Toolkit: a community wealth building energy transition

Part 4: deep dives

Oldham, Nottingham and Birmingham

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Deep dives takes an in-depth look at the role that community wealth building has played in energy transition in three places in the UK: Oldham, Nottingham and Birmingham.

The information was gathered between November 2020 and February 2021 through conversations with council officers at each of the respective local authorities, document reviews, and - in Birmingham - a workshop with local anchor institution network members. The resultant case studies informed the work found in the other parts of this toolkit by:

- **highlighting areas of community wealth building potential;**
- **identifying community wealth building mechanisms already being used to progress the energy transition; and,**
- **exposing key challenges to explore**

As the three deep dives were conducted independently, and in partnership between CLES and Carbon Co-op colleagues, each deep dive focuses on a different element of what a community wealth building approach to the energy transition looks like. They also flag some of the enablers and barriers to the approach taken by a particular locality, and highlight key learnings and considerations for other local authorities which may be exploring similar initiatives.

Oldham Council and Oldham Community Power

Introduction

An overview of Oldham

Geography

The borough of Oldham is part of the Greater Manchester conurbation, situated in the north west of England. It is five miles from Manchester city centre and nearly a quarter of the borough is located within the Peak District National Park – all households within the Borough are within two miles of open countryside.[1]

Economy

There are over 6000 businesses in Oldham, of which 99.7% are SMEs.[2] Key sectors include advanced manufacturing, health, construction, digital, creative and financial and professional services.[3] Within a 30 minute drive of Oldham there are over 100,000 registered businesses.[4] Based on its engineering base, connectivity and proximity to Manchester, high quality green infrastructure and strong tourism offer, as well as affordable residential and business premises, Oldham Council is keen to pursue the opportunity for Oldham to become a "major player in the key growth green technology and services" sector.[5]

Local anchor institutions include local and national public organisations Guinness Northern Counties, First Choice Homes Oldham, Voluntary Action Oldham, Pennine Acute Hospitals Trust, The Christie NHS Foundation Trust and Greater Manchester Waste Disposal Authority.

Demographics

The population of Oldham is 224,900 and 2.7 million people live within a 30-minute drive of Oldham city centre. Over 43% of the population have a degree, diploma, A/AS level or apprenticeship qualification.[6]

Energy transition journey to date

Climate change and community wealth building action plans, strategies and declarations

As a local authority Oldham Council adopted its first climate change action plan in 2010. The original intention was for this to be delivered by the Oldham Partnership but subsequent resource cuts impacted upon this approach. Three years later, in November 2013, the Oldham Climate Change Strategy 2013-2020 was approved by Cabinet. In July 2019, the Council announced its intention to become a "Green New Deal Council" and in September of that year declared a climate emergency. In March 2020, the Oldham Green New Deal Strategy was published.

Oldham became a co-operative council in 2011. In July 2017, Oldham published The Oldham Plan 2017-22: Our Oldham Model for an Inclusive Economy, Co-operative Services and Thriving Communities, which is based on community wealth building principles.

Oldham Green New Deal strategy

The five-year Oldham Green New Deal (GND) strategy launched in March 2020, one week before the first national lockdown, with ambitious targets for the borough to be carbon neutral by 2030 and for the Council as an organisation to be carbon neutral by 2025. The measure for the 2025 target will include reducing emissions from Council buildings and street lighting and other areas under its control. It will be supported by significant investment in large-scale renewable energy generation to meet the remaining carbon requirement, whilst generating financial savings or revenue income through the investment.

These commitments are in the wider context of the Greater Manchester Combined Authority target for carbon neutrality for the city region by

2038, with a programme of delivery set out in the Greater Manchester five-year Environment Plan. Figures from 2018/19 show that the Council's current footprint is 8,295 tonnes / CO_2 equivalent per annum based on Council buildings and streetlights.[7]

The launch of the GND strategy followed a flurry of GND policy announcements from both the UK Labour and Green parties, as well as discourse from the US. However, until the point of Oldham's release, no UK local authority had pursued a GND strategy approach. Recognising the potential for a GND strategy to encompass the inclusive economy, and the potential for Oldham residents to reap the economic benefits of a low carbon transition in terms of jobs, training, educational opportunities and reductions in energy costs, Oldham politicians were keen to be the first local authority to adopt a GND strategy – to "help the local economy decarbonize and save money at the same time", to attract green industries to Oldham, create new businesses and help existing ones decarbonize.

Achieving carbon neutrality for the Borough by 2030 will include:

1. Leading a strategic partnership of major energy users across all sectors in Oldham.

2. Developing a local energy market which will change the economic dynamic to incentivise renewable energy development across all sectors through enabling of the business case.

3. Investing in and supporting the development and roll-out of large-scale low carbon anchor institution energy infrastructure such as a low carbon heat network.

4. Supporting the development of the green technology and services sector across the Borough and supporting and incentivising the wider business community.

5. Maximising the local benefits from Greater Manchester and national level schemes which aid decarbonization.

The strategy comprises of four workstreams:

1. **Developing the green economy**: This focusses on creating the conditions to support a green business sector in Oldham, including supporting the development of Oldham's approach to community wealth building.

2. **Low carbon**: This involves the development of a local energy market and renewable energy; greening public assets; Oldham Community Power Phase 2; Citizen's Panel and Community Climate Change Action Plan; nature-based solutions on new/refurbished buildings; coal mine heat/town centre district heat network; green business centre; Red Wolf/Oldham Code for new homes; renewable energy investments.

3. **Northern roots**: This refers to the creation of a 160-acre eco-park.

4. **Embedding green approaches**: This refers to the embedding of the GND approach across other work streams, including business engagement, buildings rationalistion and medium term property strategy, regeneration programmes, housing strategy and strategic planning.

Generation Oldham

Oldham's GND builds on work that has been carried out within Oldham over the previous decade, in particular Oldham's community energy project, Generation Oldham. Generation Oldham is a renewable energy generation project for the next generation. It's an umbrella term for Oldham's community energy programme.

Influence at a Greater Manchester and EU level

As a result of Generation Oldham, Oldham Council is the lead partner for COALESCCE; a Europe wide project to help deliver community green energy projects. It involves European municipalities who share knowledge and best practice to support local community energy projects.

The five-year project sees public bodies from across Europe work together to share expertise to help community energy projects get off the ground. In order to receive the COALESCCE funding, Oldham had to show that it was able to influence policy at the Greater Manchester level. So, now the high-level vision in the Greater Manchester five-year environment plan, contains the following commitments: "we will have a carbon neutral city region that is sustainable" and "we will have more community owned renewable energy".

Oldham Community Power

Overview and Background – how did it come about?

Launched in 2016, OCP is the largest community energy programme in Greater Manchester. It is a community initiative whose aim is to generate electricity from renewable sources based on Council owned and community buildings.

OCP emerged as a Council initiative in response to the need take forward the Council's climate change strategy while recognising that as a co-operative council pursuing community wealth building principles, actions should maximise social value.

So, rather than simply paying to put solar PV on Council buildings, as a co-operative council Oldham sought to pursue an approach that built on their community wealth building aims and added social value. Community energy was the answer. Oldham Council instigated and supported the creation of OCP (a community benefit society) and Saddleworth Community Hydro (a co-operative) to install 220kW of solar PV and 60kW of hydroelectric generation on schools, community buildings and a reservoir.

The proposal to develop community solar energy in Oldham was first introduced at a public launch event in December 2014. Here, around 50 participants proposed possible sites for potential use. During 2015, three volunteer directors were appointed to the board from interested members of the public, approximately 50 of the proposed school and community buildings sites were assessed for their suitability and OCP received a Urban Community Energy Fund grant for the first phase of the project.

In 2016 OCP was incorporated as a community benefit society run on co-operative principles and Renewable Energy 4 Business was appointed as the phase 1 installer of solar panels on schools and community buildings in Oldham.

Finance

Grant funded feasibility studies

In 2015, Urban Community Energy provided a £20,000 grant to OCP to conduct feasibility studies. Electricity North West later provided grant funding to build and install intelligent interactive screens in schools to educate pupils about climate change and energy efficiency. OCP was awarded £5,400 from the DECC innovation fund to investigate how to engage low-income households in community energy.

Community and Council investment needed to set up OCP

A community share offer was launched to fund the first round of installations. When this failed to raise sufficient funds, Oldham Council agreed to a bridging loan of £250,000 to top up community investment. The bridging loan was crucial in allowing the scheme to go ahead, meeting the deadline for more generous feed-in tariff payments, acting as an expression of trust in the organisation and a physical resource that the community could see and were then happier to invest in.

The first solar panels were installed on five primary schools and Holt Street NEON Hub in 2016, and OCP became the largest generator of community energy in Greater Manchester.

In April 2017, a second share offer was launched to pay back the bridging loan Oldham Council provided to fund the first phase of installations. £150,000 was paid back to the Council with the remaining sum converted into shares. As a shareholder Oldham Council is entitled to one vote, along with other shareholders.

Who is involved and how?

Oldham Council – initiated project, provided bridging loan and hold community shares

Oldham Community Power board of directors – manage the project, build relationships among stakeholders, and source grant funding

Renewable Energy 4 Business - appointed as the phase 1 installer

Community shareholders – provided investment to repay bridging loan and invest in infrastructure, legal fees and other associated costs, including Action Together who invested £10,000

5 participating primary schools – Beever Primary School, Whitegate End Primary School, Mather Street Primary School, Medlock Valley Primary School and Blackshaw Primary School all have solar panels installed on their roofs

Holt Street NEON Hub - has solar panels installed on its roof

Electricity North West – provided grant funding

Urban Community Energy Fund – provided grant funding

DECC – provided grant funding

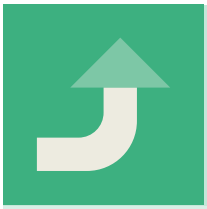
Share Energy - support community energy groups across the UK, and advised on community share offers, setting up the society, finances and the responsibilities of directors etc.

How community wealth building is being applied

SOCIALLY PRODUCTIVE USE OF LAND

The very first solar panels to be installed by OCP were on the roofs of five primary schools and on Holt Street NEON Hub (a community centre) in 2016, these installations on publicly owned buildings made OCP the largest generator of community energy in Greater Manchester.

Oldham Council also supported Saddleworth Community Hydro (a co-operative) to install 60kW of hydroelectric generation at a local reservoir.



MAKING FINANCIAL POWER WORK FOR PLACES

In the establishment of OCP, grants, community share offers and bridging loans were all required. Drawing together these different sources of finance took time, energy and commitment from the team behind OCP and a lot of trust from the grant givers, the community and the Council. The result of this trust and a progressive approach to finance is a successful community energy scheme that is delivering results for Oldham residents.

FAIR EMPLOYMENT AND JUST LABOUR MARKETS

OCP developed the UK's first national community energy apprenticeship standard, a Level 4 "Community Energy Specialist".

PROGRESSIVE PROCUREMENT OF GOODS AND SERVICES

The appointed Phase 1 installer, Renewable Energy 4 Business were a Manchester based company limited by guarantee.

BUILDING A DEMOCRATIC ECONOMY

Oldham Council instigated and supported the creation of Oldham Community Power (a community benefit society) and Saddleworth Community Hydro (a co-operative) to ensure that the community are the ones who will benefit from the wealth created through their renewable energy schemes.

Key enablers and barriers

ENABLERS

Oldham Council's trailblazing approach to its climate change work

This was crucial to the development and establishment of OCP. Without the Council's belief and the direct support of certain individuals (the former head of the Council's policy team, Jackie Wilson, who was instrumental in getting others to look at community energy, Andrew Hunt, and Councillor Abdul Jabbar, Cabinet Member for Finance who has provided continued support for the programme) the idea of OCP would have remained just that.

Innovative ways used to raise finance

This allowed OCP to develop responsibly, through grant funding at the feasibility stage, and then for it to develop quickly through the bridging loan from Oldham Council. The investment of public money gave the community confidence in the scheme and led them to invest in it too.

Provision of publicly owned space and buildings

This allowed both for the installation of the solar panels but also places for the community to meet to discuss OCP. Oldham Council offered the use of venues in the community for meetings and AGMs which allowed community buy-in to OCP to build.

BARRIERS

Community buy-in was slow to develop

The community was initially sceptical of the project, and the first community share offer only achieved around 10% of its target. Not only this, but some members of the community were concerned that the share offer was a scam and reported it to police. There is learning here around how the community are initially engaged in conversation around community energy, particularly where they are expected to contribute financially.

Learning the processes on the go

Despite having the experience of setting up Saddleworth Hydro and having the support from Share Energy, the team were still experiencing the set-up process first-hand for the first time. This slowed down certain processes like lease negotiations, often making them more expensive.

The expertise and experience available to them

The experience and expertise available locally and from further afield helped to establish OCP well. The support provided by Share Energy - who support community energy groups across the UK - was crucial when it came to setting up the community share offers, the society, the finances and all the responsibilities of the directors etc. The Council also had experience in community share offers and community energy projects from setting up Saddleworth Community Hydro.

Project impact

Social, environmental and financial impact

As part of Phase 1, OCP installed solar PV systems on 6 sites, with a total install capacity of approximately 230 kW. OCP sell the electricity to the building occupiers at a 20% discount on their electricity bills compared to their main electricity supplier price. All installations are community funded through investments to become members of the society: the people of Oldham are the majority shareholders. Investments return an annual dividend, expected to amount to an initial rate of return of approximately 4% over 20 years meaning cheaper energy for the schools and community centre and a return on investment for the community.

As well as significant cost savings OCP boasts carbon savings of 210.86 tonnes up to the end of September 2020.

Increased awareness of community energy and climate change

Another significant impact of the programme in addition to the money saved on energy bills by the five schools and the community hub, is the wider awareness of OCP, the benefits of community energy more generally and climate change. OCP secured a grant from Electricity North West to build and install some intelligent interactive screens in schools to help the pupils understand more about these topics. OCP are now working with a local IT provider called Live and Now Oldham to build the screens and install them in schools.

Learning

It isn't easy to secure buy-in from the community.

It took OCP a considerable amount of time to convince the community it was a good idea to invest in a community energy scheme. Some residents even thought it was a scam. The lesson here is to work with residents in the development of the scheme and put time and energy into helping people to understand what it is.

National policy can have a huge impact on the viability of your scheme.

Be aware of national policy that has an impact on community energy schemes. For example, the feed in tariff scheme stopped accepting new applications after 31 March 2019. This announcement of a change in policy prompted the discussions in Oldham to look into setting up OCP.

Recent changes in policy relating to solar PV on schools means that a new approach will be needed to continue the OCP project. The Department for Education have said it will not be approving any more community energy leases for schools because it is going to set up a new procurement framework for schools to get solar PV. It has stated that it does not believe that community energy necessarily represents the best value for money for schools. For this reason, it will not be approving any more leases.

Concerns from procurement departments limit the potential to support local generators within supply chains.

The technology companies required for local energy markets are in their infancy, and do not have a track record behind them from a procurement perspective. Currently, Oldham Council procures energy through a broker, Crown Commercial Services, and the idea of completely scrapping that approach and setting up a local energy market where a local authority would buy direct from local generators using a technology platform is "just not something our procurement people are up to yet."

The impacts of the Covid-19 pandemic have exacerbated the challenges facing Council finances and has already compromised elements of Oldham's GND strategy.

It has also increased competition for existing pots of funding. Any community share offers will likely be affected by the impact of the pandemic on personal finances. Phase 2 of OCP's work in Oldham will need to clearly demonstrate strong return on investment from an economic as well as environmental perspective.

Key points for other anchor institutions

What would you do differently?

- Invest more time in securing buy-in from the community early on (in addition to the bridging loan) to reassure the community that it is a worthwhile investment and a legitimate community project
- Get buy-in from the procurement team to pursue power purchase agreements
- Engage with local and expert stakeholders (by profession or experience) as early as possible and draw on their expertise
- Use template lease agreements to reduce legal costs
- Use proof of concept (now available from phase 1) to make attracting funding and community buy-in easier and to encourage wider anchor collaboration.

Advice for other local authorities embarking on a similar journey

- **Opportunities, funding and progressive climate strategies at the local and regional level can help bring a project to life.** OCP will be eligible to apply for funding in their second phase through the Rural Community Energy Fund via the North West Local Energy Hub. Grants of up to £40,000 are available for feasibility studies for a renewable energy project. Grants of up to £100,000 are available for business development and planning of feasible schemes. In addition to the above, the GND approach brings opportunities for Oldham to lead the way, and to gain economies of scale by taking advantage of Greater Manchester-level initiatives and external funding streams to secure extra capacity to deliver the Oldham GND programme.
- **Secure power purchase agreements to support viable business models.** Work with procurement departments on this from very early on. A power purchase agreement could make projects viable for community energy groups and financially advantageous for the council (without necessitating grants or leases on schools). If community energy groups initiated projects and the Council guaranteed the purchase of the energy from the installations, this would cut out the traditional energy company, replacing it with something much more flexible, that enables peer to peer trading. This, in turn, could support technology driven local energy markets in the future using market solutions provided by private sector companies such as technology platforms.
- **Ensure there is a good process for knowledge transfer when staff move on.** Phase 1 presented a learning curve for most stakeholders in relation to OCP, and there is a danger that this learning could be lost with changes to staff and other participants. Introducing clear processes for knowledge transfer and skill sharing will be key to overcoming this potential challenge.

Nottingham City Council and deep retrofit

Introduction

An overview of Nottingham

Geography

Nottingham is in the heart of the East Midlands, with Sheffield to the north and Leicester to the south. It has a population of around 323,000. Nottingham has one of the youngest populations in the UK, with over 50% of the population under 30.[8] The city benefits from two universities, the University of Nottingham and Nottingham Trent University which have 60,000 students between them.

Economy

90% of jobs in Nottingham are in the service sector, but there are other specialisms emerging in digital content, life sciences and clean technology. Nottingham is working to provide the right support and stimulus to allow these industries to grow and make Nottingham a greater exporter and re-establish its global reputation as "a place that designs and makes things".[9]

Energy transition journey to date

Climate change and community wealth building action plans, strategies and declarations

On 13 January 2020, Nottingham City Council (NCC) declared a climate and ecological emergency, recognising the immediate action required to achieve sustainable carbon neutrality. A carbon neutral charter for the city was subsequently launched, along with an associated action plan that was adopted in the summer of 2020. NCC have committed to working towards being a carbon neutral city by 2028, the most ambitious target in the UK.

Dedicated resource to energy transition

Nottingham is currently investing significant resource into its energy transition work, including around fuel poverty and climate resilience. There are six teams working across this broad area including;

- **Utilities team** - managing energy, water, waste and the district heat network ensuring no unusual consumption.
- **Customer service team** - supporting customers on their district heat network which is currently one of the largest in the country with approximately 5,000 domestic and a couple of hundred commercial customers.
- EE monitor – a hardware and software system for heat/energy metering and billing, produced in-house by NCC, replacing existing prepayment gas/electricity meters for tenants as well as allowing for remote engineering support. NCC has since developed the system as a commercial service available nationwide.
- **Regional team** - Nottingham hosts the wider Midlands Energy Hub. The regional team consists of two officers (one officer in each of the LEP areas in East and West Mids) that are responsible for coming up with energy projects ideas which are typically funded by BEIS.
- **Carbon neutral policy team** - responsible for delivering the energy and sustainability policies at the Council and in the wider city. They are focussed on the carbon neutral agenda and NCC's commitment to becoming carbon neutral by 2028
- **Income generating, compliance and consulting team** – this team is responsible for the delivery of energy performance certificates and display energy certificates,

energy audits and a broad array of energy compliance helping to bring in a steady income stream that cross-subsidises some of the other work they do. They have a team of six domestic energy assessors and four that are commercially trained. This team are ideally placed to upskill to carry out retrofit assessments. This avoids the costly recruitment of new staff that may not be guaranteed a job for long, as this work relies heavily on funding from central government and ongoing funding has not been guaranteed yet.

- **Delivery team** – this team has a broad remit covering the management of energy efficiency across NCC's estate through to developing and delivering innovative pilot projects including the district heat network, retrofit, the vehicle to grid pilot and other energy efficiency and renewable technology delivery and pilot schemes.

The delivery team is responsible for many of NCC's large scale climate projects, including whole-house deep retrofit. Before NCC trialled deep retrofit, they were carrying out a programme of basic retrofit (e.g. standard insulation), on some of the 25,000 homes in Nottingham owned by NCC and managed by the local arms length management organisation – Nottingham City Homes (NCH). However, both NCC and NCH were "underwhelmed" with the resultant performance of the retrofit and were disappointed with the work undertaken.

The focus of the deep dive: Nottingham's approach to retrofit

This deep dive focuses on deep retrofit, specifically the work of NCH and NCC progressing the Energiesprong model of deep retrofit on Council-owned homes in Nottingham.

Deep retrofit and the Energiesprong model

Overview and background – how did it come about?

Poor quality retrofit and dwindling Eco funds were key drivers for NCC and NCH exploring a new approach. They were keen to explore whole-house retrofit as an alternative to help them avoid the poor quality and underwhelming results they had seen through their existing basic retrofit approach. The Energiesprong model in the Netherlands was beginning to show impressive results using a deep retrofit approach - high quality work alongside demonstrative energy performance at scale. There was a significant desire to replicate this model in Nottingham.

NCH and NCC submitted a joint bid for EU (ERDF) and then BEIS funding to support a whole-house retrofit approach in Nottingham using the Energiesprong model. The funding was secured and a relationship was struck up with Energiesprong UK to further develop the scheme for Nottingham.

The scheme's pilot stage - known as the **Remourban project** - began in 2015 in Sneinton, one of Nottingham's most deprived areas focusing on deep retrofitting just 10 homes. Local interest in the scheme from councillors and tenants has centred not only on its energy efficiency purpose, but also on the potential of the scheme to support broader improvements to the look and feel of the neighbourhood.

Aims of the Remourban project

- Demonstrate the positive impact of the Energiesprong model in the UK
- Reduced fuel poverty via reduced and fixed fuel bills (the comfort plan)
- Better quality housing
- Warmer and healthier homes
- Reduced carbon emissions
- Neighbourhood regeneration
- Increased renewable energy generation

Following the successful pilot phase, full delivery of DREeM (deep retrofit energy model) began in the 2017/18 financial year with further objectives of proving that deep retrofit can be achieved without the need for financial subsidy and showing that net zero energy can be achieved using this model. Over the life of the scheme (ending in 2023) it is expected that 325 properties will benefit. To date around 10% of this target has actually been realised.

Nottingham is currently delivering deep retrofit using 50% of their own money and 50% ERDF funding. There is a recognition that the upfront cost of deep retrofit is high but this is with a long term view of reduced costs for delivery as the market adapts to the requirements of the DREeM model and the whole process becomes more streamlined.

One workstream in the DREeM approach in Nottingham focuses on engaging with local SMEs to prepare them for the shift in how retrofit will be procured and delivered in Nottingham. This workstream commits to supporting and

explaining the Energiesprong approach to SMEs: what it would mean for them and the change in how they would need to manage their delivery and and ensure they are prepared to deliver. The DREeM approach also holds suppliers accountable for their deep retrofit work and drives their innovation by requiring a 30 year guarantee on the energy performance of their installations. This is also discussed with the SME's so that they are able to manage their own risks with the delivery phase potentially stretching over a much longer period.

The properties benefitting from DREeM currently exceed targets in NCC's Energy Strategy and Fuel Poverty Strategy, which outline an aim to ensure energy efficiency levels in the housing stock are at a minimum of EPC Grade C. Using the whole-house Energiesprong model, properties that have been retrofitted all have an energy efficiency level of EPC Grade A: a significant contribution to NCC's zero carbon 2028 target.

Finance

Necessary early grant funding to establish the sector

Grant funding has covered 50 – 60% of the costs of the scheme so far, with NCC making up the difference. Without early grant funding to support the establishment of the market and the generation of innovative technologies DREeM would simply not have been possible in Nottingham. Whole-house high-spec deep retrofit is a costly endeavour (approximately £90k per home) and even with significant grant funding it was felt that the scheme exerted significant pressure on Council budgets, to such an extent that the planned pipeline for DREeM has been slimmed down to a far smaller number of houses than initially planned for.

The delivery team at NCC are currently reviewing the spec they are delivering through the programme to see if there are any cost saving changes they could make that wouldn't negatively impact the energy performance of the retrofit too much. Without bringing the per unit costs down, NCC recognise that the DREeM model is not cost effective.

The team are committed to getting all of their retrofit projects to a point where they stack up on their own. This is very tightly linked to their commitment to becoming carbon neutral by 2028. The pilot stages were both expensive, as anticipated. But they used the time in these pilot phases to ready the market to deliver DREeM, a time intensive pursuit. They are also now investing in advanced off-site manufacturing and innovative technologies, again an expected early costly outlay particularly when DREeM is only being delivered in a small number of houses. But once the sector is established and they are able to deliver DREeM for less money at scale they will reap the rewards of their early time and cash investments.

Moving towards commercial viability and reducing reliance on grant funding

The current plan in Nottingham is to continue to access funding to carry on their deep retrofit work and build the foundations of the small but growing deep retrofit sector. Over time they hope to shrink the amount of funding required on a gradual basis as the local market begins to establish itself in response to the commitment of deep retrofitting many more homes.

Nottingham have also procured their key contractor on the basis that they provide a guaranteed level of energy performance for their retrofit for at least 30 years. This ensures the contractor is really invested in the programme and getting the technology and the work done right. This also insures Nottingham against

any unexpected future maintenance costs to properties that have been deep retrofitted.

In addition to this, NCC is working to establish a cross subsidy model by drawing together a range of their income streams and thinking more long term about the maintenance plan for their properties moving forwards. This is part of a strand of work called "Destination Zero" whereby future deep retrofit work will be carried out incrementally (instead of all in one go) and in line with NCH maintenance plans (e.g. syncing relevant deep retrofit work with the timetable for works such as re-roofing etc.) In terms of the guaranteed income streams they can draw together to cross subsidise the DREeM model, NCC have the renewable heat incentive, the offsetting of maintenance costs against future energy savings and, significantly, the regular fixed payment from the tenants that have already benefited from deep retrofit, known as the comfort plan.

Via the comfort plan, residents pay a contribution for works/maintenance, offset by having lower energy bills in the long term. By bringing about significant energy efficiency improvements, the scheme aims to bring tenants' energy bills down to around £300 per year. However, to support the programme they are required to pay an additional £300 to support maintenance etc. NCC and NCH recognize the importance of effectively communicating this to tenants and explaining to them that despite the additional charge they will be better off in the long run. The acceptability of this message has been a challenge. NCC and NCH have applied the comfort plan in a similar way to an additional standing charge, and have been trying out measures such as making comfort plan payments slightly higher in summer (when less energy is used and bills are naturally lower).

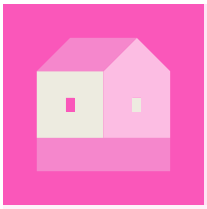
Who is involved and how?

- **NCH** – drive the practical delivery of the project, and are effectively a subsidiary of NCC

- **NCC** – are responsible for financial decisions, and provide funding to supplement grant funding

Both organisations work together to develop their business model, monitor costs, delivery and performance.

How community wealth building is being applied



SOCIALLY PRODUCTIVE USE OF LAND

As part of the Energiesprong contract Melius Homes have recently set up a manufacturing facility in the NCH depot to build internal wall panels, drawing upon the local labour market. The energy system provider was initially also a locally based start-up (a spin-off from one of the universities). This work now sits with another East Midlands company (based 14 miles away in Derby).

FAIR EMPLOYMENT AND JUST LABOUR MARKETS

It isn't clear if NCC have had these conversations as part of their Energiesprong deep retrofit contracting agreements.

DEMOCRATISING THE LOCAL ECONOMY

NCC have invested a significant amount of time, energy and resource into generating a sector comprised exclusively of local SMEs that are able to deliver high quality innovative whole-house deep retrofit. This work is not short-term, it promises to increase in scale over the coming years, providing local people with highly technical advanced manufacturing jobs for many years to come.

MAKING FINANCIAL POWER WORK FOR PLACES

NCC chose to engage their local SMEs in conversations about delivering DREeM in Nottingham instead of approaching national organisations with far more resource. This proved to be a prudent decision from NCC who took a risk in taking on Melius Homes - a small local supplier (the only responder to their tender) with limited capacity in comparison to national and international organisations. But this same supplier had significant commitment to and enthusiasm for the DREeM project and was very flexible in working with NCC to develop the innovations required to deliver the deep retrofits successfully.

PROGRESSIVE PROCUREMENT OF GOODS AND SERVICES

NCH and NCC are working to develop a supply chain with potential future suppliers and contractors for what is ultimately a bespoke and new product. For example, NCH and NCC have been working closely with Melius Homes – a fairly new start up based in Kettering (60 miles south of Nottingham) to deliver the Energiesprong model.

Key enablers and barriers

ENABLERS

NCC's openness to innovation, new ways of working and the design and piloting of new schemes.

NCH's connections with the communities it serves has been key – relationship building and engagement with tenants has been central to helping this work go ahead. On a practical level, tenants have been heavily involved in the design process. For the pilot programme there was intensive consultation, including workshops with tenants (from top level issues such as views on the scheme, to focusing on fine detail such as colour ways for local housing). This is being replicated and expanded as the scheme rolls out.

NCH's sizable and varied housing stock has been useful in testing out the scheme across different property types.

Quality intelligence about the housing stock has been core in deciding eligibility and which properties should be prioritised. This made it possible to select homes of non-standard and particularly inefficient design and poor energy efficiency to benefit from the programme.

The above is in addition to acquiring grant funding and developing a supporting business model.

BARRIERS

The cost of deep retrofit is a significant barrier to its rollout across NCH stock. NCC has been able to deliver proof of concept predominantly due to their use of grant funding – allowing them to support the creation of a local market to deliver deep retrofit. Eventually the plan is to prove the commercial viability of this model, but funding is consistently a challenge.

The size of the local supply chain and only being able to commission from a limited pool is felt to be a barrier. There is ongoing work to grow the sector as discussed earlier but the limitations of a small pool still apply currently. An example which shows the problem in practice is that in a recent tendering exercise for an element of the deep retrofit scheme, only three bids were received and of those only one company had the experience, capacity, knowledge and credentials to deliver. The lack of competition locally leaves very little room for negotiation as that one supplier is the only option.

It currently isn't possible to source complex components locally or regionally

Despite this difficulty NCC and NCH are keen to keep the construction and integration elements of the scheme as local as possible.

Lack of skills locally to deliver retrofit

The Midlands Energy Hub is based with the delivery team. They've acquired some money through BEIS specifically to skill people up to carry out retrofit to directly address the skills shortage. The Midlands Energy Hub have now approved the training providers for the scheme and are expected to release further details imminently. It is expected that they will deliver a wide scale training programme for retrofit assessors specifically targeting PAS 2035. PAS 2035 is part of a framework of new and existing standards on how to conduct effective energy retrofits of existing buildings, it covers how to access dwellings for retrofit, identify improvement options, design and specify energy efficiency measures and monitor retrofit projects. The team haven't had to contend with this new legislation so far because the existing work all began before it was put into force. But for new retrofits this will have to be factored in.

Project impact

The scheme delivers exceptionally high quality retrofit. Especially in comparison to previous work seen under the Eco funded scheme, where quality was highly variable, and delivery was based on single measures rather than a whole-house approach. The deep retrofit scheme has delivered "homes ready for 2050" with minimal need for maintenance.

How the project is being measured and monitored

Energy performance metrics are the key pieces of data available on the performance of the DREeM model, crucial in helping Nottingham to understand how far this work has contributed towards them reaching their net zero carbon target by 2028.
The DREeM model has four specific outputs that are used to monitor the success of the roll out;

- **Estimated annual decrease of greenhouse gases** (collated through the energy centre at each of the retrofit sites). Each retrofit site has a battery management system (BMS) that manages the energy generation and use at each site. All the data required to estimate the annual decrease in greenhouse gases passes through the BMS, which collates the data and sends it to the right reporting channels. The BMS system is also how they are able to ensure that their energy performance guarantees are being met (allowing them to hold their contractors accountable for their work). The BMS will pick up on any issues or sub-standard performance so they can be rectified.

- **Number of households with improved energy consumption classification.**

- **Decrease of annual primary energy consumption in a public building** (related to the school arm of this project).

- **Number of enterprises receiving support** (number of hours and type of support).

In addition to the above, the following monitoring also takes place:

- Practical delivery of the programme is captured via performance monitoring logs on the energy consumption of those buildings that have been retrofitted.
- It is difficult at this point to definitively measure financial savings made by some tenants as a result of the scheme – this is due to some having previously under-heated their homes due to inefficient EPCs and high bills. The price of gas is also lower than it has been for some time. Financial impacts may only become clearer with modelling/analysis over time.

"Lessons logs" are used internally to help reflect on what has and hasn't worked so well in the delivery of the scheme.

Social, environmental and financial impact

There is far less available in terms of the monitoring of social impacts such as the impact of reduced bills or the impact of living in a warm home, which is due to some tenants having previously under-heated their homes due to inefficient EPC's and high bills. Financial impacts may only become clearer with further modelling/analysis over time.

There had been plans to develop a regular system to use tenant engagement to gather insights on social impacts, but this did not take off. There is an awareness of, and interest in, the potential broader benefits of the scheme such as health and educational impacts. However, these have not been explored in any depth as yet. NCC and NCH are aware of Manchester's toolkit to quantify wider benefits of various interventions and retrofits. Though the use of this toolkit has been considered at a strategic level it hasn't yet been thought through at the delivery level.

The project has been focussed on achieving sustainable carbon neutrality, though both partners are trying hard to put emphasis on the co-benefits of retrofit, instead of just having a very narrow carbon focus. There are impacts to be considered in connection to the ecological crisis, biodiversity, quality of life, green and economic progress. It isn't clear if these are currently being monitored.

Addressing inequalities

Before starting the deep retrofit of some of their most inefficient homes, the team at Nottingham modelled their expected expenditure on energy bills. This modelling established that each house would need to be spending £1,300 a year on energy bills to make their homes warm and comfortable all year round. But, in reality, when they looked at the bills of the tenants in these inefficient homes they found that they were typically paying less than half of this (~£600) indicating that they were chronically underheating their homes to a point where it could have a detrimental impact to their mental and physical health.

The tenants in these homes, now benefiting from a deep retrofit, pay a set amount of £400-£500 per year for their energy. In exchange they receive guaranteed thermal comfort, guaranteed hot water and electrical load.

Learning

Cost vs quality

There's a tricky balance to be struck between wanting to deliver "the gold standard" of retrofit and keeping costs down without having to compromise on quality and robustness in the longer term.

Communicating the benefits

There has been some learning around the need to make energy bills/savings easier to understand for tenants. NCC and NCH have been working on developing a clear interface that explains tenants' energy consumption and breaks down how their bill has been generated.

Differences to take into account when basing schemes on international models

In the EU, municipalities have the advantage of being able to cheaply and more efficiently import and export energy. This is not possible with the Nottingham scheme, which has had to mitigate by using a private wire system and selling tenants a mix of solar PV and grid electricity. Drawing upon the Energiesprong model (done quickly, with as little disruption as possible, carried out over one visit etc.), there was an expectation that the deep retrofit process would be smooth, however this hasn't always been the case in practice.

Complexity/best value with regard to the purchase and resale of energy

"We had to go down a more complex route to capture the financial benefit of the solar PV, which added a lot of cost and we probably didn't understand fully around grid connections and sizings that we'd need to take into account at our single large meter. That process is really crucial when you're trying to set a green energy scheme up right and get the best price when you're buying to allow you to give the best possible value back to the tenants when you resell to them." – Nottingham officer

Scalability and cost

As yet it has not been possible to achieve economies of scale due to the small proportion of properties retrofitted in the UK. In comparison, in the Netherlands, the Energiesprong scheme has delivered deep retrofit on an estimated 10,000 properties, which has brought costs per unit down. It's envisaged that as delivery on the Nottingham scheme progresses, along with an adjustment of the spec, increased manufacturing volume and growing familiarity and knowledge of how to deliver, that a similar pattern could be achieved.

Communicating the comfort plan

This has been a challenge as it "detaches tenants from their consumption" and has been a tricky issue to reconcile for the more frugal tenants. Although the scheme generates savings and provides warmer and more comfortable homes, "there will always be some that don't like it or don't think it's fair". NCC and NCH are conscious of the need to ensure that tenants have a good understanding of how their bills are configured, and the need for clear communication about the reason for the comfort plan charge, whilst highlighting the wider benefits of having a retrofitted home.

Resident engagement

Tenant liaison officers have worked closely with delivery partners to explain how the scheme works to tenants, but this has been on a fairly ad hoc and unscripted basis. Although this has been effective, it will not be sustainable or efficient as the scheme scales up, and it will be necessary to develop a standard approach along with training for officers on how to deliver this.

Making it simple to understand

There's a need to ensure that communications are consistently clear. The scheme is highly technical and has been designed by a team with complex engineering experience. There's a duty across the delivery team to take care around disseminating relevant information about the scheme and how it works.

Working with the distribution network operator

There has been little engagement with the distribution network officer so far. On reflection, this relationship could prove very useful particularly in supporting the resale of energy and the application of standing charges. This is an area Nottingham plans to work on in the future.

Advantages to this approach

- The scheme delivers exceptionally high quality and high performing retrofit. Especially in comparison to previous work seen under the Eco funded scheme, where quality was highly variable, and delivery was based on single measures rather than a whole-house approach. The deep retrofit scheme has delivered "homes ready for 2050" with the need for minimal future maintenance.

- Delivering deep retrofit in Nottingham has carved out space for a new local market in off-site retrofit materials, bringing many technically advanced jobs to the local area.

Disadvantages to this approach

- Operating in such a niche market brings with it higher levels of risk through having to engage exclusively with small businesses. When the tender first went out hardly anybody bid for it. But there was one small start-up that was very passionate about changing the way they retrofit homes (Melia Homes). They committed to working with NCC to develop their model and trial different solutions. This was a real asset to the project and represents the value a small business can bring to an innovative project like DREeM. But, on the flip side, because they are an SME they are not as resilient to economic shocks as some larger organisations may have been. They've really struggled to deliver during the pandemic.

- Because of the large initial outlay required to retrofit one home (currently £90k), it is unlikely that some of the very worst performing homes (and the tenants in them) outside the social housing sector in Nottingham will ever benefit from such a scheme. It's much easier to make improvements on property owned by NCC. Approximately a fifth of all homes in Nottingham (26,000 out of 130,000) are in the social housing sector. But even if the NCC and NCH are able to provide deep retrofit or indeed any retrofit to all of the homes they own, it is unlikely to fully tackle fuel poverty in the area and help them to become carbon neutral by 2028.

Key points for other anchor institutions

What would you do differently?

- Consider a simpler energy system.
- Consider a cheaper model for the retrofit, looking to readjust the balance between energy savings and the comfort plan to deliver a simpler model, albeit with slightly lower performance. *"At the scale that the scheme is currently being delivered at, the difference between an excellent and a very good spec is very small – it's more about getting the scheme going and hitting costs, and then going on to look at the spec to see if it can be further improved whilst also generating cost savings".* Good is not the enemy of perfect, though it is often tricky to deliver projects from this perspective as funding for retrofit typically comes with pressure to deliver net zero carbon. This inevitably needs a very high spec (typically very expensive) product.
- Break down the very large invitations to tender to make it easier for smaller local businesses to bid or collaborate on a bid. This could potentially have developed the supply chain a lot quicker and brought more existing businesses on board.

Advice for other local authorities embarking on a similar journey

The team at Nottingham told us that delivery has been characterised by "working out what you're doing, as you're doing it!" They felt that, in hindsight, the following measures may have helped support a more structured approach:

- Be clear at the outset about intended costs, outcomes, energy efficiency targets etc and the rationale behind these. A robust budget/ financial plan is key, but it's important to note that deep retrofit is part of a very early-stage market and contractors and commissioners are still learning. There is potential for schemes to veer away from initial cost estimates and contingency is key.
- Understand the profile of the housing stock and long-term plans for this. Maintenance plans should be a major consideration as these form a key justification for investment in retrofit, and will have a bearing on how a business case for the work is developed.
- Clarity on how the scheme will be funded (supported by knowledge of the funding landscape for deep retrofit work).
- Take the time to work on communication with partners and tenants on the following areas:
  - Tenant liaison officers and ward councillors work as connectors between tenants and delivery partners where issues about the scheme and questions or problems can be raised. This is recognised as an important process. Councillors should be provided with background information and project briefs to keep them updated on the scheme. Some are more interested and engaged in the scheme than others, however the role of councillors as a direct line to the Council is a very important one. Councillors can represent tenants' views and are equipped with the ability to escalate issues easily with the portfolio holder [for housing]. This is a powerful accountability mechanism.
  - Comfort plan: tenants were generally very receptive to the idea of one low fixed cost for their energy. But there is some careful management to be done

around communication of this. Some hyper-conscious energy users may see an increase in their energy bills for example – but the key point here is to ensure that communication with tenants is led with what the benefits will be to them beyond a fixed price bill. For example, a consistently warm and comfortable home with no drafts, no damp or mould and a regular supply of electricity and hot water. Make time to listen to each individual resident's concerns and ensure they feel heard and have a sense of ownership over changes to their home.

  - Usability of the home and the public realm: consider how residents use their homes and the state of the surrounding public realm. Deep retrofit is not just about reducing their carbon output but also about the wellbeing of the resident and the wider neighbourhood. One example of this approach taken in Nottingham is the upgrading of a slim high kitchen window in a series of houses selected for retrofit. These narrow windows were lengthened and therefore provided a view onto the alleyway at the back of the homes vastly improving the amount of natural light entering the kitchen and having a positive impact on reducing anti-social behaviour in the alleyway.

- Be prepared to take quite a lot of control over energy generation and consumption in communal retrofit schemes. The team at Nottingham ended up taking quite a lot of control away from residents over what has been installed in their homes to ensure it is performing at its best for the wider community sharing the same network. This is to make sure nobody is negatively impacted by the excessive energy use of one user and so that they are able to maintain the comfort levels and fixed price agreed via the comfort plan.

- Linked to this, ground source heat pumps typically don't work that well for people that are used to living in fuel poverty. These households tend to only put the heating on at particular times of the day or year and this habit typically carries through to how they use ground source heat pumps, rendering them fairly ineffective. The team at Nottingham have found that education around how the different bits of technology work is important to ensure that residents get the most out of their retrofit.

Birmingham and the challenge of scale

Introduction

This deep dive focuses on opportunities for the integration of a community wealth building approach to energy transition within Birmingham City Council's (BCC) current work with a particular focus on scale. It presents the strengths, opportunities, weaknesses and threats to establishing a community wealth building approach energy transition, exploring current and legacy projects and approaches, anchor and community partnerships, and delivery capacity and local knowledge.

Interviews were carried out with four members of staff from BCC and a workshop was held with members of the Birmingham Anchor Network to investigate opportunities for collaboration around energy transition.

An overview of Birmingham

Sitting within the West Midlands Combined Authority, BCC is the largest local authority in Europe, with a population of almost 1.15 million people.[10] The city has a long industrial history, with key strengths in manufacturing, research and technology. However, despite the city's economic heft, Birmingham is the 7th most deprived local authority in the UK,[11] 19% of the population are living in fuel poverty, and 34% of under-16s in the region are living in poverty after housing costs.

BCC has traditionally focussed its approach to local economic development on attracting inward investment, which goes counter to the core principles of community wealth building. However, in recent years the city has recognised the potential of a different approach and since 2019 CLES has supported the coordination of the Birmingham Anchor Network, which focuses on building community wealth through progressive procurement, employment and the socially productive use of anchor land and assets. Community wealth building ideas are also being adopted in other elements of the city's economic work, including the East Birmingham Inclusive Growth Strategy.

This understanding of the need for wealth to be held locally intersects strongly with calls for a just transition to a green economy. BCC understands this well, and ongoing projects are concerned with ensuring the benefits of decarbonisation (such as green jobs, new businesses and the wealth that comes with them) stick within the city. The city's approach to economic recovery post-Covid-19 prioritises both the creation of a more inclusive economy to tackle inequalities and injustices highlighted by the crisis, and taking more radical action to achieve zero carbon and a green and sustainable city.

Energy transition journey to date

Over the years BCC has implemented a variety of different initiatives to reduce the city's carbon emissions. These projects have frequently been informed and shaped by the area's academic institutions and other local assets.[12] Using a mixture of technical and socially targeted initiatives, Birmingham has seen the introduction of solar PV, LED street lighting and Eco Pod homes, retrofit of Birmingham Municipal Housing Trust homes, educational programmes, and a district heat network (Birmingham District Energy Scheme). The majority of these interventions have been applied on Council assets and property. Other pockets of good practice have been developed across the city on non-Council assets and property. These provided key learning experiences but have not been implemented at scale.

Declaring a climate emergency and the Route to Zero taskforce

In recent years, with increasingly urgent calls for faster action from climate campaign groups,

greater public scrutiny has meant local authorities have been expected to ramp up their efforts to address climate breakdown. BCC declared a climate emergency on 11 June 2019, outlining their ambition for the Council and city to become net zero carbon by 2030, or as soon as possible thereafter as a just transition allows. The Council Cabinet made a clear commitment to step up their efforts, agreeing a new priority in the Council Plan and stating that "Birmingham will be a city that takes a leading role in tackling climate change".[13]

In autumn 2019, the Route to Zero (R20) taskforce was established to develop recommendations for how everyone in Birmingham can contribute to climate action and benefit from a safer, fairer and more sustainable city. The taskforce's membership ranges from Youth Strike for Climate and the Greener Birmingham Coalition, to the Commonwealth Games organising committee and the Greater Birmingham Chamber of Commerce, with representatives from a wide range of community groups, public and private sector organisations.

The work of the R20 taskforce played an important role in shaping the City's Action Plan and establishing priority actions to reduce carbon emissions. The taskforce became a climate assembly and the first meeting in the new format will take place in June 2021.[14] The climate assembly will play a significant role in shaping the Council's approach to tackling climate change, and therefore energy transition, within the city. As a starting point BCC contracted a baselining exercise (completed in June 2020) and conducted policy sandpits to identify carbon reduction interventions for the R20 Action Plan, with findings presented to BCC full council in September 2020. R20's interim report noted the importance of anchor institutions in driving change in the city and recognised them as having a key role in delivering city-wide change.

The role of the Planning and Development team

The bulk of BCC's energy transition work sits within the planning and development team, which covers planning policy and Section 106, sustainability policy, transport policy and economic policy. The Council recognise the importance of aligning these elements to achieve energy transition, and decarbonisation more broadly. However, the question of how to interweave the Council's desire to create a more inclusive economy while also taking more radical action to achieve zero carbon and a green and sustainable city, is one that is only now being explored in more detail.

The focus of the deep dive: the challenge of scale in Birmingham's energy transition

The majority of Birmingham's climate-focussed projects have not deeply impacted the local economy (due to their small-scale nature), and the city is still in the process of embedding community wealth building. However, with the advent of the R20 taskforce and the advance of community wealth building principles within the city via the Anchor Network, there is increasing opportunity for the city to build climate and community wealth building into its work on local economic development. In our view, this will be crucial to achieve the scale required for Birmingham to meet its decarbonisation targets, not only utilising the local strength and market-shaping powers of the city's anchor institutions, but democratising the benefits of the growth of green industry and the changes it will make to Birmingham's citizens.

As such a large local authority, scale is one of the most significant challenges BCC faces in meeting their targets around climate change. At present, the Council only has direct influence over 8% of the city's total emissions.[15] It is

currently undertaking a range of interventions to progress decarbonisation within the city as a whole, and as energy transition is such a broad subject it is beneficial to limit the scope of this deep dive. As such, the following pages explore the strengths, weaknesses, opportunities and threats of Birmingham's current work and context in enabling a community wealth building approach to delivering energy transition at scale. The findings focus on energy generation and reduction, and the potential of generative businesses and energy projects in delivering the interventions and technologies needed.

Birmingham in context: where are we already seeing community wealth building?

Birmingham's climate and local economic development projects already focus heavily on the importance of **anchor partnerships**. BCC's Decarbonisation of Heat project aims to scale out interventions through connection to the city's large public sector organisations, with hopes to align their procurement and legal framework, and collaborate to attract finance and achieve economies of scale to decarbonise heat across the city. The East Birmingham Inclusive Growth Strategy (EBIGS) specifically mentions working in collaboration with the Anchor Network on macro-opportunities such as recruitment schemes, social value and land and property, and will rely on partnerships to achieve its goals as BCC resource for the scheme is limited.

The EBIGS has a core focus on developing new businesses in East Birmingham. While the project is currently in its early stages, this is a significant opportunity to advance the **democratic ownership of the economy** in relation to energy transition. Alongside support for new start-ups, EBIGs is also exploring the potential to support the development of co-operatives in East Birmingham, and the USE-IT2 project will be particularly focussed on developing new VCSE sector organisations and linking them to contracting opportunities.

Community wealth building is already being used to investigate the connection of local people into jobs with anchor institutions such as West Midlands Police, and University Hospitals Birmingham, supported by the Birmingham Anchor Network. The EBIGS has explored a similar partnership between South and City College and Bourneville Village Trust (BVT) (an East Birmingham housing association). This partnership would offer training for local people around retrofit and link this into BVT's efforts to retrofit their stock (contributing to the **fair employment and just labour markets** pillar of CWB, and utilising anchor institution **procurement** to support the creation of good jobs). This stream of work has not been fully developed, but is a good example of how the principles of community wealth building could be used to build skills in the local community to take on jobs enabling energy transition, and the role anchors could take in procuring from local providers, employing local people.

SWOT Analysis

A number of factors have been identified as central to establishing a community wealth building approach to scaling energy transition in Birmingham.

These are:

- **Current and legacy projects and approaches** – what projects are happening/approaches being used which offer opportunity for the alignment of energy transition and community wealth building, and what projects/approaches exist which contribute/ create challenges in implementing a community wealth building approach to energy transition.

- **Anchor and community partnerships** – who the local anchors are, how they are currently using their power and how they are connected, and how the community/other stakeholders are involved.

- **Delivery capacity and local knowledge** – what local supply chains exist, and where are there gaps in the market, to enable energy transition, how much knowledge and capacity is in the local area which could enable the development of a community wealth building approach to energy transition.

Current and legacy projects and approaches

There are currently three key projects which are working to scale energy transition in Birmingham: the EBIGS, the decarbonisation of heat project (DoH), and the Birmingham District Energy Company (BDEC). In this section we will explore the strengths, weaknesses, opportunities and threats faced to implementing community wealth building principles within their approaches.

Strengths

The EBIGS has key objectives "to deliver growth and to bring forward the key interventions to enable local residents to benefit from the jobs and opportunities created. Its board will guide the delivery of growth to maximise opportunities for decarbonisation and to ensure there is a just transition to a green economy."

The EBIGS makes specific mention of community wealth building and has aims to work collaboratively with the Birmingham Anchor Network on macro-opportunities such as recruitment schemes, social value and land and property. This lays a strong foundation for the adoption of community wealth building principles and practice within Birmingham's work on local economic development, and also frames it within the context of the transition to a green economy.

The DoH project, funded by BEIS, is currently entering its second phase of work, having established the key interventions which would have the most significant impact on the decarbonisation of heat within the city (widescale rollout of ground and air source heat pumps, retrofit and adapting planning guidance). Partnerships and collaboration with local anchors to scale up interventions is central to this piece of work, with the acknowledgement that the alignment of legal and procurement frameworks will be necessary to achieve this.

Weaknesses

At present, the EBIGS has not made a specific connection to the creation of green jobs, with a broader focus on entrepreneurialism at large. The potential of the local, generative economy in meeting the city's needs around energy transition is also something that has so far been largely unexplored by the city, as BCC relies heavily on larger corporate partners and contractors to deliver projects.

One such example is that of the BDEC, a district energy network established in 2006 by BCC and ENGIE to provide heat to a group of local anchor institutions within the city centre. The scheme has the potential to support energy transition for these local anchors (and more broadly), but faces significant challenges as it is currently gas powered. As it is under private ownership and subject to a 25 year contract, BCC have limited influence over its decarbonisation, although work has been done to push ENGIE to develop a decarbonisation plan. Significant energy is being put into developing a solution to this challenge, but this example illustrates the difficulties of adapting legacy infrastructure to the city's needs, particularly when it is under private management.

When considering the potential of a more generative solution to this problem, such as a municipal enterprise, the city has explored the potential for municipal energy and water companies in the past, but competing priorities and concerns around finance led to the ideas being shelved.

Opportunities

The key question for both the EBIGS and DoH projects is: what sort of organisations do they want to deliver Birmingham's energy transition, and how can they encourage them to establish and develop? Through a community wealth building lens, these organisations should be local and preferably worker owned, in order to be capable of achieving deep carbon savings and retaining the benefits of anchor institution spend on energy transition within the local economy. Where larger organisations are necessary, social value must be maximised to ensure the local community benefits as much as possible from work done to enable energy transition.

While the EBIGS has not aligned its ambitions around developing new jobs and businesses in East Birmingham and the city's efforts around decarbonisation, there is a significant opportunity to do so. This could be particularly useful in framing community wealth building driven approaches to energy transition and how they could then be scaled up across different parts of the city.

There is also an opportunity to align the EBIGS work, the DoH project and the Anchor Network to support the development of local supply chains, utilise anchor procurement to support the development of local businesses, and apply interventions to decarbonise heat at scale. As the EBIGS work and DoH project are still at the start of their journeys, the two projects are still early enough in their development to draw some concrete links between them. There is also potential

to tailor social value requirements for contracts delivering energy transition interventions, to ensure local communities benefit. Again, as projects are still within their early stages, BCC and other anchors progressing energy transition have the opportunity to build this into their commissioning and procurement approaches.

In addition, while BCC has previously explored the potential of municipal companies and have not progressed the idea, there may be opportunity now to investigate the potential of such companies in delivering interventions around energy transition – such as retrofit, fitting ground and air source heat pumps, or delivering renewable energy generation (see Gateshead Council's approach to district heating in Part 3 of this toolkit).

Threats

Currently the city's projects and approaches do not pose any threats to adopting a community wealth building approach to scaling energy transition. However national policy acts as a significant barrier to progressing the agenda. In particular, BCC are hampered by current national planning policy. Tackling energy transition at scale within Birmingham will require developers to meet the same standards of decarbonisation as BCC. However, at present, requirements that developers meet the city's guidance are not backed up by government policy. This means that many developers then refuse to meet this guidance once they have become a preferred provider.

In addition, BCC is limited in its ability to require ENGIE to decarbonise the district heat network as there is currently no regulation stipulating such schemes to make efforts to decarbonise, and such legacy infrastructure is limited in its ability to supply renewables (such as hydrogen, one solution the Council is currently exploring).

Construction and mains power make up over 50% of emissions from the Council's procurement activities (which are the largest emissions source for BCC's Scope 3 emissions and the total Council footprint). This is greater than BCC's combined Scope 1 and 2 emissions, so addressing these areas are of key importance in scaling energy transition and enabling the Council to meet its targets.

Partnerships

Birmingham has many key local anchor institutions, some of which are involved in the Birmingham Anchor Network. The power and buy-in of these anchor institutions will be crucial if the city is to build a collective and city-wide approach to energy transition. Taking a community wealth building approach to scaling energy transition would mean co-ordinating approaches to procurement, both facilitating economies of scale and maximising social value to advance local training, jobs and skills in sectors enabling in energy transition. It is also well understood that for energy transition to be adopted at scale, community buy-in and involvement are crucial.

Strengths

Birmingham's Anchor Network have progressed collaboration between anchor institutions around recruitment, connecting local residents to recruitment opportunities with the West Midlands Police and linking housing association residents to employment pathways within the NHS. Beyond the Network, BCC has utilised their Social Value Action Plans to ensure contractors employ local people, provide apprenticeships and buy local if they are delivering BCC work. In construction contracts, this has included the establishment of training schemes to develop skills around particular elements of construction related to the project being undertaken. BCC also offer apprenticeship and graduate schemes for various areas of work.

There are also some strong examples of good practice around social value among the city's anchors, with Pioneer Housing requiring local businesses to take on local trainees as part of their procurement processes, and University Hospital Birmingham NHS Trust having strong links to local suppliers for small contracts.

Birmingham also has the advantage of hosting a range of significant anchors which have expertise in, and are applying initiatives to progress, energy transition:

- Aston University's EBRI programme supports SMEs in reducing their emissions, and acts as a hub for research on bioenergy.
- University of Birmingham's Birmingham Energy Institute is working closely with Tyseley Energy

Park[16] to build the Birmingham Energy Centre[17] and develop the Birmingham Energy Incubation Hub.[18] A core principle of this work is to scale up the energy system solutions developed by University of Birmingham and Tyseley Energy Park to benefit the surrounding communities in east Birmingham.

- University Hospitals Birmingham NHS Trust have already implemented solar arrays on their sites, with the potential for more schemes due to the variety and scale of their property.

In addition to the ways in which anchor institutions are already contributing towards community wealth building and energy transition within the city, there are several initiatives which are developing community involvement in relation to energy transition. The R20 taskforce is one way in which the city has started to 'bring people with them', by involving a range of stakeholders in shaping the city's decarbonisation plans. Alongside this, the East Birmingham Community Heat Taskforce is advocating for greater connection between the city's communities and BCC's plans and projects around decarbonisation. The EBIGS has also made efforts to bring the community with them in shaping the scheme's strategy, having opened it to consultation with the community for nine months.

These movements towards greater community engagement and encouraging participation are certainly strengths in developing an approach to energy transition at scale, and would be central to a community wealth building approach.

Weaknesses

Although there are good examples of the ways in which anchor institutions are using their procurement and social value to develop jobs, these initiatives have not yet been aligned to support the development of the kinds of organisations that would provide the work or skills needed to support energy transition (from skills in green construction, repairs and maintenance, to auditing, project management and "soft" skills supporting householders through the retrofit process). While there are clearly strong partnerships within the city, broader collaboration around initiatives such as those being investigated by the DoH project will be needed to scale energy transition.

Opportunities

All of the strengths outlined above have the potential to develop into a far more comprehensive approach to delivering a community wealth building approach to energy transition at scale, particularly by linking anchor procurement, business support and the transition to a green economy. The involvement of the community in the EBIGS presents a particularly pronounced opportunity, as communities engaged in such a programme could be supported to engage with the decarbonisation of heat work happening in the city and developing businesses and projects which could meet the EBIGS's goals around centring east Birmingham as a hub for decarbonisation in the city.

So far, the Birmingham Anchor Network has not done a great deal within the area to advance the socially productive use of anchor land and assets. Across the city, there is significant opportunity for anchors to utilise their land and assets to support the development of initiatives such as community energy projects (for example, work by Community Energy Birmingham), and anchor institutions have shown an appetite for this type of project. Pioneer Housing identified land which will be close to the route for HS2 which would not be appropriate for residential development, but could be used for other purposes, such as energy generation. Support would need to be provided to enable existing community energy groups to develop the capacity to deliver projects with anchors. BCC, or even the EBIGS project, could explore providing business support, relationship brokerage, and support accessing funding (where possible), alongside supporting the development of new businesses which could support the delivery of energy transition initiatives.

Aston University and University Hospital Birmingham NHS Trust also expressed interest in supporting the development of community energy projects using their property, in comparison to more corporate approaches to such projects which they would be less inclined to explore. This was because the "community element" of such a scheme is more likely to appeal to them. Identifying anchor property and land which could be used for renewable energy, and connecting community energy projects with anchors to advance the development of renewables within Birmingham, would both build community wealth and progress energy transition within the city.

In addition, with the city's anchor institutions holding a significant amount of property and housing in need of retrofit, and other forms of interventions to support energy transition, there is a significant opportunity to build an approach which supports the use of local businesses to deliver such programmes of work. Aston University may have the potential to support the development of such small businesses, in connection with their current SME support, which could then be connected to local anchor procurement.

There are also opportunities to align anchor work around the creation of employment with goals focussing on energy transition. For example, BCC's graduate and apprenticeship schemes could be more targeted to develop the skills required to enable decarbonisation (as outlined above), and social value requirements around employment could specify the need to train staff in green construction methods.

Threats

Within the context of partnerships, there aren't a huge number of threats to the community wealth building approach to scaling energy transition within Birmingham. However, the question of community involvement could present a challenge. A community wealth building approach to energy transition can only be successful with significant engagement from the community. "Taking people with them" is a core challenge BCC will face in progressing this agenda, as there is currently a cultural expectation within most groups engaged in the Council's R20 work that they alone will deliver what's needed to achieve energy transition. Building awareness within the city's communities, and enabling people to take action to support a community wealth building approach to energy transition is crucial to its advancement in the city.

Capacity

Birmingham's ability to deliver a community wealth building approach to energy transition at scale relies on, not only organisational capacity (including staff knowledge and understanding of the interventions required for the energy transition), but also delivery capacity.

This includes local supply chains and the ability of local businesses to deliver the measures needed to achieve energy transition, such as retrofit. The business landscape is shifting and changing as national priorities around energy transition become clear, and there is an opportunity for Birmingham to grow local generative businesses so that they can make the most of the opportunities which will arise through the city's transition to renewable energy.

Strengths

Anchors within the city are already undertaking studies to investigate the feasibility of new projects to advance their approaches to energy transition, particularly in relation to their stock/buildings. Pioneer, for example, are undertaking a project to establish a detailed analysis of energy usage and measures required to reduce it within their properties. This work will enable Pioneer to understand the key measures they need to introduce across their stock.

Weaknesses

According to the DoH's initial baseline exercise, a significant challenge to the implementation of scaling up the project's interventions is the current lack of supply chains available to manufacture and deliver what is required. In east Birmingham there is significant potential to tackle unemployment through the creation of good jobs in the fields of manufacturing and construction. However, courses and education programmes required to move people into such jobs are not currently available. Within the city there are postgraduate degrees in such subjects as hydrogen tech, but there are no apprenticeship level or City & Guilds qualifications which could enable people to develop the skills needed to deliver green technologies, such as installation, maintenance and repair of ground and air source heat pumps, energy auditing or retrofit project management. Part of the challenge in this sphere is the current lack of data which could enable BCC to profile the green skills Birmingham needs to develop within the city to deliver energy transition.

Culturally, BCC has struggled to progress its energy transition work when addressing its own emissions. Staff within the Council do not have fundamental knowledge around energy transition which could enable BCC to make faster progress in decarbonising its own assets and integrating energy transition and wider decarbonisation objectives into its broader work. Progressing energy transition is still something that is held by a "champion", and there is a heavy reliance on a small group of people to deliver upon the Council's objectives.

Within the city, there are some very strong teams or directorates within anchor organisations demonstrating good practice around energy transition. However, these are pockets of good practice, and the Council is still seen as the core source for change around energy transition. This is problematic due to the Council's limited, and receding, resource and capacity: the need for other organisations and groups to work in support of the Council's aims and objectives is becoming ever more apparent. A central example of this is the limited resource allocated to the EBIGS, a programme of work covering a quarter of a million people for 20 years, with one person assigned to it. Funding is necessary to develop a business case to access external resource to increase capacity, and in an environment of scarce local authority funding this presents a challenge.

Capacity and knowledge among community groups which are trying to address energy issues is also limited (particularly with regards to how to work with/supply anchor institutions); and anchors often find them difficult to deal with due to their lack of business planning, resilient business models, or poor grasp of technologies. There is a need for support for enthusiastic groups, and the development of different models which are viable. These will need to be communicated coherently to anchor institutions if community businesses or projects are going to play a role in the city's energy transition.

Arguably one of the most important elements when considering capacity is finance, which is a significant challenge when addressing energy transition. The development of commercially viable models which can be financed is difficult in the current environment, which explains the heavy reliance on 'pilot' projects which have not been delivered at scale. For example, for BCC there is an unfortunate trade-off in the delivery of Passivhaus properties, as in delivering better homes (which cost slightly more to deliver), and it is delivering fewer of them. In addition, for BCC to access funding for new projects there is a need to consistently be on the front foot, as national government funding is challenging to access and tends to favour local authorities which have schemes already fully developed and ready to roll

Opportunities

With regards to shaping supply chains and increasing capacity within the city, there are opportunities through anchor institutions work to advocate for the creation of training and courses to build the skills and workforce needed to deliver energy transition interventions. This could include partnerships like that explored by South and City Colleges and BVT to train people in retrofit.

Small businesses delivering interventions such as retrofit, or fitting ground source heat pumps, could be supported to take up small-scale tenders (under £25k) using anchor procurement and encouraging generative businesses to apply (as anchors can work based on three quotes for values under £25k). Using sub-£25k contracts could also mean anchors would be more willing to "risk" working with a new supplier, giving new businesses a step on the ladder, building experience and credibility, and increasing their likelihood of winning additional work. Lotting contracts would also enable smaller businesses to bid and take on work they have capacity to deliver, alongside requiring developers/ large contract holders to sub-contract locally wherever possible.

While capacity within the EBIGS project is a challenge, BCC's current approach to the delivery of the EBIGS does demonstrate an opportunity to advance the cross-pollination of ideas and integrate priorities. The East Birmingham Rapid Policy Unit (RPU) consists of a group of City Council officers and combined authority officials who work together as a virtual team. This team is intended to expand as the project progresses, with a specific focus on bringing in people who have expertise in areas such as skills and education, low carbon and transport. The intention of this team is to prevent silo'd working and promote the cross-pollination of ideas to support new ways of working. Each person working on the team has a designated amount of time committed to the project, enabling them to both work on the EBIGS programme of work and continue their core role. The multi-disciplinary element of this will mean that programmes of work with many elements will be developed holistically, with a well-rounded perspective on how intersecting areas could be expanded. The ambition of the group is to integrate academia, policy professionals, delivery professionals and the community, so there is opportunity to think, test and analyse the programmes of work to support improvement.

This cross-departmental approach to project delivery creates space for a climate element to be interwoven amongst the various programmes of work.

Threats

While anchor institution procurement could be utilised to build capacity and support the development of local supply chains, its ability to do so is limited by the perceived risk of taking on new, small, unproven organisations to deliver work (particularly if it is being delivered using public money). Among the city's anchors, there is a clear desire to involve local, generative businesses in their procurement, but the benchmarks that such a business would be expected to meet would be incredibly challenging to achieve without a track record of delivery. Concerns around the 'risk' of procuring from a new business would act as a barrier to entry for many generative businesses which could deliver interventions such as retrofit.

The mitigation of this risk might be achieved by enabling new organisations to have a lead partner with a financial track record which could vouch for them as a new community business. There is space to consider the creation of more innovative opportunities and arrangements to enable community businesses to overcome procurement requirements, but BCC in particular would be under significant scrutiny and receive criticism if it did not meet the Council's own financial and audit regulations.

If such avenues are not explored, energy transition within Birmingham will likely be delivered by large corporates with a national footprint, rather than businesses which could locally employ those trained to work in green industries, retaining the benefits of the money spent on energy transition in the city, and also the skills needed to apply interventions at scale.

In addition, when considering finance and community-owned business or projects, community groups delivering energy transition (such as community energy projects) may be able to lever in additional funding to support the development of such projects, which BCC or other anchors would not be able to access. Thinking creatively about finance will be crucial to scale energy transition, and utilising the various avenues to acquire funding through community-owned businesses would be a way to access finance through organisations which build community wealth.

Measuring impact

Measuring the economic, social and decarbonisation benefits of different interventions will be crucial in implementing a community wealth building approach to scaling energy transition.

To date, BCC has struggled to measure the economic impact of climate projects due to their limited scale. Demonstrating the generation of social value within these projects has also been challenging.

Of the projects explored, EBIGS had the clearest approach to measuring economic, social and environmental impact. Core areas of focus are:

- How many homes are created through the project and how many of these are affordable?
- How many jobs are created and whether they pay the Real Living Wage?
- Measuring impact on deprivation (with an aim to lift east Birmingham to at least the national average in terms of deprivation by 2040).

In addition, the project has ensured its measurement of environmental impact is aligned with R20's overall approach. The project is seeking funding for additional monitoring, with the hope of developing a longitudinal study to drill into the social impact of the project.

In terms of addressing inequalities, EBIGS places tackling deprivation front and centre. EBIGS' approach offers an opportunity to tackle unemployment and deprivation within east Birmingham, potentially through retrofit, green manufacturing and other green jobs, alongside supporting entrepreneurialism and community- and worker-ownership of businesses. This would have a significant impact on addressing inequalities if green jobs and community/ worker-owned businesses met community wealth building standards, with good terms and conditions and the Real Living Wage.

Birmingham's EBIGS project has demonstrated that, in this instance, it is easier to integrate climate into projects focussing on economic development, rather than integrating economic development into climate-specific projects. This is vital learning for those seeking to advance a community wealth building approach to energy transition – local economic strategy should seek to weave climate throughout in order to ensure approaches to local economic development are both socially and environmentally just, and also seek to build community wealth.

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17. The centre for UoB's R&D around energy innovation and supporting the development of new technology at scale.
18. Providing office and workshop space for businesses to work as part of a group of wider stakeholders and access the Park's research.

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