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Project report

Pathfinder Places Programme

Creating a Market for Place-based OutcomeS (CAMPOS)

Project partners:

Energy Capital at West Midlands Combined Authority

Bankers without Boundaries

Dark Matter Labs



Executive summary



- Project CAMPOS Phase 1/Feasibility has found significant potential interest in developing effective mechanisms to lever additional outcomes-based finance into Net Zero Neighbourhoods from both funders (outcomes buyers) and community partners (outcomes generators and citizens).
- Combined with other forms of finance (including grant and private finance) it appears that outcomes-based finance could provide meaningful contributions. We would expect the role of outcomes-based finance to increase over time. For example, carbon credits could provide between 10-20% of retrofit in the short-term, with health and other outcomes following in the medium to long term as the market matures and monitoring and investment logics become more sophisticated.
- To focus our resources, we explored the potential for outcomes-contracting within the domains of carbon reduction, energy system stability, positive health outcomes and mobility-related benefits. We found that carbon provided the strongest short-term case for net additional investment, with the other areas showing some potential, but requiring more work to unlock.
- The challenges of this work include the diffuse and entangle nature of some of the outcomes, and the resulting uncertainty around the investment logic. Furthermore, the cost of monitoring the outcomes must be reasonable. Whichever outcomes become monetised, it will be important to retain the wider concept that a multi-functional investment in place will compound the benefits and resulting outcomes. Hence we expect that outcomes buying itself could become stacked over time.
- We undertook significant engagement with over 50 people and organisations as part of this work. We were successful in introducing the concepts and terminologies to key regional stakeholders across the generating and buying space as well as community organisations and citizens. All parties were interested in further genuine collaboration to ensure that the design reflected the needs of each stakeholder and had the buy-in and support of local communities)
- We built a number of open-source resources that can be used by stakeholders across the UK and will shortly publish this work more widely.
- We recommend proceeding with Phase 2 to test and implement outcomes-based financing as a highly innovative way of extending and increasing much needed investment into our neighbourhoods and homes. Within this phase we would set out the business cases for investment, contracting, participation and monitoring mechanisms for actual way in which money can flow. This would include consideration of a Regional carbon offset platform, regional grid constraint investment programme and a regional health impact fund. We would also consider further development of other metrics associated with Net Zero Neighbourhoods such as skills and jobs and climate resilient communities.
- We have identified a number of early candidates for neighbourhoods and projects where this approach could be tested, including those already undergoing investment by WMCA and other public bodies.

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1. Introduction

This section sets the context why it is necessary to explore the feasibility of outcomes based financing solutions for the West Midlands. It provides an introduction to what we mean by outcomes and will define the terminology we will use throughout the report as well as the project approach

- The problem statement
- What do we mean by outcomes & outcome buying
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- The role of the citizens of place

The problem statement

The place-based funding model



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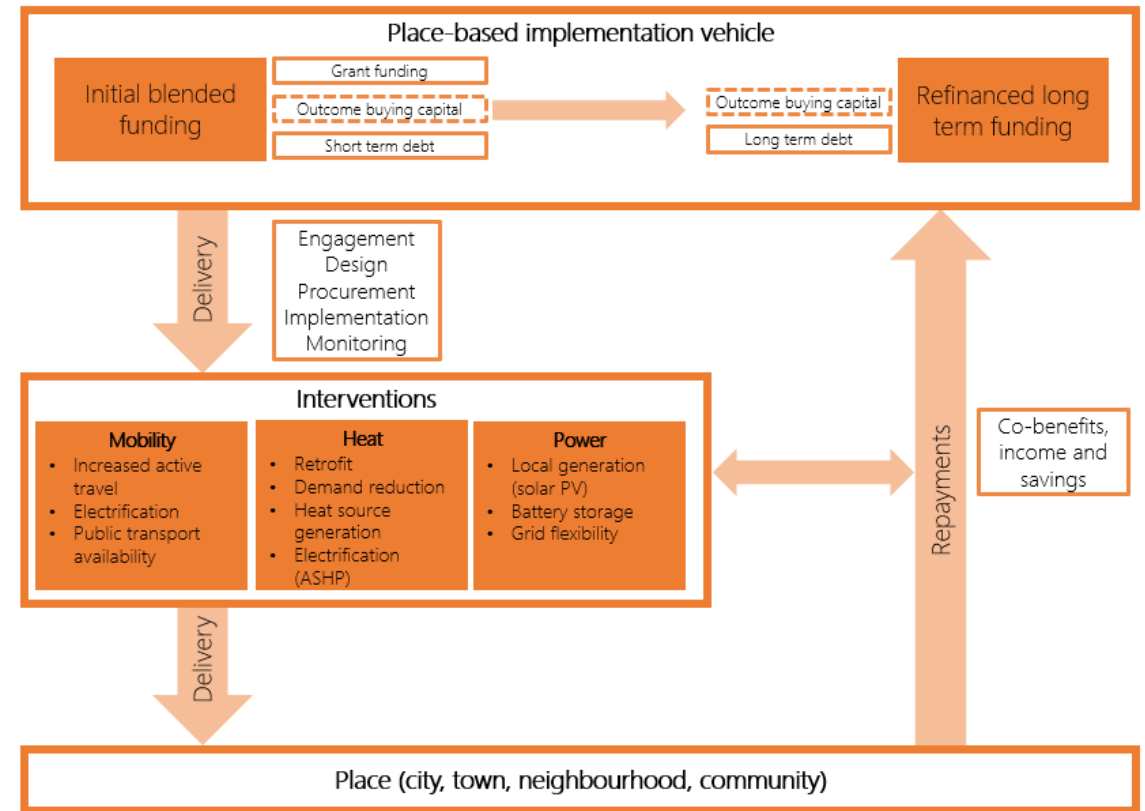
WMCA have been working on a number of place-based designs to transition the region to Net-Zero; these include Smart Local Energy Systems for Rugeley and Coventry and Net Zero Neighbourhoods across the region.

As these designs move into delivery phase, a common barrier is evident - lack of financial return making building business cases increasingly difficult resulting in a significant **funding gap**.

The blended funding model that underpins many of our place-based designs proposes three sources of capital – grant funding, private sector capital and **outcome buying capital**.

The purpose of this study is to explore the **feasibility of the outcome buying capital stack** to determine whether it is significant enough and can be viably contracted to help us bridge the funding gap.

The findings will help us Create a responsible Market for Place-based OutcomeS (CAMPOS) in the West Midlands that promotes accountability and transparency.



WMCA's place-based funding and delivery model



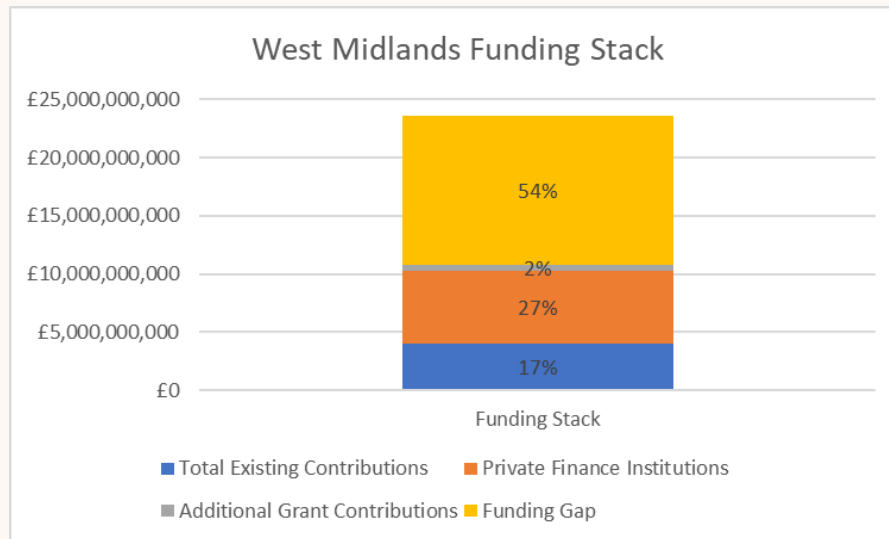
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The problem statement

The funding gap explained

Early modelling of the West Midlands region suggests that of the £23.6bn total retrofit investment required, c.20% could be supported by grant funding (both existing and future), while c30% could be raised from commercial capital. This leaves a **c.55% funding gap**, which we would look to narrow by investigating the **feasibility of outcomes-based financing**. Furthermore, the remaining requirement for public subsidy could be supported by improved **outcomes baselining & measurement** which would improve the business case for further public spend.

Illustratively, early feedback from one retrofit carbon credit provider suggests that **20%** of the cost of retrofit could be recouped via credit sales. While these are still early stage indications, this gives us encouragement that there is potential for the funding gap to narrow significantly through an effective **Outcome Buying marketplace**.



The retrofit funding stack for the West Midlands

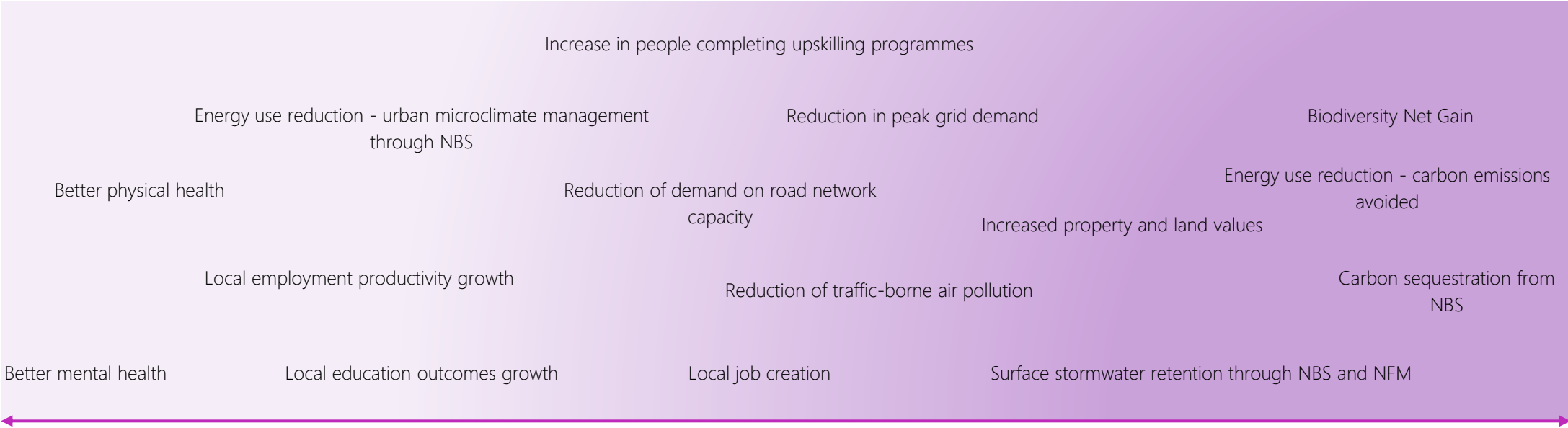
- **Total Existing Contributions** = Existing grant contributions (SHDF, HUG & LAD allocations across the West Midlands) including match funding
- **Private Finance Institutions** = The portion of the funding stack that could be raised from commercial capital, supported by recouped energy savings. Our modelling assumes 16% social housing in the West Midlands, all of which undergo deep retrofit. The remaining is owner occupier/privately rented, of which we assume 25% is fuel poor. We model fuel poor homes undergoing deep retrofit, with the remainder undergoing less disruptive retrofit.
- **Additional Grant Contributions** = Assuming the West Midlands receives 7.5% of the government's plan to spend £6bn on energy efficiency over 2025-2028, aligned with the % of fuel poor houses in the region.

What do we mean by outcomes?

In the context of an outcomes-based buying or contracting, an **outcome** refers to a specific result or achievement that is desired or expected from the execution of the contract. It represents the **intended impact or benefit** that the contracting parties aim to achieve through their collaborative efforts.

Unlike traditional contracts that focus primarily on inputs or activities, outcomes-based contracts place greater emphasis on the desired outcomes and the value they deliver. The contract specifies the desired outcomes as the primary objective, and the parties involved work together to define measurable indicators or performance metrics that will determine the successful achievement of those outcomes.

Through our analysis we have set out place-based transition outcomes below. These tend to fall on a spectrum based on characteristics that made them more or less straightforward for outcome buying.



'Soft' outcomes:
 Difficult to quantify
 Complex causal relationships

'Hard' outcomes:
 Easy to quantify
 Easy to prove direct causation and/or additionality

What do we mean by outcomes buying?



- Almost every financial transaction seeks an outcome in exchange for money.
- By way of example, within retrofit, the government funded grant programmes seek 'installed measures' as the defined outcomes. Typically, these are physical interventions such as external wall insulation or solar panels.
- We know that implementing retrofit measures such as those required to build a net zero neighbourhood will result in a wide range of social, economic and environmental outcomes which themselves have value.
- This value (also known as 'co-benefits') may be recognised either directly (e.g. Payment by results contracts) or indirectly (e.g. In public sector 'Green Book' business cases) or not at all.
- The value and outcomes have a spectrum of weak to strong correlations and causations and a complex set of interactions. In other words they are 'entangled'.
- Within this work we are seeking to broaden the scope of outcomes in order to attract additional finance that otherwise wouldn't be available.

Pros of outcomes-based buying:

- Can unlock additional finance particularly in the 'prevention' of issues rather than treating the problem once it has manifested
- Results-oriented rather than task or milestone focused
- Can help to break out of 'siloed' budgets and approaches
- Flexibility to allow service providers to choose and innovate on how they might meet the outcomes
- Risk sharing among different roles
- Can result in better performance

Cons of outcomes-based buying:

- Complex measurement and evaluation which also creates additional set up and monitoring costs (especially understanding the counterfactual)
- Risk of gaming or manipulation to achieve outcomes without delivering intended results. Might require additional monitoring and oversight.
- Innovation might be hindered by definition of outcomes
- Creates more risk for service providers as is novel and uncertain

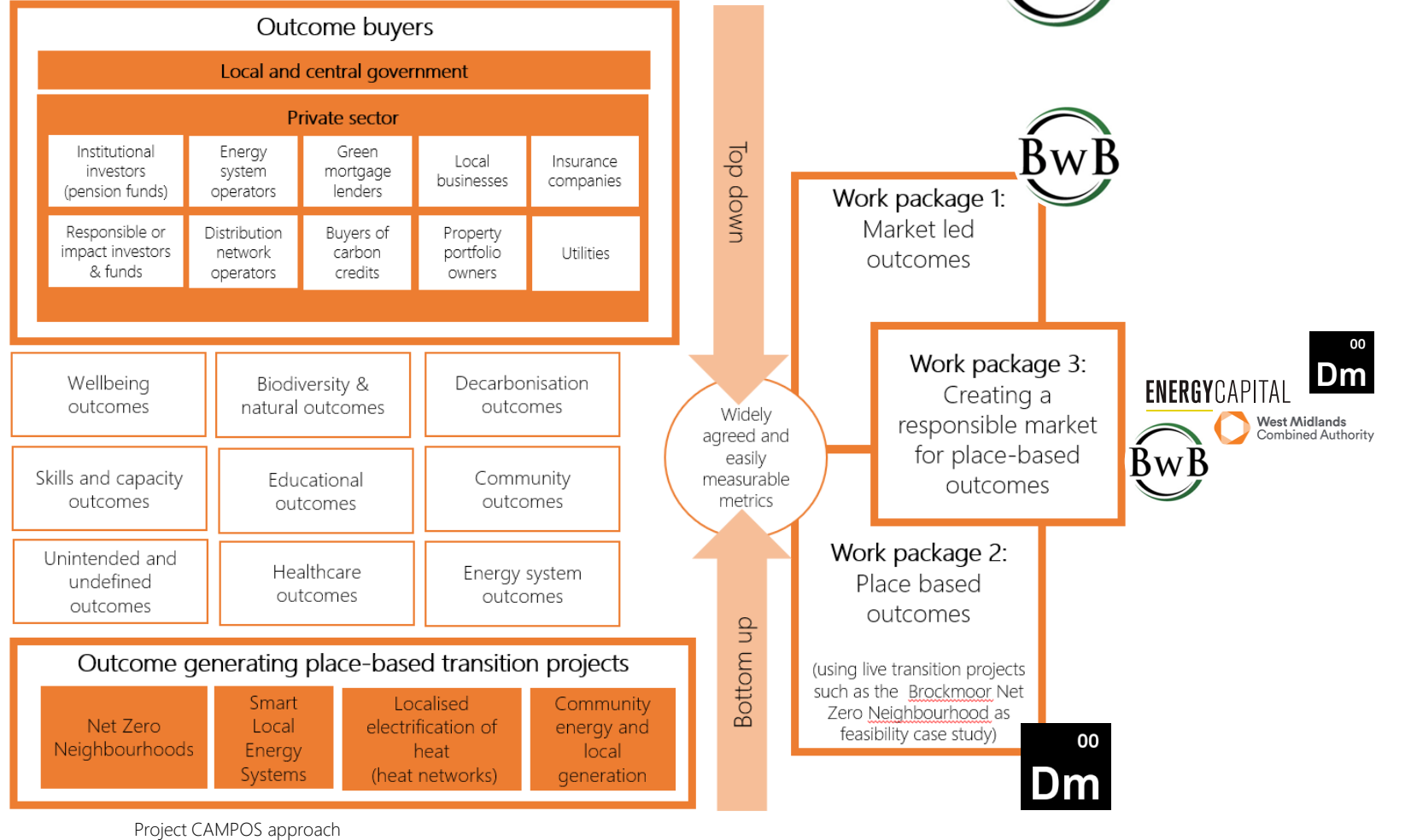
Project approach

What we want to achieve

This feasibility study looks to address this challenge by investigating a mechanism by which the myriad of **co-benefits (or 'outcomes')** that arise from place-based Net-Zero interventions can be mapped, quantified and fed back into **business cases for place-based delivery.**

There are 3 main stakeholders to consider in this project:

1. Outcome buyers
2. Outcome generators
3. Citizens of place



Project CAMPOS approach

Project approach

Introducing the terminology

In this work we will be introducing and using a number of terms that are defined below:

Term	Explanation
Projects	Specific interventions that a typical place-based transition might expect to involve, such as home and workspace retrofit, green space upgrades, tree planting, active travel and EV infrastructure, renewable generation projects.
Outcomes or Co-benefits	Possible benefits and co-benefits are generated based on the above projects, along key categories of environmental outcomes (carbon, water management, biodiversity), social outcomes (health, skills, community building), economic outcomes (job creation and productivity) and infrastructural (mobility, energy systems).
'Hard' outcomes	Outcomes that are easy to quantify and are relatively straightforward to prove direct causation and/or additionality
'Soft' outcomes	Outcomes that are difficult to quantify and have complex causal relationships
Citizens or Citizens of place	The people who live in, work in and/or move through the places where projects are located
Commissioner	The party whose responsibility it is to monitor and validate the generation outcomes.
Beneficiary	The party who benefits directly from a specific outcome
Outcome buyer	Actors that may be willing to pay for the achievement of certain outcomes
Outcome generator	Those implementing projects and creating outcomes (these can be local authorities, community groups, care boards, transport companies etc)
Emergent	Outcomes that are not pre-determined or fully defined but evolve and emerge over time
Entangled	The interconnected and interdependent nature of place-based outcomes which can make it challenging to isolate and predict causality
Metrics or Indicators	Ways of measuring to determine the quantity of outcomes generated (e.g comparing energy use with projections based on historic energy usage)
Financialisaton	The ways in which measurable delivery of an outcome can be turned into funding for a project, such as using financial instruments (e.g. biodiversity credits), or sharing avoided future costs (e.g. a water company investing in SUDS).

Project approach

Project activity

Phase 1: Feasibility (£75,000 over 3 months)

Work package 1 (WP1): Market led outcomes

Who could be buyers of outcomes generated in the West Midlands?

Research activity:

1. Market assessment of outcome buying sector

Engagement activity:

1. Initial engagement with buying sector via webinar
2. Demand testing with buying sector via detailed interviews



Work package 2 (WP2): Place led outcomes

How and where is the West Midlands generating outcomes in its transition to Net Zero?

Research activity:

1. Synthesis of existing work
2. Assessment of outcome generation in the West Midlands
3. Investigating role of the citizen

Engagement activity:

1. Demand testing with generating sector via workshop
2. Demand testing with citizens via workshop



Work package 3 (WP3): Outcomes propositions

What could outcome buying contracts look like for the West Midlands?

Design activity:

1. Establishing key terms & definitions
2. Creating a 'Long List' of outcomes to frame initial research activity
3. Revisiting the problem statement after initial research & engagement
4. Establishing a 'Short List'
5. Designing outcomes propositions for the West Midlands



Phase 2: Demonstrators (up to £5mn over 21 months)

Work package 1: Framework for baselining, quantification, measurement and verification of outcomes to ensure evidence based/data first approach

Work package 2: Detailed design of Phase 1 outcomes propositions through co-production with buyers, generators and citizens

Work package 3: Developing underlying business and delivery models feeding back into answering the question of the funding gap

Work package 4: Design of overall outcomes market and governance structure

Work package 5: Implementing framework and trialling propositions in real transition projects in the West Midlands (the Demonstrator)

Post - project

Implementation of outcome-buying contracting on place-based transition projects in the West Midlands

Regionally agreed framework in place to measure, monitor and validate outcomes



Outcomes – The Long List



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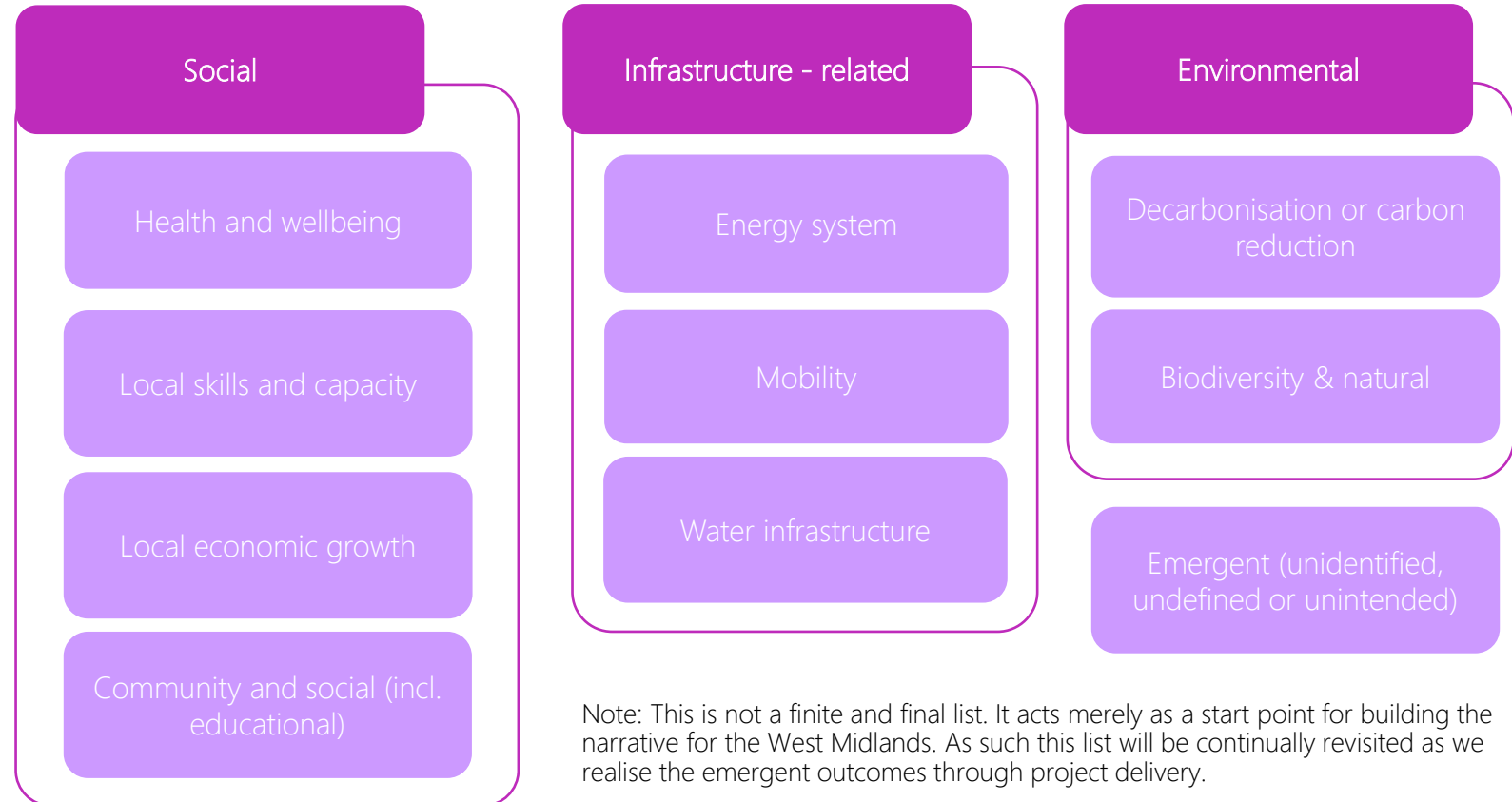


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The starting point of our research was a collective identification of key high-level outcomes that can arise from place-based decarbonisation projects.

This acted as a starting point for both the 'WP1: top-down' and 'WP2: bottom-up' work packages and helped us frame research and engagement activity and kick off the project using a whole-systems approach.

These are detailed as follows:



Note: This is not a finite and final list. It acts merely as a start point for building the narrative for the West Midlands. As such this list will be continually revisited as we realise the emergent outcomes through project delivery.



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The role of citizens of place



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When considering any place-based approaches – the role of the people who represent and make up the place (the **citizen**) should be front and centre. That is no different when it comes to thinking about the generation, measurement and purchase of 'outcomes' within the West Midlands which all depend critically on citizen buy in. For example:

- How people use energy in their homes will impact carbon savings and reduced energy demand. Rebound effects can reduce the projected energy savings of energy efficiency measures.
- Whether and how much people use active travel and low carbon transport options will also impact on carbon savings and reduced energy demand.
- Detailed and accurate data about energy use and physical and mental health and wellbeing cannot be collected without consent.

As part of a commitment to a Just Transition and creation of a **responsible outcomes buying framework**, citizens should have a transparent view on and the option to review long-term financial commitments connected to their homes and behaviours.

Understanding citizens' experience of projects like Net Zero Neighbourhoods could also bring to light unexpected outcomes that link to additional outcome funding.

What are the risks of involving or not involving citizens in an outcomes-based funding framework?

Involving citizens

- They may not be interested or have time to engage
- Appropriate governance structures can be more challenging to design and implement
- Engagement & consultation can become concentrated in the hands of a few who aren't truly representative of the citizens
- Proper engagement takes time which can become complex or costly and hold back the process

Not involving citizens

- People may refuse to participate in the programme if they perceive that outcomes buying is an extractive process that is making money off their behaviour
- Abstracting outcomes from the context in which they are created in order to monetise and sell them undermines the value of the outcome and trust in its validity

2. Market led outcomes

This section details the work carried out as part of Work Package 1 led by Bankers without Boundaries. The aim of this work package was to view the problem statement from the top down – i.e who are outcome buyers, what outcomes are they interested in, can we segment this meaningfully and what do early conversations with the sector tell us.

- An introduction to the outcome buying market
- Why we think an opportunity exists
- What can outcome buying look like?
- Potential outcome buyers in the West Midlands
- Insights and recommendations from initial engagement with outcome buyers

Work package approach

1. Market research into sector

- Establishing a long list of outcome types (9 in total), and mapping out relevant organisations that could be considered to be engaged in/interested in 'outcome buying'.
- **Output:** a long list of relevant organisations, mapped by organisation types, outcomes of interest, experience working with public sector, etc.

2. Webinar

- We then hosted a webinar on the topic of 'establishing a market for outcomes' where we were able to test our initial findings and hypotheses with a large group of market participants, and gain important feedback.
- **Output:** A webinar, and extensive qualitative and quantitative feedback on the concepts developed so far.

3. Detailed interviews

- Post-webinar we refined our hypotheses based on the feedback, honed in on four key types of outcomes (carbon, energy systems, health, mobility), and held a series of detailed interviews with relevant organisations representing each outcome type, where we came to understand in more depth the various ways outcome buying could be done, and the various actors involved.
- **Outputs:** detailed sheets; case studies on the experiences and advice of interviewees; letters of support from a number of interested parties



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Work package 1 (WP1): Market led outcomes

Who could be buyers of outcomes generated in the West Midlands?

Research activity:

1. Market assessment of outcome buying sector

Engagement activity:

1. Initial engagement with buying sector via webinar
2. Demand testing with buying sector via detailed interviews



An introduction to the outcome buying market



The Outcome Buying 'market' is not yet an established concept, nor is it an established sector or platform. It does not, therefore, consist of a homogeneous group of buyers (and sellers) with similar characteristics and requirements. Instead, Outcome Buying can be engaged in by a variety of different institutions, both public and private, with varying aims (e.g. commercial and/or driven by social values). To add to the complexity, a number of institutions may well already engage in similar activities, under different guises, while a number of others may not even be aware that they could act in the capacity of an Outcome Buyers.

As a result of this dynamic, an assessment of the market as it currently exists is important in order to achieve the following aims:

- Understand the **forms** that outcome buying currently exists as and how we can learn from them
- **Map out** the types of organisations that could be interested in Outcome Buying – incorporating a range of sectors and institution types.
- Explore with a sub-set of them whether they **already engage in Outcome Buying**, or in something similar, regardless of whether it is referred to specifically as 'outcome buying'. This is an information gathering process to gain an initial insight into what the market currently looks like, for example, by identifying any sectors where there is already innovation in the Outcome Buying space, and understanding key challenges various institutions may face when or if engaging in Outcome Buying.
- **Inform next steps:** This research will help us determine which outcomes to focus on if we can secure further funding and, subsequently, which institutions to deepen engagement with, with the aim to demonstrate the feasibility of an outcomes based market place utilising real time transition projects.

Why we think an opportunity exists

Supportive long term trends

Corporate Social Responsibility (CSR)

Long term growth in the prominence/important of CSR in the minds of consumers and businesses:

- In the UK 2/3 of companies invest in CSR programs ([NatWest](#))
- 64% of chief executives think that CSR is core to the business ([PwC Research](#))
- 85% of UK consumers more likely to support brand with 'purpose' ([Deloitte Consumer Research](#))
- British Fortune 500 companies spend approximately [£2.55bn](#) on CSR activity p/a

Impact investing/ESG

The UK impact investment market was worth an estimated [£58bn](#) in 2020.

UK-focused research from the **Impact Investing Institute** into indicates that:

- 97% of survey respondents held the view that over the past two years asset allocation to impact had increased.
- 64% predicted 10% annual growth in funds flowing to impact investments, with 36% forecasting above 20% a year.
- Healthcare, affordable and clean energy, and sustainable cities and communities are the top focus areas for investment

Shifting regulatory environment

A number of regulatory developments in the UK place increasing emphasis and stringent requirements on businesses to act in socially and environmentally responsible ways. For example:

- **Taskforce on Climate Related Financial Disclosures (TCFD):** In 2022, the Financial Conduct Authority made TCFD reporting mandatory for over 1,300 of the country's largest UK-registered companies and financial institutions.
- **Biodiversity Net Gain:** across the UK, Local Planning Authorities will now have to approve 'biodiversity net gain plans' for development work before it can start.



What does this mean?

A clear shift towards increasing prioritisation of sustainability in business and policymaking is underway. As businesses increasingly invest in CSR initiatives/sustainability more broadly, it is likely that the amount of funding that could be attracted to place-based outcomes will steadily increase in line with these trends.

What can Outcome Buying look like?

The market assessment allowed us to identify **three core types of outcome buying** and we will look to explore propositions that sit across the scale of the three:

1. Option 1 best describes many of the existing forms of Outcome Buying in the market, yet is a category that could be enhanced through the systematic baselining, collection and measurement of data.
2. Option 2 is a burgeoning space, where there is a lot of demand from corporates and where the supply side is evolving to meet this.
3. Finally, Option 3 is a more innovative development. It involves firstly mapping the outcomes from a project, then identifying who the key beneficiaries are from a commercial standpoint, before engaging those individual institutions to scope out appetite to pay for the interventions that created the outcomes in the first place (case study on the next slide).

1 Funding for specific outcomes linked to specific metrics

Incorporates specific reporting requirements for specified co-benefit metrics (though specificity of metrics can vary). Could be in the form of public grants, private sector CSR, Philanthropy



2 Via Financial Instruments

E.g. Carbon Credit Schemes, Biodiversity Credit Schemes, Retrofit Credit Schemes



3 Funding for commercially sensitive outcomes

E.g. Funding interventions that result in avoided costs in future, i.e. a water company investing in SUDS



Case study: Funding for commercially sensitive outcomes

The Greening of Mansfield

- Working with Mansfield District Council and Nottinghamshire County Council, Severn Trent are **investing £76 million** in Mansfield on a range of nature-based solutions to protect communities from flooding.
- Interventions funded include sustainable urban drainage systems, basins, planters and swales, permeable paving, and rain gardens.
- When complete, the scheme will store over 58 million litres of surface water. In real terms this means reduced flood risk for 90,000 people and the creation of 390 jobs locally, too.

Key takeaways

1. The water company has already engaged in a form of outcome buying.
2. Private utility companies are willing to pay upfront for positive environmental and social outcomes.
3. Clearly interested in a wide range of outcomes – commercial outcomes, job creation, and environmental outcomes.



[Link for more info](#)

Potential Outcome Buyers in the West Midlands

The findings from the initial market scoping of are shown here. The table shows potential buyers of outcomes generated in the West Midlands mapped across the categories in the Long List.

These could be divided into:

- Public sector buyers (often incorporating both central and local government) and
- Private sector buyers across a scale of interest and engagement with the public sector

Outcomes	Potential Outcome Buyers	
	Public Sector	Private Sector
		More accustomed to working with the public sector Less accustomed to working with the public sector
Energy System		
Mobility		
Carbon Reduction		
Health & Wellbeing		
Water Infrastructure		
Nature & Biodiversity		
Community/Social		
Local Economic Growth		
Local Skills & Capacity		

Outcome buyer engagement

The Webinar

The first part of the engagement strategy involved reaching out to the wide range of organisations identified on the outcome buyer long list, aiming to gauge which parts of the market have the most 'ready-made' interest.

We also aimed to test some of the terminology and concepts that we were using as a project team to see how potential buyers would respond. These included 'outcome buyers', 'outcome generators' and the three core types of outcome buying

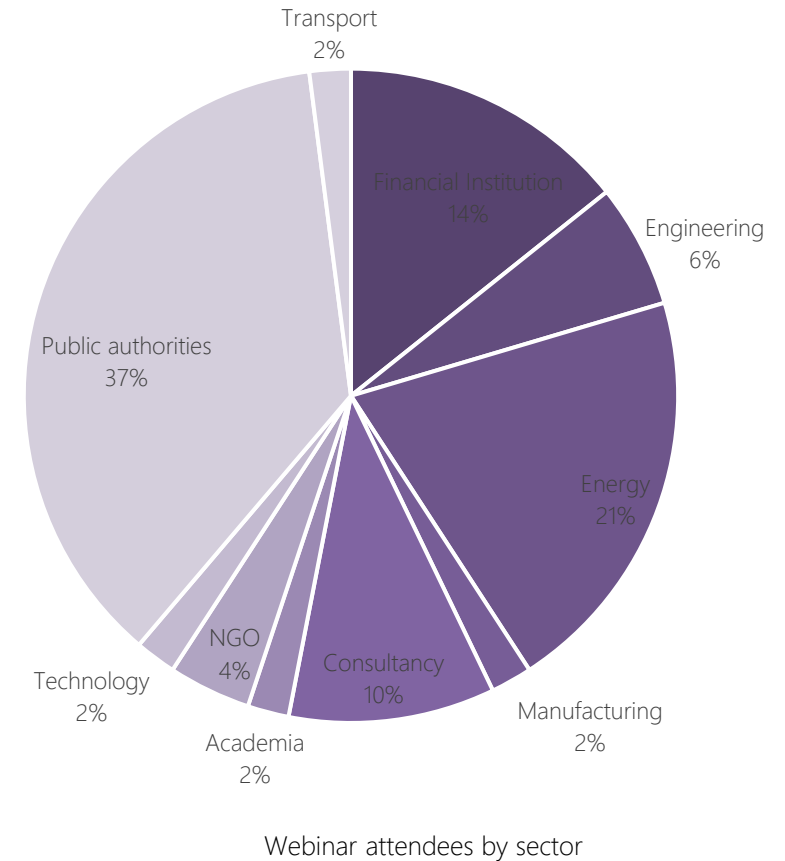
Within the private sector category, we noted that there were some institutions that were 'closer' to the public sector, i.e. used to working with public authorities in some form, versus those who were less so. This distinction came to light during the webinar engagement process, with the former category showing more willingness to engage at this early stage. For example, there was a good representation from the energy systems sector, compared to limited representation from major corporates in the West Midlands.



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Outcome buyer engagement

Insights and recommendations



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Engagement with the Outcome Buyer 'market' will be a tiered process:

There are some organisations that will have fewer barriers to entry, perhaps because they are more used to taking part in innovative projects driven by local authorities, whereas others will likely take further engagement, and potentially require further evidence of outcomes to become involved. This finding will help us define our engagement strategy going forward, and into Phase 2, partially informing the decision of which Outcomes to focus on in the first instance.

Scepticism around the role of the private sector in Outcome Buying:

Several participants, across both public and private sector, made the point that it can be extremely difficult to persuade companies to pay for things (in this case, to buy outcomes) if it is not mandated by law. As such, there was the view that there is a **critical role for government to play in creating the right environment** to encourage private sector involvement in Outcome Buying. An example was the recent legislation that requires real estate developers to demonstrate 'biodiversity net gain' associated with proposed developments, and the inflow of capital into projects that promote biodiversity that would stem from this.

Outcome buying does exist in some form, under different guises:

This includes individual examples of private institutions funding projects that make commercial sense as well as promote outcomes (e.g. Severn Trent Mansfield project), numerous examples of carbon related schemes (e.g. voluntary credits, insetting schemes) as well as broad brush public and private sector funding (traditional grants and Corporate Social Responsibility trends).

Outcome Generators should be a focus, as well as Outcome Buyers (WMCA as a convener):

A key takeaway is that many organisations consider themselves to be outcome generators, rather than outcomes buyers. In fact, we conducted a poll that suggested no organisations in attendance considered themselves to be purely outcome buyers, but 50% considered themselves to be outcome generators, with the remaining 50% considering themselves as both. There is clear scope for WMCA's place-based projects to engage with these already existing outcome generators, and to potentially co-invest in shared initiatives. If done correctly, this could both decrease costs and increase impact.

National picture is key:

The policy environment and the potential for nationwide initiatives that might encourage outcome buying was also emphasised. Participants frequently observed that **for meaningful change at scale, government regulation and mandate is needed**, particularly when it comes to areas like carbon offsetting. As such, the question became how can we, as stakeholders, influence the national landscape. It was observed that **good data is critical** when lobbying for policy change, and that we have an important role to play through this project in collecting robust data which can be used to influence the stance of government in the future. Whilst our main aim is to broaden the OB landscape and engage incremental private sector buyers, our work has the added benefit that it **will create quality data** that will make the **business case for public sector funding stronger**.

Carbon outcomes a key area of interest:

During the webinar **73% of poll respondents identified carbon emissions avoided/ energy use reduction as a key area of interest** – making it by far the most popular outcome category. This represents a clear signal that this is a strategic area which we should form a major part of the work in Phase 2.



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3. Place led outcomes

This section details the work carried out as part of Work Package 2 led by Dark Matter Labs. The aim of this work package was to view the problem statement from the bottom up – i.e what are the outcomes that are significant in the West Midlands, how can these be meaningfully measured and how can we ensure citizens have a participatory role in defining them

- Bringing together existing research and learning
- Detailed mapping of all outcomes generated in the West Midlands through transition projects
- Evaluating outcome generation potential of the West Midlands (using the Net Zero Neighbourhood model)
- Exploring the role of citizens

Work package approach



1. Bringing together existing research and learning

- Synthesising learning from other outcomes-based financing approaches, examples and DML experience in community-led neighbourhood transitions and outlining a set of guiding principles for designing responsible outcomes

2. Listing and mapping all the potential outcomes for the West Midlands (expanding on the categories in the Long List)

- Creating a comprehensive database and visualisation of possible outcomes from Net Zero Neighbourhoods and ways to measure and financialise them
- Mapping the relationship of specific retrofit measures to priority outcomes and potential outcome payments

3. Considering the potential of the West Midlands for outcomes-based investment

- Mapping place-based decarbonisation investments in the West Midlands and identifying high potential areas for outcomes-based financing

4. Exploring the role of citizens in determining, generating and buying outcomes

5. Workshop activity

- Workshop with community organisations to explore different approaches to define, monitor and financialise outcomes from place-based community-centred approaches to decarbonisation, sustainable housing and neighbourhood transition
- Workshop with community members to test outcome-based financing propositions and explore community-centred approaches to outcome-based financing and neighbourhood transition

Work package 2 (WP2): Place led outcomes

How and where is the West Midlands generating outcomes in its transition to Net Zero?

Research activity:

1. Synthesis of existing work
2. Assessment of outcome generation in the West Midlands
3. Investigating role of the citizen

Engagement activity:

1. Demand testing with generating sector via workshop
2. Demand testing with citizens via workshop



The story so far

Bringing together existing research and learning



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Dark Matter Labs has been researching and developing approaches to capture co-benefits from climate transition investments and ensure that the value created through investment is recognised and retained by cities and communities. Cities are sites of substantial public investment in sustainable infrastructure, yet under current conventional approaches, the comprehensive range of benefits and co-benefits projects generate are often unaccounted for. Accounting for these benefits can help to generate additional investment as well as distribute benefit in a more equitable and just manner.

- Research on the High Line in New York City demonstrated a significant land value uplift in property in proximity to the High Line. This increase in value was largely captured by private property owners. We investigated and proposed a variety of mechanisms to more evenly distribute the value created by public investment in infrastructure and create more equitable outcomes.
- We calculated the positive impacts on cities created by urban trees and created a model to capture these values. Through the TreesAI platform, this model is being used to facilitate co-investment between public and private sector partners in urban trees, shifting trees from a liability to an asset on city balance sheets. The platform is testing and demonstrating a method to collectively channel capital for the delivery and long-term maintenance of urban Nature-based Solutions (NbS) that reduce flood-related risks and generate environmental benefits.
- The Neighbourhood Transitions project with Civic Square in Birmingham developed an interactive value model for civic assets at neighbourhood scale, to calculate for each civic asset the costs, impacts and benefits generated and revenues. It then interrogated the model with the following questions:
 - Is this model based on rewiring value flows and capturing co-benefits viable for funding community-driven climate transition projects?
 - Is it possible to quantify and model the comprehensive set of co-benefits being created by climate transition projects?
For each type of climate transition project, it is necessary to develop an understanding of the types and quantities of (co-)benefits being generated, from the perspectives of the resident, a co-beneficiary, and an investor — is there enough research to allow this to be estimated, and how can we avoid double-counting?
 - How can qualitative co-benefits be accounted for in the model?
 - How do we model the value that is created beyond the projects themselves?
 - Finally, are there any ethical risks of financialization civic or public value, including any perverse incentives created by doing so?

Outcomes mapping

A visual for the West Midlands

Causation of outcomes

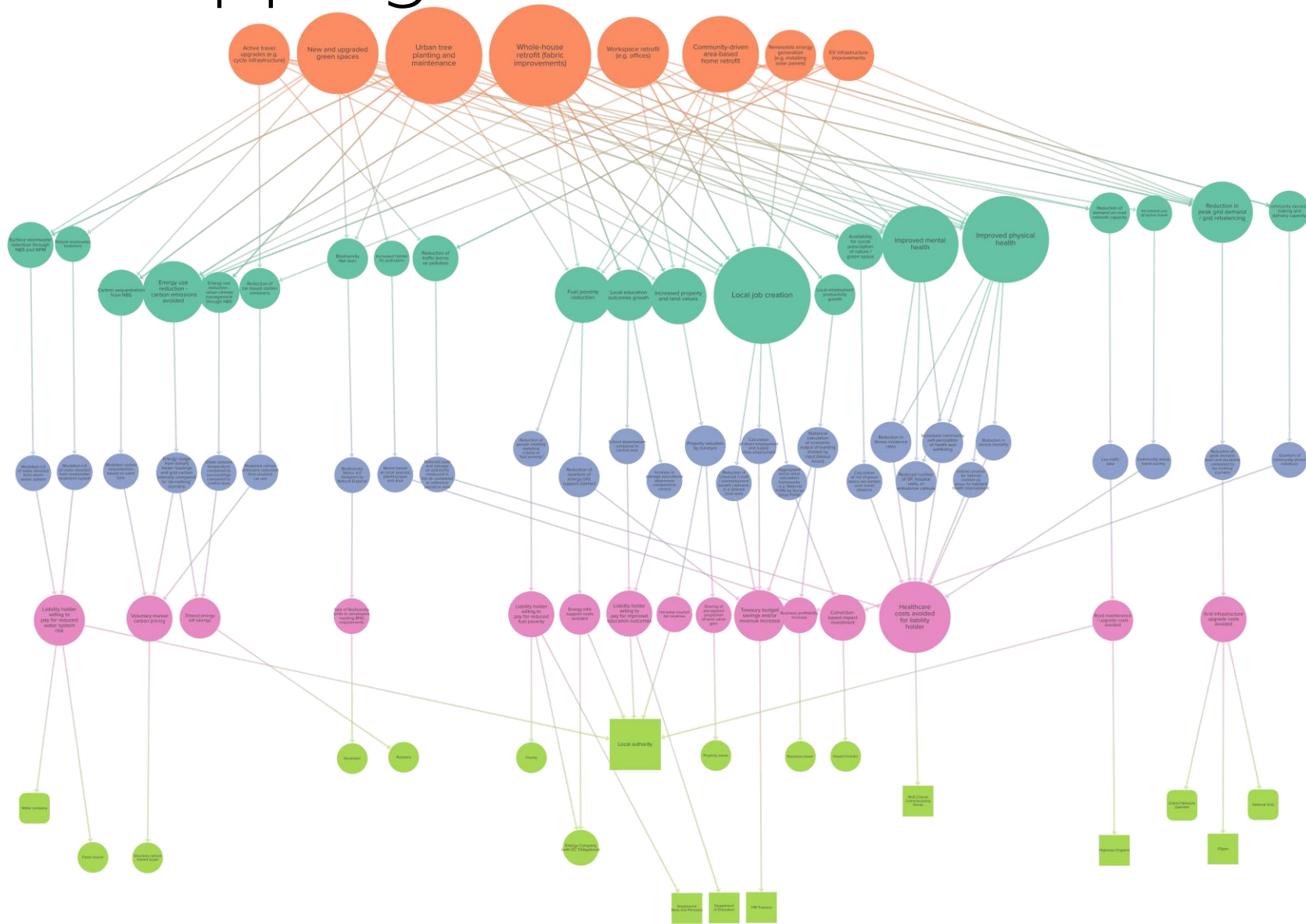
Metricisation of outcomes

Financialisation of outcome

Demand from outcome buyer

Legend

- Opposite
- Outcome
- Project
- Metrics
- Financialisation
- Outcome buyer
- Annotation



Outcomes mapping

Explaining the visual



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The 'Long List' was used to help frame a high-level scoping exercise to understand the range and types of possible outcomes that could feasibly be generated in the West Midlands.

These were mapped on a visual to show the relationships between projects, outcomes, metrics, financialisation, to outcome buyers. See [this link for the full size diagram](#)

Nodes in the diagram are scaled according to the number of connections in the diagram – for example, larger project nodes means they have a broader variety of outcomes, larger outcome nodes represent they may be created by a wide range of projects or measured, and larger outcome buyer nodes represent they may have interest in a broad range of outcomes.

The logic of the diagram suggests that there are two distinct approaches for outcome buying:

1. Certain outcomes have a direct causal relationships with straightforward measurement and a single buyer (e.g. grid upgrade costs avoided by the DNO due to reduced energy demand).
2. Outcomes which may have complex causal relationships across a range of projects, with a range of metric options that create different incentives – for outcomes such as these, there may be portfolio-based approaches needed covering a range of projects, or the creation of synthetic indexes that aggregate a broad range of outcomes.

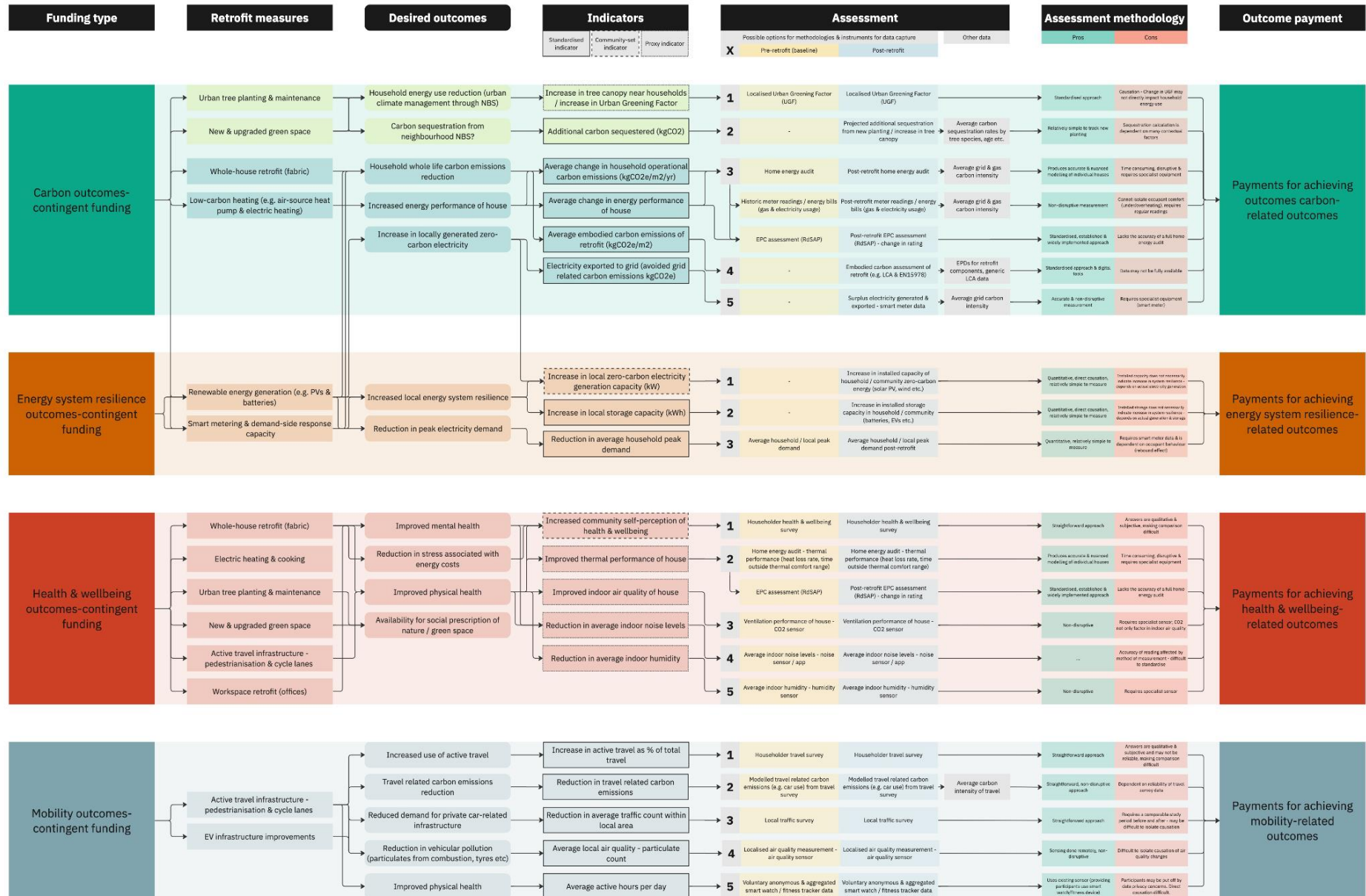
Outcomes mapping

Developing the visual into a logic diagram

This illustrative flowchart maps retrofit measures with their associated outcomes; indicators of achieving those outcomes; methods for assessing those indicators; and an evaluation of each methodology.

It demonstrates the **interconnected** and varied nature of retrofit related outcomes, with some measures – e.g. whole house retrofit (fabric) – contributing to both carbon and health related outcomes. Some outcomes – e.g. increase in locally generated zero-carbon electricity – are easy to identify a cause, whilst for others – e.g. improved mental health – causation may be more difficult to isolate.

Indicators could be standardised, community-set or require proxies, in order to assess outcomes. For each indicator, there may be different assessment methodologies with advantages and disadvantages for each. Some may rely on standardised, widely implemented approaches but lack accuracy, whilst others provide more accurate results but require custom measurement.



Outcomes mapping

Using the diagram



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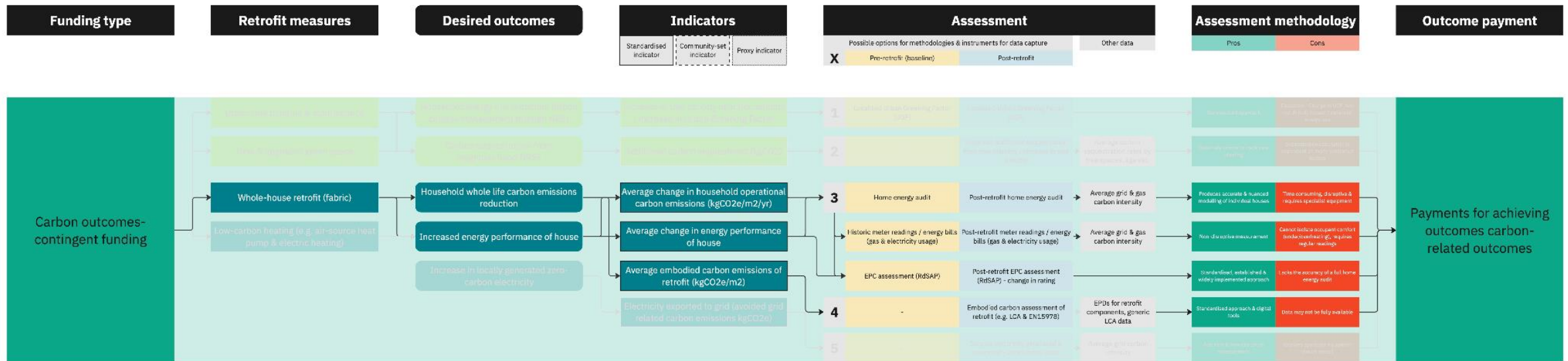
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Whole-house retrofit (fabric) - Carbon outcomes

By isolating the retrofit measure *Whole-house retrofit (fabric)* we can see that this leads to both *Household whole life carbon emissions reduction* and *Increased energy performance of house*. A series of indicators linked to these desired outcomes may be chosen as part of the funding agreement. For this measure, *Average change in household operational carbon emissions* and *Average change in energy performance* could be appropriate indicators, as well as accounting for the *Average embodied carbon emissions* of

retrofit. For each indicator a pre-retrofit (baseline) and post-retrofit assessment should be conducted. There may be several options for assessing each indicator, with their associated advantages and disadvantages. For instance, the *Average change in household operational carbon emissions* may be measured through a home energy audit, which would provide accurate and house-specific data but may be time consuming and require specialist equipment. Whilst using Energy Performance Certificates (EPC), which are already widely

implemented, is easier to implement at scale but gives much less nuance and reliable data. Decisions on which indicators are most appropriate for specific projects will therefore depend on the nature and context of the retrofit measures and must account for the preferences of households and communities involved in the project. Appropriate assessment methods may also depend on the extent of existing data.



Evaluating outcomes potential

Finding where to start



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The goal

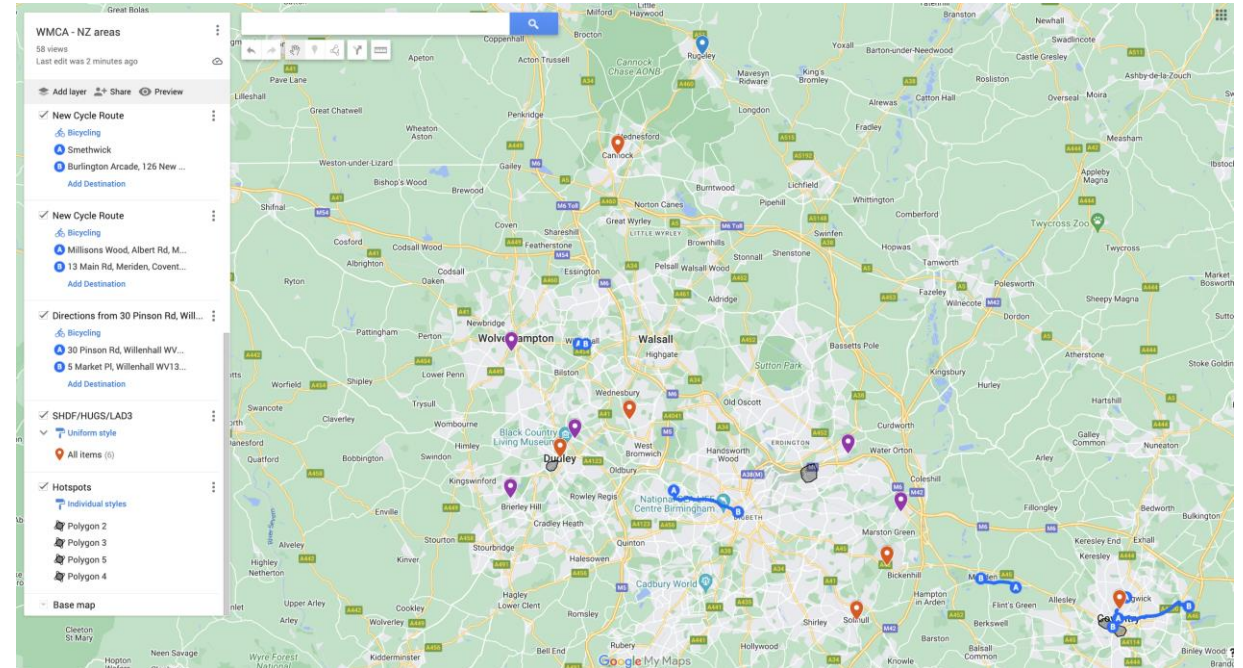
The aim of this exercise was to use easy to access data sources and open maps to identify neighbourhoods in which investments would create the greatest potential for outcome generation, and therefore future funding. By using easily accessible data sources and open source maps, this method can be easily replicated for other regions.

The method

Having identified a shortlist of outcomes for projects like Net Zero Neighbourhoods, the most relevant and easy to access datasets and maps were selected to find potential overlaps. A summarised version of this can be seen in the Google Map (right).

Key recommendations

This exercise provided insight into the potential neighbourhoods that might be beneficial for creating greater opportunities for generating outcomes. **Yet there is a need to improve both the accuracy and resolution of the exercise with more specific datasets and sources.**



Live map of relevant WMCA initiatives (eg. NZN's) & hotspots of potential outcomes related to energy efficiency works.

Find the live version of [this map here](#)



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Evaluating outcomes potential



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Maps: Regional scale Energy & CO₂

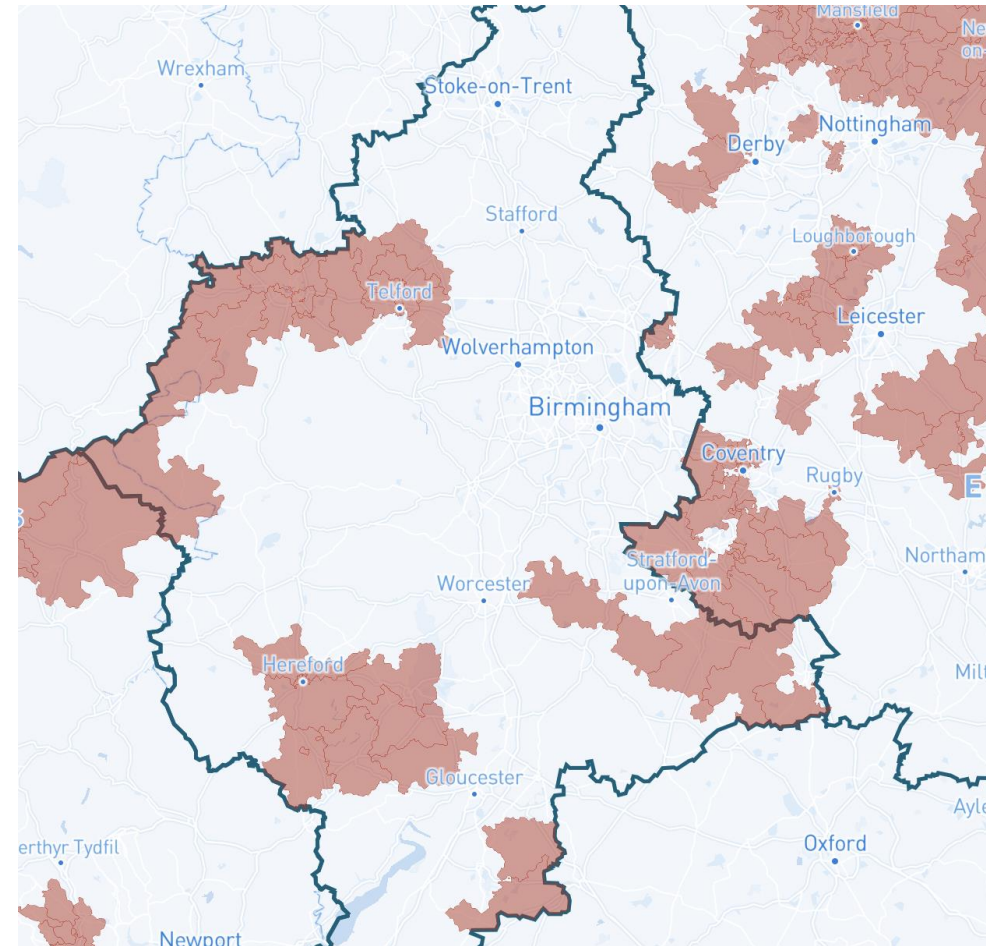
Grid constraints (2022/23)

This map shows the current area where DNOs are looking to procure 'flexibility services'.

Further work would be needed to investigate this market at a more refined scale (ie. At sub-station). See later slides for more detail.

Notably at this scale Coventry appears to be a likely focal point for energy efficiency outcome investments to mitigate grid insecurity.

A live map can be found here [↗](#)



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Evaluating outcomes potential

Maps: Neighbourhood scale

Energy & CO₂

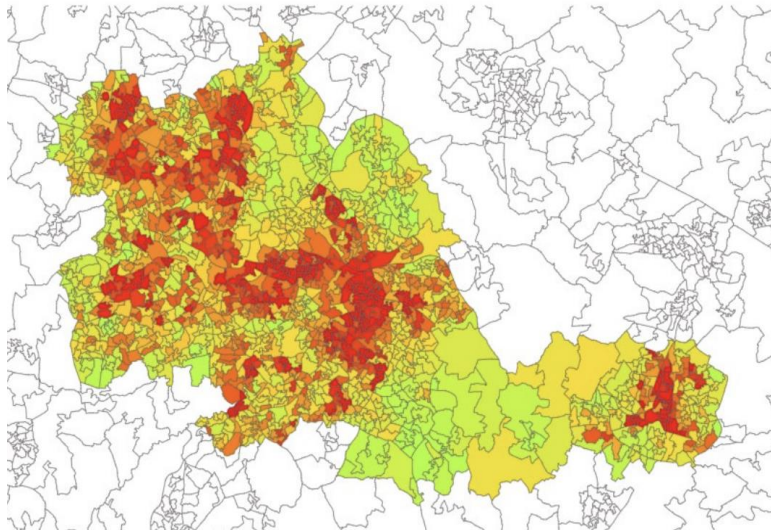


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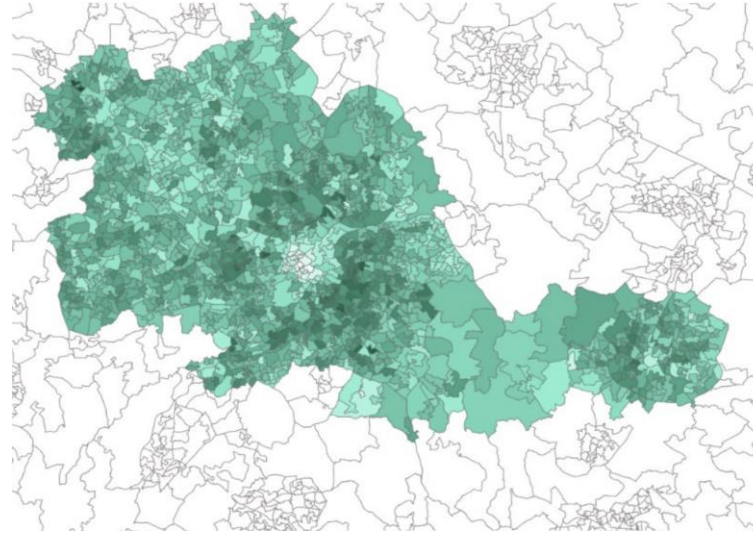
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The maps below show a range of public data around energy and energy efficiency taken from the Parity Projects report [↗](#)



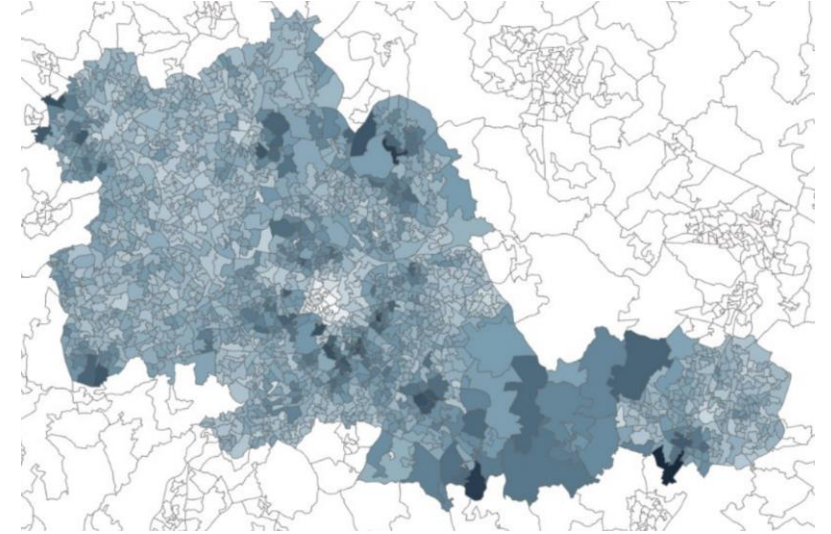
Fuel Poverty Risk

This map shows a gradient of fuel poverty risk (red showing >30% of households) in LSOAs, and is taken from the Parity Projects report [↗](#)



Average kWh/m²

This map shows areas of high energy use (darker areas showing greater usage) split into LSOAs, and is taken from the Parity Projects report [↗](#)



Average CO₂

This map shows areas of high CO₂ (darker areas showing greater amounts) split into LSOAs, and is taken from the Parity Projects report [↗](#)



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Evaluating outcomes potential



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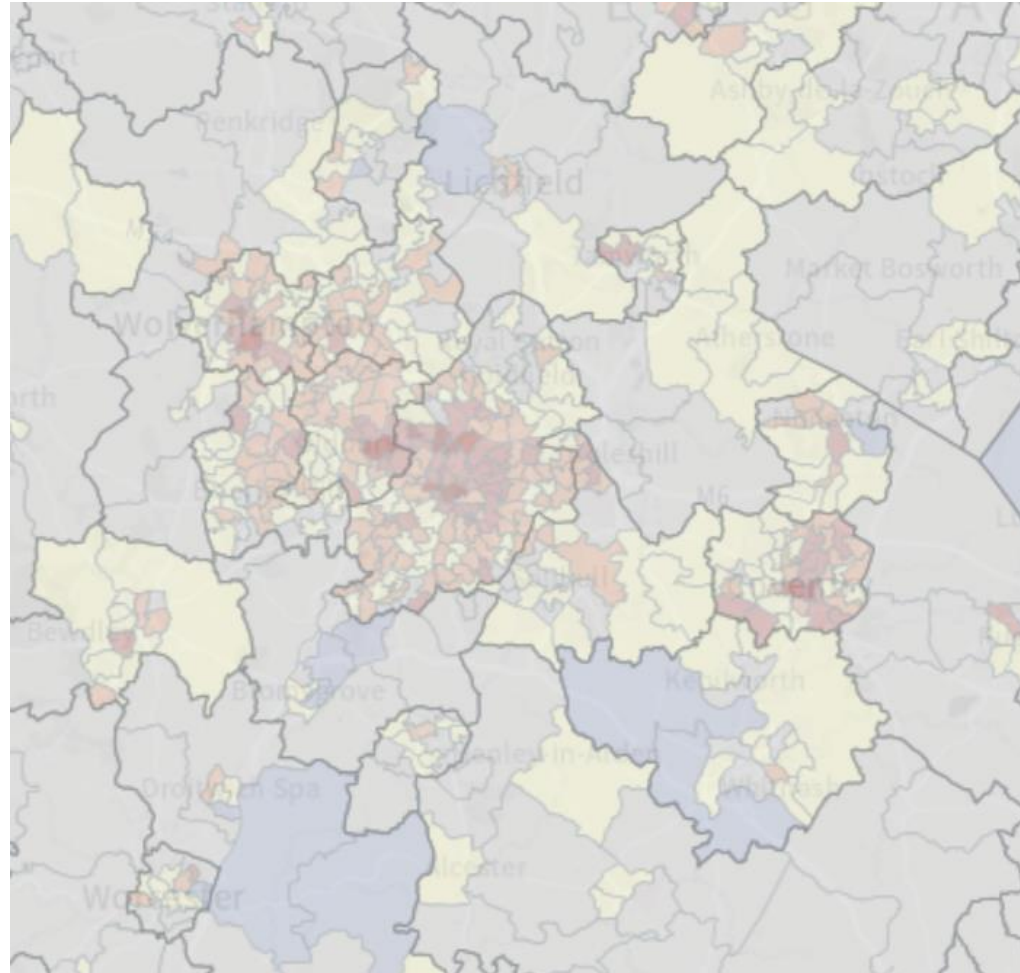
Maps: Neighbourhood scale

Environmental, Heat

Social Heat Vulnerability Index

The map shows how the personal, social and environmental factors which help to explain uneven impacts on people and communities come together in particular neighbourhoods. It shows where negative social impacts are more likely.

Source: [ClimateJust](#)



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Evaluating outcomes potential

Recommendations for further analysis



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WMCA Inclusive Growth Framework (IGF)

WMCA's [IGF](#) outlines specific data points at a local authority (LA) level. Whilst this is helpful in identifying a broad starting area there are a number of relevant indices that are conflicting. A more detailed study at a much more granular level (eg. LSOA) would need to be undertaken in future, with data being gathered and compiled from each of the LA's.

Grid Constraints

The scope of this piece of work meant that grid constraints could only be mapped at a regional level. In order to encourage potential outcome funding from DNOs, further work at a small scale (eg. sub-stations) would be needed pinpoint potential homes and areas of interest.

...

Public Health Risks

One of the key drivers in the mapping work above has been to public health; using the likelihood of fuel poverty and heat vulnerability as the main indicators. Working alongside relevant health services, further work will need to be done to identify where the health impacts of poor quality homes manifest at a local level (eg. respiratory and cardiovascular illnesses)

Active Mobility Infrastructure

Mapping work to understand the current and future active travel projects captured an initial understanding of the immediate works underway. However, a further review of TfWM (Transport for West Midlands) GIS portal, as well as information from relevant LA's will need to be undertaken to establish the location and progress of current works in greater detail.

Exploring the role of citizens

Citizen participation in an outcomes market



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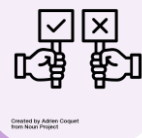


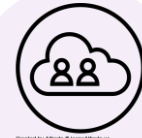


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Embedding meaningful and effective participation throughout the outcomes-based funding process - from setting the outcomes through to monitoring and evaluation – is essential to delivering a Just Transition, realising intended outcomes and ensuring alignment between the goals of outcome buyers and outcome generators.

The design of an outcomes-based funding framework should articulate the different roles that citizens can play and the scope of their influence, and the level of citizen involvement should be co-designed with the neighbourhood to be relevant and appropriate to the context. This will require high levels of trust and communication and is recommended to be done in partnership with intermediary organisations with an established presence and relationships.

There are a variety of frameworks for involving citizens in shaping outcomes in different contexts. A summary are listed on the right – these were derived from research into existing participatory methods which are detailed in the case studies that follow but remain to be tested specifically for a future outcomes market.

- 1** Defining the **outcomes** they want Net Zero projects to deliver and the role they want to play in delivering those/how the money gets spent 
- 2** Being part of a governance structure to **represent the views** of the neighbourhood throughout the process of establishing and approving any outcome-buying agreement 
- 3** Setting their **own indicators** for specific outcomes 
- 4** Being involved in the process of **monitoring and evaluating** the indicators for those outcomes 
- 5** Having a say in or being in **control of how data** produced by or representing their behaviour is used in the outcome buying process 

Case study - We Can Make

Aim

We Can Make is a community land trust and neighbourhood test-space in Bristol, imagining and making new ways to create homes that build social infrastructure and community wealth. We Can Make has developed a Community Design Code that puts the community at the heart of making rules and lays out a set of guiding principles that shape each home to ensure they are good for the resident, the wider neighbourhood and the planet, with examples of how to apply both the redlines and principles in practice. They have also created a "Good Home" Social Value Framework that articulates and quantifies the value that a good home has for individuals, the neighbourhood and the planet.



Method

We Can Make wanted to quantify the social value of their model to community-led homes. They began by using the Bristol City Council TOMs framework to measure social value, and they worked with Arup and the British Standard on Resilient Cities. They found that these frameworks weren't particularly relevant to the uniquely community-led approach they were taking. They went back to the community to develop their own Social Value Framework and then worked with HACT's approach to the UK Social Value Model to produce a measurement of the social value they generate.

Role of the neighbourhood/community

Neighbourhood workshops and conversations are informing every aspect of We Can Make's model, from the Community Design Code to the social value indicators.



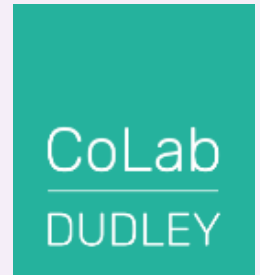
Relevant learning

We Can Make is working on quantifying the social value that a community-led approach to housing generates, including established measures of value such as carbon saved alongside reduction in loneliness and other less tangible values. This approach could be used to develop more holistic measurements of the integrated impact of improved homes and neighbourhood across social, ecological and economic factors. While We Can Make has not yet converted this measurement of value into additional income, but they are testing and demonstrating new possibilities for capturing value.

Case study - CoLab Dudley

Aim

CoLab Dudley is an experimental form of social and imagination infrastructure located on Dudley High Street. It involves hundreds of people each year in doing, creating and making which helps to nurture connection, imagination and long-term thinking. It aims to involve people in generating new visions and possible futures.



Method

CoLab Dudley has developed the 'Learning Compostor', a comprehensive methodology for monitoring, evaluating and learning from the work it does. The Compostor aims to streamline monitoring and evaluation, allow for collective evaluation, create deeper shared learning and support multi-layered polyvocal storytelling. Using 11 categories and 24 data sources based on long-term thinking about where and how outcomes might be generated, CoLab Dudley captures the impact of its work in a combination of ways that reflect lived experience as well as funder priorities.

Role of the neighbourhood / community

CoLab Dudley is an infrastructure that supports neighbourhood learning and action. The neighbourhood is effectively the instigator and creator of the work that they do.



Relevant learning

The Learning Compostor demonstrates a methodology for capturing outcomes through a variety of indicators and data sources that reflect different priorities and experiences.

Case study - Neighbourhood Doughnut

C I V I
C S Q
U A R E



Aim

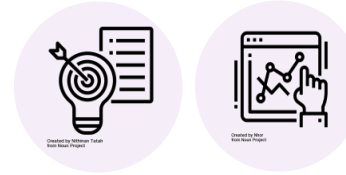
The Neighbourhood Doughnut is a neighbourhood scale version of the 'Doughnut', based on the Doughnut Economics principle of a future economy within the boundaries of human and planetary thriving. Civic Square, a community-based organisation, co-created a Neighbourhood Doughnut for the constituency of Ladywood, Birmingham to apply the principles of the Doughnut at a neighbourhood scale. The resulting Ladywood Data Portrait combines metrics with lived experience, inspiring initiatives, critical challenges, new possibilities, and crucially, potential actions in a place.

Method

The Data Portrait of place exists alongside the Community Portrait of place and use multiple methods to develop a set of targets and indicators based on four intersecting local, global, social and ecological 'lenses'. The indicators for Ladywood were developed based on research, participatory workshops and data analysis. Each lens has a unique enquiry question and set of dimensions with a shared structure that includes a monitoring indicator, a threshold for the safe and just space of the dimension, and a status snapshot of how Ladywood is currently performing.

Role of the neighbourhood / community

The neighbourhood participated in the research process to create the data portrait, and through the ongoing work of Civic Square they will be involved in implementing the actions to bring their neighbourhood within the doughnut and monitoring and evaluating progress toward that goal.



Relevant learning

The Neighbourhood Donut guide can be used as a compass to guide neighbourhoods through the climate transition by establishing neighbourhood-level priorities and indicators linking climate transition with individual and collective wellbeing. It links a local and tangible perspective with a wider city, region, national or global perspective. In the specific case of the West Midlands, it also aligns with the region's Inclusive Growth framework and could connect policy priorities with neighbourhood interpretations of those priorities, creating a shared framework with different indicators that reflect different sets of values in line with the same long-term goals.

Alignment with
WMCA
Inclusive
Growth
framework



WMCA has developed an **Inclusive Growth framework** based on the principles of Doughnut Economics that identifies eight 'fundamentals'. For each fundamental there is a set of outcomes and indicators that should guide public policy and investment in the region.

WMCA is currently running a participatory process to translate the outcomes and indicators into metrics that are more meaningful to citizens and stakeholders and to support adoption of the framework by key stakeholders across the region.

The aim is for the Inclusive Growth framework to be used as an operational tool by officers and planners to guide investments, such as the Net Zero Neighbourhood.

Case study – Cornerstone Indicators



Aim

To empower communities to discuss and understand what it means to thrive and then collaboratively design indicators to track progress. To create new and beautiful visions of what possible means in our everyday lives, to reclaim a sense of agency and to begin reconnecting citizens to public life.

Method

The Cornerstone Indicator Process developed in Sweden combines statistical analysis with participatory workshops and surveys to co-design simple, intuitively understandable indicators that encapsulate what thriving means to communities of place.

Role of the neighbourhood / community

Collaboratively design indicators for outcomes that are part of political goals e.g. wellbeing economy.



Relevant learning

The Cornerstone Indicators process demonstrates how a group of people can participate in defining what a higher-level outcome or target means to them in their day-to-day life. This leads to them becoming more involved and interested in the outcome itself. While it hasn't been tested yet, it may be possible to adapt the Cornerstone methodology and use it in other contexts as a way of creating alignment around shared goals between stakeholders with different perspectives. If a neighbourhood could interpret outcomes that may have relatively little meaning to them but have significant political meaning (e.g. reducing carbon emissions in a neighbourhood that is dealing with multiple deprivation), reducing carbon emissions) into outcomes that have meaning for them (e.g. a healthier home that led to less illness and lower costs and was also more attractive), they may become more interested in participating in delivering their outcome and ensuring that it is delivered.



Exploring the role of citizens

Key recommendations



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4. Revisiting the problem statement

This section brings together the initial research from WP1 and WP2 to generate the first set of insights that we used to turn the 'Long List' into a 'Short List' to frame proposition design for WP3

- The outcomes 'Short List' and how we shortlisted
- Demand testing & feedback from
 - 'Outcomes generators'
 - 'Outcomes buyers'
 - Citizens
- How we start to think about responsibility, transparency and accountability

Section approach

1. Introduction to the 'Short List'

- Revisiting the 'Long List' following initial research to collectively decide which outcomes to focus on for the next stage of the feasibility study
- The process of shortlisting and its shortfalls

2. Demand testing & feedback

- With potential outcome buyers through detailed interviews
- With potential outcome generators through an in person workshop
- With citizens through an in person local workshop

3. A responsible outcomes market

- Suggested governance structures that enable citizen participation and collective accountability

Work package 1 (WP1): Market led outcomes

Who could be buyers of outcomes generated in the West Midlands?

Research activity:

1. Market assessment of outcome buying sector

Engagement activity:

1. Initial engagement with buying sector via webinar
2. Demand testing with buying sector via detailed interviews



Work package 2 (WP2): Place led outcomes

How and where is the West Midlands generating outcomes in its transition to Net Zero?

Research activity:

1. Synthesis of existing work
2. Assessment of outcome generation in the West Midlands
3. Investigating role of the citizen

Engagement activity:

1. Demand testing with generating sector via workshop
2. Demand testing with citizens via workshop



Work package 3 (WP3): Outcomes propositions

What could outcome buying contracts look like for the West Midlands?

Design activity:

1. Establishing key terms & definitions
2. Creating a 'Long List' of outcomes to frame initial research activity
3. Revisiting the problem statement after initial research & engagement
4. Establishing a 'Short List'
5. Designing outcomes propositions for the West Midlands



Outcomes – The Short List



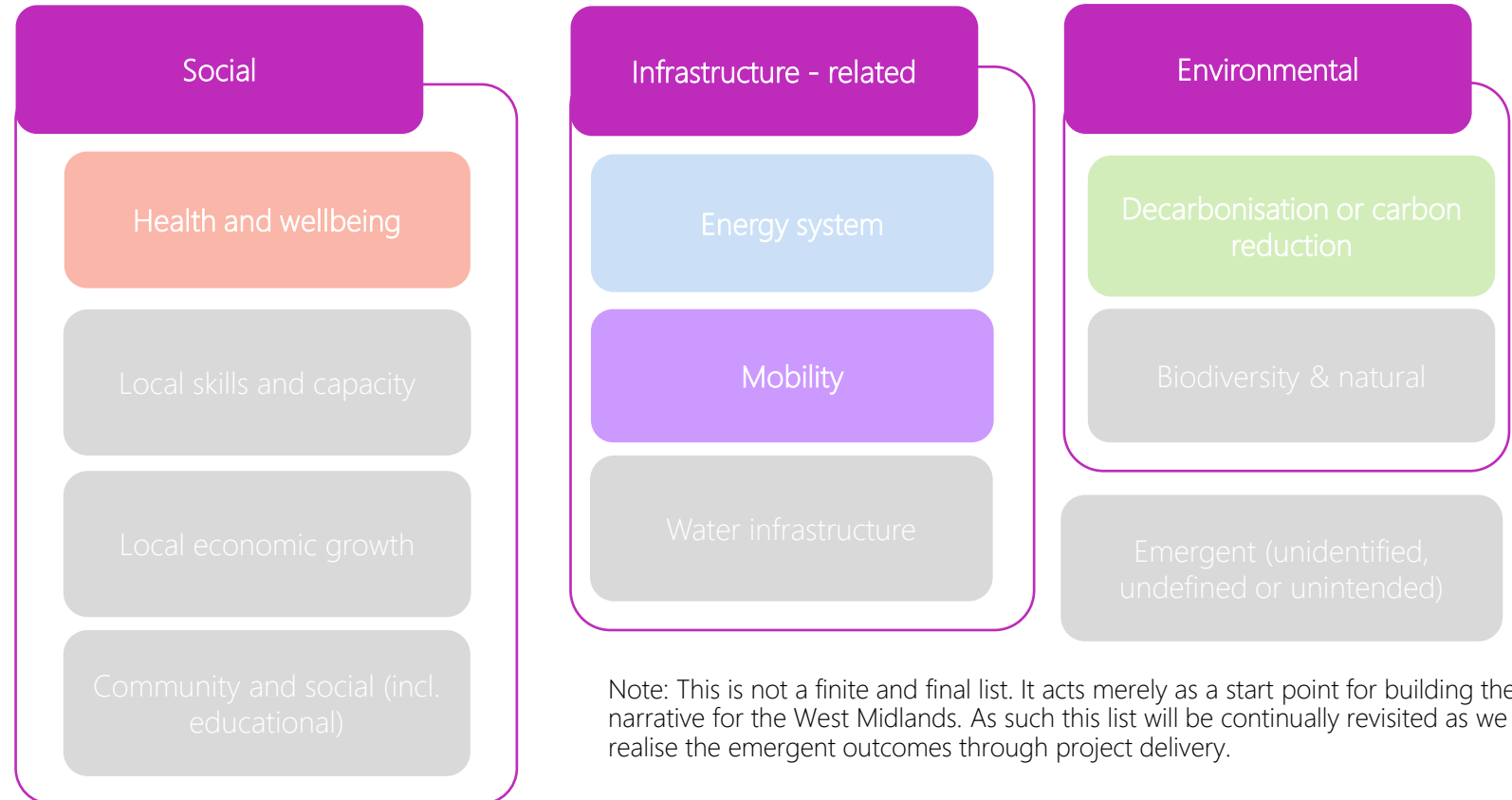
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At the half way point of our feasibility study we revisited the original problem statement and the Long List of outcomes. We reflected on the learnings from our initial research and which outcomes would be most meaningful to test with buyers, generators and citizens.

We decided to shortlist into these 4 for which would frame our final engagement activities and initial design of propositions for the West Midlands.



Note: This is not a finite and final list. It acts merely as a start point for building the narrative for the West Midlands. As such this list will be continually revisited as we realise the emergent outcomes through project delivery.



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Outcomes – The Short List

The shortlisting process



- The project team felt it necessary to short list our original 9 outcomes categories to help us focus research and engagement and allow us to get propositional quicker with the time we had available.
- The following criteria were used to frame our decision:
 1. Feedback from **initial research and findings**
 2. **Skills and capabilities:** Where as a team do we have the most expertise
 3. **Research efficiency:** Where is there already ongoing work in this space that we can connect into (i.e we chose not to focus on Nature/Biodiversity & Water outcomes as the WMCA Environment Investment Framework and Natural Capital research covers this – see Case Study on the slide that follows)
 4. **Market readiness:** Do the outcomes span a range of market readiness that we can learn from? Do we have good representation across the 3 types of outcome buying identified in WP1?
 5. **Impact:** Where do we think the most meaningful impact will come from
 6. **Deliverability:** Are there relevant projects generating the outcomes that we can locate demonstrators in? Do we think we have engaged buyers?
- Given more time we would have liked to go through a more rigorous down selection process that involved our 3 key stakeholders (generators, buyers and citizens) and is a key factor to consider if this work is ever replicated.
- To ensure that the outcomes we selected continue to be relevant, we will be continually revisiting the 'Long List' and considering additionality if we can further this work in Phase 2.

Nature/Biodiversity Case Study: WMCA Environment Investment Framework

Aim of the WMCA Environment Investment Framework:

To scale up funding for environmental projects across the region by mobilizing both public and private capital, focusing on natural capital, climate adaptation, circular economy, and air quality:



Key pillars of the framework:

The aim is to create a pipeline of investable projects before aggregating them to create an investable portfolio, with which to bridge the gap between project owners and capital providers.

The methodology involves 3 key elements detailed below.

1 Project Preparation

Engage with project owners, to create a framework for developing investable environment projects in the region.

2 Pipeline Development

Develop a project investability assessment framework that links with saleable outcomes, to support the creation of a pipeline of projects for investment.

3 Investor Engagement

Initial engagement with potential private capital providers, engaging them in the development of the programme from an early stage.

Engaging Outcome Buyers

A core part of the framework development involves assessing the opportunity for Outcome Buying across Environment projects in the West Midlands.

Firstly, the project team is in the process of engaging project owners to understand the potential outcome streams from their projects (with a significant portion being across nature-related, water-related and biodiversity outcomes). This analysis will then be fed into developing a framework to support project owners to prepare projects in a way that is attractive to potential finance providers.













Secondly, the framework development will involve engaging with potential buyers for these outcomes, which could include private sector institutions and public sector bodies.

Overall, we expect the work here to be complementary to the work of the WMCA Pathfinder Places project, which has consciously chosen to focus away from nature, water and biodiversity related outcomes to allow for most effective cross-fertilisation of work across the WMCA.

Outcome buyer engagement

The Detailed Interviews

- The 'Short List' allowed us to carry out focussed detailed interviews with a range of representatives across the outcome buying sector. We tested perceptions to outcome buying, how experienced the companies were with the concept and what methodologies were used to monitor and validate outcomes that were being purchased.
- A summary of all those we engaged with can be seen on the right. Detailed interview notes can be found in the *Appendix* section.
- We also saw a lot of interest from other organisations such as Bridges Fund Management, FORE, Natwest and the Black Country Integrated Care board who we will be looking to re-engage and interview as we prepare to apply for follow on funding.
- Specific case studies that we found to be most interesting are detailed in the slides that follow

Outcomes	Interviewed organisations
Energy System	 National Grid Energy Distribution
	 British Gas
	 Snug Energy
Mobility	 Transport for West Midlands
	 Birmingham Airport
Carbon Reduction	 HACT
	 HSBC
	 Redshaw Partners
	 Anthesis
Health & Wellbeing	 Warm Homes Prescriptions
	 Alice Jones Impact Consulting
	 Birmingham & Solihull ICS

Description

This scheme, developed by HACT and Arctica Partners, is a carbon credits scheme that unlocks additional funding into social housing retrofit by **verifying the emission reductions and social value of retrofit projects**:

- The scheme is **based in the UK**.
- Projects are assessed **after completion**. Following assessment, credits are then sold.
- It **incorporates social value**, measuring the positive impact retrofit has on residents' lives.

Key learnings

1. This certified carbon credit methodology is already being used to evaluate the impacts of retrofit projects and sell credits on to a range of buyers. Moreover currently demand is outstripping supply for this type of credit.
2. There is a market for this type of offsetting/ outcome buying; that is, organisations are willing to pay a significant premium for credits that are both innovative and local to where they have operations.



Health Case Study: Warm Homes Prescription

Description

Service piloted by Energy Systems Catapult and the NHS, helping vulnerable people with cold-sensitive health conditions and low incomes, to stay warm, well, and out of hospital – by paying their energy bills over winter.

Aim

The pilot aimed to determine whether it is more cost-effective overall to help pay the heating costs of vulnerable people than it is to pay for their health care if they fall ill.

The Impact

Results from small-scale trial in Gloucestershire showed that patients felt **warmer, healthier, less stressed** about bills and **less likely to visit their GP or hospital**. Also the staff delivering the support **said it was quick to prescribe**, practical and **benefited patients immediately**.

As a result of the trial, **the service was extended by NHS** to support over 100 households in 2022-23. A **large-scale trial is now underway** in England and Scotland, and the Scottish Government have said they will **explore doing Warm Home Prescription nationally**.

Key learnings

1. Engaging with the NHS is possible and has been successfully done through the trial.
2. NHS is potentially willing to pay for 'warm homes' because of the clear health benefits and savings to the health service.
3. Methodologies exist that could be used to prove causality between health outcomes and warmer homes.



Outcome generator engagement

The Workshop



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Workshop with the NZN Working Group

We invited members of the WMCAs Net Zero Neighbourhood working group and Energy Capital partners to join us for an afternoon workshop to discuss outcomes-based funding. We wanted to share our research with them and test three questions:

1. How well do they understand the potential outcomes of Net Zero Neighbourhoods, and could they see themselves as outcomes generators?
2. What kind of outcomes buyers do they think might be interested in Net Zero Neighbourhoods, and how would they pitch to them?
3. What are the main opportunities and obstacles that they see for bringing outcomes-based funding into Net Zero Neighbourhoods and other place-based transition projects?

Key Learnings

Participants were keen to engage and discuss new ways of framing their work and benefits created

They responded well to the terms outcomes generator/outcomes buyer

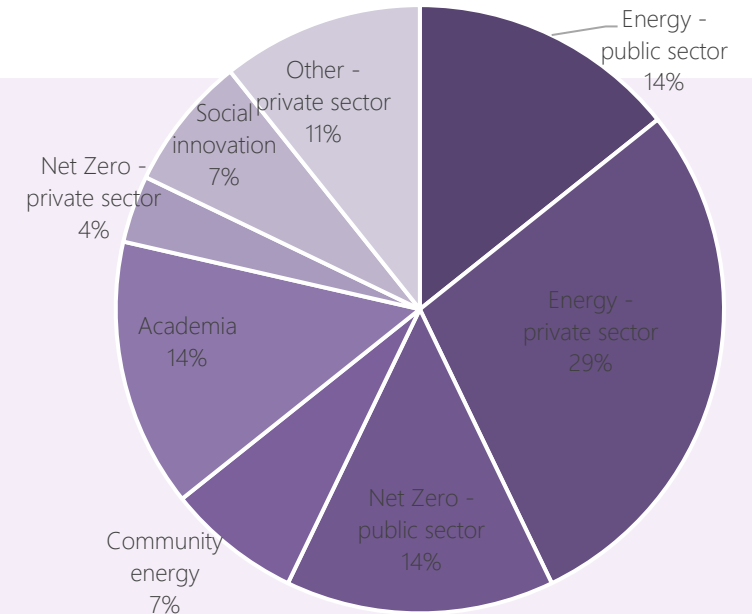
They can see themselves as outcome generators and are interested to learn more

Identified outcome-buying opportunities included energy demand reduction, poverty reduction, increased social value and increased disposable income

They understood the outcome-buying concept well and shared examples of similar initiatives, although the examples were mostly internal to the public sector

A key identified barrier was organisational/sectoral boundaries between outcome buyers and generators

They reflected on their Net Zero Neighbourhood initiatives and how they might (re)structure them to build momentum and create meaningful long-term outcomes for residents



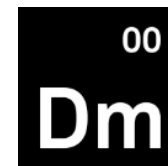
Workshop attendees by sector



Innovate
UK

Citizen engagement

The Workshop



ENERGY CAPITAL



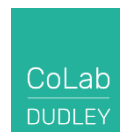
West Midlands
Combined Authority

We invited representatives of community and neighbourhood groups in and around Birmingham to join us for an afternoon workshop to discuss outcomes-based funding. We wanted to share our work with them and test three questions:

- How do you use outcomes in your work and how are community members involved in defining, monitoring and evaluating outcomes?
- How would you raise the question of financialising outcomes with community members, and how might they respond?
- What is the best way to engage with a neighbourhood or community about outcome generating and outcome buying, and what role do you see the community playing in an outcomes-based funding framework?

Attendees

C I V I
C S Q
U A R E



Link Road residents
Retrofit Balsall Heath
Zero Carbon House



Key Learnings

In principle there was support of the concept; however it was emphasised that for communities to participate they would need to make sense of the outcomes in ways that were meaningful to them, that funding relationships should not be transactional, that communities should be positioned as co-creators of mutual co-benefits/outcomes and that there be suitable time allowed and resourcing for organising.

A holistic focus on outcomes and investment could lead to new ideas for design that improve community-level outcomes. For example if retrofit was in part funded through health outcomes, could retrofit include renovating and enlarging kitchens, so that people would have more space to cook?

Funding relationships should not be transactional - communities should not feel like they are being paid to deliver something. The community should be positioned as co-creators to create mutual co-benefits.

Investment should ensure that it builds alliances and collective action rather than pitting groups against each other to compete for funding. Community priorities should be decided together before funding is on the table – but it can be difficult, expensive and time-consuming to develop shared community priorities.

Community priorities may not align with pre-determined outcomes, and community members are unlikely to engage with something that doesn't feel relevant to them.



Top: Our workshop with local citizens and community groups.
Bottom: Link Road, Birmingham retrofit street party (Civic Square)

Monitoring and evidencing outcomes can be time-intensive and expensive, and this burden should not rest with the community. New local-level infrastructure would be needed to coordinate action, translate information and oversee the process. Deep community-level knowledge and relationships are essential for successful communication and coordination.

Defining a *responsible* outcome market



ENERGY CAPITAL



From the above workstreams, it is clear that while there is a real need for additional financial investment and an openness amongst community groups to work in this space, there are important principles for how such a market should develop successfully, also to meet WMCA's wider policy objectives

Co-defining and monitoring outcome metrics

1. Public consent and challenge for both the agreed metrics and the monitoring process

Outcome metrics, and the processes through which data is gathered to validate them, should seek prior consent from whom the financing and eventual works will directly affect.

2. Investor financial returns (if any) should be tied to local wealth building or reinvestment fund

To minimise distortion of outcome results, as well as rent seeking within the outcome contract, part or all of the return on investment should be directly connected to funding ongoing work that increases the likelihood of present and future outcomes being met.

3. The spread of investments should maximise the distribution of power and influence of investors

Focus on allowing a range of investors with a smaller stake, rather than one primary investor. The aim being to minimise the influence investors have over set outcome metrics and goals.

Working with non-extractive investment funds

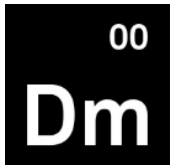
1. **Patience** – Investors who are committed to a long-term home for their capital and won't make unilateral changes without significant notice periods and public consent (from those that works will affect directly).
2. **Sharing responsibility and decision making fairly** – Investors who have no more power than the investee in deciding how investment is made, or what happens in the event of changes to the business plan.
3. **Prioritising local investment and financial recycling wherever possible** – Investors and investees set up mechanisms that prioritise and develop local supply chains, skills and employment. It has net positive externalities (i.e., positive impact on natural systems, greenhouse gas emissions, wellbeing and other public goods).
4. **Prioritising local investment and financial recycling wherever possible** – Investors and investees set up mechanisms that prioritises and develop local supply chains, skills and employment.
5. **Having net positive externalities** – Positive impact on natural systems, greenhouse gas emissions, wellbeing and other public goods

Principles for service provision

The business model should be driven and shaped primarily by the governance structure, rather than the finance model In order to:

1. Avoid rent seeking incentives over a long term, low yield investment model (eg. the 30-year comfort contract in providing return on energy efficiency measures).
2. Avoid investment that optimise for standardised retrofit measures and look to retain asset ownership or equity stakes.

Defining a *responsible* outcome market



ENERGY CAPITAL



West Midlands Combined Authority

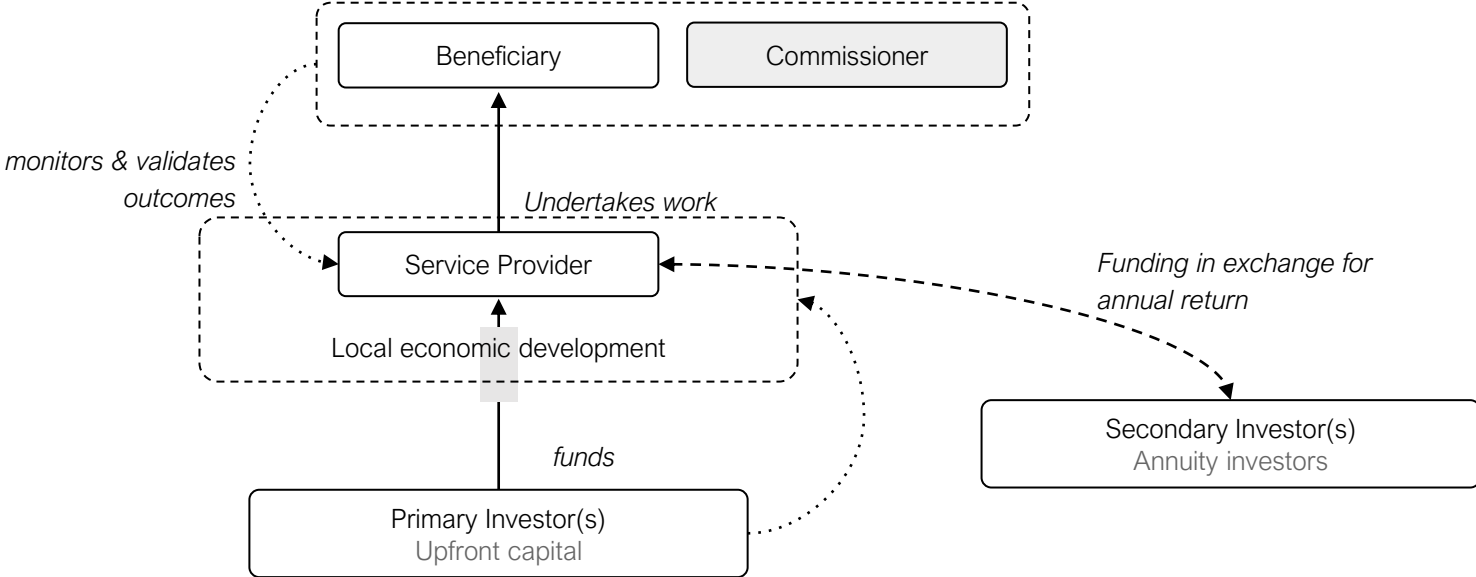
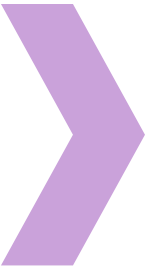
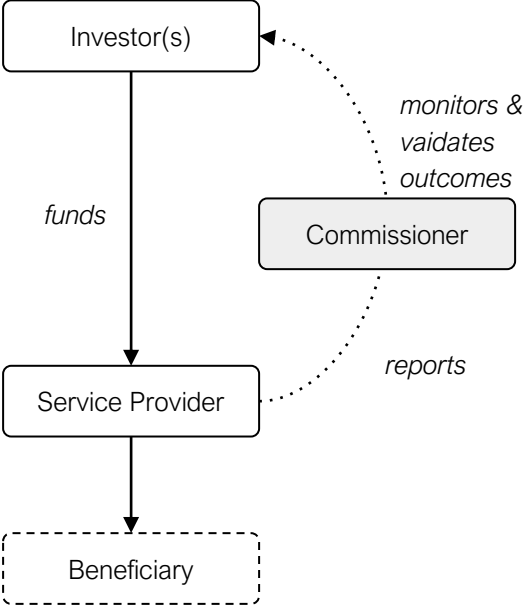
Developing effective governance for outcomes-based contracting

Towards:

Moving from:

Most existing outcomes-based approaches treat the beneficiary (in this case mostly residents in a Net Zero Neighbourhoods) as relatively passive 'recipients' of a service

- Following the workshops and our research we would seek to bring the beneficiaries into a position of deeper collaboration with the commissioning entity and also having a role in monitoring. This is critical for buy-in, trust and also to support the behaviour change and second order effects of retrofit.
- We also understand that there may be different roles for funders who are seeking ongoing, steady returns versus those that wish to have a single upfront benefit.



5. Outcomes propositions for the West Midlands

This section details first stage outcomes-based contracting propositions for the West Midlands based on the research and engagement activity from WP1, WP2 and WP3. It summarises how we think they could work in practise and where the opportunities lie and relevant feedback points from engagement activity.

- Carbon outcomes proposition
- Health outcomes proposition
- Energy system outcomes proposition
- Mobility outcomes proposition

Section approach

1. Carbon outcomes

- Proposition description & initial feedback
- Market size
- Proposed delivery model and key actors
- Opportunities in the West Midlands

2. Health outcomes

- Proposition description & initial feedback
- Market size
- Proposed delivery model and key actors
- Opportunities in the West Midlands

3. Energy system outcomes

- Proposition description & initial feedback
- Market size
- Proposed delivery model and key actors
- Opportunities in the West Midlands

4. Mobility outcomes

- Proposition description & initial feedback

Work package 3 (WP3): Outcomes propositions

What could outcome buying contracts look like for the West Midlands?

Design activity:

1. Establishing key terms & definitions
2. Creating a 'Long List' of outcomes to frame initial research activity
3. Revisiting the problem statement after initial research & engagement
4. Establishing a 'Short List'
5. Designing outcomes propositions for the West Midlands

Establishing a regional carbon credit scheme for retrofit

Engagements clearly indicated the **viability and significant buyer demand** for credits from retrofit interventions. This form of outcome buying has the potential to make significant contributions to the required capex. Two strands to establishing this: 1) setting the mechanics of the scheme, and 2) engaging buyers.

Establishing the scheme:

1. Deciding on a **methodology, certification** standard, etc.
Engaging in the detailed on-the-ground work of
2. **establishing impacts**, or work with partners to do so.
3. Engaging with verification organisations, establishing **legalities, contracting** etc.

A 'tiered' engagement strategy:

1. **Forming partnerships** with organisations in the space that have already developed certified methodologies.
2. Engage first **with buyers involved in the supply chain** and those active in local community/economy.
3. **Engage with wider buyers** (e.g. corporates) which would be the hardest to engage.

Feedback from buyer interviews

It was emphasised by numerous actors that there is a **clear market demand** (and willingness to pay a premium) for high **quality, innovative, and local projects** (buyers want impact in the areas where they are operating). Moreover, currently demand is greatly outweighing supply and credits for retrofit projects are incredibly rare.

Various methodologies already exist which can measure the CO₂ reductions from retrofit interventions, as well as measure various social/ health impacts. Some have been certified by leading schemes (such as Verra), and have already been used to sell credits.

Carbon outcome buyers represent **a diverse array of organisations**, including financial institutions, universities, airlines, and a range of other private companies.

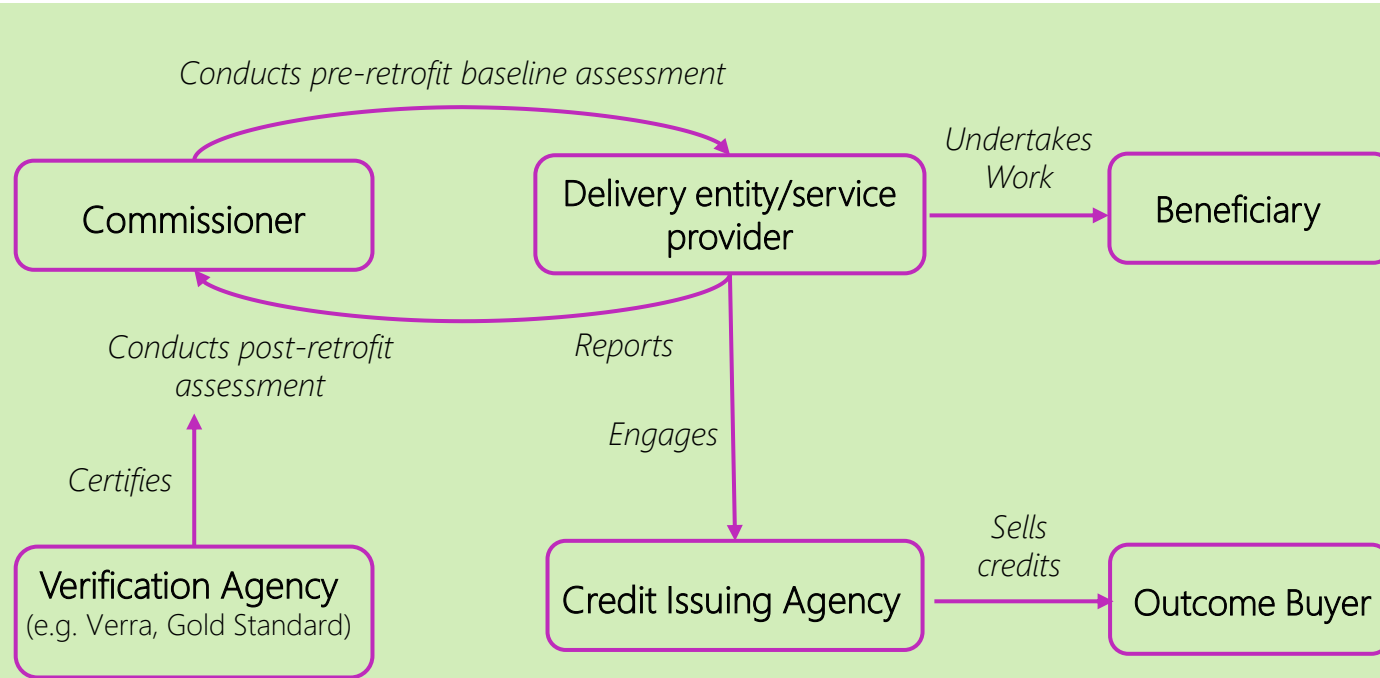
There was **clear enthusiasm from all those interviewed** within the sector to collaborate in the future and support the project in any way they could.

Estimated market size

- In 2021 UK-based organisations offset **14.9 million tonnes of carbon**. Moreover, 97% of credited projects were based abroad. Prices vary greatly, from as low as \$1/ton CO₂e and increase to \$119/ton CO₂e ([2021 data](#)).
- Initial retrofit-based carbon credit schemes are able to recoup approximately **20% of the costs of retrofit** measures from the sale of credits.

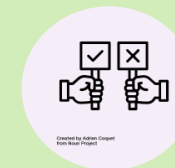
Carbon outcomes

Proposed delivery model



*To sustainably utilise carbon as an outcome to fund retrofit, realisation of the CO₂ savings and demand from buyers first needs to be **proven**. When there is a track record of income generation from sale of carbon credits, this in turn could be used to raise commercial financing pre-retrofit to fund the retrofit interventions in the first place. Once complete, this could be refinanced utilising income from carbon credits sold. Any remaining income from carbon credits not used for refinancing could be redirected into the community/place where the carbon saving was generated.*

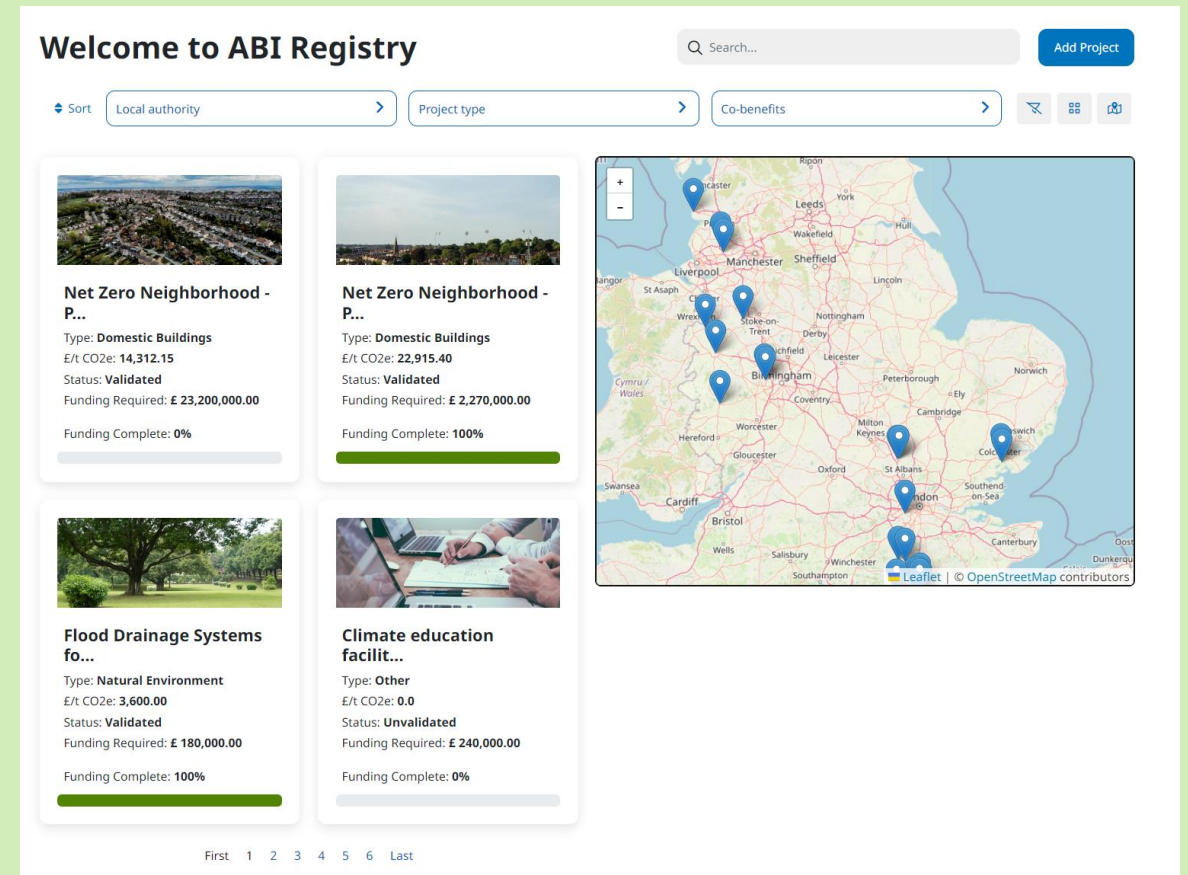
- **Commissioner:** The commissioner is responsible for conducting the pre- and post-retrofit CO₂ metric assessments. This could be a sub-set of the delivery entity/service provider or a third party, depending on capacity and expertise. The commissioner will also be responsible for maintaining verification of continuous CO₂ data collated on an ongoing basis post retrofit.
- **Delivery entity/service provider:** This would involve the project owner and a consortium of its delivery partners.
- **Verification agency:** Using a well respected agency will be key to ensuring the credits are marketable.
- **Credit issuing agency:** WMCA would work with a partner in this space who would issue the credits. They would be the key interface with the buyer, with revenue flows coming through the issuing agency which takes a commission.
- **Outcome Buyers:** Private sector corporates looking for credits as part of a broader sustainability strategy.
- **Role of the citizen:** Citizens can participate by representing the views of the place/community, being involved in the process of monitoring and evaluating the outcomes and having a say in how data representing their behaviour is used



Carbon outcomes

Opportunities in the West Midlands

- WMCA has been working with Anthesis to understand how low carbon and sustainability projects in the West Midlands can be listed as carbon ‘insets’ – a localised, more impactful version of carbon offsets.
- Anthesis have been developing the Authority Based Insetting (ABI) registry to list projects across the nation that have the ability to create reductions in carbon and drive more ethical, local buying of carbon offsets.
- Through this work – the Brockmoor Net Zero Neighbourhoods (Phase 1: Pilot and Phase 2: Demonstrator) have been listed on the ABI platform as a validated carbon reduction project and we will continue to work with Anthesis to validate and list more local projects across the West Midlands.
- Relating this back to the proposed delivery model - Anthesis acts as the **Verification Agency** and the **Credit Issuing Agency** and the registry itself is the interface for the **Buyer**
- There is a strong opportunity here to work with Anthesis to learn from their current baselining, monitoring and validation process for carbon outcomes and to what extent the process can be adopted as a regional standard for a future regional carbon market
- Anthesis are also working on baselining, monitoring and validating other co-benefits and outcomes through their insetting work which could prove very relevant for work on the other outcomes



Welcome to ABI Registry

Search... [Add Project](#)

Sort: Local authority > Project type > Co-benefits >

Project Name	Type	E/t CO2e	Status	Funding Required	Funding Complete
Net Zero Neighborhood - P...	Domestic Buildings	14,312.15	Validated	£ 23,200,000.00	0%
Net Zero Neighborhood - P...	Domestic Buildings	22,915.40	Validated	£ 2,270,000.00	100%
Flood Drainage Systems fo...	Natural Environment	3,600.00	Validated	£ 180,000.00	100%
Climate education facilit...	Other	0.0	Unvalidated	£ 240,000.00	0%

Map showing project locations across the UK. The Brockmoor project is highlighted in the West Midlands region.

Navigation: First 1 2 3 4 5 6 Last

The Brockmoor, Dudley MBC Net Zero Neighbourhood listed on the ABI platform amongst other national projects
Click [here](#) to view the registry

Health outcomes

The proposition

Regional wellbeing impact fund

1.

Either co-developed with relevant public health officials (NHS) within the relevant local authorities – who would then buy the outcomes (the most ambitious).

3

Funding for commercially sensitive outcomes

2.

Or co-developed with relevant public health officials at relevant local authorities, who could with us to design our proposition, e.g. help us collect data, help us design which metrics to use etc. Together we then build a business case to take to other buyers e.g., CSR and philanthropy (still challenging but potentially more feasible).

1

Funding for specific outcomes linked to specific metrics

Feedback from buyer interviews

The main potential outcome buyer for health is the NHS. There have been **isolated examples of NHS paying for outcomes related to heating homes/energy efficiency**, however the system is complex and bureaucratic, and it can take a lot of effort and time to reach the desired outcomes. Examples are assessed on a case-by-case basis, and funding is generally limited.

We were able to gather many **insights on the structures, processes, and contact people** that we would need to locate to pursue the possibility of the NHS being an outcome buyer. This could make the process **less cumbersome and time consuming** than it has been for previous actors in the space (such as WHP).

The possibility of **utilising CSR as a source of funding for a pilot** scheme was discussed as an option – given the NHS funding limits and the time that it can take, this could prove to be a more viable short-term option.

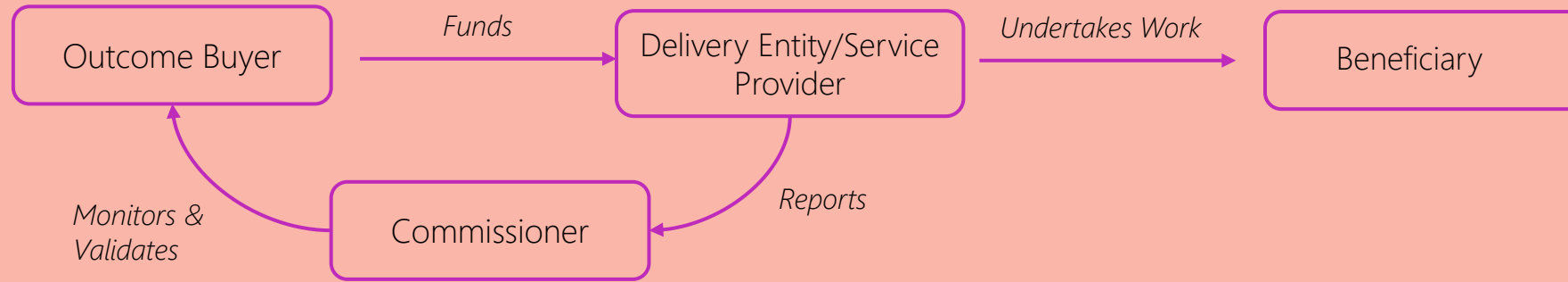
Other challenges of engaging health outcome buyers include the **difficulty of collating health care data**, and the difficulty building the **counterfactual**. Health is **potentially the hardest category** to build a proposition for, yet it could also have the highest impact.

Estimated market size

- It is estimated that poor mental health in the West Midlands costs the NHS [£2billion](#) a year – an equivalent to £3000 per person
- Since October 2021, the UK's Housing Support Fund has made over [£2.5 billion](#) available to support vulnerable households.
- British Fortune 500 companies spend approximately [£2.55bn](#) on CSR activity per year.

Health outcomes

Proposed delivery model



- **Outcome Buyer:** This could incorporate relevant public sector bodies, such as the Integrated Care System (ICS) via the Household Support Fund which is the money given to the council portion of the ICS. It could also be private sector bodies, such as corporates as part of their CSR budget.
- **Delivery Entity/Service Provider:** This would involve the project owner and its partners predominantly. In the case of the place-based transition projects in the West Midlands, this would involve a consortium of the combined authority, relevant local authority and contracted partners ranging from suppliers, to community engagement specialists, to finance specialists and design consultants etc. To work on a health based outcomes programme, there should also be involvement with the relevant public health officials for each project, likely based at local the council level.
- **Beneficiary:** Key beneficiaries of improved health outcomes would be citizens and local community members.
- **Commissioner:** The commissioner would monitor and validate the outcomes. This could be done via part of the delivery entity/service provider if it had the relevant capacity, or by a third party. The governance of the monitoring and evaluation framework should be set out at initiation of the outcome buying contract.
- **Role of the citizen:** Citizens should be considered strongly as participatory agents in this model to represent the views of the place throughout the process of establishing the outcome-buying agreement, helping to set indicators for health related outcomes they most want to see, being directly involved in the monitoring and evaluation of the outcomes to ensure they are indeed benefitting from the outcomes and finally having a say in how data representing their behaviour is used within this structure



Health outcomes

Opportunities in the West Midlands

- The WMCA has no devolved or statutory responsibilities for health aside from a target to reduce percentage of local wards where exposure to PM2.5 air pollution is above safe levels and create a general increase in life expectancy and life satisfaction.
- Therefore core opportunities will come from engagement with the Integrated Care Boards (Birmingham & Sandwell and The Black Country) who have both shown an interest in this work as well as the relevant Health & Wellbeing teams at Local Authorities across the West Midlands.
- Other opportunities can come from engaging with health technology or private sector health service providers to understand the data and baselining piece (for example the West Midlands Health Tech Cluster) . The WMCA also plans to create a [Radical Health Prevention Fund](#) to unlock innovative digital approaches to health prevention and become a pathfinder for electronic shared patient care records which could also be a significant opportunity.
- Though this market is less developed when it comes to specifically outcomes purchasing, there are so many great health outcome generating models we can take lesson from such as social prescribing which tend to have significant impact on citizens and have the potential to generate high citizen buy-in. These will be particularly relevant when thinking of very emotive issues such as damp & mould related conditions.
- We had good engagement with colleagues at Transport for West Midlands and the Environment team with ongoing work around Air Quality monitoring and the resulting impacts of local air quality on health with a keenness to engage further with a developing outcomes market. Furthermore, the Brockmoor NZN is being considered as a location for [DEFRA's WM-Air](#) particulate monitoring project

Energy systems outcomes

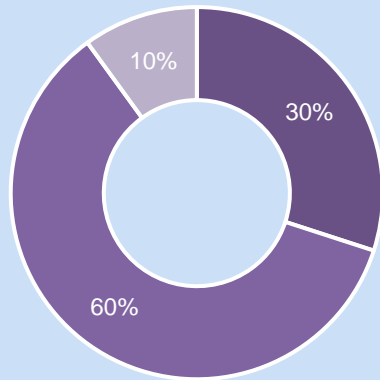
The proposition

3

Funding for commercially sensitive outcomes

To align capital expenditure plans with those of other Energy Systems infrastructure providers, resulting in spend efficiency and co-investment opportunities, while harnessing the enhanced outcomes to engage key Outcome Buyers, such as the DNOs.

Webinar Attendees from the Energy Sector:



Outcomes focused on Energy Systems will require coordination between a wide range of stakeholders within the sector, as represented by the spread of sub-sectors we have engaged with.

■ Distribution Network Operators ■ Energy Supplier ■ Renewables

Feedback from buyer interviews

The **Distribution Network Operators (DNOs)**, e.g. **National Grid**, are highlighted by a range of different stakeholders as being the most obvious 'Outcome Buyer' within this space.

There are a number of mechanisms through which place-based decarbonisation projects could be beneficial for DNOs, and it is important to note that these will vary depending on the exact locality and whether they are in Constraint Management Zones (CMZ). For example, in some areas, incorporating additional energy generation and storage (via solar & battery) could reduce peak load capacity on the grid and reduce the need for the DNO to invest in peak reinforcement. As a result, there is a case to be made for the DNO paying for this outcome. Having said that, the grid is also limited in the amount of generation it can receive, thus in some areas this particular mechanism will not be applicable.

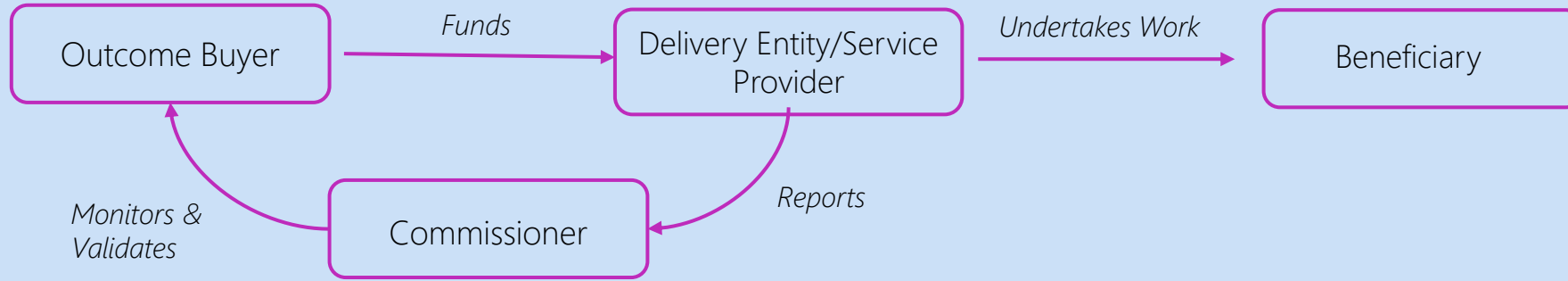
Conversations with other players in the Energy Systems space revolve around the potential for alignment of respective infrastructure projects in order to generate Outcomes. For example, bringing in Demand Side Response infrastructure from the likes of British Gas could help to flatten the demand curve when it is at peak, reducing the pressure on the grid – in turn strengthening the commercial case for the DNO.

Estimated market size

- National Grid's 'Great Grid Upgrade' initiative will see [£16 billion](#) invested from 2021-2026 to support the UK's net zero goals.
- UKPN has committed to saving customers [£410million](#) over the next five years by using flexibility to deliver capacity on the network at lower cost than building new infrastructure.
- SSE Group's fully funded Net Zero Acceleration Programme (NZAP), could will SSE invest [£24bn](#) in the UK over the next ten years.

Energy systems outcomes

Potential Delivery Model



- **Outcome Buyer:** This would be the Distributed Network Operator (DNO) responsible for transmission of energy from the sub-stations of the grid into consumers' homes. The Outcome Buyer, in this case, would contribute to the funding of a place-based decarbonisation programme to receive a commercially beneficially outcome for itself. For example, in some areas, by increasing local generation capacity via solar PV, this could reduce the pressure on the grid at peak times and, as a result, could result in savings for the DNO which may not need to upgrade the sub-stations in that particular area any longer.
- **Delivery Entity/Service Provider:** The project owner and its partners (e.g. a consortium of the combined authority, relevant local authority and contracted partners ranging from suppliers, to community engagement specialists, to finance specialists and design consultants etc.)
- **Beneficiary:** In this model, the key beneficiary of the Outcome would be the Buyer itself- i.e. the DNO
- **Commissioner:** The commissioner monitors and validates the outcomes. This could be done via part of the delivery entity/service provider if it had the relevant capacity, or by a third party. The governance of the monitoring and evaluation framework should be set out at initiation of the contract.
- **Role of the citizen:** As energy usage and consumption depends so intrinsically on the citizen, it is vital to ensure the relationships and role are captured. Citizens can participate in this contracting by representing the view of the place in the agreement of outcome-buying contracts. They would have to be involved in the process of monitoring and evaluating and how the data they produce/data representing their behaviour is used as the success of the proposition depends on consent to this data.



Energy systems outcomes

Opportunity in the West Midlands

- The success of this proposition depends strongly on buy-in and involvement from National Grid Energy Distributor (NGED) as the local DNO and to what extent ongoing projects overlap with areas of particular grid constraints (from WP2 mapping notably Coventry and parts of Wolverhampton in which the Graiseley NZN falls)
- We have a number of live opportunities through existing collaboration with NGED through the following innovation projects:

Within the Strategic Innovation Fund (SIF):

1. [EV Respond](#) – developing a rapid-response service using electric vehicles to restore power for people whose health and wellbeing relies on electricity, such as dialysis patients.
2. [Planning Regional Infrastructure in a Digital Environment \(PRIDE\)](#) - examines how using a digital twin & Local Area Energy Planning to visualise and model changes to electricity, heat, gas, transport, digital and water infrastructure, can make interdependencies, market opportunities and business cases more visible, therefore ensuring the investment decisions enabling decarbonisation of major loads are efficient and optimised.

As well as the [Equitable Novel Flexibility Exchange \(EQUINOX\)](#) project:

Which is running trials to unlock paid for flexibility services from residential low carbon heating (i.e heat pumps). Through this project, WMCA will aim bring as many trial participants in from retrofit and low carbon projects across the region (i.e heat pump installs from SHDF, HUG, LADS and NZN)

- Another SIF project – the [Proportional Investment of Networks in Energy Efficiency Retrofit \(PIONEER\)](#) is looking to measure and to demonstrate through pre and post retrofit monitoring the impact that energy efficiency (EE) measures have on network loads. The project aims to develop commercial models by which the DNOs can provide funding for thermal energy. Early findings suggest that they found that EE measures were worth between £30- £80 per house to NGED.
- Winter 2022's trial of National Grid ESOs demand flexibility service saw a huge public participation in the service showing strong citizen buy-in. Octopus reported that Birmingham showed the 'most energy saved' when compared to other large cities



Mobility outcomes

Key findings

Our core conclusion here is that Mobility itself is rarely the ultimate outcome, but can result in a host of second order outcomes itself (such as improved social, health and environmental metrics). With limited potential buyers for Mobility as a primary outcome, our view is that WMCA could work with transport infrastructure providers going ahead as fellow Outcome Generators (targeting buyers for the second order Outcomes), or as broader partners (e.g. when considering local area energy planning).

Key takeaways from engagements

Buyers for Mobility itself are limited (not considering the second order outcomes). One potential route could be transport operators (e.g. National Express) paying for transport infrastructure to be provided. However, given that the current business model for operators relies on infrastructure providers doing just that (i.e. providing the infrastructure), it would be difficult to persuade them to now pay for it. A potential route could be through a service model (e.g. National Express agrees to run a certain number of bus services on a route) but direct payment seems unlikely.

There is scope to engage the transport providers as stakeholders in other Outcomes, with potential routes to partnership to be more fully scoped out going ahead. For example, the airport is working to reduce the reliance of its energy system on gas, which could tie in with broader energy systems planning, and could potentially have medium/long term appetite in a highly local, good quality carbon offsetting offering

There is scope for WMCA to align with transport infrastructure providers as fellow Outcome Generators in order to create potential synergies rooted in place, and potentially increase the positive outcomes generated overall. For example, TfWM are working on mobility hub concepts which could be sold as part of a broader community retrofit programme. This could potentially enhance the business case for second order Outcome Buyers (e.g. health, carbon, social value etc.). Another example would be co-locating solar PV and batteries with electric vehicle charge points.

There could be other areas of market failure where there are large co-benefits/large potential from additionality that could benefit from additional investment. A good example is last mile logistics. If this could be transferred to an electric bike fleet, this could theoretically result in many benefits in air quality, noise, congestion etc. However there would still be a challenge in identifying one single buyer

6. What's next?

This section concludes on the best way forward to test outcomes-based propositions within the West Midlands and what a continuation of this work would look like.

- Summary of findings
- Recommendations for further work
- Potential impact and ability to scale

Summary of findings

Concluding remarks



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- The research, engagement and design activities in this feasibility study allowed us to truly appreciate the interconnected, entangled nature of place-based outcomes and that the single place approach means that resulting outcomes will likely amplify each other.
- From our 'Short List' we designed three early stage propositions and appreciated that all three existed within markets of varying maturity – with carbon being totally market ready, energy systems partially market ready and health showing early stages of market readiness. Considering precedents exist for each – the real value and innovation comes from how the different outcomes-contracts could interact and the notion that layering the resulting sources of capital together could make a dent in our significant funding gap.
- We found that 'Mobility' outcomes were very difficult to consider as succinct 'Hard' outcomes with defined buyers. They are instead likely to create a host of second order outcomes. This reinforces the effect of additionality for which we will need to ensure that we continue to revisit our 'Long List' and Problem statement in any follow on work to ensure a consistent whole systems perspective.
- Feedback from our three key stakeholder groups (outcome buyers, outcome generators and citizens of place) confirmed value in our approach to consider co-benefit quantification as an additional/alternative method to finance place-based projects.
 - Outcome buyers were generally interested but fed back that in order to participate they would require standard methods to exist for baselining, monitoring and validating the outcomes. Further engagement with impact investors and those in charge of allocating CSR budgets would be necessary in the next stage as we attempt to properly quantify the market opportunity.
 - Outcome generators (local authorities and representatives of place-based projects in the West Midlands) were very supportive and expressed interest in having their projects considered to demonstrate the outcomes-contracting to help them build stronger business cases for their own Net Zero transitions
 - Citizens of place represented by a workshop with community groups were also generally supportive but expressed concern that any outcome-based contracting design should be done in consultation with the people it most directly impacts. We considered this a strong theme across this piece of work as we looked at examples of participatory approaches, suggested citizen roles and identified their involvement as key to designing a *responsible* outcomes market.

Recommendations for further work

Planning for Phase 2

- We recommend the approach detailed on the right for a continuation of this work with an initial suggestion of what work packages could look like (though this would have to be refined in the Phase 2 application process as we engage with potential partners)
- We propose a data first approach as much of the feedback we received was around baselining and validating outcomes and building confidence in the approach. We propose using existing validation frameworks from more well established markets (i.e carbon) and the metrics/indicators that we identified in WP2 of Phase 1 to suggest an agreed regional framework for evidencing across our 'Long List'. We will build this from past, current and future planned projects to ensure the evidence base is strong.
- We would also like to carry out detailed proposition design with our three main stakeholders (buyers, generators and citizens) to develop and test the delivery models we identified in WP3 of Phase 1 and understand the costs associated with contracting, delivery, customer journey and opportunities for citizen participation. This will allow us to confirm our answer to the question of just how much outcomes-capital we can access to address our funding gap. Also continued engagement with our stakeholders will allow us to assess where market barriers are internally held within organisations and whether we should be focussing innovation there too.
- New governance structures will also need to be in place at a regional level (for which we are already working through as part of our negotiations with central government for Devolution) that allow for grant money to be aligned and spent more flexibly but also to allow for other forms of capital to play a role alongside. This will build on a huge amount of work already done with the Zero Carbon Rugeley project to design a regional funding entity for Smart Local Energy System delivery.
- Finally we would like test this concept to a point where we are ready to leverage in additional funding from outcome capital. So we propose to move into practical demonstration as soon as possible by implementing outcomes measurement and validation frameworks and potentially shadow contracting on current projects in delivery in the West Midlands (such as the Brockmoor NZN, local authority led delivery of retrofit through SHDF, LADS & HUG, community-led retrofit delivery, EV infrastructure upgrades etc) and on planned projects (other NZNs across the West Midlands). This would enable us to use a strong evidence base to engage with outcome-buyers with the specific aim of designing contract agreements that can allow further capital to flow into projects.
- Our successful engagement activities in Phase 1 have resulted in many potential partners across the outcomes space, many of whom have expressed interest in being part of a continuation of this work.

Phase 2: Demonstrators (up to £5mn over 21 months)

Work package 1: Framework for baselining, quantification, measurement and verification of outcomes to ensure evidence based/data first approach

Work package 2: Detailed design of Phase 1 outcomes propositions through co-production with buyers, generators and citizens

Work package 3: Developing underlying business and delivery models feeding back into answering the question of the funding gap

Work package 4: Design of overall outcomes market and governance structure

Work package 5: Implementing framework and trialling propositions in real transition projects in the West Midlands (the Demonstrator)

Potential impacts and the ability to scale

- If we can succeed in proving that the market for outcomes-based financing exists and there is demand in the buying and generating space and citizens are bought in – we could unlock brand new markets and alternative finance mechanisms to make more transition projects become investor ready.
- This would confidence to the many innovative approaches already happening in this space (e.g retrofit carbon credits, demand flexibility service, aligning healthcare spend for better wellbeing) and provide a regional market for them to operate within.
- Considering the real value & innovation comes from layering the different outcome capital together to funnel them into singular place projects. If successful, this concept has the ability to fundamentally shift how we think about current grant spend for singular outcomes and allows us to broaden our achievements by creating efficiencies in spend and resource
- This also helps to strengthen our negotiations for continued Devolution within the West Midlands and build confidence in central government that the West Midlands has the ability to spend a single devolved funding pot for retrofit efficiently



ENERGY CAPITAL



Creating impact and scale through collaboration

Considering one of the WMCAs core roles as conveners, we are in a strong position to bring any learnings from this project to key regional partners such as Transport for West Midlands, the integrated care boards and all our local authority partners. Additionally as Energy Capital has strong relationships with the private sector, our reach is further than just the public sector. Dissemination through these channels has the potential to enable other places, companies and institutions to think about and adopt outcome-based practices which allows further scale and buy-in.

A few examples of these are listed below:

- We were very keen for others working in place-based transitions to learn from our work and so many of the resources (maps, charts, diagrams) have been created as open source.
- We regularly convene the Net Zero Neighbourhoods Working Group which consists of 15 LAs (across the West Midlands but also nationally) and various other organisations working within place-based retrofit. We presented this project to them once when we kicked off and again through an in person workshop
- We host monthly Energy Capital collaboration days that allows organisations within the West Midlands and beyond to collaborate on shared challenges. This project was also presented to them and will continue to update members on progress through our monthly meets.

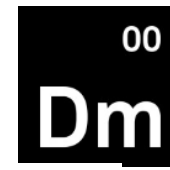
Appendices

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Carbon: Interview summary – HACT



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West Midlands
Combined Authority

Carbon



Participant

Antoine Pellet - Customer Relationship Lead - Retrofit Credits

Business Summary

HACT are a social housing charity based in the UK. They are one of the first organisations to establish a third-party verified carbon credits scheme for retrofit. The scheme – called 'Retrofit Credits' – has created a methodology which determines both the GHG emissions reductions of a given retrofit project as well as a range of social impacts.

Key Conclusions

- HACT were receptive to the idea of working alongside WMCA, and confident that the Retrofit Credits scheme would be well suited to the projects being done.
- HACT have already worked with local authorities and combined authorities across the UK, and were able to suggest a number of models for potential collaboration.
- Retrofit Credits could make a meaningful contribution towards paying back CapEx needed for the projects.
- The domestic nature of HACT's proposition offers opportunities to develop the domestic carbon credit market, offering buyers the attractive chance to offset their carbon locally.

Meeting Takeaways

- If someone does a piece of retrofit, HACT measures it for CO2 reductions and social impacts. HACT then sell credits, taking a small commission for themselves and passing the rest on to the provider (e.g. landlord, local authority, installer of measures).
- In addition to being one of the only credit schemes focused on retrofit, another distinguishing factor is that HACT's credits incorporate social value generated. The social impact component is sold alongside alongside the carbon as part of the same credit.
- In 2021 UK-based organisations offset 14.9 million tonnes of carbon (most recent data).
- 97% of these credits were abroad.
- HACT offers credits for innovative and local projects. Currently demand is far higher than supply for the type of credits it offers. To-date, HACT has sold its first cycle of credits (which it intends to do every 6 months).



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Carbon: Interview summary – Redshaw Advisors



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Carbon

Participant

Tiffany Cheung - Carbon Project Assessor

Business Summary

Redshaw Advisors are a group of emissions market experts that assist companies with understanding their direct and indirect carbon risk exposure and help them hedge it. They also assist companies and supranationals in elements of carbon market design, and support financial institutions in their efforts to invest in carbon markets.

Key Conclusions

- As highlighted in other interviews, it was emphasised that there is clearly a market demand (and willingness to pay a premium) for high quality, innovative, and local projects. Currently demand is outweighing supply. There are a wide range of buyers, including private companies, academic institutions, financial institutions, airlines, etc.

- They are enthusiastic about the project and willing to provide a letter of support.

Meeting Takeaways

- Potential buyers are willing to pay a premium for local/ innovative projects, as well as engage in forward off-take agreements. Redshaw advisors have received approaches from retrofit based project owners to see if they could be eligible for carbon credits - which they often are.

- Scale is important if attaching credits to a project: you need to calculate avoided emissions per home and then scale up across all locations. The current scale is fine because it is a pilot, but it would definitely need to be bigger to be feasible in the future to engage buyers.

- Three things that buyers would want to know or need before agreeing to offtake: 1) Forecast emissions savings; 2) scale of the project - which needs to reach a certain threshold; and 3) general financial viability of the project.

Carbon: Interview summary – Anthesis Group



Carbon

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Participant

Matt Rooney - Associate Director

Business Summary

Anthesis Group is a large sustainability consultancy/ ESG-data provider, that works with cities, companies, and other organisations to drive sustainable performance. Amongst many other things they are active in the voluntary carbon markets, where they are developing the concept of 'insetting' - localised and high quality carbon credits.

Key Conclusions

- Whilst carbon is an important part of the 'insetting' platform, a wide range of other outcomes are also incorporated that appeal to a wide range of actors. There is clear scope for the platform to play a part in securing funding for a number of outcomes of WMCA's initiatives.

- Anthesis Group are enthusiastic about the possibilities of working alongside WMCA and are willing to provide support to the project.

Meeting Takeaways

- Insetting and its relevance to WMCA: the concept operates on a 'dual approach' aimed at actors that simultaneously want to offset CO2, and also have positive impacts on the local communities in which they operate.

-Anthesis offers a platform that matches funders and projects, they essentially acts as a middleman connecting projects/prospective projects those willing to fund.

- There is a broad spectrum of funders that are after a range of different outcomes / types of projects.

- The problem is that it can take up to two years after a project to generate credits. It is also an expensive process to verify, and as such is not viable for small projects. The platform is working to bundle smaller projects such that it becomes viable to make a claim. In the case of a large NZN, the opposite could be done, i.e. a project could be divided into correctly sized chunks to be suitable for the platform.



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UK

Carbon: Interview summary – HSBC



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Carbon

Participant Chris Webb - Group Head of Carbon Markets

Business Summary

HSBC is a British universal bank and financial services group headquartered in Birmingham.

Key Conclusions

HSBC could be a potential buyer worth engaging in the medium to long term. Worth scoping out whether the traditional 'removal' vs 'avoided' credit definition applies within the more innovative retrofit context, and engage with potential buyers on this. The engagement here has enhanced our view that high quality, local UK-based projects would be of interest.

Meeting Takeaways

- HSBC has dedicated carbon markets resource, whose role is to understand the global carbon markets and help clients navigate them where relevant, as well as support HSBC's own carbon markets strategy.
- Chris observed how the UK/Europe have historically had minimal supply of carbon credits. This is changing slowly, for example through the Woodland Carbon Code, but not significantly.
- From engaging with buyers in the market, Chris sees there being a 'flight to quality'. Furthermore, corporate buyers like to support projects that has some tie to stakeholders of their business. He also believes that buyers are still grappling with managing risks associated with carbon credits (e.g. proving additionality).
- HSBC themselves are focusing on reducing carbon currently, but acknowledge that there will be residual carbon that needs offsetting in the medium to long term. The context is the group commitment to be Net Zero by 2050 including its balance sheet, but for operations to be Net Zero by 2030. The group would focus on removal rather than avoided credits. Within that, cost would be a consideration (e.g. permanent removal credits may be less attractive given their 40-50x premium compared to other removal credits). UK based projects would be of interest.



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UK

Health: Interview summary – Warm homes Prescription



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WARM HOME
PRESCRIPTION

Health

Participant

Dr Rose Chard - Fair Future Programme Lead , Technical Lead on Warm Home Prescriptions

Business Summary

A service piloted by Energy Systems Catapult and the NHS, helping vulnerable people with cold-sensitive health conditions and low incomes, to stay warm, well, and out of hospital – by paying their energy bills over winter. The pilot aimed to determine whether it is more cost-effective overall to help pay the heating costs of vulnerable people than it is to pay for their health care if they fall ill.

Key Conclusions

- There have been isolated examples of the NHS paying for health outcomes related to homes/ energy efficiency, however, funding is limited. In addition, the system is incredibly complex, and navigating it to find the right people is a time-consuming process of trial and error.
- Emphasised that CSR can play an important role in funding these types of projects, particularly piloting of innovative initiatives.
- They are willing to provide advise and support to WMCA as they embark on this journey.

Meeting Takeaways

- Initially pilots were done with NHS Gloucestershire; these started with just 30 homes but were soon expanded to 150. WHP is now working with 3 NHS trusts to further expand the scale of trials and to gather more robust evidence of the impacts.
- Local NHS Trusts do have some ability to spend money on conditions of homes; for example, the ICS is funding Energy Advice to minority and ethnic groups in one of the areas WHP are working with this winter.
- However, the NHS is highly complex and bureaucratic, as such it can take a very long time to reach a desired outcome. To be successful you must be determined and patient.
- Provided key details on the correct sub-organisations, departments, and people to reach out to to begin a dialogue about funding these types of outcomes.



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Health: Interview summary – Alice Jones



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Health

Participant

Dr Alice Jones - Alice Jones Impact Consulting

Business Summary

Alice Jones Impact Consulting was established in 2012 to provide social impact research and consultancy, focusing on the social housing sector and their work with both properties and people. The organisation provides independent research and evaluation to capture the social, economic and environmental impact of clients' projects and services.

Key Conclusions

The NHS is the most obvious outcome buyer, however it is a complicated and time consuming organisation to deal with - engaging with the right people that are committed to the issue is critical.

Despite the challenges, the NHS does have a mandate for promoting healthy home environments, and a strong evidence base is building on the positive health impacts/economics of retrofit interventions.

Alice said she would be happy to engage with us again to provide advice and support for the project in the future.

Meeting Takeaways

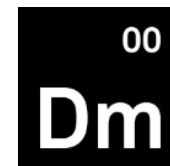
There was extensive discussion on the methodologies and tools that can be used to determine/quantify social impacts, including on topics such as 'social return on investment', as well as the ways this information can be used to feed into funding decisions (highly relevant for outcome buying concept). In addition to measuring and selling health outcomes, the prospect of mental health and wellbeing outcomes was raised as something promising to explore further.

Advice on engaging health sector as outcome buyers: the discussion confirmed much of what we observed in previous conversations, namely that the NHS or more specifically ICS does have a mandate for preventative medicine/promoting health home environments. However, engaging can be time consuming. We received detailed advice on optimising this engagement, including the central importance of finding commissioners that are enthusiastic and committed to the idea, as well as the effectiveness of an 'anchor institution' approach with regards to long term promotion of public health impacts.



Innovate
UK

Health: Interview summary – Birmingham and Solihull Integrated Care Service



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West Midlands
Combined Authority

Health



Participants

Salma Yaqoob - Associate Director of Inclusive Health
Richard Wilson - Chief Analyst
Nicola Pugh - Inclusive Health Project Manager

Business Summary

The Integrated Care Systems (ICSs) are partnerships of local NHS, councils and voluntary, community and faith sectors that come together to plan and deliver joined up health and care services. There are 42 in the UK. BSICS undertakes strategic planning for the wellbeing of the 1.3m people of the sub-region.
The ICS is governed by a board that agrees strategies etc.

Key Conclusions

The NHS officers were very interested in the logic model set out (see Kumu model) and thought that this was definitely the way to go. There was acceptance that the determinants of health are highly complex and couldn't be directly linked to interventions in retrofit (for example) but that this was no reason to not collaborate further. They would be open to both quantitative and qualitative research methods. There is potential for collaboration to co-develop metrics around health.

Meeting Takeaways

- Birmingham and Solihull is the most challenged ICS in the country with large parts of the sub-region suffering from poor health.
- The overall strategy is to move towards a wider set of outcomes
- Overall strategy is to focus on the 20 most deprived areas and 5 most prevalent conditions – CPD & respiratory, cancer, mental illness, diabetes and maternity and infant wellbeing
- Data is a key challenge and the ICS is still at an early stage with having an integrated picture
- They have a 10 and 5-year strategy (latter includes references to retrofit).
- NHS still has a tendency to be reactive and treat disease rather than prevent it.



Innovate
UK


Mobility: Interview summary – Transport for West Midlands



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Combined Authority



Transport for
West Midlands

Mobility

Participant Christopher Brown, Senior Future Mobility Developer

Business Summary

Transport for West Midlands (TfWM) is the public body responsible for co-ordinating transport services in the West Midlands. It is an executive body of WMCA.

Key Conclusions

Mobility infrastructure itself is not an Outcome, but can generate outcomes. As a result, aligning mobility infrastructure related programmes with WMCA's place-based Net Zero programmes could generate increased positive Outcomes: e.g. increased carbon abatement, additional reduction in air pollution, greater social value through broader community benefit etc.

Bus services were discussed as a potential buyer of Mobility infrastructure, although Christopher's view would be that this would be a difficult sell given the current model is that the bus operators benefit from the public sector's focus on building infrastructure. Furthermore, Christopher's view is that National Express (which owns >90% of the market) is currently under financial pressure.

Meeting Takeaways

- Working on developing the '**Mobility Hub**' concept. These are compact urban spaces which bring together a range of sustainable transport options - for example, by co-locating transport options. In addition, they consider alternative ways to make transport hubs more appealing (e.g. incorporating green spaces, pop up food stalls etc.)
- Key aim is to reallocate space so it becomes less car friendly and more sustainable transport friendly. Currently working on three pilots.
- Outcome Buying is a familiar concept to TfWM given that they consider the full suite of Outcomes when writing business cases for various projects. Christopher's view is that transport planners & central government are the key outcome buyers in this space.
- Mobility, in Christopher's view, is not an Outcome but can generate a number of different Outcomes. Key ones they consider when developing projects include: Money value of time spent; Carbon abatement; Air pollution reduction etc.



Innovate
UK

Mobility: Interview summary – Birmingham Airport



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Mobility

Participants

Tom Denton, Head of Sustainability & Nikki Bains, Head of Planning, Transport & Strategy

Business Summary

Birmingham Airport is an international airport located 8m east/south-east of Birmingham city centre, owned by the seven metropolitan boroughs of the West Midlands and the Ontario Teachers' Pension Plan. It is responsible for the safe and secure processing of passengers and aircraft through the provision of facilities and infrastructure.

Key Conclusions

The airport group could be worth engaging with to explore a variety of different outcomes, in particular on energy systems and mobility. On both, they are looking very actively at measures that can be taken to improve social and environmental outcomes, thus could potentially be both outcome generators or buyers, depending on the context. On carbon, the team were less engaged initially, but their interest increased when presented with the potential for a highly local and good quality credit scheme.

Meeting Takeaways

- Airport has a 2030 Net Zero target, which incorporates Scope 1 & 2 emissions, but not Scope 3.
- **Energy Systems:** The airport is actively moving away from gas. The initial plan was to electrify the energy system (have a solar PV programme underway, which should be complete by March 2024 and provide solar energy for 25% of the airport's uses). Now the group is considering retaining some of its gas network to potentially utilise hydrogen later down the line (had discussions with Cadent on this matter).
- **Carbon:** Airport is currently focused on reducing carbon but acknowledges that there will be residual carbon to be offset in the long term.
- **Mobility:** This is an important area for the airport, in particular considering sustainable mobility options for its staff who often have to be in at early hours, before there is much public transport available. The team is exploring demand responsive transport, but previous attempts have failed due to lack of uptake. Having said that, this continues to be a focus.
- The team is sceptical about mobility-as-a-service given the idea has been around for a while, but with no successful examples. This is not helped by the British cultural importance placed on ownership, in their view.



Innovate
UK

Energy Systems: Interview summary – National Grid



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West Midlands
Combined Authority

Energy System

Participants

Paul Morris - Innovation Team Manager; Nick Devine - Innovation Engineer, National Grid Electricity Distribution (NGED)

Business Summary

National Grid is a private company responsible for managing the UK's high-voltage electric power transmission network, connecting power stations and major substations, and ensuring that electricity generated anywhere on the grid can be used to satisfy demand elsewhere. National Grid Electricity Distribution (NGED) is the regional electricity distribution division of National Grid, serving c8m customers, including in the West Midlands. The Innovation Team develops future-orientated insights and plans to help position the organisation to survive in a changing world.

Key Conclusions

- NGED have a mandate to explore the opportunities associated with retrofit and are actively researching how best to do this. In addition they do have funding available which can be used to test out innovative models to tackle big issues such as net zero/ the decarbonisation of heat.
- The location of pilots is critical - they will only be interested in contributing funds to initiatives in areas where the network is in need of reinforcement. If that is the case, then NGED could be open to exploring retrofit/other measures that help to delay/eliminate that need.

Meeting Takeaways

- NGED see decarbonisation of heat as big challenge they must help tackle, and are actively exploring ways in which they can contribute to this, for example, through energy efficiency measures.
- They now have a license to consider energy efficiency as an instrument to use instead of reinforcing the network physically, or using flexibility models (i.e. demand side response management).
- The innovation team use external funding to finance initiatives. Importantly, this allows them (on behalf of NGED) to take developmental risks which they wouldn't otherwise have a mandate for.
- The location of intervention matters as not all sub-stations are close to capacity. The potential incentive to fund retrofit depends the chosen area being in need of reinforcement due to capacity constraints.
- Because of the high capital needs of retrofit, NGED could not be a first mover in funding interventions outright, however they recognise there is a financial incentive for them, and that they have a role to play in financing alongside other partners.



Innovate
UK

Energy Systems: Interview summary – British Gas



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Energy System

Participant

Ian Mather, National Renewables Strategy Business Development Manager

Business Summary

British Gas, owned by Centrica, is the largest UK energy and home services company, supplying both gas & electricity. British Gas Zero is a dedicated unit supporting transition to Net Zero, including specialist areas for heat pumps, fabric, solar etc. The PH Jones part of the business, where Ian Mather sits, specialises in social housing.

Key Conclusions

WMCA could engage with British Gas as an Outcome Generator. There would be potential to align interventions planned for WMCA's place-based Net Zero projects and the rollout of Demand Side Response measures across the West Midlands (an area that is already being focused on by British Gas). **Together, the organisations could develop an attractive proposition with which to engage the grid operator(s) as potential Outcome Buyers.** Furthermore, there are potential incremental social benefits to the community that could be harnessed a separate Outcome stream.

Meeting Takeaways

Key value add is via **Demand Side Response (DSR)**, which is the management of assets (e.g. fridges, heat pumps etc.) via a virtual power plant to support the grid.

- Works to smooth demand on the grid, as such generating potential revenue streams for grid operators.
- Pilot schemes have passed some of these savings onto the residents e.g. via annual retail vouchers. There could be models for further community benefit explored (e.g. communal wifi, community hardship/contingency fund).
- Currently piloting the incorporation of storage heaters into the virtual power plant system in the Midlands. Storage heaters have the potential to prevent the grid having to dump power or fire up additional generation, enhancing the positive impact from DSR
- Key barrier to incorporate heat pumps into the system currently is working with manufacturers to allow software to be integrated into hardware. Currently working with 3 key manufacturers.



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Energy Systems: Interview summary – Snugg



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Energy System

Participant

Michelle Robinson - Head of Business Development

Business Summary

Snugg is an online platform that aims to help improve the energy efficiency of homes. It does this by analysing current and potential performance, and creating a personalised home improvement plan which includes links to relevant grants and recommended local installers. Snugg's goal is to make home energy efficiency more simple and more affordable.

Key Conclusions

The key takeaway from the Snugg conversation is that there are a number of more novel potential Outcomes that can be considered. While Snugg is not necessarily thinking about employers putting capital to work to encourage home retrofit, the idea certainly demonstrates thinking outside the box. Furthermore, a number of the outcomes we have considered have potential to be harnessed to attract Corporates as buyers. Thus, layering different benefits (e.g. reducing scope 3 emissions alongside broader health and wellness employee benefits) could help enhance the business case.

Meeting Takeaways

- Snugg is primarily focused on the able-to-pay market, developing a tool to allow homeowners to engage with individualised household data and engage with various parts of the retrofit journey (e.g. suppliers, potential finance providers).
- Snugg is at the early stages of thinking about relevant Outcomes angles for its platforms, with the view to develop incremental ideas for our retrofit could be funded.
- One key idea is looking into Work From Home (WFH) trends and specifically whether the increase in home working could build a business case for employer's to contribute to this cost. Specifically, people's homes could gradually come within a businesses' Scope 3 emissions and therefore employers could consider encouraging home retrofit as a way to reduce their Scope 3 emissions.
- Worth noting, that Snugg is viewing this less as a potential monetary contribution from employers, but more as employers facilitating knowledge sharing around retrofit (e.g. via webinars, buying corporate access to the Snugg platform etc.)



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Project team



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Bankers without Boundaries (WP1 & WP3)

- Christine Zhou (work package lead)
- Rufus Grantham
- Mansi Dixit
- Isaac Caiger-Smith

Dark Matter Labs (WP2 & WP3)

- Cat Magill (work package lead)
- Daniel Hill
- Jack Minchella
- Calvin Po
- Oliver Burgess

Energy Capital/WMCA (WP4 & WP3)

- Ayushi Vyas (work package lead)
- Cheryl Hiles
- Kate Ashworth
- Eleanor Pitcher

Innovate UK

- Nick Jones (Monitoring officer)
- Sophie Randall (Innovation lead)