SONNET - Social Innovation in Energy Transitions

Co-creating a rich understanding of the diversity, processes, contributions, success and future potentials of social innovation in the energy sector

D4.4 (D15):
Report on the SIE City Lab in Bristol

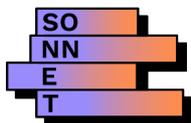**Project Coordinator:** Fraunhofer ISI (Karoline Rogge)

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Version: 1.0

October 2021

SOCIAL INNOVATION IN ENERGY TRANSITIONS

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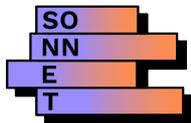
GA#: 837498

Funding type: RIA

Deliverable number (relative in WP)	D4.4
Deliverable name:	Report on the SIE City Lab in Bristol; specifying insights regarding processes (incl. enabling and impeding conditions) and contributions of SIE
WP / WP number:	WP4
Delivery due date:	July 31, 2021 (extended to October 31, 2021)
Actual date of submission:	October 29, 2021
Dissemination level:	Public
Lead beneficiary:	Bristol City Council – City of Bristol BRIS
Responsible scientist/administrator:	Lorna Humphreys and Matthew Jones (BRIS)
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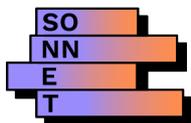
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No	Participant name	Short Name	Country code	Partners' logos
1	Fraunhofer Society, with its Fraunhofer Institute of Systems and Innovation Research (Fraunhofer ISI)	ISI	DE	
2	Dutch Research Institute for Transitions	DRIFT	NL	
3	University of Sussex, with its Science Policy Research Unit (SPRU)	UoS	UK	
4	Grenoble Ecole de Management	GEM	FR	
5	Akademia Leona Kozminskiego	ALK	PL	
6	Zuercher Hochschule for Applied Research	ZHAW	CH	
7	ICLEI European Secretariat	ICLEI	DE	
8	City of Mannheim	MANN	GER	
9	City of Antwerp	ANTW	BE	
10	City of Bristol	BRIS	UK	
11	City of Grenoble	GREN	FR	
12	City of Warsaw	WARS	PL	
13	City of Basel (Associated Partner)	BASE	CH	

Preface

Bristol City Council focuses on the questions: How can crowdfunding as an investment activity be made use of to collectively raise the capital to install energy efficiency measures within community buildings within an urban area? Community centres have always been hubs for communities in the UK. Cuts from local authorities mean that many services once coordinated by the council are now being taken on by the local community. Community occupied buildings are often the last to receive the necessary energy efficiency adaptations and this is nearly always down to a lack of finance. The energy efficiency of these buildings is key to the level of comfort. Moreover, if energy bills can be reduced, there is ultimately more revenue available for the community to undertake their core activities. Crowdfunding not only has the benefit of being able to raise capital in a collective way, but it also is a method that attracts attention by its very nature and requires the residents of Bristol to come together to raise the funds required.

Executive Summary

This report has been compiled to document all the stages that the City of Bristol's City Lab has been through; from the conception of the idea, to the roll out of the surveying of citizens and community building managers and undertaking building energy audits. The City Lab chose to investigate the possibility of using crowdfunding - specifically a Community Municipal Bond (CMB) mechanism - to fund energy efficiency measures in community buildings. This took the form of surveying citizens across Bristol and building managers of the community buildings about their opinion of such an initiative as well as technically surveying the buildings to assess the value of the energy efficiency works that needed to be undertaken and the resultant business case. It was clear to see that the majority of building managers believed that energy efficiency measures needed to be undertaken in the buildings that were assessed whilst most citizens surveyed also agreed with this. 57% of citizens surveyed confirmed that they would be interested in investing in a CMB which compares favourably with comparable surveys undertaken elsewhere. Some citizens did raise the question about the levels of affluence in some of the areas where community centres were located and whether this would potentially reduce the amount of CMB interest. The City Lab also conducted energy efficiency surveys on a selection of community buildings. This revealed that there was around £200k of possible investment opportunity. It is clear that this portfolio would need to be increased in order to deliver the best value to Bristol and its citizens. Bristol City Council is now looking at doing just this and progressing through its internal decision pathway to seek senior officer and political leadership permission to launch a Community Municipal Bond in the future.
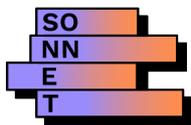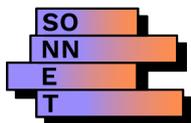
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1.1   Information about city lab-like activities before SONNET

What have been city-led initiatives towards energy transition & their outcomes up to date?

Bristol is leading by example in taking action on climate change and net zero. Bristol was the first UK city to declare a climate emergency and has committed to being a carbon neutral city by 2030. Since 2005, Bristol City Council has delivered a wide programme of energy efficiency and investment initiatives, investing tens of millions of pounds in renewable energy generation and energy efficiency and meeting its 2020 corporate carbon reduction target three years early. The city is now moving forwards with innovative pilot schemes that will help build the city's future smart energy system. This level of delivery, coupled with the city's thriving community energy scene and a wealth of socially responsible organisations, is just one of the reasons why Bristol is internationally recognised as a leading UK city working towards a clean energy transition. A summary of key actions to date include:

- Bristol became the UK's first local authority to build and manage its own large-scale wind turbines
- Helped over 2,000 private and council-owned homes become cosier, healthier and more energy efficient through its schemes
- Delivered a multimillion-pound solar investment programme on its corporate and community buildings. Installed over 8 Megawatts (MW) of solar PV across the city
- Established a best-practice community energy fund which has provided funding to support over 30 local groups with their sustainability and energy efficiency projects in communities
- Nearly £2m invested in energy efficiency refurbishments across council-owned buildings delivering £1m annual savings on its energy bills
- Launched the first section of its new low-carbon and lower-cost heat network in Redcliffe and Bristol's Enterprise Zone, as well as a number of mini heat networks serving social housing across the city
- Launched the innovative City Leap[1] initiative to deliver more than £1 billion of investment towards Bristol becoming a zero-carbon, smart energy city by 2030
- Met and exceeded its target to reduce carbon emissions by 77%, three years early. These targets have since been updated, with Bristol's end goal being to become a carbon neutral city by 2030
- In 2020 Bristol also launched the One City Climate Strategy[2]

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[1] https://www.energyservicebristol.co.uk/wp-content/pdf/City_Leap_Prospectus%204-5-18.pdf
[2] https://www.bristolonecity.com/wp-content/uploads/2020/02/one-city-climate-strategy.pdf
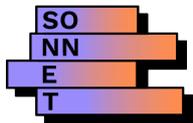
What have been other initiatives towards energy transition (private, civic) & their outcomes up to date?

It is important to acknowledge that Bristol City Council cannot tackle climate change and achieve carbon neutrality alone. Key to its success is the involvement of the entire city such as residents, local businesses, third sector organisations and beyond.

Bristol is often referred to as a hotbed of activity when it comes to community-based energy activities. It has an abundance of community energy groups and initiatives spanning across the city. Organisations such as the Centre for Sustainable Energy (CSE), Bristol Energy Network (BEN) and the Bristol Green Capital Partnership (BGCP) are often seen as gatekeepers to this hub of knowledge and action. BGCP have a network of over 900 organisations from a plethora of sectors in the city. The city is also home to organisations such as the Bristol Energy Cooperative (BEC) who have installed a total of 9MW of solar PV. This is only touching on a tiny amount of the work that is happening in the city.

Whilst Bristol has an incredible amount of activity in this space, (and in 2019, 88% of Bristol resident's[3] surveyed claim to be very concerned or concerned about climate change) there is still a significant amount of work to do to translate plans to action across the city. The One City Climate Strategy aims to be a call to action on challenging climate change and provides the framework within which the people of Bristol can each take responsibility and work together to transform the city.

Another initiative that is critical to Bristol's pathway to carbon neutrality is City Leap. City Leap is a series of energy and infrastructure investment opportunities that represent a big step towards a cleaner, greener Bristol. This will not only create a healthier and fairer city for all Bristol residents, but also allows success to be shared. It will help to create jobs, maintain Bristol's economic competitiveness, de-carbonise the city, build strong partnerships and empower people to take their future into their own hands. Since September 2020, a procurement exercise has been underway to identify the future Strategic Partner for City Leap – the organisation or consortium that will work with the council to deliver more than £1 billion of investment towards Bristol becoming a zero-carbon, smart energy city by 2030.

Which were areas/topics tackled by those initiatives, and which have been neglected, and why?

To meet the 2030 target there are a host of initiatives that will need to be developed and enhanced to achieve this. In particular more could be done around decarbonising Bristol City Council's housing stock and moving towards greener sources of home energy to remove households' from reliance on gas. The high capital cost and lack of grant funding are factors in the slower retrofitting of homes which City Leap above may help to tackle from a finance perspective. National policy also has an impact in this area such as challenges faced by residents

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[3] https://www.bristolonecity.com/wp-content/uploads/2020/02/one-city-climate-strategy.pdf
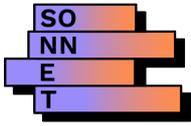
and authorities alike of accessing, interpreting and delivering the Green Homes Grant which has been one of the main central government residential decarbonising funding mechanisms in recent years.

1.2   Understanding of SIE for SONNET

How is SIE understood in the city lab? What are its major characteristics?

By its very nature, Social Innovation in Energy (SIE) has an extremely broad definition and it has been interesting to delve down into what it means for us in Bristol. By looking at the defined typology of SIE (Deliverable D1.1) I.e. doing, thinking and organising energy in new ways by means of differing social relations – cooperation, exchange, competition and conflict, we can see that we have clear examples of each of these at play in our city.

Within our City Lab though, it is clear that we are focusing on 'investment and finance mechanisms' whilst touching on 'local energy production and consumption' and 'peer to peer learning'. At this point in the report we are considering the City Lab in an ex-ante way thus we are unable to comment further on the SIE typology fit at this stage.

Below are presented just a few examples of some of the typologies of SIE in the city so that we can convey our understanding of what they mean to us and how this has translated into our thinking for our City Lab (this is detailed in the following paragraph explaining how the City Lab topic was decided based on other examples of SIE typology in the city of Bristol.:

- Local energy production & consumption – there is a large amount of this in Bristol, exemplified perfectly by Bristol Energy Cooperative's (BEC) 9MW of installed solar capacity. BEC are a community-owned energy cooperative, growing the local area's green energy supply and making the benefits open to all. They have raised £14m to date from public share offers. Ambition Community Energy (a community energy group) have also recently received planning permission for one of the largest onshore wind turbines in the country which will produce enough electricity to power around 3,500 homes whilst delivering benefits directly back to the community. This will be located on Bristol City Council land in the area of Avonmouth.
- Action against specific energy pathways – when in 2017 diesel generator powered STOR (Short Term Operating Reserve) plants were proposed in an area of Bristol, a community action group was formed – RADE (Residents Against Dirty Energy) to oppose it and also to offer up alternative uses for the site like a battery storage system. The proposal for the diesel generator was subsequently refused planning permission.
- Energy education – WHAM project (Warm Homes Energy Advice and Money) - aiming to reduce financial, food and fuel poverty in Bristol. It combined energy education (particularly in the form of how to make your house more energy efficient and financial advice – provided by Bristol Energy Network and the Centre for Sustainable Energy) with financial advice and practical energy efficiency measure help such as draught proofing.
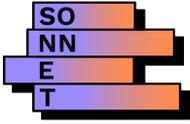
- Peer to Peer learning - Energy Champions – this is a BEN initiative with a vision for every neighbourhood in Bristol to have a local person to turn to for energy advice, a person who would champion energy saving in their community. BEN provide training to Energy Champions to help enable them to support energy groups in the city, work with community groups wanting to run energy programmes or to start their own projects.
- Investment and Finance mechanisms – Bristol Community Energy Fund (BCEF), a Bristol City Council initiative, was developed to offer grant and loan funding to community energy projects in the city. It successfully awarded nearly £250k in grants and just under £130k in loans. This funding was seed funded from the Department for Business, Energy and Industrial Strategy (BEIS).

How was it decided? If any, what were other options considered?

Drawing on past experiences of SIE in the City, the City Lab was able to see a niche that hadn't been explored in its entirety. This led on to the development of the Bristol City Lab project of looking into alternative financing mechanisms to fund energy efficiency works in community buildings. We have built on many different projects and learning outcomes to be able to position the city lab to be a successful research project. Having had experience with the BCEF project, we were keen to explore how Bristol could raise its own capital to fund energy projects unlike the central UK government funded BCEF project. This was also touching on the experience of BEC who have raised £14m from share offers through private and institutional investors. We realised that if we could raise finance from the community, then we had the potential to also generate social capital at the same time.

Who was involved in defining SIE in the city?

This is something that has been defined through practical applications and the success of projects across the city. No one person has been responsible. Bristol takes a co-design approach to project development seeking to enable and foster community ownership of projects where possible. Bristol Energy Network (BEN) has been instrumental in the co-design of the Bristol City Lab. They have worked with Bristol City Council throughout to design and implement the project.
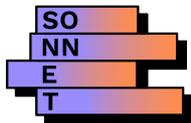
2 SONNET CITY LAB PROCESS

2.1 Setting the stage and challenge structuring:

What is an energy related issue that is to be addressed by a city lab? What is the rationale behind the choice?

The topic that was chosen by Bristol City Council to focus on for the SONNET City Lab was energy efficiency in community buildings and how to fund the works in an innovative way. This is an issue that has plagued community buildings for many years. Community buildings are often older and have poor energy efficiency. This has an impact on how much it costs to run these spaces as well as to the comfort and usability of the buildings. The tenants of these buildings are often community organisations who do not have buoyant levels of financial reserves to a) pay for their energy bills b) to complete the energy efficiency works themselves. The focus initially would be on Bristol City Council owned buildings due to the perceived ease of administrative tasks around these however it remains the ambition to include all community buildings in the city.

Bristol City Council wanted to explore the feasibility of investment-based crowdfunding (specifically Community Municipal Bonds – CMB) as a way of raising finance to fund these energy efficiency measures in community organisation tenanted buildings. Bristol has a strong track record in delivering energy efficiency projects in Council owned buildings. Since 2005 Bristol City Council has been operating one of the UK's largest Salix[4] recycling funds for improving the energy efficiency status of public sector buildings. The fund was extended to £1.8m in 2016 and will have invested around £700k alone in 2017/18. However, Salix was stopped in March 2021. Despite the Decarbonisation Fund[5] being put in its place, it is important for BCC to look at alternatives.

Bristol City Council worked with the University of Leeds in 2018/19 on the Financing for Society: Assessing the Suitability of Crowdfunding for the Public Sector report. This precursory work looked to explore the idea of crowdfunding as a means to fund projects and the council's appetite for such a mechanism. The findings of which went on to play into the development of the Community Municipal Bond (CMB) with involvement from Abundance Investment[6] – an ethical investment platform. We did not directly involve these parties within the City Lab, but have kept Abundance in particular abreast of the developments of our findings and have drawn on their experiences of launching CMB's in different parts of the UK.

Critically, CMB's are not just about raising finance, but also social capital. When you get a 'community' behind projects (in this case financially investing in them) you garner interest and a genuine involvement. It also gives the ideal platform to communicate through. In this case about climate change and the actions that the city of Bristol is taking and how people can get involved further.

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[4] Salix Finance
[5] Public Sector Decarbonisation Scheme - GOV.UK (www.gov.uk)
[6] Mobilise your money for good - Abundance (abundanceinvestment.com)
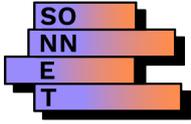
To date, two other UK local authorities have successfully launched CMB's; West Berkshire Council and Warrington Borough Council who were both attracted by the fact that capital raised by retail investors was cheaper than borrowing from the Public Works Loan Board (the PWLB provides loans to local authorities of all types in Great Britain, primarily for capital projects) and that it allowed for a greater engagement level with local residents. There is around £584 billion in UK ISA's (Individual Savings Accounts) and a CMB provides an ideal opportunity to tap into this saving pot.

What other issues were considered and dropped? Why?

Due to the fact that BCC had already completed the aforementioned project with the University of Leeds, it was clear from the outset that BCC should continue to explore this issue and its potential solution within the SONNET City Lab. SONNET presented the ideal opportunity to do so. As previously mentioned, funding energy efficiency measures in community buildings is incredibly challenging.

Who was involved in the process of identifying an issue?

The team at BCC were instrumental in bringing forward this issue to be tackled. Bristol Energy Network (BEN) were also involved in early discussions about the project to look at how the SONNET City Lab should be approached. The University of Sussex took part in these early discussions and helped formulate the pathway forward.

Has the issue been addressed by the city so far? In what way?

Bristol City Council has for many years been tackling the issue of poor energy efficiency across its corporate estate using the Salix programme (which has now ceased).Note that BCC has not used a crowdfunding (CMB) mechanism to fund any type of works before. Here are the council's energy efficiency programme highlights:

- Delivered an energy efficiency programme which has cut emissions in the council's buildings by 60%, achieving the council's 2020 carbon reduction target three years ahead of schedule.
- Managed a £1.8 m revolving Salix loan fund, delivering a £3.6m investment in energy efficiency with sub five-year payback to date.
- Delivered energy efficiency upgrades to 10,000 social housing and private domestic properties.
- Installation of energy efficient street lighting across the entire city council portfolio and now commencing a further staged upgrade to LED lighting
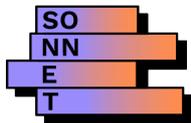
How is the issue related to the city's current strategies and policies?

It is directly related to the Bristol's current strategies and policies. Bristol has a commitment to be carbon neutral and climate resilient by 2030.

In November 2018 the City Councillors and Mayor declared a Climate Emergency. The Mayor has now developed an initial plan of action in response to this: Climate Emergency: The Mayor's Climate Emergency Action Plan[7]

This initial action plan provided funding to work with partners and stakeholders to develop a climate strategy for the city. The One City Climate Strategy has been created to set out Bristol's vision for what needs to happen over the next decade to achieve this target.

Team formation

How is the city lab team composed?

The main partners in the City Lab team include Bristol City Council (BCC), the University of Sussex (US), Bristol Energy Network (BEN), and BCC's subcontracted Energy Efficiency Surveyor (EES). BCC is the acting coordinator for the project and is answerable to the funder for the City Lab deliverables. BCC has subcontracted BEN to focus on the engagement and co-creation tasks of the City Lab. Finally, the EES, who is also subcontracted, will assess the community buildings and generate data for the financial modelling. This individual has already worked for BCC on a large project (Salix), which aims to reduce energy usage in academies, sixth form colleges and schools. The academic city partner, the University of Sussex, were involved in shaping the parameters of the City Lab, giving guidance and direction and observing our interactions with other partners.

What did the process of team formation look like? Who was included and who was excluded?

In terms of the process of team formation, the lead partner (BCC) and academic co-lead (US) were written into the funding application, so their involvement was a prerequisite. Furthermore, the involvement of an EES is seen by BCC as essential to the planned activities of the City Lab, and the specific individual was engaged based on their existing work on Salix. Using the same subcontractor is efficient for BCC in terms of contract and relationship management, as well as knowledge transfer between the two projects. Therefore, the only partner that was engaged independently of any prior arrangements was BEN. BEN was engaged because of the close fit of their mission and objectives with those of the City Lab. They were also judged to have the requisite knowledge, skills, capacity, public reputation and (critically) networks to deliver the engagement and co-creation tasks. BCC has worked with BEN on many other projects in order

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[7] https://www.bristol.gov.uk/documents/20182/33379/Mayor%27s+Climate+Emergency+Action+Plan+2019+FINAL
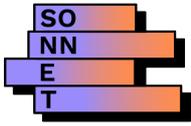
to garner outreach to harder to reach communities that the council may more difficult to engage with.

What was done to ensure that all the relevant parties were included and treated on equal terms?

A contract was put in place with BEN to manage their work in the City Lab. BEN were engaged at an early stage (November 2019) in the City Lab so that they could effectively participate in the design and planning of the workshop. BEN were formally contracted in March 2020 following BCC procurement procedures to do so. From the beginning, a collaborative approach was used with BEN such as jointly working on the aims and objectives of the city lab and resultant KPI's. This was really important to BCC as it ensures that the approach is multi-dimensional and is not just reflective of BCC's public sector perspective.

How was the needs diagnosis tailored to the issue identified?

The total number of community buildings in Bristol was identified and using some level of pre-existing knowledge of the likely energy efficiency issues these face from other programmes i.e. Community Asset Transfers, the issue and scale was broadly framed at the outset.

How was the process of needs analysis conducted?

BEN engaged with building managers through phone calls and other forms of engagement where permitted whilst also drawing on existing knowledge and relationships to get initial feedback on the issues they faced. A building manager survey was then developed and tested with some building managers designed to gather further information that would be both useful context to frame the need whilst providing key information required for energy audits to take place. Existing knowledge of issues around building energy efficiency was also drawn upon by BCC energy service team based on previous project experience to frame the issues.

What were the methods, timeline, outcomes?

Methods had to adapt to what was possible within COVID restrictions and are detailed above. This process took place over a period of months but continued ad hoc throughout the period from late 2020-summer 2021. In total 12 buildings responded to the survey which highlighted significant expenditure on energy bills and enabled the undertaking of energy audits.

The objectives were also reassessed in April/May 2020 to make sure they were still relevant and allowing the team to really target their activities. The following were agreed upon (these are operational objectives):
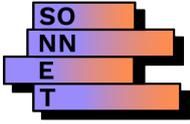
- To conduct inclusive engagement activities with building managers of community buildings, users of community building and local residents to the community buildings
- To work collaboratively and in a dialogical way within the internal city lab working team (BCC, BEN, SPRU), respecting our different roles and responsibilities
- To evaluate the process and outcomes of the city lab to be able to reflect on the process and produce some learning outcomes for a variety of stakeholders
- To deliver actions that are socially innovative (to the city council) i.e. how does the city lab change social relations within the city
- Assessing disruptive potential of a lab in a given city context
- To gain senior level buy in (within BCC) to new funding models for energy retrofit of buildings
- To conduct energy efficiency audits (via an external consultant) on up to 12 community buildings
- To build understanding of citizen's perceptions of how they perceive energy efficiency works and use of community buildings
- To build understanding of building management stakeholders perceptions of how they perceive energy efficiency works and use of community buildings
- To build understanding of building users of the possibility of using investment-based crowdfunding i.e. Community Municipal Bonds to fund energy efficiency improvements on community buildings

2.2   Agenda and goal(s) setting, ex-ante analysis:

Goal(s) choosing process, based on issue identification and diagnosis

What did the choice of the goal(s) process look like?

The end goal of the City Lab is to ready BCC to launch a Community Municipal Bond to deliver energy efficiency measures in community buildings that is financially viable and socially acceptable.

What methods were used?

The strategy for achieving this is based on the following objectives:

- developing an investment-based crowdfunding model, based on a Community Municipal Bond structure and online platform
- assessing the potential for installing measures to increase the energy efficiency of community buildings, both technically (in terms of which measures would lead to the greatest gains) and socially (in terms of which measures people want)
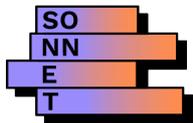
- demonstrating the willingness of Bristol residents to fund the measures via a CMB mechanism

To clarify, the objectives above are overall ones of the Bristol City Lab, whereas those referenced in Section 2.1 are operational objectives.

This strategic goal was determined through a series of engagements between the core partners in the City Lab team (BCC, US and BEN). This included a session at the SONNET consortium meeting in Karlsruhe (October 2019) and a design and planning workshop held later in Bristol (December 2019). The partners used basic workshop techniques to elicit these shared goals and objectives.

Ex-ante analysis of enabling and impeding conditions (institutional, social, economic, individual) and identification of milestones and bottlenecks

What methods were used for conducting the ex-ante analysis?

What were the analysis results?

What methods were used for the collaborative development of foreseen scenarios?

What were the results?

The process adopted for identifying milestones and bottlenecks and envisioning scenarios and strategies for managing them has so far been emergent and iterative, with an important role being played by the series of engagements between the core partners mentioned above, and the sharing of minutes, informal notes and other forms of documentation from these engagements. In particular, the following iterations helped to cement the current understanding:

- In January 2020 US co-lead, Rachael Durrant, created an outline of the SONNET Bristol City Lab, based on minutes from the December 2019 design and planning workshop and discussions during a follow-up conference call with BCC
- In March 2020 BCC lead partner, Lorna Humphreys, created a 'scope of works' document to outline the goal, objectives and tasks that BEN would be working on within the City Lab
- In March 2020 US co-lead, Rachael Durrant, produced the first working draft of sections 2.1 and 2.2 of the City Lab report

Major 'milestones' identified through these engagements are the three objectives outlined above. In terms of how to 'get there', the following processes will be crucial:
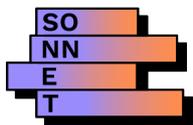
- Developing the business model: BCC's work will involve a significant internal engagement exercise, as involving other council departments, especially finance and legal, will be critical for enabling any scale-up of the outcomes. BCC will also need cabinet approval for this, which relies on buy-in from finance and legal.
- This engagement process was started during earlier 'financing for society' work with Leeds, so the team are able to build on the earlier groundwork. For instance, where previously the Energy Service were introducing basic energy concepts and knowledge to staff in finance and legal who had no background in it, now they have some existing knowledge.
- Engaging with people and communities: Another big part of this work involves demonstrating that people have a desire for (or would at least accept) energy efficiency measures being installed in these buildings.
- The City Lab must also demonstrate that Bristol residents want to be involved in funding the measures – ideally, we will be able to demonstrate that the offer of investment is open to everyone with a minimum investment of £5 but that there is also an appetite for people from across the city to invest in projects that might not necessarily be in their direct area that they frequent or live in.

Major potential 'bottlenecks' identified include:

- Working with public perception, specifically (1) the perception that the council should be paying for things, not asking people to raise money for them I.e. Council Tax should cover these things, and (2) fears or scepticism about the community municipal bond, i.e. some people might worry about how their money will be spent I.e. is there any risk of the money being spent on a council project that hasn't been listed – always a perception that the council just spend money on things like roads. Hopefully this can be partly mitigated by working with and through BEN as a trusted community partner.
- Working with subcontractors, specifically the risk that they don't deliver in the ways that the project demands. Hopefully this can be mitigated by close collaboration and communication.
- Working with a short timescale, i.e. nine months seems a very short duration for a project of this scope and ambition, and as a result the City Lab may not deliver the best results possible. This is something we have to live with, though it is partly mitigated by the project being embedded within ongoing work at BCC and BEN.

2.3   Experimenting (incl. network building)

This section has been authored by the Bristol Energy Network.

Background to BEN activity

Bristol Energy Network (BEN) is an umbrella organisation for individuals and community groups with an interest in energy in Bristol and the surrounding area. BEN has over twenty member groups working towards a fair, sustainable energy system. BEN believes that to build an energy
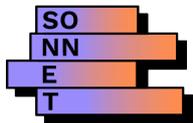
system that works for everyone, everyone must be involved in building it. BEN aims to act as a conduit between its members and other organisations to enable the sharing of skills and knowledge relating to energy across the network and beyond. Due to this positioning, BEN has developed strong ties with a variety of community organisations and is well placed to engage both the managers of community buildings across Bristol, and the communities that use them, in the Bristol City Lab section of the SONNET project.

BEN also has experience of going out into the community with information and ideas around energy from energy saving tips in the house and DIY improvements, to understanding the energy system and where our energy comes from. As well as going into the community, BEN also encourages working in partnership between existing groups and non-energy groups in targeted neighbourhood wards across Bristol, particularly focusing on those wards that in the past have not had good levels of community engagement. This approach allows BEN to reach out to communities previously not engaged by the energy agenda in the city and provides BEN with experience of varying socio-economic and socio-cultural groups that inform the way BEN plans and delivers its projects.

BEN's scope of work was to collaborate with Bristol City Council (BCC) to provide a programme of works to engage citizens of Bristol on the idea of using investment based crowdfunding to fund energy efficiency works in community buildings. This process had two stages. The first stage was to: Engage community building managers with an energy based survey.

The survey was to determine what energy efficiency improvements need to be made to their buildings and/or the appetite and feasibility for on-site renewable energy generation. This information was then passed to BCC to plan full energy audits of 12 community buildings.

The second stage of the process was to find out how communities and citizens of Bristol perceive and engage with community buildings and their thoughts about funding improvements through investment crowdfunding e.g. a Community Municipal Bond (CMB). Whilst understanding what elements of energy efficiency improvements need undertaking and which ones would pay for themselves over a reasonable timescale is one side of the project, of equal interest is how communities perceive and engage with these buildings. This then forms the background to how an investment-based crowdfunding model might be developed that would attract local support and funding from the building users, surrounding communities, and citizens across the city.

The building managers' survey indicated the desire for managers to reduce their building's energy consumption, as it is one of their highest outgoings, and the audits presented with around 200k worth of suggested energy efficiency improvements to undertake in order to achieve long term energy savings.

The citizen survey demonstrated a clear interest in the proposal for a Community Municipal Bond in order to fund energy efficiency improvements to community buildings. Over 70% of respondents stated that community buildings were of high or very high importance to them personally with 58.64% following up to say they would be interested in a CMB.
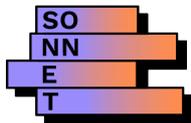
Methodology

Launch event

The launch event for the SONNET Bristol City Lab was planned in collaboration with BEN and Hartcliffe and Withywood Community Partnership. HWCP were chosen to collaborate on the event as they are a community partner that BEN has worked with before on energy saving issues and they had a great case study to present in the form of the Symes community building (as detailed below). It took the form of a themed Open Meeting: 'Re-Energising Community Buildings'. It was intended to take place, in person, in March but due to the pandemic was pushed back until June and took place online. The benefit of this delay meant that presenters from HWCP could talk about the importance of their community building in the emergency COVID relief work which was taking place in their community, and BEN could emphasise their desire to work with buildings to find out what their needs are as a starting point and from there, figure out how to optimise their building.

The Symes building was presented as a case study. The building had new sustainable technology installed when it was built but it had not been integrated into the building properly and staff did not know how to use it. A company came in to install building software that optimised the sustainable technology and successfully and reduced energy bills and carbon footprint. The SONNET project was introduced by BCC and BEN and the rest of the meeting was spent in breakout groups with building managers and BEN members exploring the needs of buildings and the scope of the project.

Building manager survey

Content development

The building manager survey was developed to ascertain practical and technical information that would enable BCC to determine which buildings may be best placed to receive a full energy audit which would then be used in their modelling of a Community Municipal Bond. It was also designed to find out what barriers to energy efficiency improvements exist for managers.

The survey was built on the SurveyMonkey platform, intended to be filled in online by the building managers.

The survey questions fell under the following 5 areas in order to fully build the picture required by BCC to undergo the full energy audit. The questions are listed below.

1. How much energy the building uses:
   - how much the building is used/occupied
   - how much the building/ user groups spends on energy
   - levels of energy efficiency
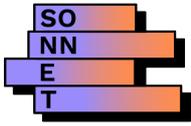
- possible levels of carbon emissions
- patterns of optimisation of energy usage

2. Physical characteristics of building/surrounds which informs:
   - potential for certain renewable generation (e.g. solar PVs)
   - capacity for more equipment/storage
   - ease of retrofit/upgrade process

3. How the building communicates to its users, which in turn informs:
   - possible avenues for engagement

4. how the building sees itself in the community future plans:
   - plans for energy efficiency upgrades
   - plans for renewable generation
   - plans on how to finance these projects

5. Barriers to energy efficiency plans:
   - details of why the managers have not already undertaken this work
   - financial barriers
   - physical barriers
   - capacity and knowledge barriers

Trialling the survey

The survey questionnaire was informed by feedback from the BEN open meeting / SONNET launch event in June 2020 where community energy managers were encouraged to take part in workshop sessions identifying their needs. Further questionnaire development followed consultation with BCC Energy Services to determine the possible structure and needs of a Community Municipal Bond, along with further feedback from Sussex University. The survey was then tested with community building managers at Eastside Community Trust and Bristol Central Quaker Meeting House.

Finalising the survey

Once surveys were completed by the pilot organisations, a review of the survey was undertaken to obtain feedback from all stakeholders, BCC, and Sussex University to ensure the survey was completed and meeting objectives of the project. BEN Energy Champions and staff were then trained in promoting the survey before reaching out to community building managers.
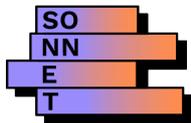
Citizen Survey

Content development

The citizen survey was developed as the second stage of engagement around the Bristol City Lab. It aimed to establish how citizens use and view their community buildings and whether there would be an appetite for establishing a new model of council-backed community crowdfunding (i.e. a Community Municipal Bond (CMB)) in order to finance the energy efficiency improvements and renewable generation projects that would help sustain community buildings and reduce their carbon emissions.

The survey was built on the SurveyMonkey platform and then transferred to Smart Survey which is the platform used by BCC for all their surveys and consultations. It was agreed that as this is a co-created research project, the survey should come from both parties and the Smart Survey platform is compliant with all current BCC data protection. There was also the benefit of BCC team members experienced in using this platform and willing to make useful recommendations to improve the user journey. The survey was intended to be filled in online by individuals, but paper copies were also available in the foyer of some community buildings and were used at community in-person events.

The questions fall under the following 3 areas in order to fully build the picture around community buildings, their usage, and the appetite for community-raised investment.

1. Practical building usage questions:
   - what buildings are used
   - who uses the buildings
   - what they are used for

2. How people feel about issues connecting to the building, including:
   - buildings improving their energy efficiency
   - buildings generating their own energy
   - buildings saving money
   - a building's role in the community

3. Appetite for financial investment in community building energy improvements:
   - Likelihood of investing in a CMB
   - likelihood of donating any interest to other similar projects
   - what would make an individual more likely to invest

Trialling the survey

The survey content was developed through a collaborative process where BEN presented questions and feedback was given from both the BCC team and SPRU academics. Additional input came from the experiences of Abundance who had launched two municipal bonds over the past year on their platform.
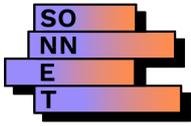
Once all teams were happy with the content, the survey was trialled with BEN's Energy Champions/volunteers and more feedback was given on clarity, length, and structure. From this helpful feedback, adjustments were made to ground the introduction in the role of community buildings and lead the questions from there. The team learnt that it is important that any practical or technical questions were situated in how a person might perceive and connect to their community building, in order to encourage more sincere engagement.

Finalising the survey

The final tweaks and improvements to the user experience were made with support from the BCC communications team and the survey was uploaded to their Smart Survey platform.

Figure 1: Engagement Timeline

Feburary 2021
Initial development of survey on surveymonkey plaform. Shared internally between BEN and BCC team.

March 2021
Shared with BEN Energy Champions. Adjusted accordingly. Shared with BCC comms team. Adjustments made.

April 2021
Final comments from BCC comms team. Transferred to SmartSurvey platform. Paused for elections.
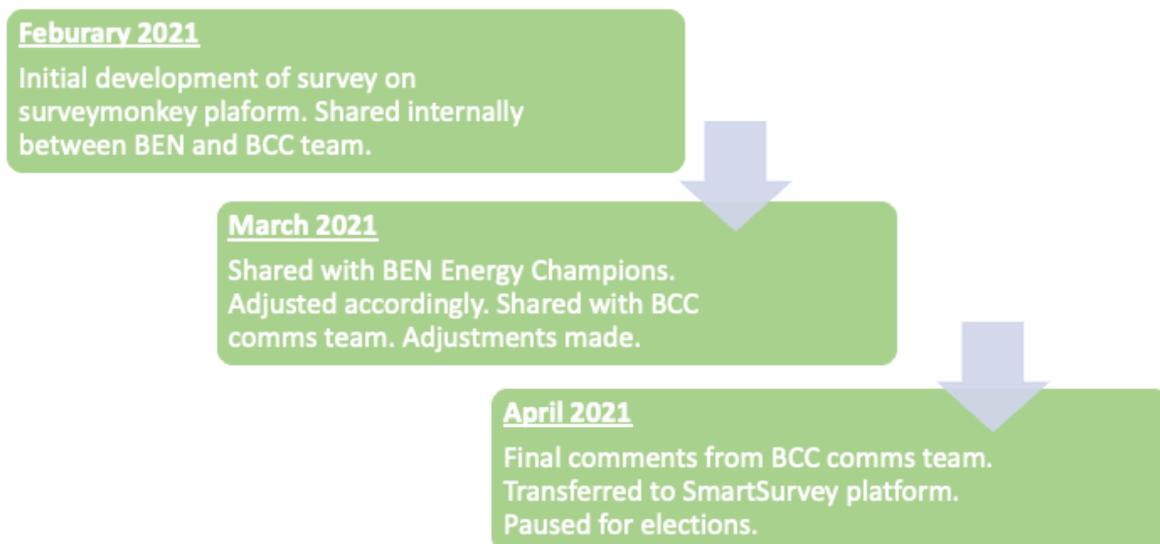
Communication and engagement around the surveys

Building manager survey

Both the communication and engagement around the Building Managers Survey was a challenging process primarily due to the COVID 19 pandemic and the subsequent national lockdown periods in the UK. The original communication plan was to provide information on the SONNET project and the Bristol City Lab in the following outlets:

- BEN webpage

- BCC webpage
- BEN newsletter to members
- BEN social media
- BEN open meetings with follow up emails and phone calls

The offer of free 12 KW Solar Panel System (PV) to offer a suitable Bristol City Council owned property was used as an incentive to participate.
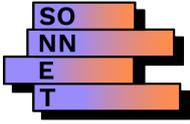
Citizen survey

The engagement plan for the citizen survey was developed with the following questions and motivations at its core:

- Encouraging people to think about the value of community buildings
- Introduce the concept of a CMB
- Would you consider investing your own money to help buildings decarbonise, save money, and better serve the communities in which they operate?

In order to achieve this, we planned to utilise the following channels that were available to us and to keep in mind the key stakeholders:

Available channels

- Bristol Energy Network newsletter, website and social media
- The participating buildings' newsletter, website and social media
- Groups who use the buildings (fitness classes, youth groups etc)
- Posters and surveys in community buildings' foyers (with scannable QR code)
- Posters in local supermarkets, food shops, libraries, BCC parks notice boards
- In person events e.g. fairs, play sessions etc
- BEN member groups and anchor organisations
- Any available BCC channels

Key stakeholders

- Citizens of Bristol
- Those who frequent community buildings
- Those who are interested in green energy improvements
- building managers
- community groups
- other groups who rent/hire/borrow space

Key information with contacts, suggested social media forums, dates of classes and events, deadlines for newspaper publications and access to notice boards were all collated in a spreadsheet so that the engagement could be supported by our Energy Champions. The plan was for the Energy Champions to promote the survey online and attend online events. This would move to in-person events when they resumed in later summer months where Energy Champions could engage stakeholders in the SONNET project and have conversations around improving resilience of community buildings. Entry into a prize draw for shopping vouchers on completion
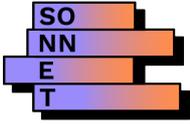
of the survey was an incentive that was promoted by the Energy Champions in conversation and on all the publicity material surrounding the survey. BEN would promote the survey at its open meetings and engage with community organisations around the benefits of research in the area of crowdfunding energy-improvements to encourage the organisations to promote the survey themselves through their own networks and social media.

A short video, including interviews with building managers and an animation with narration, was created by BCC to help explain the project. This was shared on BEN social media and sent to all the buildings to share on their social media platforms with a link to the survey. A longer version was also subsequently produced with more detailed that was shared across the same channels.

While attending one of the Filwood market events, more filming took place to develop a more in depth film about the SONNET project. BEN spoke to Filwood Broadway Working Group (below on the left) part of the Knowle West Alliance about the greater context of their community building and the work that it needs. Including detail about how that work could be undertaken, or at least shadowed, by local trade's people, keeping the benefit of the community building works in the community. This richness of specificity to a locality aids in promoting the survey locally and the likelihood of adopting a model like a CMB with the belief that it will benefit the community directly.

Figure 2: Image of event at Filwood

Photo credit twitter @HSheriffBristol- Susan Davies BEM High Sheriff of Bristol

The few in person face-to-face events that BEN was able to attend (due to COVID restrictions) facilitated rich conversations with local residents. When face-to-face, it allows for more

contextualisation of the survey and more authentic engagement as the conversations stretch beyond energy to the purpose and opinions around community buildings.
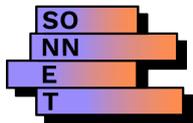
Figure 3: Image of event at Filwood - bike generator

A Filwood resident having a go at powering lightbulbs with the BEN bike generator

Figure 4: Image of engagement event in Lockleaze

Issues encountered with engagement

COVID 19

From March 2020, BEN's engagement plans were disrupted by the onset of COVID and national lockdowns. The problem that BEN encountered was that many community buildings had closed and building managers were on furlough, reduced hours, and/or were busy with emergency COVID relief work.

Some BEN member organisations, who already have a relationship with BEN through other projects did engage but in order to increase levels of engagement a new strategy was put forward utilising BEN's Energy Champions and volunteers. BEN put together a spreadsheet of all council owned buildings in Bristol and the champions updated any information and proceeded to individually email all the buildings. Many emails bounced back with a note about being closed due to the pandemic. After a workshop with the champions creating a SONNET phone script, and including the offer of supporting the manager through the survey over the phone, the emails were followed up with telephone calls to explain the project and encourage responses but once again, many telephones were not answered. Of the 76 buildings that we attempted to contact, 45 did not respond to any emails or phone calls, some stating that they were temporarily or permanently closed. Any responses, even if only partially answered, were followed up with regular contact until the information was received and 12 buildings had been identified for audit.

The lessons learned from this challenging process are that it is very difficult to engage individuals and community organisations if there is a significant destabilizing of their regular activities. It is also hard to engage managers around future plans when there is a lot of uncertainty about the future of the buildings, organisations, and indeed individuals' jobs. Engagement around future-proofing, even though it is understood as beneficial in the long term, is demanding if the imminent needs and functions of the community organisations and buildings are not being met.

Similarly, one of the community building managers was not keen to promote a survey, about crowdfunding, to their community as the building had been used solely for the purposes of emergency relief services since COVID began. They felt it would be inappropriate to ask a community who were financially struggling to consider any form of crowdfunding.

Local Elections

The publication of the citizen survey was held up from the original planned timeline of the beginning of April due to the pre-election period in Bristol. There were local, mayoral and regional mayoral elections on the 6th of May and, after initial advice that it would be ok to proceed, BCC decided that the survey could be interpreted as influential and that the release would have to wait until after the election and new roles had been put in place. This disrupted the engagement plan for the citizen survey and put it back by 6 weeks.

Language

The final barrier to some of our engagement was the use of certain technical and financial language. When talking face to face with people at events, some people were not receptive to
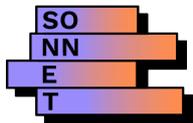
words like 'investment' or 'financial returns'. Some survey respondents added comments such as "I don't know what this means" even after the short written explanation on the survey. In order to engage with as many citizens across Bristol as possible, it will be important to adapt language according to the audience.

The Digital Divide

For many groups, the digital divide (those that have access/understanding of digital resources like laptops, internet connected phones, internet connections, video conferencing software) was exacerbated during lockdowns with access to public wi-fi hotspots and libraries/ community centres with free internet access closed. As referenced in the Black South West Network's report on the impact of COVID on the Voluntary, Community and Social Enterprise sector, some organisations were able to transition their work online while anchor organisations and community hubs could not fulfil their functions this way.

Relying on an online approach to promoting the survey leaves out a section of the community that it would be good to hear from. The in-person events that were able to go ahead showed the importance of being able to engage face to face with those who may not otherwise engage online.

Findings

Building Manager Survey

The survey responses from the building managers paint a picture of busy community hubs that want to make improvements to their energy efficiency and generation in order to keep serving their communities. 12 surveys were completed out of the buildings contacted.

Most of the buildings (76%) are either Charitable Incorporated Organisation (CIO) or Charitable company limited by guarantee and 53% are BCC tenants while 26% are on Community asset transfers or long term lease from the council.

The buildings are used during both the day and evening for a wide spectrum of activities ranging from paid and voluntary work spaces, dance classes and toddler groups, advice and support services, cafe and socialising spaces, and private and community events. The annual footfall across the 12 buildings in this survey is approximately 200,000 people per year, with some buildings spending over £13,000 per year on gas and over £16,000 per year on electricity. The managers all recognised that their buildings have a role in helping Bristol achieve its goal of Net Zero carbon emissions by 2030 and identified ways in which they could help:

- generating their own renewable energy and feeding any excess back into the local community,
- providing events locally so residents do not have to travel,
- encouraging cycling,
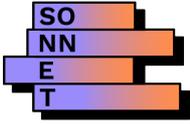
- fostering positive attitudes towards ecosystems,
- education around growing your own food,
- demonstrating how people can reduce their energy use at home.

It was an open question- "How do you see your community building having a role in helping support Bristol's One City goals to achieve NetZero (CO2 emissions) and End Cold Homes (eliminate fuel poverty and end the risk of anyone having to live in a cold home) by 2030?

One manager's comment linked the physical energy needs of the building to Bristol's 'One City Goals'

"We are fully supportive of Bristol's One City goals. We want to reduce CO_2 emission, manage waste better, have better solutions for managing electricity. We want to install solar panels on a proposed extension at the back. … We already have a better heating system with a thermostat installed. We need expert advice on what other affordable solutions and technology we could implement in order to support Bristol's One City goals."

The needs expressed above were reiterated in the comments about barriers to energy improvements in community buildings. All the respondents cited money and funding as the major barrier to achieving improvements, while expertise and length of tenancy were also prominent obstacles to energy efficiency and generation projects. Overall, managers and buildings are committed to reducing their carbon footprint, and the buildings use large amounts of energy but they require funding models and expertise in order to make these changes.

There are plans to expand the number of building manager surveys being undertaken to build a greater picture of the potential investment portfolio for a CMB. This work will continue through until winter 2021 and managed by Bristol City Council.

Citizen Survey - 'Investing in the Energy Efficiency of our Community Buildings'

Overview

The survey was given the post-election go-ahead on 12 May, and from this date until the drafting of this report 170 surveys were completed online by 124 participants and in person by 46 participants (at community buildings and at events).

The survey respondents identified predominantly as white British at 80%. Although Bristol's population is made up of 77.9% White British BEN recognises that it would be beneficial to have a wider ethnic diversity represented within the respondents to represent a wider community voice. The 10% of survey respondents that consider themselves disabled is more representative of the population.

Household income brackets of respondents were of a relatively even spread with the highest number of respondents, 34%, earning £31,000-£60,000 per year.
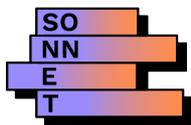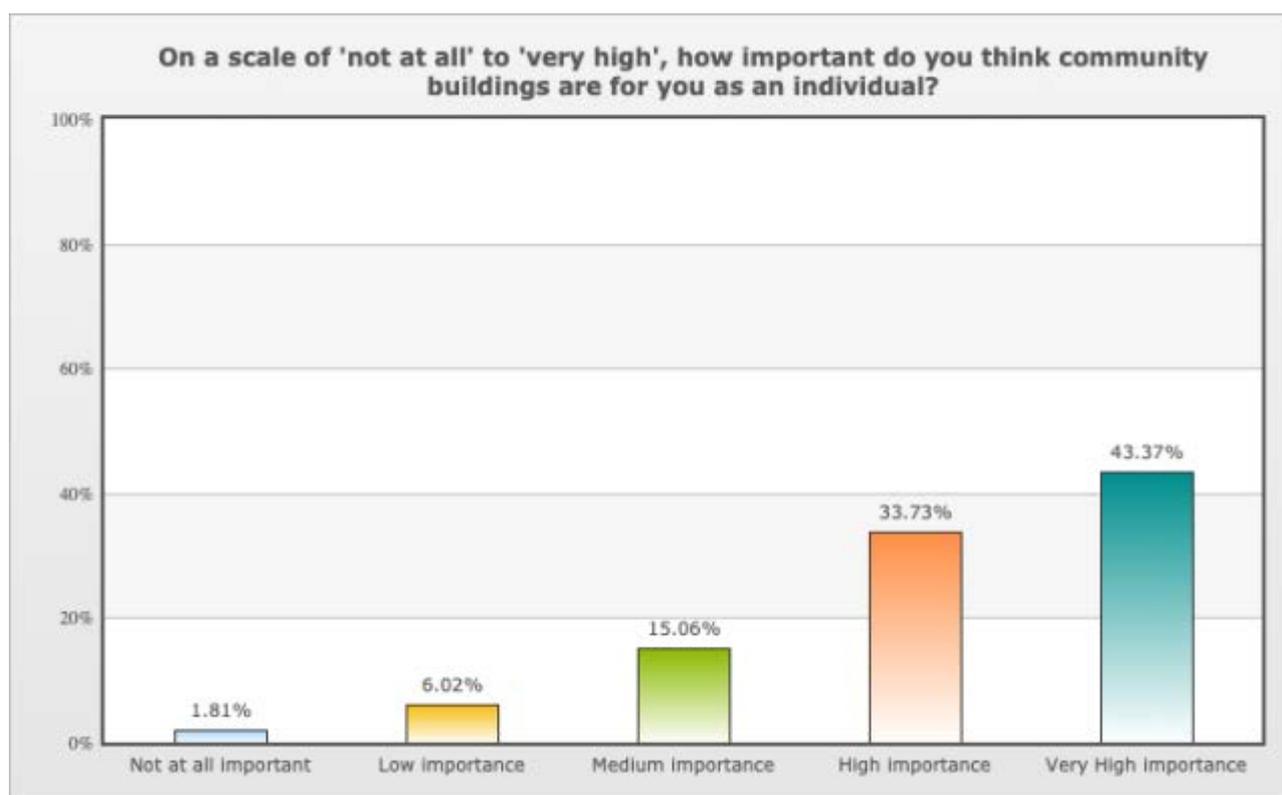
Though some of the surveys were not filled out in full, there was still quantitative and qualitative data to analyse, so they have been included.

The survey was split into sections for ease of analysis

- use of community buildings
- energy issues with community buildings
- receptiveness to CMB
- shopping voucher motivation
- focus group participation
- Use of community buildings

Over 70 different community buildings in Bristol were named in the responses, with some buildings coming up repeatedly. The buildings were used for a range of different purposes over the past 3 years. Predominantly they were used for group classes (36.81%), but group meetings, work, private hire, events, cafes, gardening, studying, voting, food hubs, health visitor appointments, and COVID vaccines were also mentioned.

Figure 5: Graph to show importance respondents placed on community buildings

On a scale of 'not at all' to 'very high', how important do you think community buildings are for you as an individual?

50.30% of respondents use their community buildings at least once a week. This might be an indication of the type of person who would respond to this survey in the first place, and one of the main stakeholders BEN wished to engage with; community building users. Only 2% of respondents said that they do not use community buildings. However, it is worth noting here that
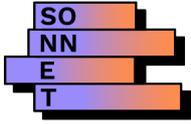
some of those respondents left comments about still recognising buildings' importance for the community and some had a desire to engage more:

"If I wasn't more busy with work I would like to use them more. Maybe when I have more time I will."

The importance respondents place on community buildings is demonstrated in the graph in Figure 5.

77.1% placed high to very high importance on community buildings. This was bolstered by comments on the value of community spaces as a place to meet other parents, for kids to play, for everyone to learn, to get advice. The extent of the value of community buildings was summarised in the following:

"Community buildings are a place of congregation for so many kinds of activities and reasons. People need these spaces to gather, seek opportunities, learn from each other, support each other - giving and receiving, share ideas, access vital advice and services and most of all feel welcome."

This sense of welcome and inclusion was echoed in a comment from a disabled respondent who finds their community space essential to their mental health:

"Being disabled without the opportunity to meet others in a Community Building I would become very isolated and lonely. I would have no interests and lack of people to see & communicate with would add to my depression."

The majority of people who left comments on this section of the survey feel strongly about their community buildings and the benefits they have on the wider community.

Energy and community buildings

Question 3 asked about perceived issues with the building that the respondent named. 25% found their building too cold and 35% saw large seasonal differences in temperature. It is important to link these issues with the energy efficiency work, and the cost of energy bills, that could be addressed by work funded through a CMB. Building an understanding of how one issue is linked to another (e.g. coldness with cost of bills, or too hot with poor ventilation) builds on the understanding of why these works need to be implemented and could increase the chances of people wishing to contribute at the same time as increasing the individual's energy efficiency knowledge which they then could implement in their own home.

The following graph displays opinions on the importance of energy issues within the building:
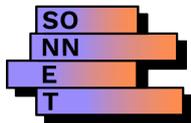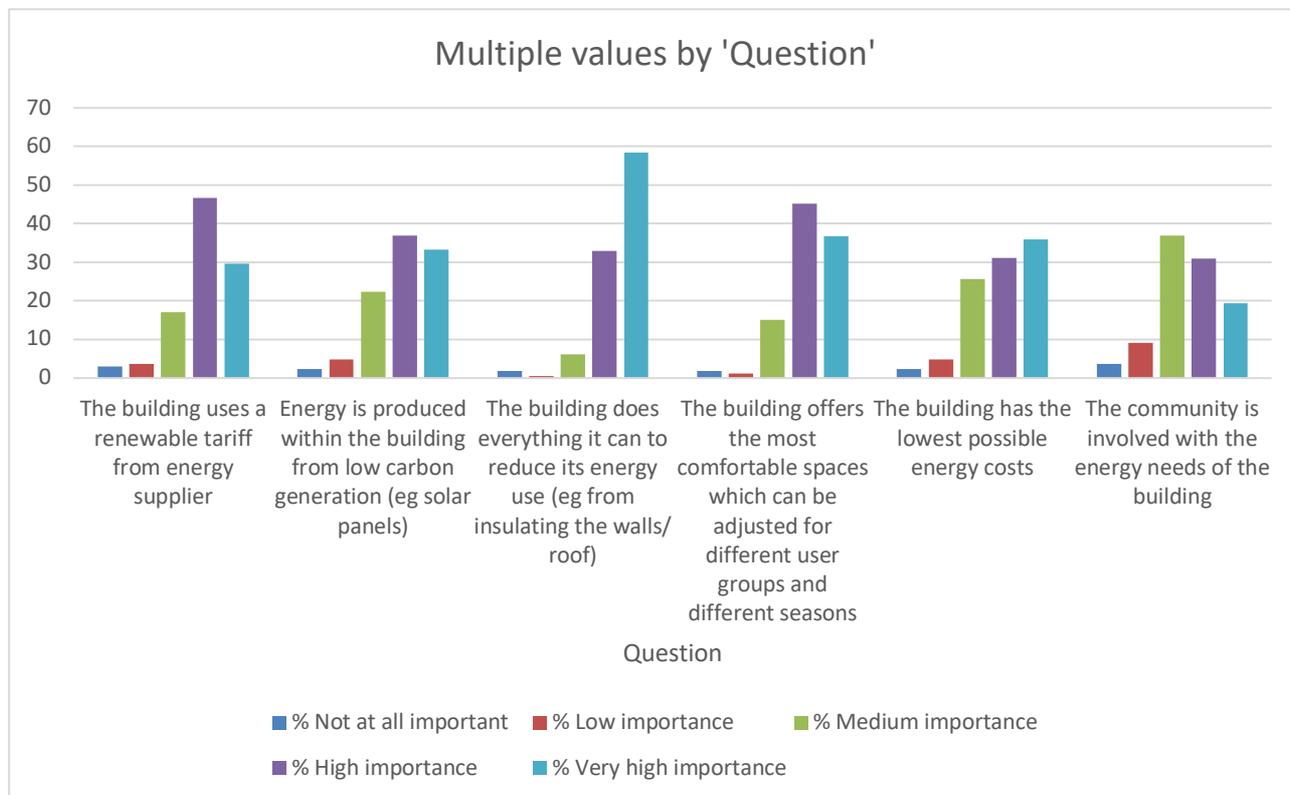
Figure 6: Graph to show opinions on importance of energy issues within the building

'The building does everything it can to reduce its energy use (eg from insulating the walls/ roof)' is considered the most important energy issue by the respondents with 59% considering it of 'Very high importance'. This bodes well for the CMB being offered as a solution to address this issue.

When asked if they had considered ways to support their community building, 31% had considered financial options of either donating or investing money to the building. Another 61% of respondents had considered volunteering or helping with the management or running of the building. The fact that many people are already considering ways, or are actively helping their buildings, shows a desire to keep their buildings functioning. This will be an important motif to consider for a CMB, if it can be packaged as a way to support and 'volunteer your savings' to help out community buildings. A further 37.8% have not considered any ways to support and this will be a group of stakeholders who should be specifically targeted with messaging that might make the prospect of helping out their community building more attractive (financially or ethically) or easy (not taking up personal time).
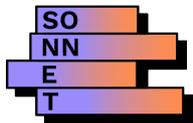
Community Municipal Bonds

The results of Q8 show that there is an appetite for community crowdfunding to improve the energy efficiency and energy generation of community buildings. 59% of respondents said that they would invest in a Community Municipal Bond (CMB) with a further 29% unsure with multiple comments stating they felt they needed more information before making a decision. This compares favourably with data from a One Poll survey undertaken for Abundance Investment which found 52% of respondents would be interested in a CMB.

Some respondents want clarification on how and where exactly the money would be spent, citing inequality of previous funding as a worry:

"It depends on how the funds are allocated as some areas in Bristol get forgotten and some Centres in an Area get everything there is going whilst others struggle for every penny" (sic).

This suggests that clear communication on the roll out of a CMB would be important to gain the trust of local communities.

Another issue raised was one of affluence. A lot of the locations where BEN did face to face engagement are areas of deprivation as identified by BCC such as Southmead, Lockleaze, Ashley and Filwood. Some respondents from these areas were engaged with the idea of a CMB but were concerned whether it would be successful in their area: "I am on a low income but the idea is potentially a good one provided there are enough supporters. In our area there are pockets of deprivation and a great need for our Community Centre but I'm not sure there are enough affluent people to support this." This was echoed by another resident who was "Not sure the area is affluent enough".

However 33% of people who said they would invest in a CMB said they would invest in the £5-£49 bracket suggesting that keeping the low entry for investment is very important to keep lower income areas engaged.

While the medium bracket of £100- £499 was a popular option with 26%, the other end of the scale that would invest over £1000 was only 12%. This suggests some targeted engagement with the more affluent areas around Bristol may be of benefit as some of these respondents expressed that they "would like more detail".

The answers to Q10 on the comparison of interest rates between a CMB and a high street bank, suggests that it does help to illustrate that a CMB model is a good option for someone who has savings. Though again, there is a spread of comments around this question ranging from identifying the fact that a lot of people do not have savings to wanting to know the guarantee details compared to that of a high street bank.

There were multiple comments suggesting that the focus should be more on the social good of the investment: "It would be more because of the social good to invest. The pay back interest is just an added bonus" and "So much more motivated by knowing there is potential local community benefit from my investment". This suggests that framing a CMB around community benefit with the rate of return as a co-benefit would be well received.
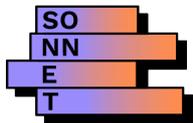
This feeds into the results of Q13 on what might encourage someone to donate the interest of their CMB to other community buildings or projects. 36% said they would donate their interest, with a further 46% unsure. For those who would donate, the information about the community benefits of their donation would impact on their decision. Information on carbon savings, financial savings, improvement of user experience, sharing retrofit information for home use and for community use , were evenly selected for their impact on encouraging donation. Only 14% said that it would not encourage them. As with the comments connected with Q10 this highlights the appetite for the investment being specifically for the benefit of communities. In order to progress the CMB as a feasible and successful option for Bristol citizens it will be important to engage different groups of people with different approaches. Some people in the more affluent brackets would like more information on the financial detail of the CMB while others, specifically those from lower income brackets, could do with more messaging around supporting their local community buildings and being part of the solution to climate problems.

Shopping voucher motivation

62.35% of respondents left their email address for the chance to win a £50 shopping voucher. This does seem to have worked as a motivation for some to fill in the survey but on reflection, it may have been better to have that information at the very beginning of the survey, as in the first version, rather than in the 'About You' section at the end.

The survey was initially constructed with a request for the respondent's email address for the 'chance to win a £50 shopping voucher' as the first question of the survey. This question was moved to the end 'About You' section to go alongside other BCC equalities and monitoring questions. Although 62% of people did leave their email address, on reflection it would have been better to have started with that question as a means of motivation to fill the rest in.

Focus group participation

26% of respondents have agreed to be contacted to be part of focus groups on the topic of CMBs as a model of funding the energy efficiency improvements of community buildings. This is a useful number of responses, adequate for the needs of further research.

Building energy audit results

Energy audits were undertaken at 12 buildings covering lighting, building management systems and insulation. These were chosen due to them providing the most reliable sources of energy efficiency savings based on previous SALIX schemes the city council has administered. The audits were coordinated by Bristol City Council's energy service utilising the team's experience based on the methods used for SALIX previously. This created efficiencies in terms of administrative approach and bringing in relevant experience of colleagues and known contractors.

Initial findings from the audits are summarised below in terms of savings that could be made across different energy efficiency measures. Although some significant savings would be possible, the total value of these savings would not necessarily equate to an amount that a CMB could be launched on the back of. Ideally, according to Abundance investment a figure of £500,000 would be preferable although anywhere from £200,000 of investment could also
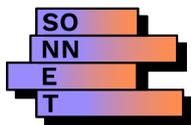
be possible due to set up costs. The below figures also do not take into account the stacked benefits in terms of energy efficiency savings so are currently over-estimated until further investigation work is undertaken.

**Figure 7: Energy audit summary financial benefits**

12 Community Building Energy Audit Summary financial benefits

Measure	kWh Saving	£ Saving	Quote for works	Payback (Years)
LED	168,306	£20,873.00	£47,764.00	2.29
Insulation	240,639	£7,536.68	£78,220.00	10.38
Building Management System	492,223	£14,981.29	£57,695.00	3.85
Energy Audit Fee			£7,200.00	
BCC Energy Service Fee			£18,367.90	
Total	901,168	£43,390.97	£209,246.90	4.82

An example of the individual detail for each building audit is presented below:

Figure 8: Filwood Community Centre loan scenario

Description of Work	Energy Type	Current p/kWh	Annual kWh Pre-Project	Annual kWh Post-Project	Annual kWh savings	Project Value	Annual Financial Savings	Payback in Years
LED	Electricity	13.00	32,719	10,982	21,737	£6,076.00	£2,721	2.23
Pipework Insulation	Gas	2.50	428,000	417,029	10,971	£1,878.00	£285.00	6.59
Loft Insulation	Gas	2.50	417,029	412,962	4,067	£7,925.00	£609	13.01
Cavity Insulation	Gas	2.50	412,962	377,839	35,123	£8,264.00	£913	9.05
BMS	Gas	2.50	377,839	283,379	94,460	£9,800.00	£2,361	4.15
Audit Fee					-	£600.00	£0	
BCC Management Fee					-	£3,454.30	£0	
						£37,997.30	£6,889.49	5.52
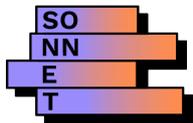
Further to the investment amount ideally being greater than currently available, it is also being considered whether the overall business case for launching a CMB would be stronger with a greater number of buildings involved to spread the investment risk. The City Council are now progressing with the further building survey and/or audits required whilst simultaneously following the decision pathway process through to launch of a CMB

As the business case for a CMB is investigated further by BCC, the energy audit findings are still useful to building managers to use for their own funding applications and business plans. One of the managers has reported already using the data to support a grant application. BEN has shared news of local grants such as the Thrive Renewables Community Benefit Programme and the Megawatt Community Energy Fund. BEN has also introduced those buildings who did not receive the solar PV array from the council to Bristol Energy Cooperative, a community owned cooperative, who install PV across the city.

Conclusion

The conclusions to be drawn from this research into the opinions of key stakeholders, around community municipal bonds as a way to fund energy efficiency and renewable energy generation in community buildings, are the following:

- People who use community buildings, and even those who do not, place value on them, the services they provide, and environments they create.
- There is an appetite for people to invest in a community municipal bond as a means to fund the energy upgrades that community buildings need.
- Both building managers and building users are keen for buildings to reduce the amount of energy they use.
- More work needs to be done to highlight the link between energy efficiency and generation in a building, and the impact that will have on the building's functionality and ability to provide services.
- It would be beneficial to do another round of face-to-face engagement on the topic of CMBs if they were to launch in the near future.
- A greater number of buildings would be required to have energy audits undertaken to increase the value of the investment portfolio to be substantial enough to launch a CMB on the back of. We are currently examining what volume is required to give a more reliable set of data.

3 EVALUATION OF THE CITY LAB

Authors: Marfuga Iskandarova and Sabine Hielscher (SPRU)

3.1 Overview of the evaluation process

The evaluation investigates questions such as what the expected goals are and if they have been achieved, who is able to participate (or not, incl. gender aspects), or how many resources are required to implement the experiment (D4.1).

The main research question for WP4 is the following: How, to what extent and under which enabling conditions may city labs result in new breakthroughs or successfully help to overcome sustainable energy transition barriers, such as limited citizen engagement or slow adoption of new technologies (D4.1).

The goal of Bristol city lab is to explore the feasibility of crowdfunding as a means of raising capital to install energy efficiency measures within community buildings.
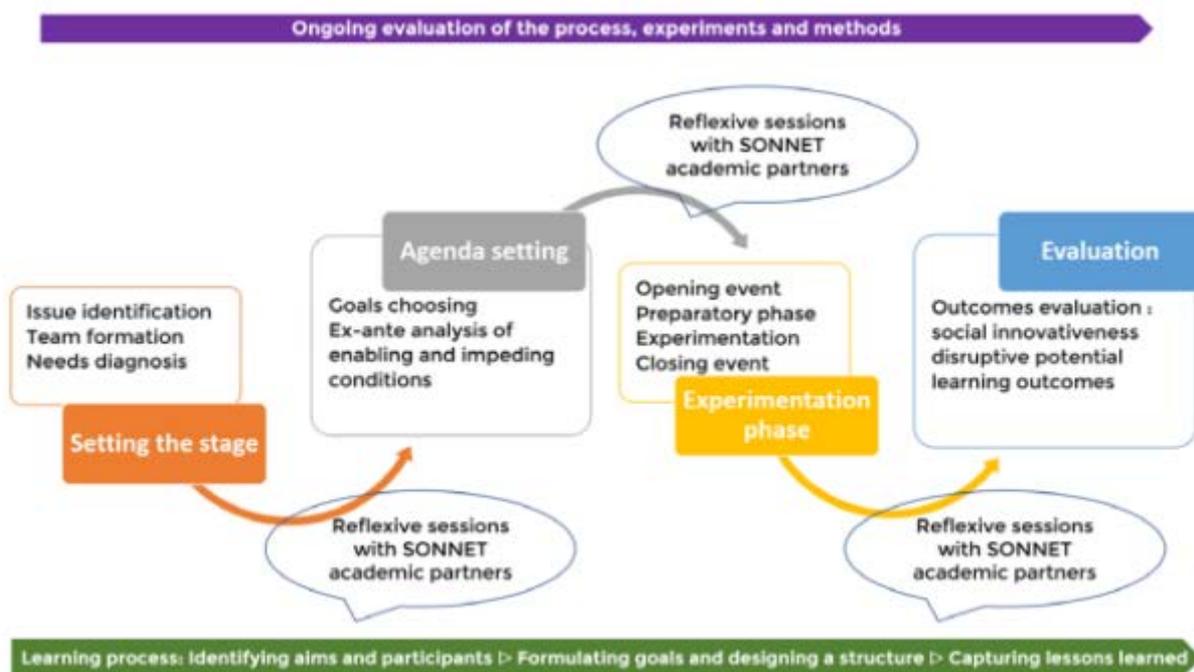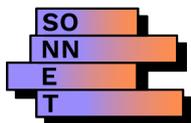

Figure 9: City Lab process and its evaluation

Two general criteria for an <u>ongoing evaluation</u> suggested by WP4 are:
- relevance (whether actions undertaken address the goals set),
- inclusiveness (communication, team building)

The evaluation objectives are used to assess:

- the level of inclusiveness of the city lab process.
- whether the city lab process is led in a dialogical way.
- the relevance of the actions undertaken to the goal(s) set.

D4.1: The ongoing evaluation consists of three main areas:

1) <u>Evaluation of the process</u>: Aims to reconstruct, understand and monitor a co-creative process of the lab and of the ideas' development. It would focus on the displaying roles of the participants (to make sure that all the relevant voices are acknowledged), identify internal and external factors that support and limit the process at each of its stages, and offer recommendations that may help to increase the inclusiveness and efficiency of the process. It is recommended for the SONNET city lab team to organize reflexive sessions with academic partners by the end of each of the city lab process' stages (see: evaluation methods below). That would allow summarizing what has happened at a given stage, assessing the level of realization of the goal(s) set, as well as to identify potentially displaying new factors that had not been foreseen before, and that may require to be adapted to in the following stage of the process. Such reflexive sessions would also support systematizing the data gathering, to be further used in preparing the final city-specific report and outcomes evaluation.

2) <u>Ongoing evaluation of experiments</u>: The process would benefit from evaluating experiments undertaken on an ongoing basis. That means monitoring how they are exercised, trying to assess the upcoming outcomes. Possible bottlenecks and obstacles can be spotted and addressed as they occur, to correct the actions in order to meet the goal(s). To what extent such evaluation can be done systematically would depend on the given actions/ experiments, their length and complexity. However, it is recommended to plan an ongoing monitoring of the interventions. It would allow confronting the presumptions and plans with actual users' behaviour, exploiting advantages of the city lab methodology to its fullest.

3) <u>Methods evaluation</u>: which methods work best and for what purpose? Learning and innovation, being explicit goals of a city lab, are dependent on the methods applied. At the same time, the methods themselves are to be tested in this experimental process. Hence it is important to ensure that the methods of intervention are co-created and chosen in a participatory way, so that they can provide learning opportunities to all the partners involved. Methods can be adapted, and even reshaped, as a result of the reflexive sessions after each stage of the city lab process. The SONNET city lab team shall also monitor to what extent a given method of work is comfortable and acceptable to different participants, and book time for adjustments that different partners may need. It should be explicitly discussed how the given method would contribute to a learning experience for each of the parties involved.

An ongoing evaluation relied mostly on qualitative methods, mainly on reflexive sessions with the academic partners and the city lab calls regularly organised by the city council. There were three online reflexive sessions organised as part of ongoing evaluation. They were conducted in June 2020, December 2020 and February 2021. During the first session, we developed and discussed the objectives, project outcomes, outputs, measurement indicators and roles and actions (see Table 1). The second session was used to reflect upon the social innovation in the city lab, discuss the city lab timeline of events and maps of actors involved (created by the SPRU team) and reflect upon what might be additional actions that we had not previously thought about. In the third session, we reflected upon the progress so far, objectives and activities, the inclusiveness of the process, and learnings so far and created another plan of action based on the reflections. The
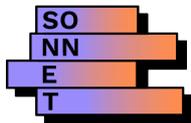
discussions and reflections were largely informed by stakeholder mapping exercise (an actor network) and the city lab objectives and indicators.

The list of project objectives, outcomes and measurement indicators was agreed by the city lab team at the meeting on 16th June 2020. These objectives and indicators were used during the reflexive sessions throughout of the city lab (for both ongoing and outcomes evaluations).

Project Objectives	Project Outcomes	Outputs	Measurement indicators	roles and actions
To gain senior level buy in to new funding models for energy retrofit of buildings	New funding model / technical document is scoped	Cabinet report	Cabinet report approved	BCC lead
To conduct energy efficiency audits (via an external consultant) on up to 30 community buildings	Energy efficiency audits are undertaken	30 energy efficiency audit reports	Number of surveys undertaken	BCC lead
To build understanding of citizen's perceptions of how they perceive energy efficiency works and use of community buildings	Greater understanding of citizen view points	Two case study buildings examined	No of consultees	BEN lead
To build understanding of building management stakeholders perceptions of how they perceive energy efficiency works and use of community buildings	Greater understanding of stakeholder view points Understanding of governance structures for building management	Evaluation report	No of consultees	BEN lead
To build understanding of building users of the possibility of using investment-based crowdfunding i.e. Community Municiple Bonds to fund energy efficiency improvements on community buildings	Greater understanding about how to deploy new funding model and implications	Evaluation report	Understanding of receptiveness to a CMB as a mechanism to investing in community buildings	BEN lead

**Table 1: Project objectives, outcomes and measurement indicators**

The <u>evaluation of outcomes</u> was the final stage of the evaluation process with a focus on the assessment of the results of the city lab.

According to the research protocol for SIE city labs, outcomes evaluation serves to assess:
- social innovativeness of the results
- a disruptive potential of a lab in a given city context
- learning outcomes of a lab: Lessons learned? What worked or didn't? The main challenges?

In line with D4.1, the criteria adopted for outcomes evaluation were:

- relevance (whether actions undertaken met the goals set);
- inclusiveness (whether the results address/ involve all the relevant parties),
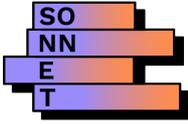- outreach (scope of the results and chances for scaling up).
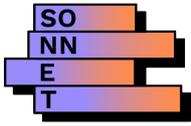
3.2   Ongoing evaluation

Ongoing evaluation of the process

The ongoing evaluation has been based on two reflexive sessions that were conducted on the 01.12.2021 and 09.02.2021, and the SPRU team taking part in the initial planning meetings (Dec 2019 – April 2020) and city lab project meetings fortnightly (May 2020 – July 2021). For the two reflexives session, we drew on the innovation history approach (including a timeline and an actor network map – see Figure 2) to encourage reflections on the process of the lab, in particular, focusing on issues of inclusiveness, relevance of actions taken, ways of working (i.e. whether this has been done in a dialogical way).

The innovation history approach has been developed to better understand innovation processes. Within a workshop setting the participants usually develop a timeline (i.e. listing key events) and an actor network map surrounding the experiment. The aim of creating the timeline and the actor network mapping is to stimulate discussions and reflections: what is working (or not), how one's actions influence other people's actions, do we have shared goals (or not), how to improve the process, what lessons were learnt. Seeing that the team was busy with carrying out the city lab and the time for the reflexive sessions was limited (1.5-2 hours), the SPRU team prepared the timeline and an actor network map for each session (based on the project meetings) and shared them a week before the sessions with the rest of the team.

City lab team — Timeline — Actor network

MAY 2020

City lab team

Matt joins the project

Meeting BCC, SPRU 08/05/2020 – Info SONNET

Project meeting BEN, BCC, SPRU 19/05/2020

Project aim
- Phase two of CMB; Phase one completed with Leeds university: Legal requirement on how a council would launch a bond and buy in from council's legal team how it would work; Phase two: Reaching out to our communities – BEN, understanding the appetite and learning some lessons how we promote CMBs, test the financial viability – people in treasury department: how they see CMB working in practice, one of the deliveries of SONNET: residential work and test financial viability; Phase three (after SONNET) go and do that.
- CMB is instrument for this (not Tridos, etc.) – needs to be bespoke for each council, work with Abundance

What are we going to do (COVID)
- Develop some milestones and phase the work
- Which buildings, wider review of potential buildings, questionnaire – which ones should be our case studies, we can do this remotely; Building managers (BM) & users
- Engagement of residents will be harder – lockdown
- How do we re-imagine the uses of community buildings (CB)? Getting by in and creating connections to CB

Actor network

Leeds university
Conducted phase 1

Communities
Test the appetite and how to promote CMB

Council officers - legal team, treasury
Lobbying work needed & show financial viability
Identify people needed for buy in and narrative

Community buildings
Which ones to work with COVID influence

COVID
Changes to engagement work

City lab team

- Solar panels: Possibility to win, encouragement to fill out survey

Scope of the buildings (CB)
- Long list of 200 buildings, how to work with them? Is there a shorter list, engage with as many as possible, not raise expectations
- Expectation management important - Basic criteria exist: They need to be under the community asset transfer, occupy the building for 20 years, allows us to invest in building and get a return; needs to be Bristol freehold – owned by BCC
- But is it not about having a broader conversation? Why just these buildings? Make them aware of community energy; if we go for a wider audience of CBs - need to be clear that we can only investigate in more CB's that fall under the criteria, there might be more criteria than the two, clear about and communicate who can/ cannot participate in the research

Stage 1 engagement with BM and Stage 2 engagement with the users
- BEN's scope of work already describes this – see previous meetings

Identify and engage the buildings – BEN go away and plan for it
- Not clear about scope yet: talk to 200 CB? (And value to that but maybe not all SONNET related) – How would you measure the result? What would you do with that information? More buildings is better but if we send out 200: How many do we get back?10-20%? And what is the value of the information? Need to see: Not just the questions but what are the outputs of the survey

Actor network

Community buildings
Expectation management
Criteria for choosing them: community asset transfer, occupy building for longer, Bristol freehold, get a return on investment
How to engage more buildings than 2 cases & why
How many to engage with? 200?
How to create emotional connection to project so that CBs come along in the CB journey
How to have a broader conversation with CB and its users
Value of the findings when conducting certain work

City lab team

BEN scope of work document

BEN needs to know from BCC – What are the criteria?
- E.g. Is this a leaky building? Good building for CMB. How is the buildings used? Etc. all in the scope document. How EE is the building? Benchmark the results of the survey. Take low achieving buildings. Comfort levels of users, etc.

Extension to deadline/ Lockdown restrictions for engagement work
- Phoning, survey – would this work?
- At the moment, think about BM & 200 buildings & survey letters? Hardest person to convince can be BM... Emotional engagement to project is key

How to sell the project
- Not about BCC doing CMB, but rather free EE measures, do not want leaky roof – BEN will draft something

Ask about extension

Talk about evaluation of city lab

JUNE 2020

Project meeting BEN, BCC, SPRU 02/06/2020

Matt starts to project manage the city lab – resourcing

Purchase order has come through

Actor network

Community buildings
Criteria CB work with: Leaky roofs, low achieving buildings – also a matter of how it is used

Engagement work in pandemic

Figure 10: Section of the innovation history – used for reflexive sessions
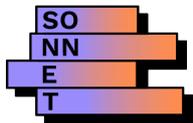
Identification and engagement of all relevant parties

a) Engaging with relevant actors: inclusiveness of the process

The Bristol City Lab has had a core team that met up fortnightly to plan the activities of the lab and share the results along the way. This core team consisted of the representatives of the Bristol City Council (BCC), Bristol Energy Network (BEN, a local community energy network organisation) and the University of Sussex's Science Policy Research Unit (SPRU). Several other relevant actors were identified during early meetings of the core group, for example, community building managers, users of community buildings and other citizens living in Bristol. The core group was put together during the proposal writing process of SONNET. The importance of other actors emerged during initial meetings of the core group. They were particularly identified during the aims and objective's workshop sessions conducted by the core group (carried out on the 2nd and 16th of June). Additional actors were identified and specified throughout the process.

The core team was keen to engage all the relevant actors during the city lab process. Discussions about who to engage with and how to engage with them (i.e. issues of inclusiveness) regularly arose during the project meetings. In addition, the actor network mapping during the reflexive sessions helped identify people/organisations to work more closely with through the process (see Figure 3).

For example, some discussions arose at the early stage about which community buildings to work with and how to select them. There was a willingness to engage with as many community buildings as possible, but there was also an awareness not to raise people's expectations. Expectation management was considered to be key when dealing with community building managers (see meeting on the 19.05.2020). For example, BCC and BEN was aware that not all the community buildings could benefit from the project, for example, not in all buildings energy could be conducted due to finances. The team was keen to make this transparent from the beginning when engaging with community building managers so that they knew what to expect from the project. BCC and BEN were keen to develop an inclusive process, manage expectations and keep promises. Due to Covid, face to face interactions with community building managers and visits to community buildings could not happen.

The team therefore decided to conduct surveys with community buildings managers. The response rate to the survey was slower and lower than expected. Lots of the buildings had been shut due to Covid. It was not straightforward to get hold of community buildings managers. Lots of efforts went into gaining more responses and engagements. Engagements were possible with community buildings that were open during Covid and where it was possible to gain access.
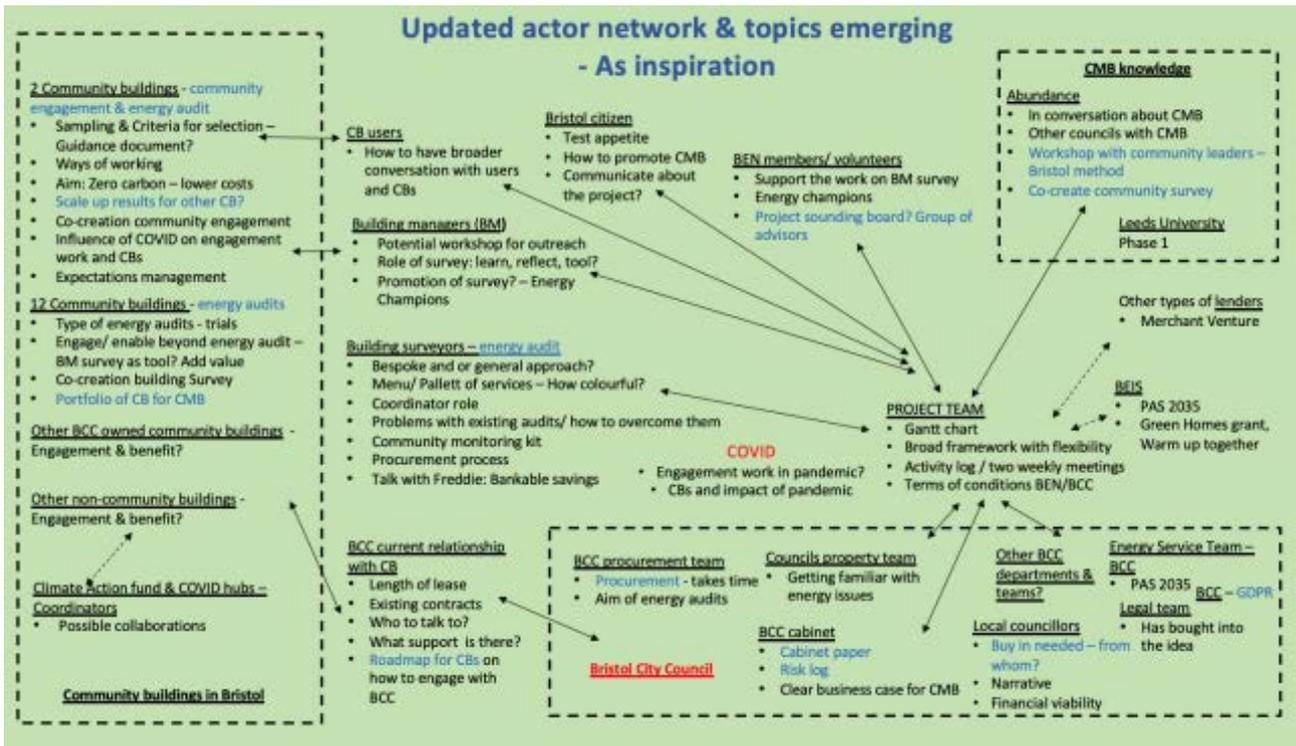
Figure 11: Actor network map from the first reflexive ongoing evaluation session 09.02.2021

As highlighted by BEN, Covid has had a major impact on engagement activities. "*I think it is quite difficult to access the people that we would like to and that is largely due to Covid... These people are not really on the radar at the moment and largely due to Covid it is hard to get hold of them*" (BEN, second reflexive session). Similarly, BCC felt that Covid has had an impact on the inclusiveness of the city lab process. "*We need to qualify how we define inclusiveness... Within the parameters in which we find ourselves, are we making it inclusive and with our resources and access limitations... probably yes as much as we can... but with us having contingency plans shows that we are committed to an inclusive process, and we put things in place when and if we are able to. We can only do as much as we can in the current limitations*" (BCC, second reflexive session). Contingency plans have also been put in place for other engagement activities. The original plan was to conduct focus groups in two areas of Bristol to gain in-depth insights from citizens about their interest, knowledge, etc. around CMBs. After postponing these activities for a while in the hope that Covid lockdown restrictions would be lifted, the decision was made to carry out a citizen survey with all of Bristol's citizens.

The core team regularly reflected on issues of inclusiveness during the project meeting. These issues became apparent when thinking about how to sample the citizens, community buildings and community building users and how to engage with them. During the second reflexive session a discussion arose about what it means to be inclusive in such a process and its relevance.

BCC: "*For me, when the project came about pre-SONNET, it was about getting money into community buildings and reduce their energy use... what this project has allowed us to do think more nuanced and reflective about it... People who do not have a voice and who will not be benefitting from a CMB, who will not be empowered. There are several stakeholders: councillors,*
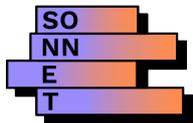
business leaders, trades people, SMEs and crucially the property team in the council, don't have a voice, even though I have called them... they don't have time to have a voice. They were given the option, but some of them did not want to take it."

BEN: "*I think it is about how we frame the activities though as much as anything, helping to create the links and help them see why they want to have a voice... Create a narrative that they can buy into than they buy in and spend more time on it... When do you introduce voices to give them a voice and to have a reasonable comment...? It has to come to a digestible point where they could actually make a point...*"

BCC: "*An interesting point, at what point are you bringing these other stakeholders into the journey with our group starting, do you present it as a phase complete to the councillors or as this is how it would work to investors...*"

BEN: "*Who benefits? And who has got a voice? Maybe not everyone needs to have a voice? But people benefit in different ways by making these buildings more usable, delivering more social benefits... Does really everyone need to have a voice? Or is it more about how people benefit from the outcomes? And this is inclusive and spread around the city in an equitable way.*"

To sum up, although there was a willingness and reflectiveness about being inclusive and efforts were made to make it happen, due to Covid and sometimes time pressures and some practicalities (e.g. people who had time, were able to hear about the work and responded to the core team's efforts) determined who the core team could involve in the process and whose voices were heard. Moreover, questions about how to frame activities so that other actors could relate to them and at what stage to get people involved seemed to be key when thinking about an inclusive process. In addition to considering the inclusivity of the process, who benefits from such a project i.e. CMB was considered to be important.

It is also important to keep in mind that CMBs have already been set up in other cities in the UK. These projects mainly went ahead without engaging previously with its citizens. BCC felt that this would not be a good approach in Bristol. In addition, because the CMB is about financing energy efficiency measures in community buildings, citizens had to be part of the project early in the project. As highlighted by BCC, "*We could have done a CMB like other authorities, like a megawatt solar farm... Because it is community buildings it makes it more embedded in the city... We are doing something quite special already*" (BCC, second reflexive workshop).

BEN's approach and Covid impact

Bristol Energy Network (BEN) is an umbrella organisation for community groups that engages in energy in Bristol. Community outreach, buildings capacity, helping members, etc. are some of its core activities. During the first meeting between BEN, BCC and SPRU, BEN was keen to incorporate the BEN approach to the project. This approach is partly based on co-designing projects with community groups, giving its members the possibility to have a role in the project and giving something back to the local community (through, for example capacity building and skills development. Some of the aims that were included by BEN were, for instance, 'building relationships with community groups in Bristol, building capacity for (community) retrofit, and understanding community and users' needs and desires in their own terms' (see Figure 4 below). Due to Covid some of the aims and activities needed to be re-considered. Rather than being able to rely on tested and trialled face-to-face activities, engagements had to go online and/or conducted over the phone, as well as through survey activities.
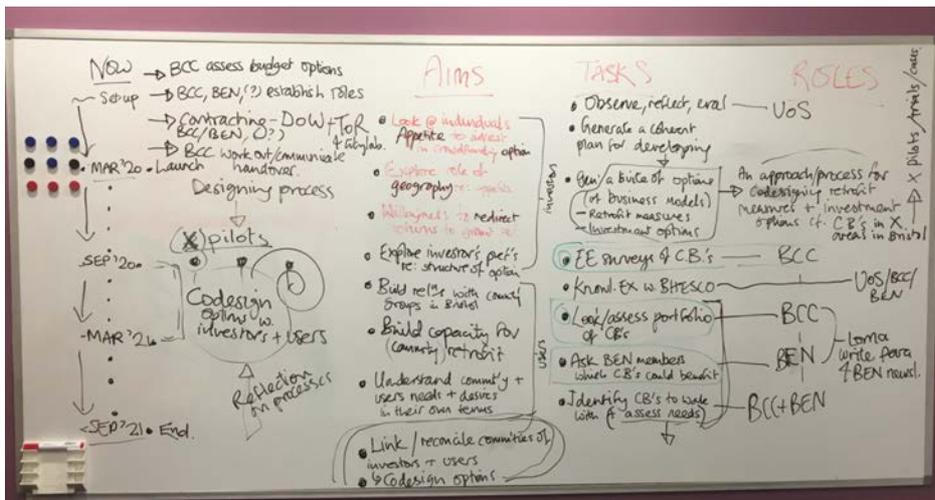
Figure 12: Initial project planning session between BEN, BCC and SPRU

b) City lab led in dialogical way: working within the core team

BCC has been working with community groups over the past decade. BEN is an umbrella organisation, and several groups have a membership in it. BCC and BEN have worked together on previous projects (such as Replicate). As set out in the SONNET proposal, BEN was sub-contracted by BCC to conduct some of the city lab work. In December 2019, there was an initial meeting between BCC, BEN and SPRU to share expectations, goals, and ways of working (see section 2.1.1). After the meeting, a scope of work and a contract were set up by BCC in conversation with BEN that outlined the aims, timescales, budget, outline of works, events and reporting between BEN and BCC. At the time, one of the BCC team members explained that "*BCC will be acting as the coordinator for the project, answerable to the funder, will be writing up the report*
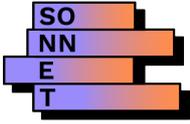
and will do all the business modelling. BEN will bring in the engagement and co-creation side" (interview notes with BCC member on 13th February 2020).

During the project meetings on the 2nd and 16th of June 2020, the core team discussed and produced an Excel table outlining project objectives, project outcomes and outputs, measurement indicators, roles and actions, evaluation objectives and learning questions (some of them were inspired by the SONNET WP4 questions and themes). SPRU had presented the evaluation process and learning questions by the WP4 team on the 2nd of June. BCC took this as a starting point to create a first draft of the Excel spreadsheet. This was shared before the next meeting and then discussed and adapted within the core team (see meeting notes on 16th of June and Table 1). A shared cloud folder was set up by the SPRU team so that data and documents could be shared within the core team. After a few weeks, BEN created project workstream action plan, listing all the activities and timelines for each. In addition, BCC chaired each project meeting, listing action points at the end of each meeting and taking them as agenda points in the next meeting. The project meetings have happened fortnightly.

The <u>procedures and structures</u> put in place by the core team meant that objective, roles, and activities had been set up and agreed upon early in the city lab process. This way partly due to a collaborative process and contractual one, and where BCC and BEN have had previous experiences to build upon. Some core decisions were therefore made early in the process. This situation somewhat changed when the seriousness of the first lockdown became apparent. The team felt that project objective did not really need to be changed but how to achieve them (i.e. what types of activities were feasible under lockdown conditions) (see notes from the reflexive sessions). Regular discussions and reflections arose during the project meeting about when it will be possible again to do face-to-face engagements, how to engage with people under lockdown conditions, how to best reach people, etc. It felt like that during these discussions everyone's view was considered, expertise was respected and/ or voice was heard (SPRU observation). Concerns and changes (for example, how to engage with citizen under lockdown rules and/ or how to not raise too high expectations about what the lab could achieve) could be raised by any of the team members. The team frequently listened to, discussed, and considered them (for example, rather than conducting face-to-face engagement activities other formats were found such as online open meetings and surveys) . Some of the suggestions were trialled to consider their feasibility (e.g. how to conduct the energy audits in the community buildings). Decisions were often based on these discussing and trials (e.g. how to engage more community building managers), reflecting upon opportunities and challenges before arriving at a decision. More often, practicalities also played a key role in decision-making processes (e.g. how many resources have we got and what is possible under Covid). Sometimes, decisions also derived from the BCC team, trying to push along the achievement of specific outcomes (i.e. final decision on how to conduct the energy audits withing the community buildings) (SPRU observation).

During the reflexive sessions, BCC and BEN agreed that the city lab has been based on a "highly collaborative" process. There was a "high commitment" to the work from the core group. Ways of working were considered to be "constructive" and good communication exists within the team. BCC and BEN have particularly enjoyed building new relationships with some of Bristol's communities (see notes from the two reflexive session).
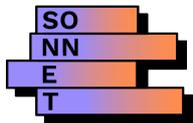
"*A lot of new projects have a term of reference and then you have… like the senior responsible officer (SRO)… should I be just sitting at the back with a big stick if things are slipping [play the SRO]? And xx is doing the heavy lifting and xx and xx are having their roles… we are all not really doing that in this project, we all chip in… collaborative. Do I need to whittle a big stick? I don't know. A question for the group. If it is all going swimmingly, we do not really need that SRO*" (BCC, second reflexive session)

Although the process was experienced to be collaborative and constructive, it was also not without <u>challenges</u>. One of the BCC members, listed "working with third sector organisations challenging at times" as one of the most difficult aspects of the process during the July 2021 Grenoble project meeting. He explained that the bureaucracy behind setting up the working relationship between the council and third-party organisation can be time consuming. In addition, he mentioned that in the city lab, the relationship between BCC and BEN was based on "friendliness" and previous personal relationships which sometimes made it hard to maintain the contractual relationship. This could also be observed during the project meetings. BEN had to ask several times when the contract could be signed between BEN and BCC (linked to payments). In addition, discussions arose once or twice about the BEN's position, often relying on short-term funding rather than being able to rely on some core funding (a situation that is different for the council staff). Moreover, during two to three meetings, BCC tried to pin down project activities and outcomes and their deadlines with BEN (e.g. when will this activity happen, how and type of outcomes). The seriousness of achieving the project objectives and contractual relationship was reiterated (based on SPRU observation and notes from project meetings). During the July 2021 Grenoble project meeting, the BCC member explained that it might have been better to more regularly monitor the project outcomes and watch out for the key performance indicators (KPIs). During Covid, this would have partly meant to more actively re-frame the KPIs (and success linked to them) throughout the process.

Identification of novelties and surprises

During the first reflexive session, the core group talked about what might be <u>socially innovative</u> about the city lab. BCC started off by explaining that "*for us the massive innovation is around putting a 'pay as you save' model for energy efficiency because the returns and the credit worthiness of the re-payer is highly questionable still. So that is probably more the innovation than the CMB. But I think the challenge for BEN and their champions is how they leverage that interest with citizens being more fully engaged in energy efficiency compared to a solar farm… So hopefully there is that citizen side is much more engaged. And I think that's another level of innovation that this project is looking at as well.*"

Figure 13: Illustration of what might be socially innovative about the Bristol city lab

BEN agreed with BCC but put more emphasis on the community engagement aspects: "*I'm kind of thinking that CMB yeah fine other people doing CMBs as well, applying it to an energy efficiency context is more interesting. Definitely. But then how you engage people in the CMB is the bigger innovation in terms of working with community building so they kind of understand it better, working with the users so they're more likely to think that that's a good idea. I kind of get it. And, by the way, I'm getting climate change and energy efficiency in the process.*"

The core team did not reflect upon surprises that influenced the process during the reflexive sessions. There discussion did also not really emerge during the project meetings. As part of the July 2021 Grenoble project meeting, one of the BCC team members said that one of the biggest surprises has been the 'lack of responses to the citizen survey in Bristol'.

Other surprises could have been challenges gaining access to community buildings managers, interest of community buildings in the project, dedication of the core team and the length of the lockdown restrictions. Some of the points have already been mentioned and answers provided how these aspects have changed the process of the city lab. One point might be worth picking up, in the summer of 2020, BEN in collaboration with BCC carried out the opening of the city lab. The core team was really surprised how many community building members turned up at the meeting. They showed a real interest in the project, sustainable energy and citizen investment.
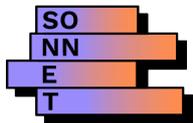
Identification of obstacles and shortcomings

During the second reflexive session (February 2021), the core group reflected upon 'How do you feel it is going? What do you feel works well? What would you like to see changing (if anything)?'

The achievements and opportunities identified:

- + Some concrete and specific results started to emerge (e.g. findings from the building manager survey);
- + Key achievements: two surveys put together (and in parts carried out) with community building managers and Bristol's citizens;
- + Commitment to the project from the core group, highly collaborative process, 'constructive' ways of working with each other and good communication between team members;
- + New community members and organisations that the group has been able to talk to and being able to build new relationships.

Some obstacles and shortcomings discussed:
- - Staff changes over time: challenges coming later to the project (main reason: people going on maternity leave);
- - Covid has been frustrating: (a) low response rate to survey and people seemed unavailable and (b) existing engagement approach cannot be carried out (no face-to-face engagements possible). This created an overall feeling of not getting as much out of the project:
- - Unsure whether we are meeting our set project objectives: Are we tracking the objectives enough and therefore meeting them? (Little time for high level reflections because of ambitious goals and activities that had to change due to Covid):
- - Working with a community organisation that juggles lots of different activities and has limited resources.

In addition, at the July 2021 project meeting in Grenoble, BCC highlighted the following difficulties: (a) working with third sector organisations challenging at times; (b) communication support internally withing the city council difficult to coordinate and due to Covid; (c) lack of face-to-face interactions and engagement; (d) informal desk discussions within council teams not possible.

During the reflexive session and SONNET project meeting, there was limited time to reflect upon how the shortcomings and obstacles influenced the process of the city lab. The following reflections are mainly based on SPRU team member's observations who took part in the city lab meetings. All the shortcomings pointed out by the core team have influenced the city lab process. First, the low response rate to the surveys and difficulty to get in touch with, for example, community buildings managers meant that the BEN team had to spend additional resources and time. BEN works with a group of champions (i.e. volunteers who help out on projects). Champions needed to be recruited to find up-to-date contact details from community buildings and find ways to get in touch with them (e.g. via telephone).
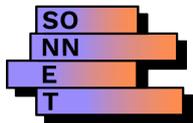
Second, the perceived lack of checking whether objectives are being met, could have arisen because Covid created a situation where it was not straightforward to plan activities. For example, for a long time, the core team held onto the idea that the UK would come out of lockdown, and it would be possible to do face-to-face engagement activities. The aims and activities shifted over time. This might have partly influenced the perceived value of the original objectives that also shifted over time.

Third, BCC pointed out several times how important it was to gain buy-in from the councillors and some of its departments. Informal engagements with colleagues and councillors could not really continue during lockdown periods. Such informal engagements were considered key to get people interested in the project and make them aware of it. There was a real awareness that this work would need to happen once people are able to return to their office. The SONNET on tour event in Bristol[8] will also be a possibility to engage with local policymakers.

One other possible obstacle that has not been mentioned is the bureaucratic process in the council. It took quite a while to set up the contract between BEN and BCC, go through the General Data Protection Regulation (GDPR) requirements and sign off different communication materials. Both organisations might already be used to these processes, it felt like that there were a few weeks in which the project activities could not take place because these procedures needed to be put in place.

3.3   Ongoing evaluation of experiments

Actions and interventions chosen and designed

a) Actions and interventions chosen

The pre-history of the city lab is best told by one of the BCC members: "*I applied for SONNET funding as a kind of putting a square peg into a round hole. What I was looking for was testing the second stage of the financials, business case and citizen sensing around a CMB, because the first stage was completed with Abundance to test the legal diligence...*" (BCC, first reflexive session). The quote makes apparent that there was a pre-history to the city lab – a stage one. The city lab was meant to be the second stage: creating the business model for the CMB and engaging with the community building managers/users and other citizens of Bristol along the way. The third stage (which was not part of the city lab) will be to implement/run the CMB to finance energy efficiency measures in community buildings. It is possible to suggest that from the beginning there were clear aims and linked activities.

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[8] The SONNET team will conduct two 'SONNET on Tour' regional training workshops. These are 1.5 -day training workshops (approx. 30 participants each) hosted by a SONNET city (Warsaw for Eastern, Central and Southern Europe and Bristol for Northern & Western Europe). The workshops will strongly involve local SIE-initiatives (e.g. field trips, peer learning sessions) and introduce local government representatives and SIE-initiatives to SONNET methods and results from all empirical work packages.
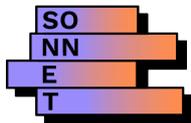
These ideas were further developed during the proposal writing for the SONNET project (e.g. framing these activities as a social innovation, which was not difficult to accomplish, considering the community engagement aims of the process). A meeting between BCC, BEN and SPRU in December 2020 helped to detail the aims, tasks, and roles. A scope of work was set by BCC and BEN, outlining the different activities that BEN would be responsible for as part of the project (see scope of work document). A few weeks later these were translated into workstreams, leads and timeline by the BEN team (and checked with BCC and SPRU team) (see Figure 6).

Workstreams/Project Objectives	Lead
Project mgm't & governance, including project setup	
Bi-monthly progress meetings to assess key milestone and sign-off any additional activity needed	ALL
GDPR processes agreement	
To conduct inclusive engagement activities with building managers of community buildings, users of community building and local residents to the community buildings	
Recruitment strategy produced & action plan co-designed amongst partners	BEN
Research existing system and community building user needs analysis of energy serveys carried out by Bristol Energy Network & other parnters	BEN
Develop survey targeted at every community building in the city to identify user needs, barriers, and investment decisions into undertaking energy efficency measures	BEN
Bristol City Council Interviews with key staff to share outputs of the survey and understand how those operating community buildings tenancy arrangements can be supported to undertake energy efficency measures	SPRU/BEN
Identify suitable casestudies of community buildings - approx 2 casestudies	BEN/ALL
Work with to understand how users & local can support actions towards energy efficency To build understanding of citizen's perceptions of how they perceive energy efficency works and use of community buildings	BEN
Explore in more detail with casestudy understanding of building management stakeholders perceptions of how they perceive energy efficency works and use of community buildings	BEN/ALL
Explore in more detail with casestudy understanding of building users of the possibility of using investment-based crowdfunding i.e. Community Municiple Bonds to fund energy efficency improvements on community buildings	BEN/ALL
Create follow up survey to test user case of bonds to understand potential uptake of a community municiple bond offer for community buildings	BEN/ALL
Develop & propose new BCC policies/guidance & community building manager guidance to enable retrofit in community buildings to happen more easily	BCC/ALL
To conduct energy efficency audits (via an external consultant) on up to 30 community buildings	
Create 'pallette' of surveyors available to the Council in order to satisfy the needs of a range of building types and management status: technical, strategic, cost estimates. - Identify contractors including those that are qulified as retrofit cordinators who have an understanding of PAS:2030 or have similar skills	BEN/BCC
Using survey feedback identify buildings that would be suitable for a survey & provide list to Bristol City Council	BEN/BCC
Promote survey opportunity to all community building stakeholders	BEN/BCC
Assess 10 surveys of community building undertaken review by BCC	BEN/BCC
Financising package - Work with survqeors & BCC to understand the business model & proposition to communitiy buildings & consumers	
Work with survyeors & BCC to understand the business model & proposition to communitiy buildings & consumers	BCC/BEN
Workshop outcomes of the business model design with building users & Bristol City Council staff	BCC/BEN
Refine new business model after & stakeholders engagement workshops	BCC/BEN
Stakeholder Engagement & Management	
BCC to gain senior level buy in to new funding models for energy retrofit of buildings	BCC
Community builidng managers to be supported with guidance in approaching retrofit of their community building and provide guidance note	BCC/BEN/SPRU
Community enagaement strategy to ensure community buildings are supported by their communities to address energy efficency of their building	BEN
Marketing	

Figure 14: List of actions and leads for actions

The details of the actions and changes due to Covid were further identified and designed during the fortnightly project meetings. The task lead would usually prepare an outline of the task or would outline it during the meetings. The rest of the team could then comment on the outline until everyone was happy with the design. For example, after some discussions about the aims of the survey with the community building managers, BEN created a first draft of the survey, there were several feedback rounds and discussions during project meetings to make changes. Then, BEN trialled the survey and shared the results with the core team. Further changes were made until sending out the survey to community building managers. Some of the tasks (not all) that BCC led on where more shared with the team rather than openly discussed. This was mainly due to the fact because they consisted of gaining information and/ or working with people within the
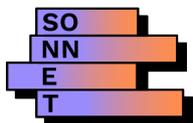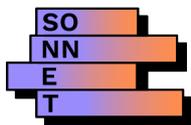
council about certain aspects of the lab. Information about these tasks was always shared with the rest of the team.

b) Actions considered, corrected, repeated, and dropped

The table below presents a picture of actions developed and changed (i.e. corrected) until February 2021. Actions were not repeated or dropped during the city lab process.

Key actions initially decided (see Figure)	Changes due to COVID	Other changes	Status of action
Bi-monthly progress meetings	N/A	N/A	Ongoing
GDPR agreement with BCC	N/A	N/A	Completed
Engagements with community building managers and users	No longer face-to-face engagements (such as focus groups) but survey with community buildings managers. Some user aspects could be asked through survey. Some of the surveys were filled in through telephone interviews with the support of BEN's champions. In addition, a film was created to engage community buildings.	N/A	Ongoing
Engagements with citizens based on two case studies	No longer face-to-face engagements (such as focus groups) in two case study areas but citizen survey which all Bristol citizens can fill in.	N/A	Ongoing
Development of community engagement strategy	Some of the activities were slightly delayed due to COVID.		Ongoing
Identification of community buildings to be conduct the energy audit and promotion of project	COVID made it tricky to engage with community building managers. Some of the buildings closed during lockdown and/ or provided minimum services. It was therefore impossible to visit the buildings. Getting hold of community building managers was extremely difficult and getting them involved in the project. Due to COVID only a limited amount of community buildings could be engaged with.		Completed

Key actions initially decided (see Figure)	Changes due to COVID	Other changes	Status of action
Design and conduction of energy audits in community buildings		Lower number of audits conducted due to budget constraints. The design and methodology of the survey audits was discussed in several project meetings (challenging to design). In the end, a practical approach was taken (maybe rather than holistic).	Ongoing
Work with surveyors (energy audits) to further develop business model for financing EE measures through CMB	Some of the activities were slightly delayed due to COVID.		Ongoing
Gain senior level buy in in the council	Some of the activities were slightly delayed due to COVID.		Ongoing
Develop/ propose new BCC policies/ guidance	Some of the activities were slightly delayed due to COVID.		Ongoing
Further develop business model based on stakeholder workshop and some of the project results	Some of the activities were slightly delayed due to COVID.		Ongoing

During the second reflexive session, we looked back at some of the project objectives and workstreams. The following points were made by the team:

"*Not having looked at them for a long time, I am surprised how well we are tracking them… with our weekly activities. I am quite impressed how we are doing. The main difference is the kind of outputs within each one, where we might have different numbers of buildings [energy audit] being audited for example…*" (BCC)

"*It is reassuring that the headline objectives are what we are doing, heading in the right direction, case study thing is something that we have not really engaged with, and it might need to slightly change… I think it is fine.*" (BEN)

"*I think we are moving in the right direction.*" (BEN)

"*SONNET is not expecting a CMB to be launched…*" (BCC)

During this reflexive session, it was decided to go back to the workstream and make some changes to the timings and wordings. For example, it was reiterated that the work that needs to
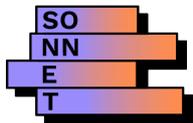
happen internally in the council (i.e. lobbying) would need to happen once the team has some of the results of the surveys, etc. It was also appreciated that BEN had been able to mobilise some of their champions (i.e. volunteers) to support the activities (in particular, getting in touch with buildings managers and supporting the design of the citizen survey) – "*let's keep building that momentum*" (BCC, see notes second reflexive session). Finally, some of the wording might need to change. For example, the energy audits would be less of a 'pallet' of different approaches to the audit. Due to time constraints, it was decided to go for a less holistic methodology.

Results and their evaluation [9]

During both reflexive sessions all the activities were still on-going. It is therefore not straightforward to think about direct results during the ongoing evaluation. Some tentative results can be shared:

- Carrying out a successful opening event. (Evaluation: core team feedback round after the meeting and a high number of community building managers at the meeting).
- Designing the community building managers' survey and citizen survey. (Evaluation: conducting trials, several feedback rounds within the core team, communication team in the council provided support).
- Building relationships with community building managers. BEN worked with some champions trying to get hold of community building managers to gain responses to their survey. This partly helped to create more memorable connections.
- Designing a methodology for and carrying out energy audits within community buildings. This has been a challenging undertaking because of the diversity of approach to energy auditing and the importance of identifying bankable measures in the community buildings (that will provide energy savings). (Evaluation: talking to energy surveyors and experts before deciding).
- "Built relationship with financial institution, Abundance, who might work with us in the future." (BCC, during the second reflexive session).
- Developing film to engage with community building managers and communication of project activities and results on BEN's website.

One of the BCC members mentioned during the July 2021 Grenoble project meetings that the most satisfying aspects of the city lab process has been so far:

- Getting energy audits done in buildings;
- Not being the first to trial the approach and learning from others.

Difficulties and constraints (as learnings so far)

A few of the obstacles and shortcomings (like difficulties and constraints) have been listed in section 2.1.3. During the second reflexive session, the core team outlined some of the learnings so

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[9] The results presented in this section as part of ongoing evaluation were based on work conducted until February 2021. For the reflections on the city lab results at the time of the outcomes evaluation (June 2021) see section 3.2.
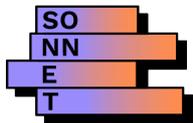
far. It might be useful to mention them here, seeing that they partly relate to identifying and overcoming difficulties and constraints.

One of the major learnings that was pointed out was about being able to work collaboratively (despite of Covid) and the ability of the team to discuss the progress and any changes that were needed. Still, it was important to manage each other's expectations towards the project due to Covid limitations. BEN's usual approach of engaging with community groups and citizens needed to change, seeing that it heavily relies on face-to-face engagements. Surveys, telephone conversations and online meetings were mainly chosen as a replacement. The team still felt that the city lab was 'successful' in building relationships with anchor community organisations in Bristol. For example, BEN was surprised how they could keep their network going, including aspect of the city lab process through online meetings. New relationships could be forged and some relations to community buildings managers strengthened. As already mentioned above, some of the core team members felt that it would have been important to track the KPIs and project objective more regularly. In addition, workstreams could have been updated more often (including more directions from BCC). BCC used some of their time getting in touch with cities that have run a CMB and Abundance Investment to learn from their experience. They considered these engagements as extremely valuable. As pointed out by one of the BCC members, it has been most satisfying to 'learn about history of social energy actions'. It is not about 'working in a bubble', 'not having to re-invent the wheel', to be able to 'move things along at speed' (referring to climate crisis).

Methods evaluation

For the ongoing evaluation, we decided to make use of the innovation history approach, taking part in the project meetings, and conducting two reflexive sessions within the core team. The two reflexive sessions lasted between 1-2 hours. It felt like the core team wanted to get on with carrying out the city lab work. The reflexive sessions maybe felt a bit like a distraction. Although the team felt that the sessions were useful, we try to keep them short and to the point. During these sessions, a balance had to be struck between letting the team reflect on how it was going and considering the WP4 objectives of the ongoing evaluation. Most useful was to be part of the project meetings as it was possible to see the city lab process unfold, how decisions were made, actions needed to adapt and observe the team dynamics. To sum up, it was useful to see the city lab process unfold during the project meetings based on observations and then hear the voices of the team about how they had experienced the process. It might have been useful to conduct a few more reflexive sessions for the evaluation process (but we are unsure how useful more sessions would have been for the core team). We therefore decided to include as part of the outcomes evaluations few interviews with the team members.
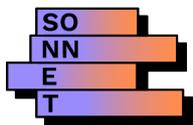
3.4   Outcomes evaluation[10]

Outcomes evaluation process

The evaluation of Bristol city lab outcomes was conducted in two ways:
(1) an evaluation 1-hour workshop (online) with the city lab team members/partners that involved three representatives of BCC and three representatives of BEN (29th June 2021);
(2) three follow-up semi-structured interviews with representatives of Bristol city council and Bristol Energy Network.[11] The online workshop's agenda included:

- Summary of the results to date and reflections on the objectives;
- Reflections on learning outcomes: what were the most important lessons learned?
- Reflections on process and methods: what were the main challenges?

The interviews were conducted online with the representatives of BEN (2 interviews) and BCC (1 interview) to cover the gaps, to discuss in more detail the challenges and lessons learned, what worked well and what didn't work, and to reflect on personal experiences with the city lab.

The city lab results and main challenges

The city lab results

At the outcome evaluation workshop there was a consensus that not all objectives had been met at the time of the outcomes evaluation, and some wouldn't be met as the scope/scale of the city lab work had changed, and there were a number of challenges and obstacles that did not allow to conduct all planned activities (See Table 1).As summarised by BCC representative, the first (ultimate) project objective that would result in a new funding model approved by the BCC senior level is achievable (estimated to be mid 2022).

The second project objective – to conduct energy efficiency audits on up to 30 community buildings – has been achieved (with respect to 12 buildings).

The objectives 3 and 5, which are related to citizens perceptions, have not been achieved in full: building a greater understanding of how citizens perceive energy efficiency and use of the community buildings (objective 3) was problematic due to lack of in-depth interviews or focus groups that were originally planned for two case study buildings. Understanding of a receptiveness to CMB as a mechanism to invest in community buildings (objective 5) was still work in progress at the time of the evaluation but the preliminary results provided enough evidence to mark it as successfully achieved. There could be done more to achieve a greater

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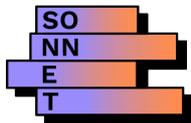
understanding of building managers' perceptions and governing structures for community buildings (objective 4).

It was admitted that setting up the objectives at the start of the city lab was very useful ("*good to know what we were doing*" (BCC2_W)). The ethos behind the city lab still remains the same from the beginning: its purpose is to find out what the citizens of Bristol (first of all, people who use community buildings) think about CMB, and how it can impact individuals and groups across the city (BCC3_W); this has been achieved to a degree.

There was some notable frustration observed about not delivering all planned tasks or not being able to deliver according to the original timeline. Reflecting on the results and objectives was accompanied by the discussion of what was particularly challenging during the city lab experiment.

See the main Bristol City lab report for more detail about the results.

The scope of the results and chances for scaling up

The numbers of building audits conducted and responses to two surveys allow reflecting on the scope of the results to some extent. There was a hope that the numbers of citizen responses would be higher and more buildings would be reached through the manager's survey. However, it was quite challenging to engage with building managers. A BCC representative explained that, as a result, there was a change of scale – had to scaled down the total number of buildings for energy audit (from 30 to 12) (BCC2_W). It was also not in BEN's earlier scope of works, and they had to spent more time than originally expected on this task ("*Somewhere fairly early in the process the whole community engagement bit got slightly 'de-railed' by the community buildings managers piece*" (BEN1_I)). It was reminded at the workshop that the original scope was very much citizen engagement to explore how the buildings were used, not necessarily in great detail how buildings were operated from the energy perspective. (BEN1_W) As BCC was looking for data for the business case (CMB), this change in focus is probably an indicator of what BCC considers as the most useful data.

At the time of the outcomes evaluation, there had been around 150 responses to the citizen's survey received. As explained by BEN, they tried to put the call to as many people as they could, the survey was sent to all BEN members and member organisations and their members, community centres were asked to send it to all their users as well (because it was believed that users have more relationship with the building) (BEN1_I). Although one could probably expect few hundred responses in normal circumstances, taking Covid-19 into account, it was pointed out that setting up a 'realistic target' regarding the number of responses at the start would be helpful. It was also recognised that the users are not the only audience, and the idea was to pick two community centres for case studies to look in more detail, and try to engage with people who do not necessarily use the community centre but live in the vicinity of it (e.g. through street parties, or being on local high street). Due to Covid, this was not possible, and the case studies were 'side-lined'; this affected the richness of data the city lab might had produced. (BEN1_I).

The closing event (November 2021) will be focused on building managers and very local scale, and reflect on the next steps. The city lab team is looking to influence mainly internal stakeholders
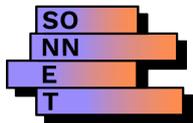
("*involving the people locally that we would need to rely on to get have CMB process actually running*" (BCC2_I)), and potentially share some experiences at sub-regional level.

Due to the nature and focus of the Bristol city lab, there were no immediate plans for scaling up or replicating the experiment. However, Bristol City Leap[12] is seen as a 'massive opportunity', it can go straight into delivery of known solutions to make a bigger impact. There is a possibility that within that programme multiple municipal bonds would be launched ("*there are hundreds community buildings and we need to do them all within the next few years*" (BCC2_I)).

Reflecting on a broader impact of SONNET activities, the team agreed that the learnings gained from the city lab would be useful for energy-related activities, especially in the context of the City Leap agenda for Bristol. It was emphasised that for BEN the positive outcome is that the learning is wider than CMB process; the project can be viewed as a pilot - there is a lot of rich data collected through SONNET city lab (e.g. on energy efficiency of community buildings, including recorded discussions with architects and energy specialists about how best to undertake energy audit before conducting them) that can inform other activities/projects. If energy efficiency programme does not go forward through CMB process, BEN might work with community buildings e.g. helping them with fundraising. Overall, the process of engagement of building managers and citizens using those buildings are viewed as important in a 'wider fabric' of the city works.

Main challenges

It was not surprising that the situation with <u>Covid</u> was the main challenge for the implementation of the city lab experiment. ("*Covid made things more complicated.*" (BEN1_W))

It resulted, first of all, in a lack of <u>face-to-face interactions</u> which was deemed as the biggest problem for two key tasks - a building manager's survey and a citizen's survey.

With the initial focus on building manager's survey, the hope was that the engagement would be more in-depth and personal to build the relationship (BCC2_W). However, it was quite challenging to engage with building managers relying entirely on emails (as the buildings were closed at the beginning and the managers were not answering phone calls). As noted by BEN representative responsible for those contacts, not having conversations is "*very, very tricky*"; "*people are way more engaged if you can speak with them*" (BEN3_W). It was suggested that probably the managers' priority was Covid response (e.g. food parcels) looking after their communities (BEN1_I). BCC's expectation was that building managers would see it as an opportunity to get more investments, and the low level of response came as a surprise to BCC.

Although it was hard to think how it would be without Covid, the citizen survey response rate still came as a surprise given that there were some incentives in place ("*Giving £50 shopping vouchers - don't people want them for the 5 min of their time?*" (BEN1_I)).

An interesting observation was added by one of BEN team members related to the issue of <u>trust and overall fatigue</u> due to Covid-19. It felt that there was a little less trust around; people were tired, and having an outsider coming in was a 'tiring thing' (engaging with people is tiring).

[12] https://www.energyservicebristol.co.uk/cityleap/
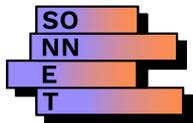
Planning for the future can be difficult for people if e.g. you still don't know if your job is secure or if you hadn't been working since lockdown or your loved one had died etc. Community work was focused around immediate needs like foodbanks, raising money for those who couldn't pay the fuel bills (this work was very well received and engaged with). There was also an issue of trust noticed by BEN i.e. the Bristol city council badge on the survey was not necessarily helpful as BCC is doing things that some people are not keen on (BEN1_I); "*There is definitely an anti-council feeling in some communities, a mistrust of which I was a bit unaware of.*" (BEN3_I) This made BEN think how they could help that relationship to improve, "*because communities and the council have to work together to make any of this work.*" (BEN3_I)

A number of <u>delays</u> were reported by the team caused by various reasons and change of circumstances: as a result of Covid (e.g. the launch event in March was postponed to June), the elections in May 2021 (delayed the launch of the citizen survey), the ambiguity in the timeline (no clear distinction when the manager survey was going to finish and the citizen survey would start), and the change of the scope (i.e. more work with community buildings for BEN which meant that the citizen's survey kept pushed back while they were doing the community building work).

Looking back, it was recognised that through the time of the city lab there was a hope that the situation with Covid would change and there would be an opportunity to do more things in person; this probably added to delaying some tasks such as citizens engagement. The BCC representative also explained why it took longer to draft a citizens survey ("*we had too many cooks in BCC really*" - BCC2_W), although 95% were valid comments, and this resulted in a better-designed survey. Having the survey on BCC server could also make the process longer adding 'another layer of complications', as seen by BEN (BEN1_I).

The issue of diversity was noticed when looking at the survey responses which highlighted a <u>digital and economic divide</u> in the city, as the respondents to the citizen survey were mainly white British. This raised a number of questions that would need to be considered in future work, e.g. whether different groups feel different about contributing financially within their community; whether people chose not to engage or they were not aware/not reached (it was difficult to measure the level of 'digital engagement'); the need for more targeted engagement; what other local authorities do in terms of diversity in similar projects (if on their radar).

It was interesting to observe a diversion of views within the BCC team on the weight of each task, and in particular on <u>citizens engagement</u> element of the city lab. Bristol city lab was framed as a social innovation project, and one BCC team member spoke about the ethos behind the city lab as remaining the same from the beginning - the main reason for doing it is to find out what the citizens of Bristol think about CMB and how it can impact individuals and groups across the city. However, another BCC team member admitted that building managers and audit, in his vision, were the 'heavy focus' of the city lab rather than the citizen's survey, and that CMB proposal could go ahead even without citizens expressing their support through the survey. They also questioned the representative sample that would give confidence that CMB would be successful ("*a couple of hundred people responding are not representative of the city of 450,000*" (BCC1_W); "*To have a representative sample would need more investments to get thousands of responses to give you a better indication at city level.*" (BCC2_I)).
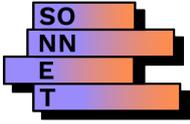
This stance is explained by what is expected to be the key outcome for BCC - the business case to provide evidence to senior officers in the council who are making a decision whether BCC is going to adopt CMB as a form of financial borrowing (also means changes to the council's treasury policy). The main data to back up CMB would be the results of the buildings energy audits (technical output), not citizen's survey (BCC1_W). One argument was that the scheme was 'part proven' and other local authorities did not do community engagement part until they launched CMB (BCC2_I). Without denying the importance of community and citizens engagement, for BCC it seems hard to quantify its value, which is often not captured within the project evaluation process. It also 'puts a massive extra cost on price of delivery and a longer timescale', and the question is whether there is time and resources to do community engagement if the ultimate goal is to tackle climate change (BCC2_I). It was admitted that such delays are more acceptable within research projects, but in commercial projects with a limited budget an engagement element would not be done in the same way/to the same extent, especially if the idea has been proven already (although there is often a need to prove it locally as the scheme might not be directly replicable (BCC2_I)).

Those in BCC team who expressed a more practical/utilitarian views on the project focus and outcomes still recognised the fact that the city lab process provided lots of other lessons learned, and the citizen's survey was useful as it gave people a chance to speak to BCC how they feel about community buildings, as BCC asset team hand over their assets to communities without post-transfer engagement.

Not surprising, that, considering the nature of BEN as a community organisation and its role in the project, BEN team members supported and shared the view on the city lab as a socially innovative experiment which primary aim should be about engaging citizens.

To sum up, the discussions revealed that the leadership of BCC team were focused more on how to set up CMB process (seeing SONNET as a convenient vehicle to do that), while BEN members were interested in how to use the city lab as a mechanism to engage more communities in energy. "*They are complimentary objectives but they are slightly different*" (BEN1_ I).

The ongoing working relationship between BCC and BEN was regarded by both organisations as very valuable and helpful for underlined collaboration within SONNET. Both organisations work well together and listen to each other. It was admitted by BCC that they are still learning how the best work together with community organisations, and the learning is probably happening on both sides. For BCC it was challenging to work with small local organisation because they are not set up in the same way as a big contractor would be, they often rely on volunteer time, and things were going 'quite slowly' until another BEN member came on board. (BCC2_I) In turn, BEN representatives also find it slightly challenging to work with BCC pointing out that the process can be slow sometimes due to the size of BCC and different levels/departments. It seems like within BCC different departments can have different approaches, so working with a large organisation can slow things down, everything has to be signed off and approved, it is a lengthier process. (BEN3_I)

One of the city council representatives posed a question whether their involvement in SONNET research activities such as power lab sessions gives the most for a city lab. Admittedly, these
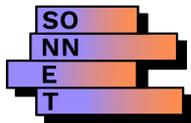
activities require lots of time and efforts which could be used for city lab-related activities rather than other SONNET research.

The most important lessons learnt

Reflections on learning outcomes were focused on the most important lessons learned in relation to: the experiment, the process of implementation and the methods used in the city lab.

It is clear that for building the CMB business case the numbers and more technical information are needed to make the CMB scheme 'investable', but the important component that makes the Bristol case different from other local authorities' projects is also to make sure it is something that citizens actually want and interested in (a more inclusive approach). SONNET provided a very valuable tool to speak to people and find ways of making the CMB proposal 'not just rich-man's game' as it might be as little as £5 to invest in CMB. (BCC3_W) This makes it incredibly valuable and inclusive, potentially attracting a wide variety of people across the city rather than small amount of people who invest e.g. £1000 each. Potentially there could have been even a stronger emphasis on 'co-design' if face-to-face interactions were possible (such as workshops) - some more 'open' questions to allow citizens to make suggestions for crowdfunding investments in Bristol. For example, what other types of beneficiaries would they consider supporting, e.g. the city council, businesses, SMEs.

One powerful message from the city lab is about linking it with 'green finance' that would be part of COP-26 this year, and an average Bristol residence can be part of that. (BCC3_W) Moreover, it also gave an opportunity to talk to citizens about climate change at the same time.

The important lessons learnt are about people's priorities, inequality and digital divide in the city of Bristol. One learning, particularly for BEN, is that there are ways to engage people in the things that matter to them. The information gathered through the city lab can inform what the community centres are for; it helped communities to reflect on their community buildings as cohesive place where they can have a conversation about climate change. The community events demonstrated that the passion is there, and the SONNET project helped capture people's voices - they want to be included in net-zero agenda and want to find ways to do that, although it might be not necessarily through investing in CMB. Generally, the investment in community buildings is welcome. (BEN2_W)

One of the key lessons learned is that face-to-face engagement is vital for experiments like Bristol city lab. Face-to-face engagement is necessary if you want real authentic responses to a survey. This would mean explaining the experiment/idea and the survey context first. It is not clear how much people think about the process/questions when doing it online and how much they contextualise it. If you speak to them first, the answers are more authentic and more useful for the whole process.

Making changes to the buildings without explaining what the benefits for the community are would probably not get the responses that the city lab needs. *"It is important to take community*
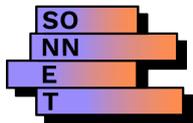
along on any journey or changes you are making within it." (BEN3_I) It was also suggested that several rounds of engagement to be done as part of the city lab, e.g. one more round of targeted engagement when the actual product (CMB) is about to be launched; this will likely to result in higher uptake. (BEN2_W)

As the main obstacle for the engagement process was the situation with Covid, the obvious lesson for those responsible for it was "*Don't try to do community engagement work during the global pandemic!*" (BEN3_I)

The <u>composition of the city lab team</u> and <u>inclusiveness</u> were also discussed at the workshop and during the interviews. It was noted by BEN that including other stakeholders, e.g. local community organisations, could be useful: 'May be a couple of representatives of community organisations that manage their buildings might have been useful to have in the room, to explore better how we engage with people.' (BEN1_I). "*Although BEN is good at representing communities, we are not the communities themselves, and may it would be nice to have communities themselves*" (BEN3_I). Getting them on board and more invested in the project would help them to fully understand what the city lab was trying to do and why, and then take that message to their communities.

BCC thinks that someone from the property team with knowledge of community buildings perhaps could be brought in; energy champions would not necessarily want to be at the meetings that the city lab had (experience from the past projects) (BCC2_I). one member of the BCC team suggested that bringing building managers as part of the process could be useful for an experiment like Bristol city lab.

<u>Other key lessons</u> summarised by BCC representative are mainly in relation to the implementation and management of the project: (1) go back regularly to your original objectives and KPIs (key performance indicators), also reviewing those more often; (2) make sure the contract with community organisations (e.g. BEN) is 'as tight as possible' in terms of KPIs as well (maybe they were too loose and could be clearer); (3) consider the amount of time to get people to respond e.g. building managers, thought they might be more responsive than general citizens but I guess lots of them are voluntary people as well. (BCC2_I)

For BEN one of the key lessons mentioned was also in relation to project management i.e. about allocating resources properly and drawing a line for key tasks ("*we've done buildings, now we do people*"). Sticking to the original proposal would have resulted in more interesting outcomes perhaps, however considering Covid impact and the limitations it created 'a reasonably good job' was done through the city lab. (BEN1_I)
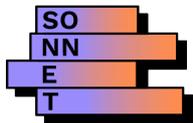
Bristol City Council Perspective

The City Lab Process in Bristol has successfully enabled the city to take forward the investigation regarding whether or not a Community Municipal Bond would be something that would be supported by citizens and related stakeholders (e.g. building managers) as a way to fund energy efficiency improvements.

Significant challenges have been faced due to Covid particularly in relation to the preference for face to face engagement around a potentially complex topic. This resulted in limited citizen survey feedback but which was in fact in line with findings from other CMB surveys on key questions which help to validate the lab's findings.

Building manager engagement was also difficult and the lab hopes to take forward more energy audits in buildings in the coming months to help build the evidence base for the business case. The business case will therefore be strengthened ahead of a decision pathway process conducted internally to approve the CMB process.

Work is continuing to take forward the concept of the City Lab around CMB's until the end of the SONNET project. It is likely that around the point of project close would coincide with the targeted approval date for sign off to launch a CMB. This would represent a significant achievement within the timescale of the project.

University of Sussex Perspective

Although it might be not very clear how much fundamentally SIE has changed given the makeup of the UK energy system and power relations, for Bristol the socio-economic aspect of this SIE initiative can be noticeable. On the one hand, the CMB process, if approved and adopted by the city council, can change the way the energy efficiency measures in community buildings are funded. On the other, it would provide a real opportunity for citizens to invest in their communities and support community buildings (e.g. with as little as £5), potentially raising people's awareness and interest in energy and climate change and related projects.

The most important political processes around energy and sustainability in Bristol at the moment are probably associated with the City Leap which can be seen as an example of building on the foundation of SIE in the area to become something widely politically backed. The fact that civil society actors/community organisations are engaged in organising activities together with the local authorities (also based on some previous work with the city council) was saying about their role and the importance of energy and sustainability agenda in the city, as well as about the potential for further collaborations. The important aspect of socio-political relations in Bristol city lab was that the future of CMB would depend on whether the business case/ a new funding
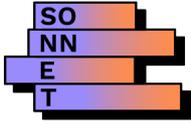
model is approved by the BCC senior level, so gaining political buy-in was key for the city lab. It might be possible to say that citizens engagement around CMB was key to convince councillors that this was worth pursuing.

Bristol city lab was clearly set up as SIE - it was based on collaboration between local authorities, a community non-profit organisation and academic partners, as well as cooperation with other relevant stakeholders (e.g. champions, building managers) with a strong emphasis on citizens engagement. Although the idea behind CMB is not particularly unique (others are developing similar schemes), Bristol city lab approached it differently from the start with an emphasis on the social innovation component of the scheme (e.g. community engagement). The city lab was well-embedded in the city context. A lot of the sustainable energy initiatives, collaborations and networks already exist in Bristol, and there is an understanding of the roles for both, social innovation and technology innovation. This was probably the key enabling factor for the city lab implementation. The main impeding factor is the impact of Covid-19 which caused delays, prevented face-to-face interactions (a huge factor for engagement activities) and created additional obstacles (such as overall fatigue and people having other priorities at these difficult times).
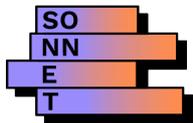
Appendix 1: EC summary requirements

Changes with respect to the DoA

There have been no changes with respect to the DoA apart from the extension of the deadline by 3 months due to covid-19 restrictions.

Dissemination and uptake

This deliverable will be made publicly available on the SONNET website (https://sonnet-energy.eu) as well as via Zenodo.

Short Summary of results

The City Lab chose to investigate the possibility of using crowdfunding - specifically a Community Municipal Bond (CMB) mechanism - to fund energy efficiency measures in community buildings. This took the form of surveying citizens across Bristol and building managers of the community buildings about their opinion of such an initiative as well as technically surveying the buildings to assess the value of the energy efficiency works that needed to be undertaken and the resultant business case. It was clear to see that the majority of building managers believed that energy efficiency measures needed to be undertaken in the buildings that were assessed whilst most citizens surveyed also agreed with this. 57% of citizens surveyed confirmed that they would be interested in investing in a CMB which compares favourably with comparable surveys undertaken elsewhere. Some citizens did raise the question about the levels of affluence in some of the areas where community centres were located and whether this would potentially reduce the amount of CMB interest. The City Lab also conducted energy efficiency surveys on a selection of community buildings. This revealed that there was around £200k of possible investment opportunity. It is clear that this portfolio would need to be increased in order to deliver the best value to Bristol and its citizens. Bristol City Council is now looking at doing just this and progressing through its internal decision pathway to seek senior officer and political leadership permission to launch a Community Municipal Bond in the future.

Evidence of accomplishment

This document.