education work in schools. There have also been requests directly from schools for BEN to go in with their Energy Champions and talk to the students about renewables, energy saving, and the impact they have on the climate. Schools and colleges are likewise keen to discuss the potential jobs that can help address climate issues and become part of the climate solution.

Developing a schools education toolkit, with resources for Early Years, KS1, KS2 and KS3 (and the possibility of developing it to KS4 and 5 with curriculum specific input) would be a way to provide reliable, quality resources for those engaging with schools. These resources could also support the many schools across the city who are participating in the national Eco Schools scheme.

Despite there being many resources available from different organisations online, for a toolkit to work at a local level for a local school it should be developed and adapted to the specific needs of that school community. This requires the development of a Bristol-specific toolkit with room for adaptations according to the different wards across the city. These adaptations would be best made with local community groups who understand the needs and specific issues relating to their community. Involving local community groups builds on the relationship and insider knowledge

with local schools, developing trust and delivering education that is both new and relevant, and more likely to engage both the children and their families.

A project like this would be most effective with a coordinated approach across the city with someone dedicated to liaising with both schools and local community groups. There would need to be time and funding to work with community groups to adapt the toolkit for each ward. The delivery of the material could still rely on local volunteers but this may be harder in some areas than others as it would also have to be during a working day.

Engaging children at a young age is of great importance if understanding energy, and its impacts on the environment, are to be integrated into learning and development in a way that has not happened for previous generations.

The opportunity and interest from schools is present in Bristol so it would be beneficial to develop and build a quality toolkit that can respond to the Bristol-specific educational energy needs.

Other Projects

Accessibility co-benefit of retrofit

The interview with Bristol Disability Equality Forum (BDEF) highlighted an opportunity to create co-benefits to retrofit of homes. Retrofit will touch nearly all homes in Bristol, especially those which were built before accessibility was part of building codes. There is an opportunity to train retrofit professionals to understand the principles of accessible building design, and to retrofit for accessibility as well as for low carbon where possible.

Bristol Disability Equality Forum could be partners in a project to make sure that all retrofit professionals are able to identify and include accessibility needs in all homes. Disabled people will benefit immediately from such understanding and forward planning by having more housing options available to them, and the 'not yet disabled' will have a home that is future-proofed for both energy and accessibility needs.

This project could offer workshops in how to identify and assess a home for immediate needs and how to prepare a home to be adapted at a later date, for example by raising power sockets, installing smart, energy saving technologies that can be operated with a remote or phone, and by considering barriers such as width of rooms/corridors when installing heat pumps or internal insulation.

The result of such workshops mean that the ≈ 42,000 households across Bristol that have at least one disabled resident will be able to benefit from retrofit and reduce the ≈ 98,0000 kgs of CO_2e

that they produce [5] while saving money on their energy bills and benefiting from the health impacts of warm homes.

One-Stop-Shop

Knowing where to go for information on retrofit is confusing, and BEN members have repeatedly expressed frustration at not being able to refer someone to one place where they could receive all the necessary information, support, and examples of retrofitted homes. A 'One Stop Shop' approach to retrofit, which has been trialled in many European countries, is an appealing solution. The Futureproof project in Bristol goes some way toward developing a retrofit One-Stop-Shop, but it needs further development and could be added to with actual shopfronts in local high streets as well as the current online presence.

Similar to ENGIE Zero, a One-Stop-Shop model would need to demonstrate to local residents the financial benefits of making home energy improvements and importantly, offer support in accessing existing funding and incentives (such as ECO and RHI) to help with upfront costs. For this to be successful it would need to engage local residents within their own neighbourhoods with example retrofitted homes nearby. This place-based approach could unlock a number of 'afford-to-pay' homeowners who have not had the opportunity to encounter retrofit as an option for their home and could engage social housing residents to agree to improvements in their homes by the local authority.

Community organisations are well placed to host high street entry points to a One-Stop-Shop with a citywide 'back office' function behind the scenes.

3. Community Investment

This section gives an indication of local appetite for investment in community or City Leap projects and under what terms, drawing on experience of community share investment in Bristol Energy Co-operative leading to community benefit, and survey data from the SONNET project which explores a community municipal bond approach to financing energy efficiency improvements for community buildings.

Case study: Bristol Energy Co-operative

In 2011, Bristol Energy Cooperative was formed from a number of smaller climate action groups and now operates across the whole city. It has successfully raised around £14m for renewable energy projects in Bristol and the surrounding area. Around £7m has been raised directly from community shares and bonds, with a significant proportion from local investors.

[5] CSE carbon footprint report

The co-operative has a low minimum investment of £100 and a structure that gives everyone an equal say at the AGM, regardless of how much they have invested. The projected interest rate is currently around 3.5%.

All surplus revenue is reinvested into new local projects or provided as community benefits to local organisations. To date, the co-op has facilitated over £250,000 for the local community, probably more than any other social, commercial or municipal renewable energy developments in the city. See here.

Bristol Energy Co-operative's experience shows that Bristolians value sustainability very highly and continue to have a strong appetite for community energy investments, as evidenced by their recent £2m share raise at a projected interest rate of 3.5%. Based on a survey of BEC investors, the main reason for investing is the environmental and social impacts. They are a trusted local organisation based on their ethical mission, not-for-profit structure and strong track record.

Research project: SONNET Project

The following section is taken from the ongoing and unpublished results of the SONNET project in Bristol. The full results and accompanying report will be available towards the end of the year from their website. As this project is not completed, the following results are an indication of trends, rather than a final result or output.

The SONNET ('SOcial iNNovation in Energy Transitions') project's Bristol City Lab is a research project exploring new ways to finance energy efficiency and renewable energy investment in community buildings in Bristol. The City Lab partners are Bristol City Council, the Science Policy Research Unit at the University of Sussex and Bristol Energy Network, and the project will run until summer 2021.

BEN's role is to undertake engagement activities with community building managers and Bristol citizens to explore energy efficiency works in community buildings and the possibility of using investment-based crowdfunding to fund these works.

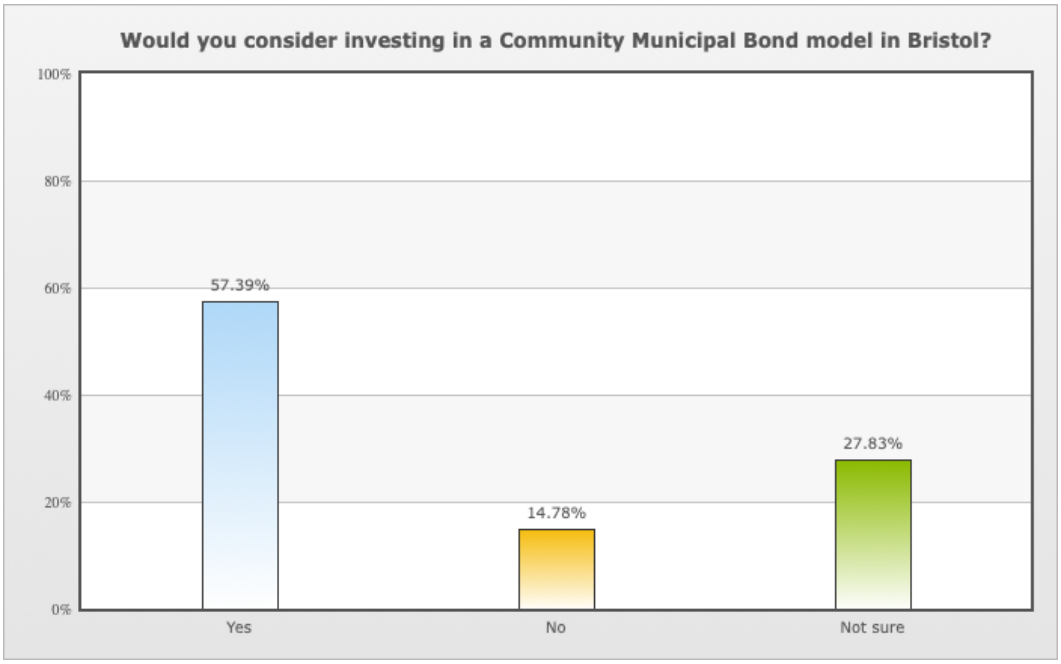
The idea of a Community Municipal Bond (CMB).[6], backed by Bristol City Council, that would pay regular interest, and be very low risk, was presented to citizens across Bristol with a particular focus on areas surrounding community buildings.

The CMB was described as a way to fund energy efficiency measures on community buildings across Bristol, helping them save money, decarbonise and better serve the communities in which they operate. It was proposed that it would be open to Bristol residents as a new local saving and investment option with bonds starting at £5.

From the initial 115 number of survey responses, the following trends can be identified.

[6] This model is based on one that has been successful with Abundance finance

The preliminary results from the survey show that there is an appetite for community crowdfunding to improve the energy efficiency and energy generation of community buildings. 57.39% of respondents said that they would invest in a Community Municipal Bond (CMB) and a further 27.83% unsure with multiple comments stating they felt they needed more information before making a decision.



When asked about the attractiveness of the interest rates on the return, there were multiple comments suggesting that the focus should be more on the social good of the investment, not just a financial return to an individual

> "It would be more because of the social good to invest. The pay back interest is just a added bonus" and "So much more motivated by knowing there is potential local community benefit from my investment"

This suggests that framing community crowdfunding and investment around community benefit with the rate of return as a co-benefit (as with a Community Benefit Society) would be well received, perhaps with the option to donate any interest back into other community buildings who will not make a financial return on their energy saving investments.

Further takeaways from the survey suggest that information on a community building's carbon savings, financial savings, improvement of user experience, sharing retrofit information for home use and for community use, would all encourage people to donate the interest of their CMB back into community projects.

Overall, the study displays potential for crowdfunding investment for community projects but highlights the need to accompany the financials with community engagement and a clear demonstration of the benefits to the community.

4. Resource needed

The potential impact, efficiency and value of developing projects together with community organisations is huge, as shown in the sections on pipeline of projects and community investment above. However, to do this work needs investment, and the more secure and long term the investment is, the more effective it will be. This process should be seen as an investment opportunity for City Leap, which will over the course of 2-3 years lead to a pipeline of skilled labour to work on City Leap projects and of projects owned by communities.

With a business startup, the first years may be spent building a solid foundation, developing a business model, piloting approaches, developing good relationships with suppliers and customers/clients. With community investment, there is similarly a startup phase which needs to be done well at the outset in order to achieve solid impacts in the longer term. This involves building relationships in the community, taking the time to go to the people who are not already focused on this conversation and listening to their needs and priorities, and from that base co-creating projects and identifying opportunities with external partners.

Every community in Bristol can develop to the point where they are developing their own energy projects, supporting people within their community to access energy advice where needed, and developing skills and jobs in the energy transition which will be of huge value to City Leap's success.

This section identifies the resources communities need to develop their own projects, including case studies showing the investment needed at key stages in the organisation's development and elaborates on the five stages in the community development journey outlined in the introduction and shown in Figure 4.

Inclusion requires essential investment in stages 1 and 2

Without investment in the capacity building stages 1 and 2, only the people who are highly educated, well-resourced and have the time and energy to invest significant voluntary efforts in developing projects will be able to progress to stage 3. Even with these benefits, many voluntary projects fail due to burn out of volunteers and for other reasons.

If we are to reach beyond the 'white middle class environmentalist' group, it will require:

- Proper resourcing for the development work of stages 1 and 2
- Making high quality land and assets available to communities and engaging existing, community-embedded organisations to deliver services
- Starting with listening to understand community ambitions and priorities rather than coming in with a pre-existing agenda that is not flexible.

With this approach, we can go far, as seen in the case studies of community anchor organisations described below.

All communities need resource to develop projects

The case studies below show that the following resources are needed by many types of community energy initiatives:

- Access to land and building assets - to maximize the community value, communities need to have first access to good quality land and building assets, not just the smallest and most difficult to develop.
- Expertise in engaging with the planning process, including funds to pay planning professionals to work for community organisations, and learning the vocabulary to participate in planning discussions
- Long term and stable funding so that the organisation can focus on delivering projects and services rather than fundraising, and can collaborate rather than compete with others
- Core costs and project management time funded to avoid burn-out and collapse of volunteer-run organisations.

Figure 4 shows where BEN members and associated groups are currently on their 'Community Energy Journey'. Each step of the journey takes engagement and expertise and the ability to link community priorities with energy projects. By investing in the early stages, it will be possible to advance groups to the latter stages and to a pipeline of potential community owned energy projects.

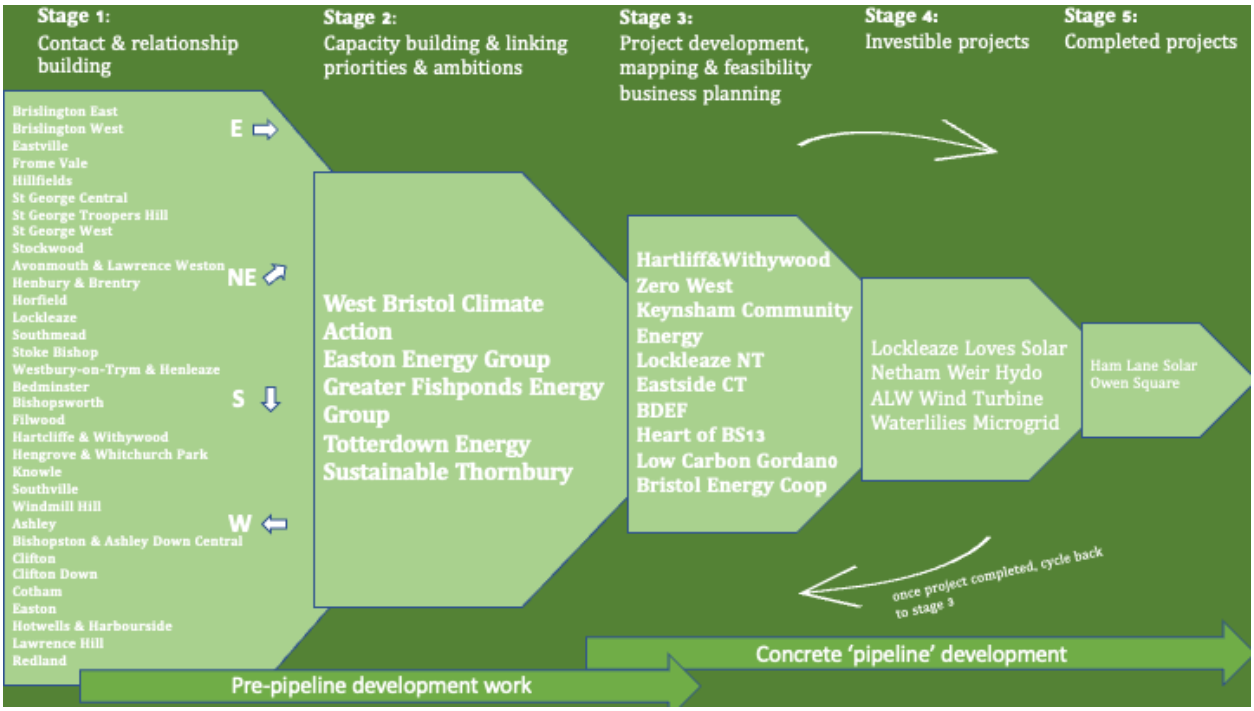


Figure 4: Community Journey

The five stages of the journey are:

Stage 1: Contact and relationship building

Making contact and building relationships is the foundation of any successful community work. It is a process that takes time and needs the relevant paid community roles in order to build trusting and lasting relationships. This involves engaging with communities in their own spaces, such as presence at community fairs, visiting community buildings and, most important of all, listening to their needs, wishes, and local expertise. Providing immediate value - e.g. advice on fuel poverty - enables this connection to be made. Communities need to see that they are not just being used to implement something top down, external and short term based on someone else's agenda. With 34 wards in Bristol, laying the groundwork for productive energy-related relationships, creates huge potential for community energy projects in the city.

Stage 2: Capacity building and linking priorities and ambitions

This stage builds on the initial relationships to systematically connect community priorities and ambitions with energy projects, and build the capacity of organisations to plan and deliver both energy projects and more formal engagement within their own communities in order to remain accountable.

It is essential that a community's priorities and ambitions are what drive projects in their local area. Therefore, any energy project in the area must originate from within the community, with external support where required, and be framed around responding to the community's agenda, not an external one.

We know that 88%[7] of Bristol residents are concerned about climate change and want to be part of the solution, so finding where that desire can translate into real local action with co-benefits to the community, could power the city's transition to Net Zero.

The Community Climate Action Project (see case study below) is an example of this process of community led action on the climate.

Stage 3: Project development, mapping and feasibility business planning

This stage requires development funding for communities directly and for them to employ the external expertise that they will need to develop community energy projects. This is the stage where the Development Grant Fund proposed by the Community Energy Propagator Consortium would play its most significant role. BEN could be the organisation to support communities through this stage given its experience in community engagement and supporting fledgling groups in

[7] Bristol Quality of Life Survey 2019/2020

getting projects started. There are a small number of groups already at this stage, but requiring an injection of funds to secure the time and expertise they need to progress their projects.

Stage 4: Investible projects

Projects that demonstrate a good chance of securing planning permission and being implemented can be taken forward to stage 4. Funding or development loans that are repayable only if the project is successful are of value here, to pay for:

- More detailed investigation into the key areas of technology selection,
- Securing a site (e.g. legal fees), undertaking environmental impact assessments, submitting planning applications, permitting applications and developing a full investment business plan.

Once a project is investment ready it requires a resource to project manage the process of raising funds and building the project. This resource can come from Community Energy Propagator and be provided by existing community energy practitioners such as BEC and Low Carbon Gordano. The capital needed to pay for a project's construction (plus pay the fund back for the money provided to develop it) will come from public share offers and perhaps crowd funding such as provided by Abundance and Triodos. We are also considering the idea of creating a Transition Investment Fund, potentially a national fund that invests in community projects and all Bristol residents can invest in it whether they have a project in their community or not. This will be investigated with City Leap once the partner has been chosen.

Stage 5: completed projects

When projects are operational they need ongoing management, maintenance and administration support. Organisations like BEC and Energy4All provide these asset management services.

For projects with a sufficient income, the operational costs and the cost of capital will have been included in the original business model and therefore should be self-sustaining. Non-investable carbon reduction work may need ongoing resource to continue. This ongoing resource is important, and while innovation is valuable, ongoing investment in proven approaches can be more efficient and should not be forgotten.

Organisations which have completed projects all the way to stage 5 are in a position to develop new projects (circle back to stage 3), or invest any profits in further community development (stages 1 and 2). They may also be possible venues for Energy Learning Zones.

Case study: Bristol Energy Network

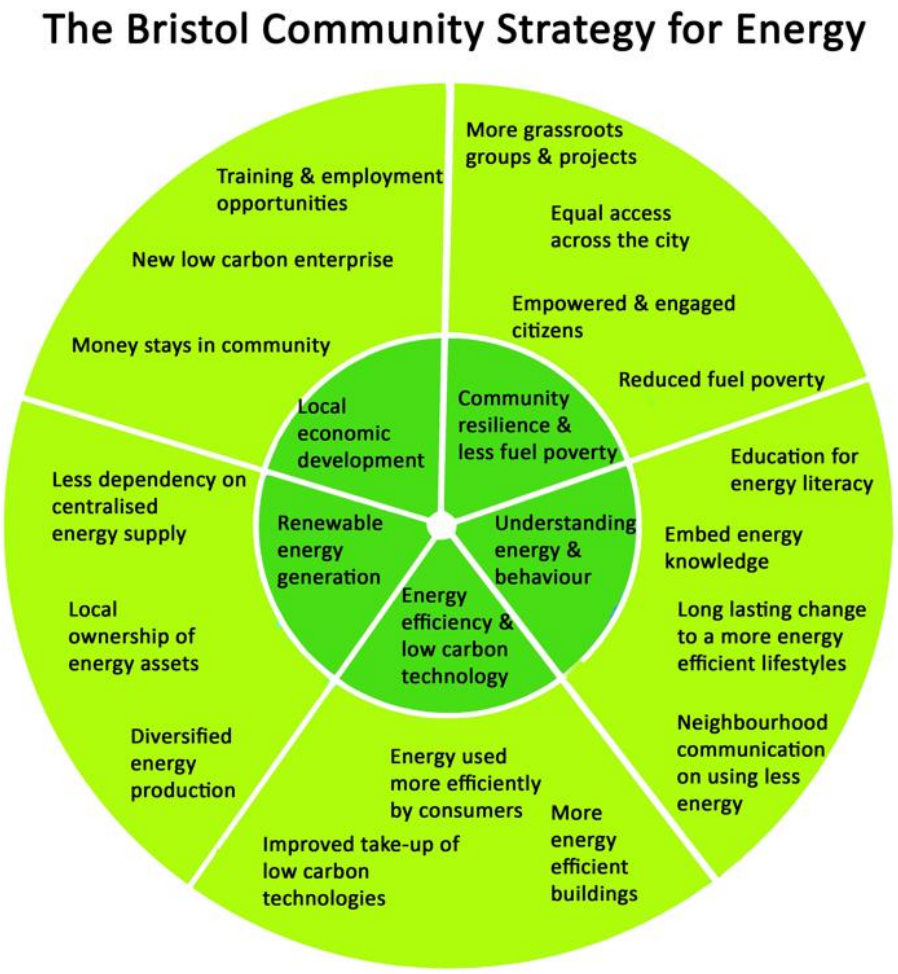
Bristol Energy Network has played a unique role in creating an ecosystem for a community energy system in Bristol, since the first informal meetings between energy groups that had grown out of the Transition Towns movement. Many of the case studies described here have had some input

from Bristol Energy Network, which has acted as an incubator, a relationship broker, an innovation developer and project development partner at various times.

Bristol Energy Network first met in 2010, to bring together local energy enthusiasts in an umbrella organisation to network, share information, skills and resources, reduce duplication and advance local engagement with sustainable energy. BEN's open meetings continue to bring the city's community energy movement together.

When the city's community energy groups received 11 national grants (Local Energy Assessment Fund) in spring 2012 this further developed community engagement with energy efficiency and renewables. Success was largely the result of support from CSE and BEN raising awareness of the opportunity, supporting bid submissions and project delivery. Successful groups built on CSE's in-house expertise and services whilst BEN offered an existing platform on which to share project experience and learnings with wider audiences.

Bristol's communities developed a grassroots Community Strategy for Energy in the City in 2013. The development of the strategy was led by BEN with support from the Council, CSE and the University of Bristol, the strategy marked a statement of intent. It was developed collaboratively over a number of meetings and with multiple authors, and set out a common framework within which different approaches could be taken. The strategy was launched by the city mayor in June 2013 and has since formed a strong platform from which to develop new projects and with which to urge action from the top.



Over the following year (2014) BEN was set up as a Community Interest Company (CIC) with a membership of community groups and others interested in local approaches to energy. Its stated role was to:

- Bring people together to share news, learning and experience through regular meetings, website and newsletters
- Support new and existing groups to emerge and access support and resources
- Represent local community energy activity and act as a bridge between communities and Bristol City Council as well as other interested local, regional and national organisations
- Developing shared resources and opportunities for local and city-wide projects and partnerships.

The Sustainability Team at the City Council recognised the value of an umbrella group for the many community energy activities and provided some initial funding through which a part-time administrator and project development officer were financed. Having a formal structure also opened up new funding opportunities and consolidated BEN's role as an important convenor of

local community action, as facilitator of new groups and activity and as an intermediary or broker between community energy and municipal energy. It also marked a growing recognition of the value of city-scale collaboration.

In 2016 Bristol Energy Network supported the development of the Bristol Community Energy Fund. The was a scheme set up by Bristol City Council 2016- 2017 with seed-funding provided by the Department of Energy and Climate Change and was developed to support and grow the ever-growing number of community energy projects in Bristol. It is this fund that Community Energy Propagator is largely based on (also CARES in Scotland and RCEF in England).

The aim of the project was to increase the awareness of community energy in new communities and build capacity in wards such as Lockleaze, Filwood, Easton, Lawrence Weston with road show events. For the allocation of small grants, BEN helped set up a diverse grant panel with representatives from partner and community organisations. Projects funded have continued to develop and become self-sustaining such as The C.H.E.E.S.E project which is integrating with many of the CCAP groups.

Additionally for those community organisations with viable energy projects requiring development finance following the ending of Urban Community Energy Fund, a loan fund was available to cover the development costs of a renewable energy project which was administered by CSE.

Projects which received loans in 2017 that would only be repaid if successful. The total value of the fund was £150k and was shared between the following projects:

Rooftop solar development (Bristol Energy Coop) 2019
Ambition Community Energy C.I.C. Wind Project (Ambition Lawrence Weston) - Achieved planning 2020, build date 2022
Owen Square Community Energy C.I.C (Easton Community Centre) - expansion of heat network - still requires development finance 200k

BEN now plays a crucial role in the development of the city's community participation in energy. It has a strong voice representing the diversity of local communities and is an important asset and one that makes connections between the grassroots and policy, representing the community. Securing core funding would enable BEN to continue focusing on its role as a trusted intermediary, to reach out into new communities, support old and new initiatives and bring community energy into projects run by the Council.

Community anchor organisations

Community anchor organisations are primarily focused on the needs of their communities - not on energy or climate or larger scale environmental issues. They are the ones with trusted relationships with communities outside the 'white middle class educated environmentalist' bubble, and working with them to ensure the work we do fits community priorities is essential to achieving the equality aims of the 'One City' approach as well as the city's climate aims.

There is potential for renewable energy and other energy projects to contribute to financial sustainability for these organisations, so that they can continue to enable wider participation in the life of the city.

Case study: Ambition Lawrence Weston

Ambition Lawrence Weston (ALW) is a community anchor organisation which serves the community of Lawrence Weston in North West Bristol. They are one of the communities which is furthest along the path to community energy development, and have planning permission for a 150m wind turbine. This is a significant energy project which has progressed through several stages of energy investment alongside community development work.

ALW itself was well resourced to develop legitimacy in the local community through the participative allocation of a Big Local grant from National Lottery. The funding was spent according to their Big Local Plan, based on the participation of local residents including a survey with over 1500 responses, achieved through local people knocking on every door. This has allowed the community to access expert advice on planning, legal advice and other professional support.

Bristol Energy Network started developing a relationship with ALW in 2014 (stage 1 and 2 in community journey), in the run up to Bristol being the Green Capital of Europe. BEN secured £2,000 of funding to pay for a few days of engagement activities including stalls at public events and DIY solar panel making. In 2015/16, when Bristol Energy Co-operative started developing a solar farm next to Lawrence Weston, ALW secured a community benefit fund from the project. They then started working with BEN staff member David Tudgey to investigate the potential for a community owned wind turbine.

The first stage of business planning was funded from the last round of Urban Community Energy Fund (stage 3 of community journey). This first £20,000 provided funding to develop a planning strategy supported by legal advice and planning expertise on the possibility of developing new onshore wind in the post 2015 policy context. It also provided some funding to identify potential of sites in Avonmouth & Lawrence Weston Ward with BCC, develop a business development strategy and undertake community engagement.

Based on this evidence, ALW was able to secure £78k from the Bristol Community Energy Fund (a scheme set up by Bristol City Council with seed-funding provided by the Department of Energy and Climate Change. Developed in partnership with the Bristol Energy Network to support and grow the ever-growing number of community energy projects in Bristol). This paid for project development management & technical project management, legal strategic advice, exclusivity land agreements, environmental surveys and technical assessments of three sites that were identified as possibilities (stage 4 of community energy journey).

Following the planning strategy and business plan, studies were undertaken t that de-risked the project and gave enough confidence for the Port Communities Resilience Fund to invest over 100k as a development grant and further at-risk finance loan from Bristol and Bath Regional Capital City Funds, and a development grant from Power to Change ~£50k s to do the remaining work required to secure planning permission.

Funding breakdown below:

- £19,623 Urban Community Energy Fund Grant (DECC/BEIS managed by CSE) (application submitted 26/03/2016 grant awarded ~01/06/2016 - Ambition Lawrence Weston (setup ACE & initial business plan and exclusivity agreement).
- £78,168 Bristol Community Energy Fund Loan (funded by DECC/BEIS via BCC, managed by CSE) 03/08/2018 - Ambition Community Energy C.I.C
- £49,920 Power to Change (plus recoverable VAT - managed by Power to Change) Grant Funding 13/12/2018 - Ambition Community Energy C.I.C
- £109,049.65 Port Community Resilience Grant Funding (via BCC, managed by BCC) (02/07/2018 £9,049.65, 07/8/2019 100,000) - Ambition Community Energy C.I.C
- £150,000 City Funds Loan (managed by Bristol & Bath Regional Capital) 26/05/2020

Plus £500,000 has been awarded in capital grant for the construction phase from West of England Combined Authority Local Energy Scheme grant, funded by the European Regional Development Fund.

While the potential for additional community owned wind turbines within Bristol is uncertain, there is strong potential for communities around Bristol to develop wind and solar farms, which can be developed with the Community Energy Propagator and funded through Bristol-wide share offers. This could be a significant pipeline of projects.

This case study shows the pathway for step-by-step development of community energy projects with initial grant funding leading to larger at-risk loan funding that is repayable only with successful project completion.

More on this case study on the Mayor's blog.

Case study: Community Climate Action Project

Stage: 1 and 2

The Bristol Community Climate Action Project (CCAP) project has been resourced through £372,592 of development phase (Oct 2020 – April 2021) funding from the National Lottery's new 'Climate Action Fund' (CAF) to support UK communities to respond to the climate emergency.

The project sees six Bristol community hub organisations (both geographic and demographic) play a leading role in shaping Bristol's transition to a low carbon and climate resilient city by 2030. Ambition Lawrence Weston, ACH, Bristol Disability Equality Forum, Heart of BS13, Lockleaze Neighbourhood Trust, and Eastside Community Trust will develop robust and informed 'Community Climate Action Plans' to improve quality of life for local people, whilst simultaneously reducing carbon emissions. Collectively these six community organisations represent the diverse demographic of Bristol whilst also including some of the less heard community voices in the climate change debate.

The project is underpinned by the principle of co-production and the community partners have each developed a unique approach to engage and inspire their communities in conversations around climate action, within the challenging context of the recovery from Covid.

The overall objectives of the project are to contribute towards:

- A reduced risk of catastrophic climate change
- A just and inclusive transition to carbon neutrality
- Supporting wider community needs and priorities through co-benefits / improved quality of life.

Bristol Green Capital Partnership (BGCP) is the coordinator of the project, the Centre for Sustainable Energy (CSE) provides technical advice on carbon emissions / carbon baseline reports and Bristol City Council (SCCC Team) supports project learning, impact and integration across the city.

CCAP Project Timeline:

Summer 2019: BGCP (a network organisation of over 1000 members) began collaborating with BCC and CSE to develop a proposal for the lottery's new Climate Action Fund

February 2020: the three project partners undertook an open process to select six diverse community organisations to participate in the project, alongside a series of workshops to generate support/collaboration from local climate sector partners (eg. B.E.N)

Summer 2020: the project proposal was successfully granted funding by the lottery (to support development phase staff time and delivery costs) and officially launched in October 2020.

The main delivery phases of the project are:

- **October 2020 – February 2021:** building the partnership, training and development, communications plan, evaluation framework, coproduction plans, carbon footprint reports developed for each organisation (by CSE)

- **March – September 2021:** Six community organisations undertake extensive coproduction activity with their communities to identify climate priorities, integrated creative commissions are delivered by two project artists
- **October – December 2021:** development/launch of Six comprehensive Community Climate Action Plans – one for each community
- **Jan – April 2022:** promotion of plans, funding and partnership development for implementation of plan priorities (which will include energy), dissemination of project learning.

By the end of 2021, a suite of Community Climate Action Plans mapping the contribution each community will make to achieving carbon neutrality in Bristol by 2030 will be published, covering the main themes of the One City Climate Strategy (including energy). BGCP and the community partners will then collaborate with strategic partners and funders in the city (and beyond) will begin to implement the priorities identified in the plans and to catalyse tangible community-led climate action which contributes to a 'Just Transition'. Energy is already surfacing as a community priority and the CCAP has the potential to support the community energy project pipeline for City Leap going forwards.

FFI: Community Climate Action Archives - Bristol Green Capital (image credit Ambition Lawrence Weston)

Case study: Black & Green Ambassadors

The Black & Green Ambassadors programme aims to connect, empower and celebrate diverse leadership and community action on environmental issues in Bristol and beyond; challenging perceptions, creating new opportunities and working towards ensuring the environmental movement is inclusive and representative of all communities.

The project originated in 2016, following Bristol's year as European Green Capital. Although Bristol was recognised for its leadership in environmental sustainability, it faced criticism for failing to include diverse voices in the environmental sustainability community and its leadership, and in 2015 many individuals felt marginalised and left out of the 'Green Capital' agenda, particularly those of Black, Asian and Minority Ethnic communities. Community consultations led by Ujima Radio highlighted these issues and identified a need for a different mix of leaders and voices, a continuous stream of positive project activity and a new narrative about meaning and engagement. These recommendations led to the formation of a new partnership between Ujima Radio, Bristol Green Capital Partnership, the University of Bristol and Up Our Street - and the development of the 'Green & Black Ambassadors' pilot project.
With some seed funding from Bristol Green Capital Partnership CIC (£5,000) and from the Cabot Institute Innovation Fund (£5,000) – and with significant in-kind support from organisations and individuals across the city - a six-month Ambassadors pilot was launched.

Founding Ambassadors Zakiya McKenzie and Jasmine (Jazz) Ketibuah-Foley received leadership development training, mentorship and funding to engage with organisations and institutions in the city, challenge and influence how decisions are made, explore issues of exclusion through community action research and produce a popular monthly radio show. Funding from the National Environment Research Council (NERC) enabled the programme to extend by a further six months, recognising the positive impacts and potential opportunities realised by Ambassadors within their first six months. The project made significant inroads, raising the profile of initiatives led by Black, African, Caribbean, Asian and Minority Ethnic individuals, facilitating new connections and deeper dialogues, and enabling decision-makers, environmental organisations and academic researchers to embed diversity and adopt more inclusive approaches.

In 2020, grant funding from the National Lottery Community Fund (£175,000) and additional sponsorship (£36,000) has enabled the programme to launch a new three-year phase and invest in nine new emerging leaders to work with and between diverse communities, businesses and organisations to explore, amplify and enable solutions for an environmentally and socially just future for all.

Since beginning in October 2020, Year One Ambassadors Asia Yousif, Olivia Sweeney and Roy Kareem have received mentorship, skills training and unique development opportunities whilst being supported to plan and deliver a wide-ranging year-long programme of activities including a monthly radio show to 30k+ listeners on Ujima Radio, community-based research projects to explore issues of social and environmental justice, workshops and media projects and speaking

opportunities and engagement with institutions, governance and policy-making forums at local, regional and national level.

Their radio shows, events and media projects have amplified the work of 20+ community leaders and projects, reached 30,000 listeners, engaged 35+ collaborating organisations and inspired 320+ participants at Black & Green Ambassador events. In early 2021 the Ambassadors launched community projects on environmental and social justice issues, including use of green spaces, clean air, and celebrate cultural sustainability practices. These activities aim to:

- Empower diverse leadership in the environmental sustainability sector.
- Tackle inequality and strengthen people's voice and participation from under-represented communities, including Black, African, Caribbean, Asian, and other ethnic minority backgrounds.
- Bring people and communities together to address environmental issues.
- Develop links between diverse communities and environmental sustainability organisations.
- Enable mutual learning and encourage constructive challenge to achieve more inclusive practices leading to systemic change within the sector.

Bristol has positioned itself as a pioneer in working collaboratively for a just and green future, and the Black & Green Ambassadors programme plays a key role in working towards this. Over Years Two and Three, securing additional sponsorship, donations and grant funding up to the value of £100,000 will enable the programme to scale up, supporting an additional two Ambassadors and investing in the programme infrastructure, development, communications and events. Read more about the programme at www.blackandgreenambassadors.co.uk.

Image credit: Bristol Green Capital Partnership

Neighbourhood Energy Groups

Several neighbourhoods in Bristol have active neighbourhood energy groups, people motivated by environmental values who want to see more sustainable use of energy in their area. Neighbourhood energy groups were at the core of Bristol Energy Network from the outset - the Network emerged as a way of connecting and coordinating the work of local groups Easton Energy Group, Transition Montpelier, Low Carbon Gordano, Nailsea and Backwell Energy Group and Sustainable Westbury on Trym to avoid 'reinventing the wheel'.

These groups now include:

- West Bristol Climate Action
- Greater Fishponds Energy Group
- BS3 Energy Group
- TRESA
- And more

They provide education for why we need to address climate change and what that means in practice in terms of buildings, energy etc. They are trusted communicators in local communities.

These groups undertake a variety of activities, including:

- Public talk series in community spaces/libraries/online;
- Stalls at local community events
- Projects to support local SMEs to reduce energy use
- Sharing of energy saving and climate friendly lifestyle tips online and in person
- Displays and engagement activities in local public spaces e.g. libraries.

There is a limit to how much can be achieved on a purely voluntary basis. Neighbourhood energy groups are often in better-off parts of the city where there are more people with the time and resources needed to put voluntary effort in, and so are not eligible for funding which is prioritised toward areas of deprivation. At the same time they are not social enterprises with a revenue stream. Falling between these two categories makes it hard to get funding. Some have aspirations to develop investable projects, but also see the value of the specialist roles and economies of scale developed by organisations like Bristol Energy Co-operative.

Several neighbourhood energy groups were recipients of 'Local Energy Assessment Fund' (LEAF) funding, a Government initiative providing funding to community groups to build capacity for energy efficiency and generation measures within their local areas. The fund was launched in December 2011, with bids for funding submitted in January 2012 and all projects completed by the end of March 2012. The challenges of working to these funding timescales within voluntary groups are clearly articulated in the 2013 'Maintaining Momentum in Bristol Community Energy' report which shows the risk of collapse of groups under the pressure of preparing funding bids over the Christmas period and having very little time to engage their wider communities in the process of project delivery.

Potential development with additional resources:

- Develop a citywide school education pack about climate change, energy and how to get involved with community energy in Bristol, that can be delivered by neighbourhood energy group volunteers.
- Peer to peer learning sessions coordinated by BEN to encourage shared learning, templates for projects and sharing expertise and equipment.
- Deliver a pipeline of projects in collaboration with CCAP and other community organisations.

Citywide specialist energy groups and Social Enterprises

These organisations have developed viable business models for community energy in Bristol. In some ways, they are faced with the challenges of any organisation developing a business model in their sector - e.g. the uncertainty and loss of business model due to changes in policy and subsidy regimes in the renewable energy and retrofit sectors.

On the other hand, as smaller organisations these community social enterprises typically do not have the ability to invest large sums of money for development. Their small number of staff can also make it very challenging to quickly respond to new opportunities - more due to lack of capacity than due to unwillingness to change.

Many of these organisations have been described in case studies in the 'pipeline of projects' section, including Bristol Energy Co-op, CHEESE Project and Green Open Homes.

Resource needs:
The resources needed to strengthen and support the work of specialist energy groups and social enterprises are highlighted in the community journey stages 3-5. Project development, mapping and feasibility business planning, investing in projects, maintaining completed projects and cycling back through these stages require extra staff time that is often not available in small organisations. Investment in the developing of detailed plans and business models for projects at the outset would help to build capacity in the organisations and replicability of the projects they work on.

5. Pipeline Potential during the first 5 years of City Leap

Since the closure of the UK Government's Urban Community Energy Fund (UCEF) several years ago, a fund that was specifically created to support community energy projects in cities, there has been a slow down in projects nationally. Despite this, Bristol (having built its capacity to develop projects) has been able to continue developing some energy projects where funding is still available, such as such as Ambition Lawrence Weston which, as an area of some deprivation, could access EU funding, and BEC which has continued to develop rooftop solar through 10 years of persistence. The Community Energy Propagator is perfectly positioned to market City Leap's support in utilising the skills and experience of local practitioners to support communities, having identified their priorities through Community Climate Action Plans, to develop investable energy projects.

The high-level plan for Community Energy Propagator is to support existing community projects in years 1 and 2 and make them investment ready, while building the capacity of of Bristol's wards over the first five years. Within the context of Covid and understanding the implications the front-line response has had on Bristol's communities, the Community Climate Action plans will continue supporting the first cohort with the implementation of their plans, and work with 6 new communities to develop and begin delivering Community Climate Action Plans over 3 years – with the first cohort providing critical peer learning, capacity building, evaluation and planning and engagement to the next round of anchor community organisations. This will generate a pipeline of the type of community energy projects outlined in this report and the kind of community engagement that City Leap need to progress its own pipeline of projects.

The following is our assessment of the phased work and services available that could be delivered over the first five years of the fund.

Year 1: 2022

- Support ALW Wind Turbine supported with full funding to complete their project

- Owen Square project is financed and built
- Lockleaze Loves Solar is developed to full viability and investability
- BEC continues to develop solar on non-domestic roofs, with some barriers being removed and further investment in outreach work
- First cohort of CCAP communities, with support from BEN, identify potential energy projects on the basis of their community climate action plans and are supported to deliver those plans.
- Early stage engagement begins in new communities over 3 years to establish contact and develop plans based on community priorities through extended CCAP project.
- Peer learning established whereby the first cohort mentor the new wave of community anchor groups.
- Energy Learning Zone secures early-stage funding to develop a partnership and detailed project plan
- Promotion of City Leap plans to communities
- Promotion of Community Energy Propagator fund to communities around and beyond the city.

Years 2-3: 2023-2024

- BEC and Low Carbon Gordano continue to support community groups in developing new generation projects.
- The domestic PV model developed by Lockleaze Loves Solar is rolled out to other parts of the city.
- First cohort of CCAP communities begin to develop early stage business plans for energy projects
- Work with communities who are affected by City Leap projects and engage them with the opportunities it presents
- The new communities where relationships have been established continue to develop and finalise their own Community Climate Action Plans, with mentoring and support from the first round CCAP organisations and central coordination from BGCP
- Early stage engagement exploration in remaining Bristol communities to evaluate readiness to develop Climate Action Plans
- Relationships are initiated with groups and communities within the wider West of England in places where there is high renewable energy potential to help them understand their options for benefitting from this.
- Energy Learning Zone pilot projects train people in different parts of the city to develop Net Zero skills, and links them up with employers.
- The national policy and regulatory context enables the development of viable projects across all energy types.

Years 4-5: 2024

- Complete new Community Climate Action Plans based on input from people in their communities and community carbon footprinting data
- Communities with Climate Action Plans identify potential energy projects

- Continue work with communities who are affected by City Leap projects and engage them with the opportunities it presents
- Skilled local people work for City Leap in delivering infrastructure projects of all types in a wide variety of roles and skill types
- Relationships between local community organisations, Energy Learning Zones and City Leap have become well-established and trusted
- The community energy sector is able to scrutinise and hold accountable the social value provided by City Leap and in that way act as a trusted critical friend.
- The pipeline of investible projects continues to grow.

After year 5 the process of support will continue as the pipeline grows. As successful projects pay back their development costs and help the fund to revolve, it should become self-sustaining as we get deeper into the transition.

Cost of Delivering the Pipeline

The proposed Community Energy Propagator fund will require admin and support services to bring forward projects for development, investment (where required) and delivery. There will also be provision made within the fund for promoting City Leap and Community Energy Propagator to communities all over Bristol and beyond. The following costs are indicative and for the purposes of Engie's bid. Should they decide to include the Community Energy Propagator fund and any of the associated activities mentioned in this report, a full business model would need to be developed with City Leap, once the winning bid has been selected. It is also expected that funds for Community Energy Propagator will be available from public sources for some components of its delivery.

- First cohort of CCAP communities, with support from BEN, identify potential energy projects on the basis of their community climate action plans and are supported to deliver those plans.
- Early stage engagement begins in new communities over 3 years to establish contact through extended CCAP project.
- Peer learning enabled whereby the first cohort mentor the new wave of community anchor groups.

Year	Activity	Fund admin, support, Promotion	Capacity Building programme	Feasibility	Pre-development funding	Total
1	Continue delivering plans and prepare existing	£200k[8]	£450k[9]	£50k	£50k	**£750k**

[8] There will be a lower cost to administer development of projects in the first year as promotion/capacity building creates interest

	`projects for capital investment & build capacity of new cohort communities through peer learning					
2	Continue Capacity building, work on developing new projects, support share offers	£300k	£450k	£100k	£200k	**£1.05m**
3	Continue Capacity building, work on developing new projects, support share offers	£300k	£450k	£100k	£300k	**£1.15m**
4	Work on developing projects & support share offers.	£300k		£200k	£500k	**£1m**
5	Work on developing projects & support share offers.	£300k		£200k	£500k	**£1m**
Total		£1.4m	£1.35m[9]	£650k	£1.55m	**£4.95m[10]**

Assumptions:

- Admin support and promotion to be carried out by CSE and BEN
- Capacity building programme of engagement with 6 existing communities plus new communities chosen on basis of geographic overlap with City Leap activity, priority factors (such as social deprivation levels and potential for carbon savings) and partner readiness, to be led and developed by BGCP and community partners.
- BEC/LCG to deliver support services as part of the Development Funding
- Zero West also to support promotion of the fund
- Numbers here are based on experience from consortium practitioners but may bear no resemblance to the business model figures at the next stage
- The number of projects is based on there being 34 wards taking forward a mixture of the projects of different scales and technologies.

6. Conclusion

This report has shown the significant role that communities can play in Bristol's Net Zero agenda. This ranges from investible energy projects such as solar PV, microgrids and wind turbines, to

[9] As this activity has been publicly funded already, it is hoped that some if not all of this element could be publicly funded and potentially match funding for other elements of the proposal

[10] It is not expected that City Leap will have to fund this entire amount. BEN and other members of the consortium have a lot of experience of applying for grant funding

community development including skills and broader education and participation. The investment in this foundation should come from a combination of public funds with investment from City Leap.

Communities, energy projects, organisations and companies can play a vital role in ensuring the success of City Leap. They can act as brokers of the trust between the newly arrived, anonymous City Leap and Bristol's public, SMEs and community organisations. This can reduce risk of backlash against disruption, negative press coverage, or planning objections. Working with communities where they are at is fundamental to increasing inclusion, leading to a greater pipeline of projects, and laying the foundation for a skilled and motivated workforce throughout the city ready to participate in delivering City Leap.

Providing Bristol-specific funding and finance, and supporting the ecosystem of engaged communities can accelerate progress by reducing the need to spend time on funding applications and competition with other parts of the country. All communities need resources to develop projects, with different terms for different stages of development - from grant funding at the early stages to development loans that are only repayable on project success, to capital investment with a return on investment. Having said this, public funding will be available to deliver many of the strands presented in this report, but having a match from City Leap is important to leverage these funds.

Inclusion requires essential investment in pre-pipeline capacity building, which will be essential for participation beyond the 'white middle class environmentalist' demographic. This investment does not have a direct financial return, but will provide significant benefits in terms of skilled labour, unlocking widespread participation and engagement and the diversity of voices across the city supporting the Net Zero agenda. Projects like CCAP and Black & Green Ambassadors are showing how this can be achieved.

The skills pipeline development is crucial. Development of a distributed Energy Learning Zone in collaboration with community projects throughout the city is already part of the Bristol Energy Network strategic agenda. City Leap could be an essential partner in this work, providing early stage development funding and providing long term jobs for people who are trained through the programme.

The range of investible projects depends partly on national government policy and incentive structures. The Feed in Tariff created a space within which community energy organisations could develop and grow. In its absence, the number of financially viable projects is greatly reduced. Therefore, if a just transition is to be realised, communities must partner with local authorities and work with the resources available. The lack of stable policy support for a domestic energy efficiency business model is also a limitation, and a change at that level could lead to the flourishing of community-based retrofit businesses. Many community energy projects are highly innovative and pushing the boundaries of what is possible within the current regulatory system, such as Lockleaze Loves Solar and the Microgrid Foundry. City Leap has a role to play in lobbying national government for policy changes that will enable both City Leap itself and delivery of a just

transition by community energy. The Community Energy Consortium Propagator has the ability to brand City Leap's support, and enable commitment to this pipeline of work.

Appendices

Appendix 1: Community plans

*organisation part of CCAP

Organisation	Location	Climate action type
Lockleaze Neighbourhood Trust*	Lockleaze	solar and engagement
Ambition Lawrence Weston (ALW) *	Lawrence Weston	wind turbine and engagement
Heart of BS13*	Hartcliffe	engagement and planning
Eastside Community Trust*	Easton/Lawrence Hill/Barton Hill	engagement and planning
Bristol Disability Equality Forum (BDEF)*	Bristol	accessibility and retrofitting combination
ACH*	Bristol	engagement and planning
Windmill Hill	Windmill Hill	
Southmead	Southmead	
Transition Montpelier	Montpelier, Bristol	(group no longer active)
Easton Energy Group	Easton/Lawrence Hill/Barton Hill	(group now combined with Eastside Community Trust)
Low Carbon Gordano	Gordano	
Nailsea and Backwell Energy Group	Nailsea and Blackwell	(group no longer active)
Sustainable Westbury on Trym	Westbury on Trym	
West Bristol Climate Action	West Bristol	
Greater Fishponds Energy Group	Fishponds +	
BS3 Energy Group	Bedminster/Southville	
TRESA	Totterdown	

Appendix 2: Community priorities as per community plans:

Theme	Lockleaze Neighbourhood Trust	Ambition Lawrence Weston	Windmill Hill	Southmead Development Trust	Bristol Disability Equality Forum
Housing	◆ Housing as No.1 priority	◆ Affordable housing ◆ Community led housing	◆ Affordable housing ◆ High environmental standards for building	◆ Affordable housing without having to move area ◆ Community involved in planning of area	◆ Council to use all means available to enforce accessibility ◆ Developers to provide,& Council enforce, space requirements for accessible housing ◆ New housing wired to be 'ready' for flashing alarms to be installed
Jobs and Training	◆ Access to jobs locally ◆ Access to training locally to develop skills ◆ Clear pathways to education and employment ◆ Free local courses ◆ Good communication of local	◆ community sector based skills academy ◆ community health and employment hub ◆ new developments maximise local training and employment	◆ adult learning opportunities ◆ To provide opportunities for employment creation-space for SMEs	◆ local jobs ◆ target kids to encourage pathways to training and FE ◆ opportunities for NEETs ◆ increase take up of apprenticeships ◆ youth employability and training hub	◆ Implement positive action mentoring & 'shadowing' opportunities for Disabled people within senior management & politics. ◆ Increase no. of working-age Disabled people in employment from 46.3%

	learning offers				
Transport	◆ Good transport links to employment centres across the City ◆ address congestion and poor air quality ◆ Sustainable infrastructure to meet future needs	◆ Transport to jobs in Avonmouth and other jobs ◆ E.V charging points ◆ improved bus network	◆ Less cars ◆ active travel paths and sustainable travel ◆ clean air	◆ Improved busses and active travel ◆ community transport for older people	◆ Mobility scooter parking provided on each floor of large multi-occupancy buildings ◆ by-law or other action, that enables penalising obstructive pavement parking
Inclusion	◆ not to feel forgotten ◆ strong resonant voice	◆ empowered to make choices to improve own lives ◆ include local business as community 'environment champions'	◆ sense of ownership of local environments ◆ engagement and listening from developers ◆ co-design with local community	◆ Older community have a voice ◆ engage orgs with community plan ◆ increased access to free/low cost wi-fi ◆ joined up services ◆ involve schools in community development	◆ All statutory service providers to provide online BSL & Easy-Read descriptions of their services, whoever runs them. ◆ a city that understands Disabled people are an asset, not a liability

Appendix 3: Completed community energy projects in Bristol

This table shows a selection of completed community energy projects in Bristol. It is not a fully comprehensive list.

Group	Project name	Project description	Project date	kWp
Bristol Energy Co-operative	Lawrence Weston Solar Farm	Ground mounted solar farm	2016	4,188
Bristol Energy Co-operative	Puriton	Ground mounted solar farm	2016	4,568
Bristol Energy Co-operative	ACTA Theatre Company, Bedminster	Rooftop solar	2016	22
Bristol Energy Co-operative	Brentry and Henbury Children's Centre	Rooftop solar	2016	13
Bristol Energy Co-operative	Bristol Folk House	Rooftop solar	2015	10
Bristol Energy Co-operative	Bristol Indoor Bowls Club	Rooftop solar	2020	152
Bristol Energy Co-operative	Coniston Community Centre, Patchway	Rooftop solar	2016	20
Bristol Energy Co-operative	Easton Community Centre	Rooftop solar	2011	41
Bristol Energy Co-operative	Empire Fighting Chance	Rooftop solar	2015	20
Bristol Energy Co-operative	Hamilton House	Rooftop solar	2012	20
Bristol Energy Co-operative	John Sheppard	Rooftop solar	2018	138
Bristol Energy Co-operative	Knowle West Media Centre	Rooftop solar	2012	25
Bristol Energy Co-operative	South Bristol Sports Centre	Rooftop solar	2015	50
Bristol Energy Co-operative	The Architecture Centre	Rooftop solar	2017	4
Bristol Energy Co-operative	Wick Sports Ground	Rooftop solar	2018	27
Low Carbon Gordano	Moorhouse Farm Solar Park	Ground mounted solar farm	2015	1,830
Low Carbon Gordano	Ham Lane	Ground mounted solar farm	2016	915
Low Carbon Gordano	Northleaze School	Rooftop solar	2016	49.9
Low Carbon Gordano	Clevedon YMCA	Rooftop solar		5.4
Low Carbon Gordano	Church House	Rooftop solar	2016	9.9
Easton Community	Owen Square	Rooftop solar		49.76

Centre				
Southmead Development Trust	Greenway community centre	Rooftop solar	2011	49.68
Southmead Development Trust	Greenway community centre	Rooftop solar	2015	70.2