City Leap Energy Partnership

Appendix A: Further essential background information

BRISTOL CITY COUNCIL | ENERGY SERVICE BRISTOL

BRISTOL ONE CITY

Contents

Executive Summary

The aim of City Leap is to take advantage of the transition to a decentralised energy system; to build an interconnected, low carbon, smart energy system that delivers social, environmental and economic benefits for the people of Bristol, building on the innovative leadership the council has shown in energy and sustainability over almost three decades.

The council has a compelling value proposition; the council itself, with its assets and influence, the council's award-winning Energy Service, with its expertise in delivering low carbon energy infrastructure and pipeline of investment opportunities, and the council's wholly-owned energy supply company, Bristol Energy, which will have a key role to play in this transition by harnessing its energy supply expertise and smart energy innovation capabilities to put the company on a sustainable footing for the future.

City Leap will leverage this value proposition to drive city-wide action, strategically co-ordinating and delivering energy infrastructure projects at significantly increased scale and pace over and above what the council could achieve on its own.

This transformation will require significant levels of investment; levels that the council simply cannot deliver alone. Therefore, one of City Leap's aims is to attract, facilitate and deliver at least £1bn of low carbon and smart energy infrastructure investment in Bristol's energy system.

To that end, in May 2018, the council published the City Leap Prospectus, which set out our past successes, the council's current programme of work and future investment opportunities in relation to energy. The Prospectus invited engagement from any organisation with an interest in Bristol's future energy vision and the range of investment opportunities set out in the document. The response to the City Leap Prospectus exceeded the council's expectations with 180 Expressions of Interest being submitted containing a wide range of proposals, from a broad range of organisations across all sectors.

The council subsequently undertook an extensive soft market testing phase with organisations that submitted an Expression of Interest, in addition to completing its own comprehensive options appraisal. The outcome of these exercises is that the council's preferred model to deliver City Leap is to set-up a joint venture with a strategic partner.

This partnership will only be the start of the City Leap journey, which will need to be flexible and inclusive in its approach, engaging our communities, bringing in new projects, innovation and partners over time as Bristol progresses towards carbon neutrality and a more decentralised, democratised energy system.

Introduction

Bristol is a vibrant, creative and growing city – home to over 450,000 with a population set to increase to nearly 530,000 by the year 2037. The Guardian newspaper has ranked it as one of the best places to live in the world and we are currently the only Core City outside of London to make a net positive contribution to the UK Exchequer – a testament to our strong local economy. The development of a low carbon, resilient, and sustainable city is a cornerstone of our approach to remaining competitive in the global economy and ensuring that everyone in the city benefits from this success.

Bristol has long led the way in the fields of energy, sustainability, digital and future start-up companies:

- it has the lowest carbon footprint of any of the UK's Core Cities,
- is the UK's only city to hold the title European Green Capital in 2015,
- has the largest cross sector environmental network of its kind in the Bristol Green Capital Partnership,
- was ranked the number one smart city in the UK in 2017,
- successfully delivered c£50m of low carbon energy investment between 2012 and 2016, and
- set up one of the only municipally owned energy companies in the UK in 2015, Bristol Energy, which now has over 160,000 customers.

Our Mayor and City Councillors, across all political parties, are committed to making Bristol a carbon neutral city as quickly as possible and want to rapidly accelerate delivery of low carbon and smart energy infrastructure. The City's formal target is to achieve carbon neutrality by 2050 and, in November 2018, the city's Full Council unanimously agreed a motion put forward to set a new target – to achieve carbon neutrality by 2030. This is very ambitious and the city council recognises that, whilst the city cannot achieve this without significant changes nationally, it clearly signals the commitment of the city's political leaders to lead the decarbonisation of our city and country.

Low carbon and smart energy infrastructure is a broad agenda, covering both organisational and technological innovation. We are already innovating with new technologies including low carbon heat and power generation, heat networks, private wire and shared networks, battery storage, energy efficiency and ultra-low emission vehicle infrastructure, all connected by innovative digital technologies to minimise energy consumption and maximise value generation.

We are also innovating with our partners at the two world class Universities located in Bristol, the University of Bristol and the University of the West of England, in addition to the voluntary and community sectors to create new ways of financing and decarbonising the city – for example working with the Bristol-based national charity, the Centre for Sustainable Energy (CSE), Bristol Energy Network and Bristol Energy Co-operative.

We are aware that achieving this vision will result in a massive transformation of the city and its energy system and, although we have made a strong start, we cannot do this alone. The council is therefore seeking a range of local, national and international partners to join us on this journey, which we call City Leap.

The scale of the task and the purpose of City Leap is to attract, facilitate and deliver at least £1bn of low carbon and smart energy infrastructure investment in Bristol's energy system over the next ten years. It should be noted that this £1bn of investment is in addition to the investment that the city will need to undertake in, for example, transport and non-energy digital infrastructure.

Delivering such a programme will lead to significant additional benefits for Bristol's residents and businesses, including a reduction in fuel poverty, the creation of jobs, warmer and cosier homes for residents, improvements to residents' physical and mental wellbeing, better digital connectivity, significant business opportunities, inclusive growth and low carbon energy security and resilience. In essence, a future city fit for its residents, businesses and visitors in the 21st Century, a city that will continue to successfully compete at a global level.

This is particularly important to the council when you consider how hugely significant energy is to Bristol, its residents and businesses. 60,000 Bristolians are living in fuel poverty, many of whom rely heavily on the council's services, Bristol loses £870m (6.4%) of its GVA annually as a result of paying its energy bill as nearly all of this money leaves the city and, despite much good progress, Bristol's CO_2 emissions are still over 1.5 million tonnes annually.

Finally, a key part of our philosophy is taking the One City Approach in which the city council has worked with a wide range of partners to create the One City Plan. This sets out an overarching roadmap to 2050, across all areas of city life, including the energy system. Under this umbrella, the City Council is also leading the development of a new Climate Strategy for Bristol, which will update and develop our existing strategy, which has supported the delivery of so much of the progress to date. That Climate Strategy will be developed in collaboration with partners and city stakeholders and regularly reviewed as opportunities and challenges change. Full details can be found in Schedule 1 to this report.

The council strongly believes that taking a city-wide partnership approach is also the right way forward for City Leap and, having undertaken an extensive soft market testing exercise following the publication of the City Leap Prospectus in May 2018 and concluding a comprehensive options appraisal, Bristol City Council is now in a position to move forward.

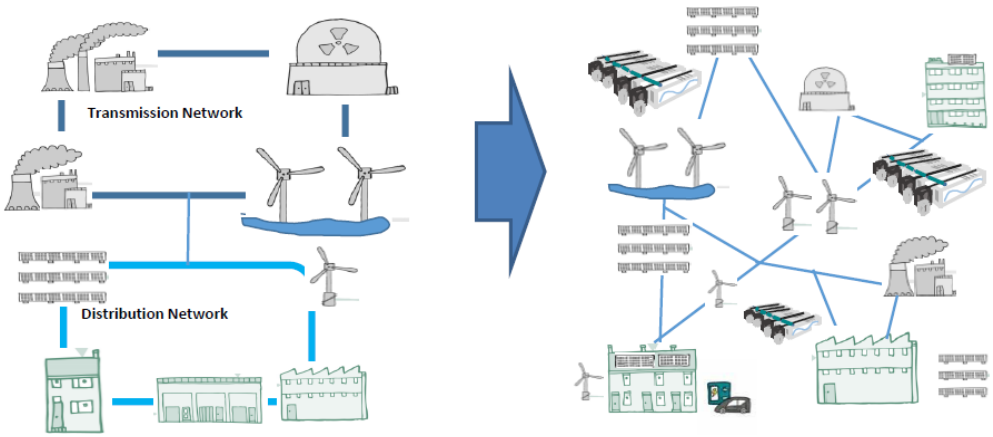
This is our opportunity to deliver something truly transformative for Bristol, building a citywide energy system that will protect the environment and improve the quality of life for the people of Bristol.

We look forward to working with partners of all sizes and sectors to achieve our aspirations.

A decentralised and democratised energy system

The UK is in the midst of a transition to a decentralised energy system which enables greater flexibility and more focus on local energy generated from renewable sources. Our energy system is also getting smarter. Smart meters are being installed and smart technologies and services, such as smart thermostats and Time-of-Use tariffs, are becoming more prevalent. This technology driven revolution will dramatically change the way households and businesses interact with the energy they use, as well as the way that energy is generated, transmitted and balanced.

Centralised system **Decentralised system**



The move to the future smart energy system creates opportunities for the development of new business models, increasing the amount of local energy generation and linking generation to local demand, including:

- Locally-owned generators being able to sell their power directly to the local community/energy supplier
- Digital platforms enabling access to new revenue streams such as balancing and flexibility markets
- Heat networks utilising low-carbon generation to decarbonise heat demand
- Cheaper local generation tariffs supplied by local renewable energy generation
- Greater connection with and support for local renewable energy projects
- Peer-to-peer trading enabling people to sell their surplus energy to their neighbours
- Local micro grids to minimise carbon emissions from new developments
- New ways to supply energy such as energy and/or heat as-a-service
- Greater utilisation of existing distribution network infrastructure, reducing the capital costs, environmental impacts and disruption associated with network upgrades

The council's emerging smart city strategy identifies energy as a key area of need and opportunity for the application of smart technology, not least because realising the smart, decentralised energy system will require smart grids and systems to manage demand, supply and storage.

Smart technologies empower citizens and communities to manage their energy use and become producers of energy, reversing the outward flow of money from the city. Smart energy solutions can also provide the basis for other services related to health and social care which can support service delivery and reduce costs.

Bristol taking the lead

Bristol has long played a pioneering role in low-carbon and sustainability projects and there are many organisations in Bristol that have made significant contributions to the city's growing reputation as a leading energy city. Bristol City Council has played its part in this Bristolian success story and has also committed Bristol to becoming a carbon neutral city.

The council believes that it has a moral responsibility to do everything it can to help deliver decisive action on climate change and has a key role to play in Bristol achieving carbon neutrality including:

- **Demonstrating leadership and innovation**
  The council has a unique role in developing and demonstrating new low-carbon energy solutions.

- **Inspiring change**
  Through the council's assets, the services it delivers, as a social landlord, trusted community leader and major employer, in addition to its regulatory and strategic functions.

- **Securing local benefits**
  Supporting local people, the local environment and the local economy through lower energy bills, economic regeneration, creation of local jobs, increased renewable/low-carbon energy and improved health and wellbeing.

- **Creating partnerships**
  A city-wide, action-focussed initiative that will build mutually beneficial ties between the public and private sector, in addition to partnerships between communities and the wider city.

- **Delivering at scale**
  Leveraging the council's assets, infrastructure and convening powers to dramatically increase the scale and pace of delivery to support Bristol's carbon neutral ambitions.

The council's delivery to date

The council has been actively working to decarbonise Bristol's energy system for over a decade, by investing in renewable and low-carbon technologies to increase the sustainability of our city. Bristol is the UK's only European Green Capital and has achieved national and international recognition as a leading energy city, as a result of the action it has taken, including:

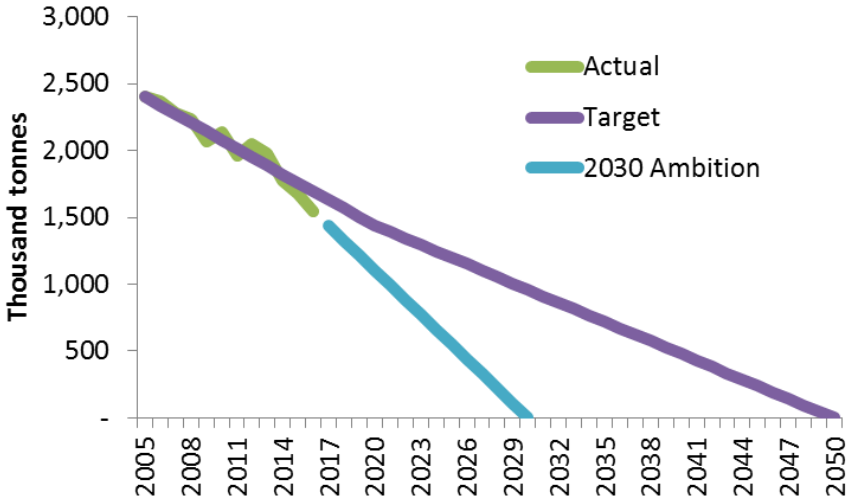
- Setting up Bristol Energy, one of only two municipally-owned energy companies in the UK and a force for social good, which now has over 160,000 customer meter points.
- Being the only local authority in England to own large-scale wind turbines having invested £7m in the installation of two 2.5MW wind turbines in Avonmouth.
- Investing £5m in the installation of 4MW of solar PV on council-owned buildings and land including our offices, museums, libraries, schools and leisure centres in addition to a number of community buildings.
- Investing over £2m in biomass boilers with a generating capacity of 5.2MW.
- Investing over £6m in low-carbon heat networks to date, connecting over 1,000 social housing properties to the network. The council has also recently announced the first commercial connection to its heat network.
- Supporting 52 local community energy projects with £250k of grant funding through the Bristol Community Energy Fund.
- Facilitating the delivery of a 4.2MW community-owned solar farm through the provision of council-owned land and grid connections.
- Delivering an energy efficiency programme which has cut emissions in the council's buildings by 71%, achieving the council's 2020 carbon reduction target three years ahead of schedule.
- Managing a £1.8m SALIX revolving loan fund which invests in energy efficiency projects in the council's corporate estate, which has been "revolved" three times, delivering £5m of investment with sub-five year payback.
- Launched an energy efficiency scheme for local schools to deliver affordable improvements to the education facilities of Bristol children. 100 schools in Bristol have expressed an interest to date, with 13 schools currently being upgraded.
- Delivering energy efficiency upgrades to 10,000 social housing and private domestic properties, reducing the energy bills of thousands of residents and creating warmer, healthier homes across Bristol.
- Installing energy efficient street lighting across the entire city, through a programme of ongoing improvements.
- Overseeing a project to deliver 120 new public electric vehicle charging points to the region by 2021, including the installation of Bristol's first electric vehicle rapid charging hub.

Our Environmental Performance Summary 2017/2018 provides more detail on the council's activities.

The council's ambition for Bristol

Bristol as a whole is making good progress towards carbon neutrality. About three quarters of this is due to national action to decarbonise the UK's electricity supply, but we have also seen substantial improvements in energy efficiency in buildings within the city, significantly reducing energy demand. Building on this momentum, the council is aware that there is an urgent need to accelerate the pace of delivery of low carbon infrastructure in Bristol in order to achieve carbon neutrality.

The graph below shows Bristol's reduction in CO_2 emissions over time:



Our long term ambition is to build an interconnected, low carbon, smart energy system that enables Bristol to achieve carbon neutrality and capture as much of the value that this transition will generate for the benefit of the city, its residents and businesses. We are on the cusp of an energy revolution and, in true Bristol fashion, our intention is for Bristol to be at the forefront of this revolution, creating an energy system that works for everyone in Bristol and serves as a template for other cities and regions.

By strategically co-ordinating and delivering of energy projects at significantly increased scale and pace over and above what the council could achieve on its own, we will take a significant step on our journey towards carbon neutrality and secure the social, environmental and economic benefits that can be obtained from a transformed energy system. By doing so, we will cement Bristol's reputation as a leading energy city and create a city-wide smart energy system that Bristolians can be proud of.

The partnership rationale

As discussed previously, there are a number of reasons why we believe that working in partnership is a key element of the solution required to deliver Bristol's carbon neutral ambitions. These reasons, coupled with shrinking public budgets, mean that we need to find new, innovative and inclusive ways of delivering and funding the city-scale low-carbon infrastructure that will be required to deliver on our ambition.

Given the need for city-wide action, we are very clear that transformation at this scale cannot be achieved without the support, input and consent of the residents and business communities of Bristol. It is therefore vital that we fully engage with the city to ensure that the people of Bristol have a meaningful say and, crucially, a level of ownership in City Leap and the smart energy system it will deliver. These communities will play a crucial role in further developing Bristol's energy system whilst ensuring that the diversity of Bristol is fully represented and able to shape the city's future energy strategy.

As a result, the council believes that the creation of the City Leap Energy Partnership set out in this document is the next big step on the city's journey to carbon neutrality and we envisage a much broader partnership evolving over time. This will include a wide range of organisations, community groups and businesses to deliver the projects that will constitute City Leap.

This broad partnership approach will be built into City Leap from the outset and will give City Leap the flexibility it needs to access and incorporate the new technologies, approaches and innovations that will be developed as the smart energy system evolves over time.

City Leap

The vision for City Leap

The aim of City Leap is to strategically develop, co-ordinate, deliver and facilitate a smart, interconnected energy system for Bristol; One that leverages the assets within the city to deliver clean, affordable energy to its people, communities and companies. City Leap will make it possible for Bristolians to take ownership of their energy system, using it to build better lives for themselves and their children.

For the citizens of Bristol, this means:

- **Better quality of life**: by improving the warmth and comfort of their homes; through better air quality and environment; by creating better health outcomes.
- **Delivering simple, affordable energy**: by delivering simple, attractive and cheaper energy tariffs and services; by helping to insulate people from future price rises.
- **Greater prosperity**: by creating local jobs in energy and related supply chains, by creating economic growth through affordable energy.
- **Increased ownership**: people can see and own the assets which generate and deliver their energy and influence their energy system, through the local political process and having a say in City Leap.

For the city, it means:

- **Better environment**: addressing targets for climate change, air quality and the environment in the shortest possible timeframe.
- **Generating economic development**: investment in local facilities; local jobs in the energy supply chain; affordable energy for local industry.
- **Improved health, wellbeing and social welfare**: warmer, healthier homes and cleaner air lead to improved health; jobs and affordable energy reduce fuel poverty and improve social welfare.
- **Building our reputation**: City Leap builds from and further develops Bristol's reputation as a forward thinker and innovator.

For investors and partners, it means:

- **Generating an appropriate return on assets**: opportunities to invest in new energy assets with a well-defined route to monetise these assets to deliver an appropriate return on investment.
- **Creating new, service-based revenue streams**: participation in advanced service-based energy propositions.
- **Developing new business models**: an early opportunity to trial and develop the new business models that are emerging from the transition to a smart energy system.

For the wider energy system, it means:

- **Gaining better insight into energy usage and flows**: by using real time data from smart metering and other tecnhology, to understand patterns of generation and consumption in order to reduce demand.
- **Creating access to demand side flexibility**: by enabling investment in energy storage and smart devices, and by linking these devices to digital platforms that enable better monitoring and control of these assets.
- **Increasing low carbon generation**: supporting increased investment in low carbon generation by enabling generation and storage to access additional revenue streams and higher value service-based revenue models.
- **Creating new models for system operation and governance**: by demonstrating new models of local operation and governance, better suited to a world of smart decentralised energy.

City Leap will achieve this vision by using smart, digital technologies to aggregate Bristol's future portfolio of "energy assets" — buildings and housing, low carbon heat and power generation, heat networks, public and private wire network infrastructure, battery and thermal storage systems, energy efficiency, public transport and low/no emission vehicle infrastructure — into an integrated whole. It will use real-time data on local patterns of energy consumption and generation to optimise the match between supply and demand, thereby maximising the value derived from these local assets and the benefits they deliver to local people.

This will enable us to better align the way we generate, transport, store and use energy with people's needs for warmth, light, mobility and health, and with the wider energy system's needs for cleaner energy and greater flexibility to reduce demand. The end result will be to substantially reduce both the cost and the environmental impact of Bristol's and the UK's future energy system.

Strategic Objectives for City Leap

The council has set six Strategic Objectives for City Leap, which are outlined below:

1	**Establishment of a long-term, flexible City Leap Energy Partnership** to strategically develop, co-ordinate, deliver and facilitate a programme of work that supports the creation of a resilient energy system for Bristol on its pathway to carbon neutrality by 2050.
2	**Optimise Bristol City Council's assets and services** to attract additional investment and generate revenue to support a sustainable business model for the City Leap Energy Partnership.
3	Ensure that the **residents, communities and businesses of Bristol are fully engaged** by the City Leap Energy Partnership and are able to influence and participate in the programme of work.
4	**Maximise the economic, social and environmental benefits** arising from the programme of work carried out by the City Leap Energy Partnership, including job creation and the alleviation of fuel poverty in Bristol.
5	**Ensure that the City Leap Energy Partnership supports and enables innovation,** ensuring Bristol prospers from the energy revolution and enhancing its reputation as a leading global 'smart city'.
6	**Further enhance Bristol's reputation as a leading energy city** through monitoring, evaluating and disseminating the lessons learned from City Leap and working towards replicating City Leap across the UK and beyond.

Outcomes and KPIs

A number of desired Outcomes have been determined for each of the Strategic Objectives.

These Outcomes will form a key element of any future procurement exercise for City Leap partners, being the basis against which the council will evaluate bids from prospective partners. As part of any future procurement process, prospective partners will be asked to submit proposals for KPIs against each Outcome which will subsequently become contractual terms used to drive and measure the performance of City Leap.

Given their central role in the procurement exercise, the Outcomes are not being published as part of this report but will be made public as part of the documentation accompanying the future procurement exercise for City Leap.

Social Value

Within Bristol City Council, social value is seen as a process whereby we meet our needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating

benefits not only to the council, but also to society and the economy, whilst minimising damage to the environment.

City Leap has the potential to deliver very substantial social value by, amongst other things:

- Keeping Bristol on course to be run entirely on clean energy by delivering £800m to £1bn of investment in the city's low carbon, smart energy system.
- Improving our environment to ensure people enjoy cleaner air through supporting the further deployment of renewable energy generation and electric vehicles.
- Improving physical and mental health and wellbeing by making residents' homes warmer and cheaper to heat, reducing inequalities and the demand for acute services.
- Tackling food and fuel poverty by reducing energy bills.
- Creating jobs, contributing to a diverse economy that offers opportunity to all and makes quality work experience and apprenticeships available to every young person.

The council's strong desire to deliver significant social value from its activities is fully reflected in City Leap and the Outcomes it has developed under each of the Strategic Objectives.

The launch of the City Leap Prospectus

In May 2018, the council published the City Leap Prospectus, which outlined the council's vision for creating Bristol's future smart energy system. The Prospectus is a public document, accessible to all, and sets out our past successes, current programme of work and future ambition in relation to energy.

We have always been clear that City Leap is an initiative by and for the whole city and will only flourish if organisations, communities and individuals come together to share in its challenges and successes. Therefore, in developing an initiative that has the potential to act as a catalyst for transforming our city's energy system, it was important that the Prospectus came from the city, not just the council.

Our City Leap Partners (who are also named in the Prospectus document) are:

Bristol Energy; Bristol City Council is just one of only two local authorities that owns its own energy supplier – Bristol Energy. Bristol Energy is a national supplier which has been trading to domestic and commercial customers since late 2015 and now has in excess of 160,000 customers.

Bristol is Open; a joint venture partnership between Bristol City Council and the University of Bristol in advanced digital infrastructure and the Internet of Things. Through Bristol is Open we have a number of existing partnerships with technology providers.

Goram Homes; a new company established by the council to facilitate the construction and development of new homes for the city.

Bristol Green Capital Partnership; a unique network of more than 850 member organisations from across public, private, third and voluntary sectors, all committed to working towards a 'sustainable city with a high-

quality of life for all'. The Partnership has the city's carbon neutral target as a rallying point for its work. Its members include Bristol Energy, Bristol Waste and Bristol is Open, among many others.

University of Bristol Cabot Institute for the Environment; the University of Bristol's first flagship cross-disciplinary research institute exploring how we impact and depend on the Earth.

University of the West of England; which contributes to a sustainable and healthy future through applied research and collaborations with organisations and communities.

Western Power Distribution; the local Distribution Network Operator who are acting in an advisory capacity to the City Leap Programme.

Invest in Bristol and Bath; the region's inward investment agency.

E3G; an independent climate change think tank operating to accelerate the global transition to a low-carbon economy.

Within the Prospectus, we set out a range of areas of investment and opportunity for future City Leap partners. These investment opportunities included:

- further development of our heat network
- further investment into renewable energy generation
- the creation of a smart energy system
- delivering domestic and commercial energy efficiency at scale
- increased infrastructure for electric vehicles and other e-mobility solutions
- investigation into hydrogen as a technology to aid low-carbon mobility
- marine energy

We were also aware that local, national and international engagement and communication is a key element of City Leap. We therefore included two rather less obvious investment opportunities within the Prospectus which are vital to City Leap's success nonetheless, these being:

- a comprehensive approach towards public engagement
- a programme of monitoring, evaluation and dissemination to improve policy and decision-making for local and central government

Full details can be found in Schedule 2 – *Engagement*

The Prospectus also included investment opportunities for non-energy projects such as the Western Harbour and Temple Quarter developments. Full details can be found in the City Leap Prospectus.

The publication of the City Leap Prospectus opened a window for organisations to express their interest in City Leap which was open from **8th May 2018 to 31st August 2018**.

Throughout the duration of this window, we worked to actively promote City Leap including national and international advertising in a range of publications, the use of social media, promotion through partner

organisations and central government, direct communication with leaders across the energy sector and engagement at local and national events.

City Leap also received excellent media coverage in publications and a sample of the coverage received throughout the first six months of the project can be found in Schedule 3.

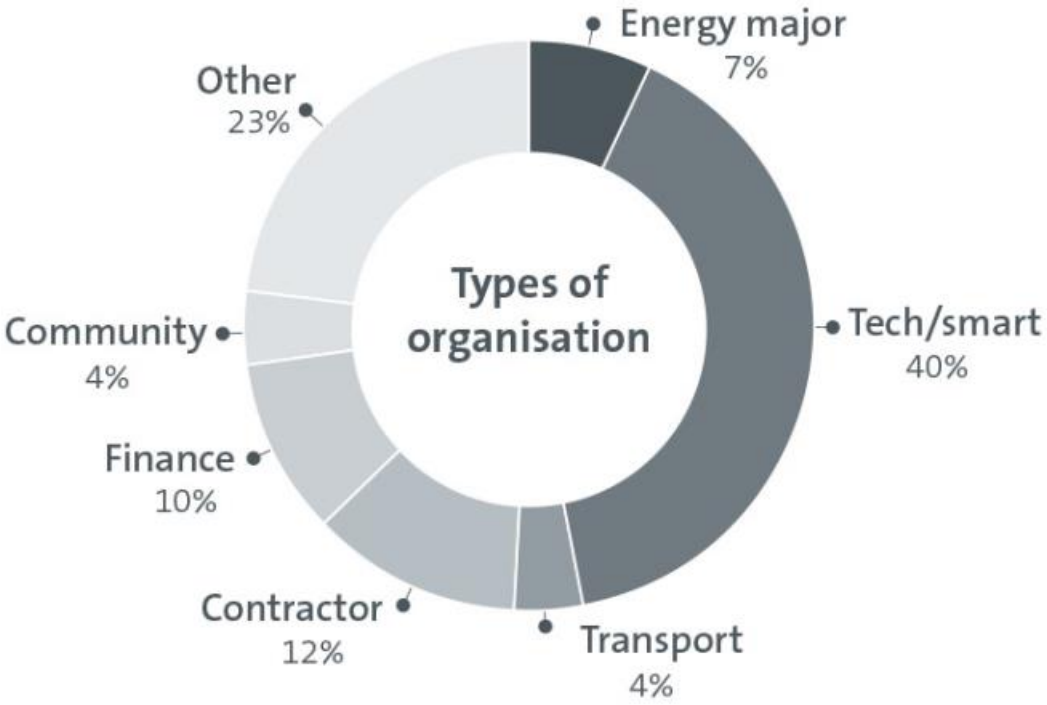
Expressions of Interest were submitted through a web portal (no longer live) on the council's Energy Service website and consisted of a short web form which asked for brief detail on the organisation and the parts of the Prospectus which were of greatest interest. The limited level of information requested was a deliberate attempt to ensure that smaller businesses and community organisations with limited resources felt able to respond. The strong response from organisations of these types, as detailed below, suggests that we achieved this aim.

Once our expression of interest window closed, the web portal was removed from the website and replaced with a brief holding message.

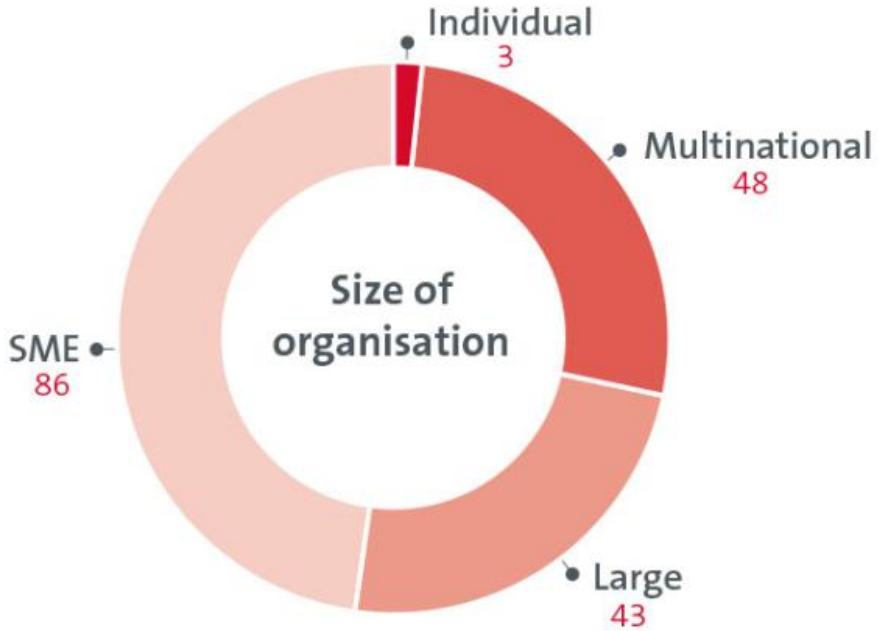
The Response to City Leap

The response to the City Leap Prospectus greatly exceeded the council's expectations with 180 expressions of interest (EOIs) being received from a broad range of local, national and international organisations.

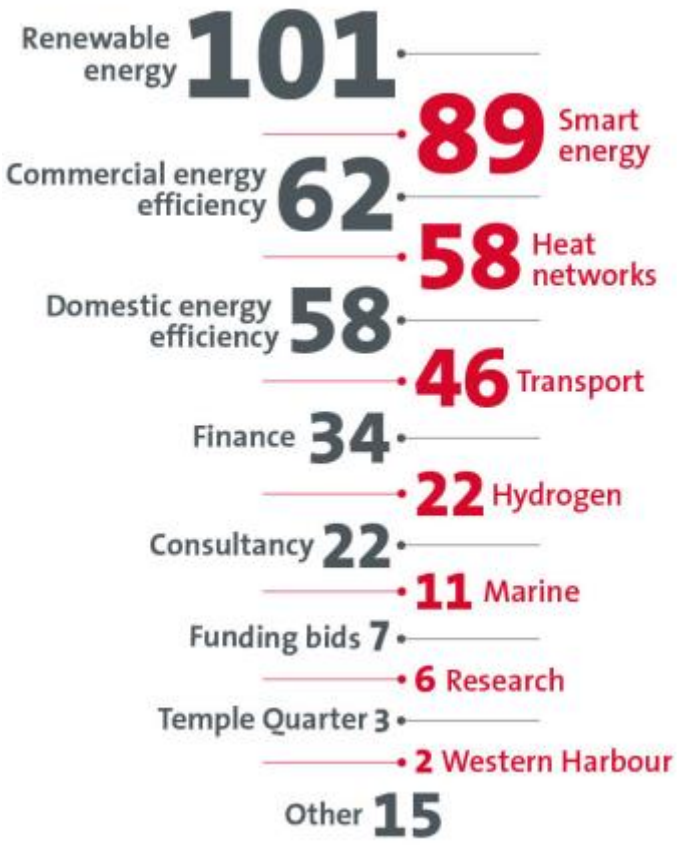
The chart below shows a breakdown of the organisations that responded by type.



Of the 180 organisations that expressed an interest, we have broken these down by organisation size:



We have also analysed the areas of interest for each organisation and these can be seen in the table below. Understandably, the majority of organisations identified interest in multiple areas, so the figures greatly exceed 180 due to this crossover.



Finally we have broken organisations down by geography as shown by the infographic below – Bristol and the Southwest (47), rest of the United Kingdom (107) and International (52).

Soft Market Testing

Introduction

Our intention was always to run the soft market test phase of City Leap in an open and non-prescriptive way and we made it clear that this was a two way conversation with potential partner organisations of all types. In the spirit of a true market test, we were very interested to hear about the innovation, ideas and structures that organisations wanted to discuss with the council. These discussions have shaped the council's thinking on the future design and delivery of City Leap.

The feedback throughout the process has been very positive with local, national and international organisations welcoming such an inclusive and innovative approach from a local authority. We also received excellent feedback from colleagues in the Department for International Trade and the Department for Business, Energy and Industrial Strategy who have been keen to encourage inward investment into the UK and understand if the City Leap approach can be replicated elsewhere for the benefit of other UK cities and regions.

The scale of the response was both humbling and, to some degree overwhelming; nevertheless, the City Leap team met with around 160 organisations over a period of five months. The only organisations that the team did not meet with were contractors interested in bidding on specific project tenders, simply on the basis that there were no tenders to bid on at this stage of City Leap.

This engagement with potential partners was delivered through one-to-one meetings which allowed the City Leap team to further set out the council's ambitions for City Leap and gave potential partners an opportunity to share their innovative responses to City Leap.

During these discussions, it became readily apparent that the respondents interests were extensive, ranging from business models for specific projects or classes of assets through to large scale infrastructure investment or acting as advisors to City Leap.

Developing the council's thinking on the structure for City Leap

Whilst meeting with potential partners, the City Leap team was also beginning to think through the potential options available to the council as regards the future structure for City Leap.

Given the intended scale of City Leap, the team reached the conclusion that the future City Leap structure needed to move away from the current position, where the council takes all of the risk associated with the build out and operation of energy infrastructure, towards a model where there was a sharing of risk and reward with partners. It was also equally apparent that the council would need to have a strong role in the future City Leap structure in order to ensure that the Strategic Objectives and Outcomes for City Leap were delivered.

Consequently, the team's thinking concentrated around three main options, as follows:

1. Delivery Partner

- Taking a typical public sector approach, City Leap offered the council an opportunity to 'contract out' the entire City Leap programme strategy to one 'lead' partner/consortium in order to execute City Leap on behalf of the council.

2. Partnership

- Establish a wholly owned vehicle to replicate the success of existing models such as PPS, the Swindon Borough Council (ESCO), and Thameswey, owned by Woking Borough Council.
- Establish a Joint Venture (JV) with a private sector partner.
- Set up an Innovation Partnership - an innovation partnership develops and subsequently purchases a service or works which cannot be met by solutions already available on the market.

3. Investment Fund

- Set up an investment fund along the lines of the London Mayor's Energy Efficiency Fund.
- Set up an investment fund along the lines of FINERPOL.
- Create a crowdfunding platform or issue a Green Bond.
- Leverage existing local investment funds to support additional investment.
- A combination of the above.

Other key points of discussion around this time also included:

- The potential role/position in City Leap for Bristol Energy and the council's Energy Service.
- How to make best use of the council's renewable energy assets.
- Risks, opportunities and challenges linked to public sector procurement processes
- Outline financial implications of different City Leap solutions to the council's balance sheet.
- Different optionality for ownership of a City Leap joint venture, for example:
    - 100% council owned;
    - 50%/50% owned by council and third party;
    - majority council/minority third party and vice versa.

The consortium option

A small number of potential partners proposed a 'Delivery Partner' approach for City Leap. Taking a 'Delivery Partner' approach would lead to a substantial transfer of delivery risk and responsibility from the council to the parties it would be contracting with.

However, whilst this would de-risk City Leap for the council from this perspective, it results in a number of other risks with respect to delivering the Strategic Objectives and Outcomes for City Leap, including:

- The council would have less control over the priorities and running of City Leap.
- Potential 'cherry-picking' of financially viable projects by the Delivery Partner, leaving less financially attractive projects behind.
- Potentially limited strategic co-ordination of projects.
- Lack of flexibility in the structure, resulting in little opportunity for other partners to be involved.
- Limited opportunities for innovation.

Given the above, the 'Delivery Partner' approach is not seen as a viable option for City Leap.

The partnership option

A significant number of proposed solutions centred on a 'partnership' approach, specifically a joint venture (JV). This was considered to be the most flexible structure to deliver City Leap and could enable additional partners to participate in the future

The establishment of a JV would provide a mechanism with the flexibility to deliver the Strategic Objectives for City Leap, whilst risks and costs would be shared between the council and its partner(s) in the JV.

Entering into a JV would still result in reduced control for the council, meaning that there would need to be agreement between the council and the third party on key decisions, e.g. through Reserved Matters and other corporate governance mechanisms.

However, the flexibility that a JV model could provide was considered to be very much in line with the Strategic Objectives of City Leap and the council's desire to work in partnership with as broad a range of organisations as possible.

The wholly-owned vehicle option was also considered but rejected on the basis that the council would still bear all the delivery risk of City Leap. The Innovation Partnership option was rejected on the basis that it was diametrically opposed to the 'working in partnership' principle of City Leap, given it would involve the council 'picking' a partner or partners, rather than conducting an open tender exercise. The risk of legal challenge if the council were to do so was considered significant, given the extensive interest in City Leap.

The investment fund option

A number of EOIs were received from institutional investors and specialist low-carbon investment funds with a strong track record of investing in the kinds of projects that will be part of City Leap. Consequently, the council believes there is a clear opportunity to set up an investment fund to support City Leap with multiple potential sources of funding to deliver specific projects or classes of assets, depending on the return on investment and risk profile.

A City Leap Investment Fund could be set up alongside a Partnership for City Leap delivery, but is more difficult to envisage in a Delivery Partner approach.

It should be noted that there are a number of sources of capital funding that are potentially available to fund City Leap projects, including governmental and regional capital funding, such as the Heat Networks Investment Project (HNIP) and Innovate UK, as well as community-based, social and philanthropic capital.

The graphic below sets out the multiple sources of funding that a City Leap Investment Fund could potentially access:

It is also worth noting that seeking equity risk capital falls outside public sector procurement regulations as it is neither goods nor services. However, in detailed discussions with potential investor partners, it became clear that, from an investor perspective, an investment fund is not necessarily their recommendation for City Leap due to the complexities of engaging with multiple partners and the associated due diligence challenges and costs.

In addition, the council would continue to bear the delivery risk of City Leap in the absence of a Delivery Partner or Partnership being in place. Nonetheless, the creation of a City Leap Investment Fund at some point in the future, potentially alongside a City Leap partnership, remains a strong possibility and is something the council will re-visit in due course.

Finding a way forward

In addition to the proposals of a more 'strategic' nature described above, a very broad range of proposals were submitted by an equally diverse range of organisations including SMEs, community organisations and individuals. A number of these proposals were specific business propositions in their own right and have the potential to be implemented immediately, or revisited at a later date, whilst others expressed a strong desire to work with the council on City Leap across a range of specialisms.

Proposals received from a large number of local organisations confirmed what the council has long known – that there is a very strong network of organisations with a focus on energy and sustainability projects in Bristol. These organisations have a key role to play in City Leap and it is the council's firm intention to ensure that they have the opportunity to do so.

However, given the sheer scale of the potential risks and rewards of City Leap, the council concluded that it has a strong preference to share these risks and rewards with potential partners but to retain a strong interest and an element of control of City Leap.

Therefore, the council is of the view that there needs to be a central relationship between the council and a more 'strategic' partner that can act as the cornerstone and catalyst for City Leap. It was with this in mind that the City Leap team commenced the next phase of the project; options appraisal.

The City Leap Value Proposition

There are three key elements that, taken together, comprise the foundation of City Leap:

- The council, as the local authority, the assets it owns and the opportunities it can provide
- The council's internal Energy Service team,
- The council's wholly owned energy company, Bristol Energy.

The council

Bristol City Council is recognised nationally as a leader in energy and organisational innovation and Bristol as a whole is renowned as being a leading smart city. Over a number of years, the council has pioneered municipally-led activity in the energy sector and has a long track record of delivery of low-carbon energy infrastructure.

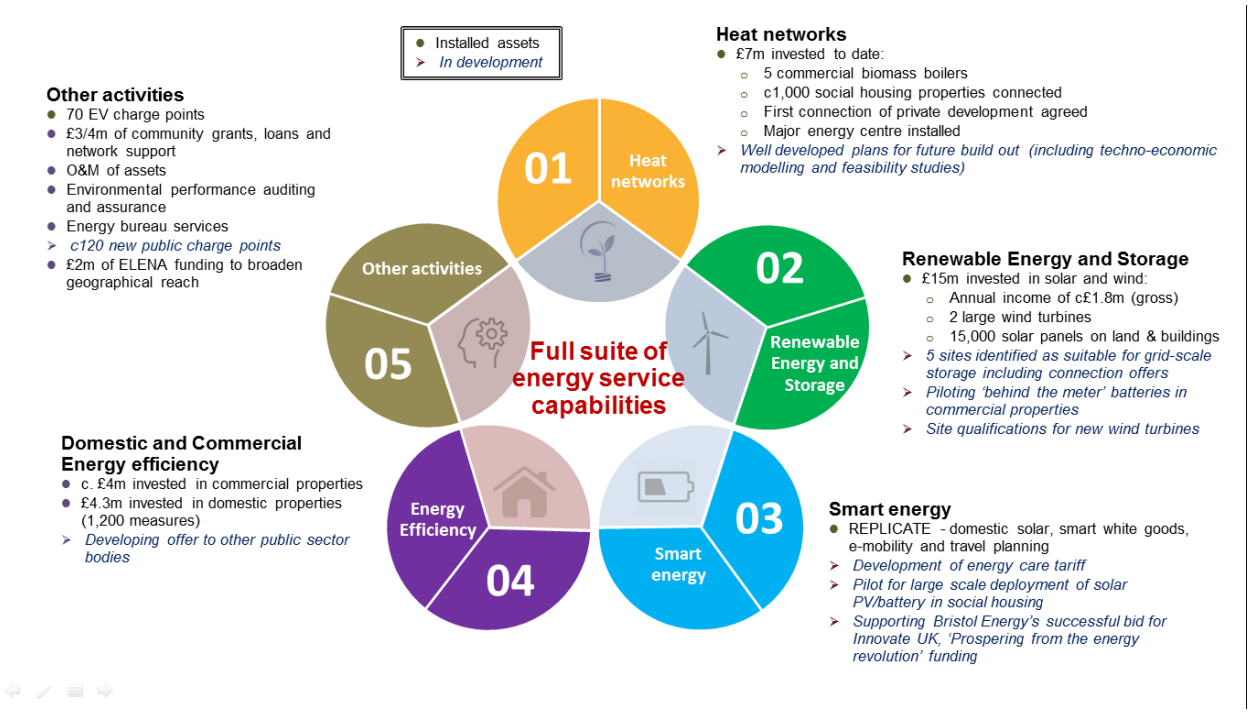
As the local authority, the council has significant influence in Bristol with many existing relationships and communication channels that can be brought to bear in support of City Leap. The council has committed Bristol to being carbon neutral and has built and is continuing to build a suite of policies that will contribute to achieving this ambition. For example, we are strengthening the existing Local Plan policy on Sustainable Energy to become a suite of policies which will deliver zero carbon housing, heat networks and on-site and off-site renewable energy. The new local plan was issued for consultation in March 2019.

The Energy Service

The council has been active in energy and sustainability for almost three decades, beginning with the inception of the Energy Management Unit (EMU) in 1992. The focus of EMU's work was energy procurement and management within the council's estate and included the delivery of innovative and award-winning projects such as the two 2.5MW wind turbines in Avonmouth.

Following a successful bid for ELENA funding from the European Investment Bank in 2012, the Energy Service was created, combining the existing EMU with a number of additional posts that brought an influx of commercial experience. As a result, the Energy Service is capable of delivering a wide range of energy related projects from domestic energy efficiency, to renewable energy generation, to major infrastructure projects such as heat networks and organisational innovation, such as the set-up of Bristol Energy.

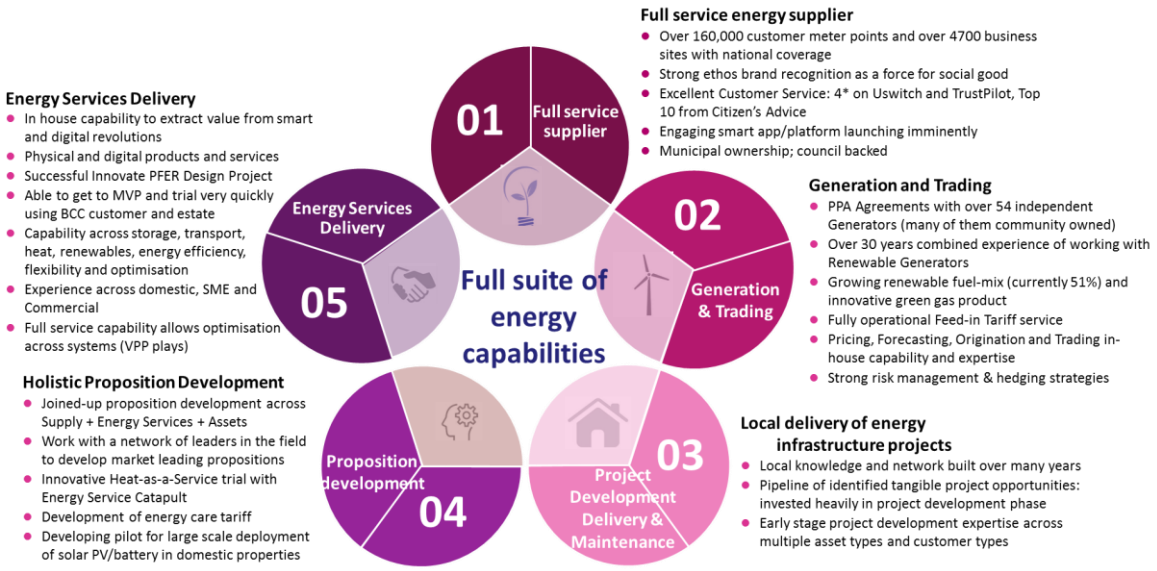
The Energy Service team is currently around 40 strong across five different work streams and has a strong track record in project origination, development and build management across many low-carbon asset types. As a result of its success, the Service's costs are fully met by the revenue generated by the renewable energy assets it has installed over time.



The Energy Service, alongside Bristol Energy, will play a key role in City Leap as the project origination and development 'engine' that will bring forward investment ready projects complete with customer-facing propositions to successfully monetise assets.

Bristol Energy

Bristol Energy completes the City Leap proposition by bringing the expertise and capabilities of a municipally-owned, Bristol-based supply and energy services company to City Leap. Bristol Energy enables City Leap projects to connect with people, connect with markets, and to connect together into more complex and more valuable offerings to customers. Bristol Energy is able to cover the full range of services around supply, trading, and monetisation of flexibility in-house.



Bristol Energy is increasingly being recognised for its innovation and its national presence, and is augmenting this position by focussing on growth in the local area, and speeding up the development of its energy services offerings. Bristol Energy has a well-developed pipeline of both supply and energy services propositions in development and trial, and will be scaling these through the year. For example, Bristol Energy is:

- jointly developing a care proposition to support Bristol citizens. Care costs within the council are increasing and this proposition could support the adult social care team to help citizens stay in their homes longer and/or design more efficient care patterns.
- working to provide Bristol's housing teams propositions that support its tenants to have cheaper, greener, better energy experiences.
- Further, BE has a strong local network of partners and community groups to support the continued acceleration of decarbonisation of the city.

BE's service development has been kick-started by winning a competitive Innovate UK bid and is now leading a consortium with Bristol City Council and community energy groups in the design of a local energy system funded through the Prospering from the Energy Revolution (PFER) Industrial Challenge Fund. BE has also accessed EU funding through its work with Gower Power developing a local energy storage project in Wales.

There are further additional funding opportunities that BE is now well positioned to access with a range of established relationships and ground work in place, such as additional funding from the PFER Industrial Challenge Fund and Innovate UK.

Options appraisal and recommended option

Redlines and guidelines for City Leap

In arriving at a recommended option, the council identified a number of key redlines and guidelines that the City Leap structure needed to address:

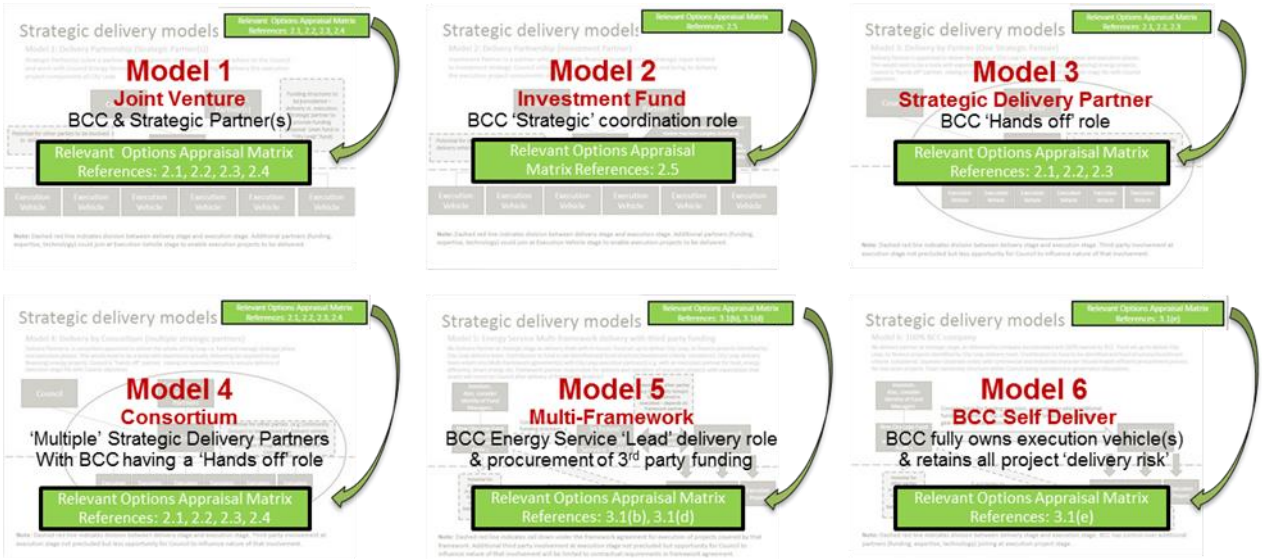
- **Bristol Energy**: That Bristol Energy is included as an integral part of City Leap.
- **Ability to integrate with current council structures**: Existing council structures are able to interface with the City Leap partnership.
- **Tax and balance sheet treatment**: The council needs to avoid materially significant liabilities, e.g. debt finance, being consolidated onto its balance sheet
- **Influence and control**: Achieve a balance between risk, control of outcomes for Bristol, and ensuring City Leap is run on a commercial footing
- **Revenue impact**: Ensure there is no unanticipated revenue impact on Bristol City Council.
- **Risk**: Ensure future investment/expenditure commitments of, or linked to, the Strategic Partner in City Leap do not carry inappropriate financial risk for the council, including that the Strategic Partner has sufficient financial standing for the role it is to play in City Leap and related procurement issues.
- **Procurement**: Ensure that Bristol Energy's commercial and financial position is not adversely impacted by the procurement process and information provided as part of the process.

Options appraisal process

Following the completion of the soft market testing phase of City Leap and having developed some initial thinking, the City Leap team commenced an appraisal of various options for City Leap, coming at the issue from the council's perspective and considering the redlines and guidelines that had been set.

A long list of options was generated by the City Leap team and its external financial and legal advisors. An initial evaluation of these options was undertaken by the City Leap team in accordance with how well each option met the Strategic Objectives and Outcomes of City Leap.

It became apparent that a number of the options on the long list were essentially similar models from a legal perspective and, as such, the long list was reduced to six overarching models.



The external advisors were also asked to consider whether any other structures not previously proposed by the Council would be appropriate in this case but no further options were identified.

These models were assessed for their ability to deliver the Strategic Objectives and Outcomes, as well as the guidelines and redlines set by the council for City Leap. This assessment, which took place over several weeks, determined that Model 1, 'Joint Venture', was the model most likely to deliver the Council's objectives.

Recommended option

The recommended option is for the council to procure a Strategic Partner to form a joint venture (City Leap Energy Partnership) with Bristol Energy and the council's Energy Service playing an integral role in City Leap.

Strategic position of Bristol Energy and the council's Energy Service team within City Leap

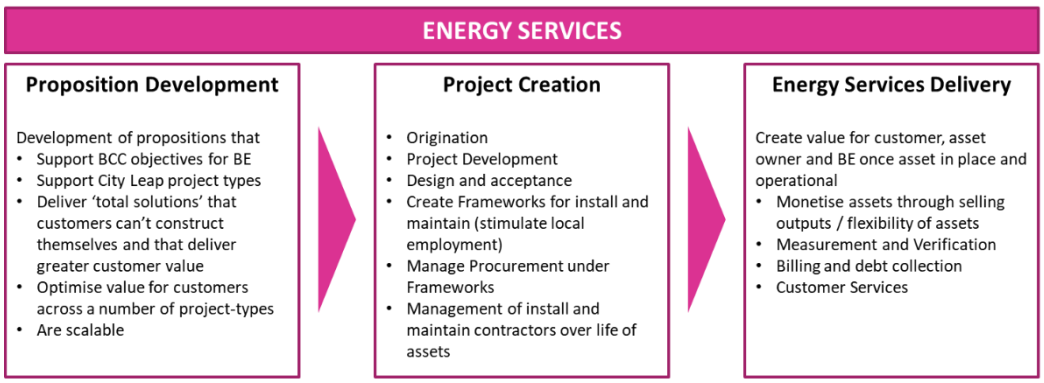
City Leap aims to deliver many hundreds of millions of pounds of low-carbon energy infrastructure projects of all shapes and sizes into Bristol. In order to do this, two things are required; access to funding and an ability to deliver energy infrastructure at scale and speed.

City Leap will establish a new model for urban energy infrastructure deployment and operation. Traditionally, infrastructure projects are executed on a stand-alone basis, with financing and delivery being assembled for each project. Due to the scale and speed requirements of City Leap, there are significant benefits to using the same partner across a large number of City Leap projects, i.e. a long term partnership for development, delivery, financing and operation, whilst also leaving room for other partners to play a significant role.

The Council's wholly-owned energy company, Bristol Energy, and the Council's in-house Energy Service (BCCES) are well positioned to play a role in the delivery mechanism for City Leap.

Bristol Energy has developed a number of innovative propositions in the field such as heat-as-a-service and battery storage, and is developing a Local Energy Market design under its BESST (Bristol Energy Smart System Transformation) project.

BCCES has a long track record of successful delivery of low carbon infrastructure and has a pipeline of in-flight projects that are the foundation of City Leap, such as heat networks, and are also currently delivering a number of innovation projects. Together, Bristol Energy and BCCES have significant capability across the whole project value chain.



In addition to the capability sets above, Bristol Energy and BCCES together have a well-developed and constantly expanding pipeline of propositions and projects, huge amounts of local knowledge, a wealth of contacts with local people, communities and businesses, and the track-record of having delivered energy infrastructure projects in Bristol.

Working with Bristol Energy to deliver City Leap

In order for Bristol Energy to play a key role in the delivery of City Leap, we will:

- speed up diversification of BE into Energy Services: BE has already begun this journey with a number of highly innovative and leading propositions such as 'heat as a service', and we wish to increase the pace of development and trialling of these innovative energy services in readiness for City Leap.
- work closely across BE and BCCES, leveraging expertise from each team, and collaborate on a range of energy service propositions.

What are energy services and how do you make money?

Energy services relate to the deployment of physical energy assets and their operation over a period of time for the benefit of the user, with the user minimally involved other than using the outputs of the asset. Energy services usually contain a range of activities assembled together to enable a 'service' to be provided to the user.

Energy services are very different to electricity or gas supply. Supply is invisible, a commodity and easily switched. Energy services typically involve an asset being placed for the benefit of the user or users, are typically long term contracts with the user (longer than the payback period for the asset at the centre of the 'service'), and carry a higher profit margin than Supply because both the provider and the user are sharing the value produced by the energy service project.

As a simple example, an LED lighting project could be sold as an Energy Service:

- Assume a user currently spends £1000 / year on electricity to operate lighting in their office
- Bristol Energy could offer an energy service to customers to:
    - Purchase LED lights at BE's cost
    - Install them on the users premises
    - Supply the lights with renewable electricity
    - Repair the lights when necessary over a 20 year contract
- The new LED lights would use say 10% of the electricity currently used and yet provide the same level of lighting. This means that the project would produce a value of £900 / year for 20 years, totalling £18,000.
- The cost of the assets (the LED lights) is say £10,000 over 20 years (including finance costs), leaving £8,000 in benefit to be shared between the user and Bristol Energy
- Bristol Energy captures some of this benefit by charging the user for the 'service' (not just the cost of the assets)
- The user and Bristol Energy could agree to share the benefit say 50:50, in which case the user would save £4,000 over 20 years without doing anything at all. To enable this, the user would agree to pay Bristol Energy £800 / year for the lighting Energy Service, £200 a year less than at present.
- Bristol Energy would take in £800 a year from the user (£16,000 over 20 years), and use this income to pay off the LED lights and operate the 'service' to the user.

This principle of creating value through providing assets plus services can be applied to many project types, from domestic heating to EV charge points. This global mega-trend is often referred to as the 'as-a-service' model.

Energy services around City Leap asset types

The above methodology can be applied to the many project types anticipated under City Leap. These project types don't require City Leap in order to be delivered, but are accelerated considerably by City Leap.

The financial model constructed to determine the value of the energy services includes many project types: district heat networks powered by low carbon heat generation, domestic PV, domestic energy efficiency, domestic PV and batteries, large scale batteries, commercial energy efficiency, EV charge points and renewable power generation such as rooftop solar PV on commercial properties.

By its very nature, the modelling has been limited to a finite number of project types, is unable to see 10 years into the future due to technology evolution, and is constrained to realistic roll-out rates over a 10 year period. This means the model is not the totality of what is possible, but a small representation of the principle of operation of energy services and the value it could create.

Un-modelled synergy benefits between energy services and supply

There are numerous un-modelled synergy benefits between energy services and Supply. Almost all energy services contain an element of Supply of electricity or gas to the end user, or the by-products of these supplies, e.g. heat. This means a Supplier is well-placed to be the provider of energy services as they enable the Supply part of the energy services and are able to capture the value of this part of the operation. Suppliers are also able to transfer some of the value captured from the supply relationship to customers, creating even more value for the customer. Similarly, many energy services cannot be created without a relationship with a Supplier.

Conversely, the Supply relationship with energy services also has benefits to the supply business. As energy services are long-term contractual relationships with customers, this leads to lower switching rates, potentially higher supply volumes (including behind-the-meter), and more efficient energy trading from sub-metering attached to energy services.

Making a difference in the next two years

The energy services activity in Bristol Energy and BCCES is still continuing at pace in parallel to the City Leap procurement and we expect to have delivered the early stages of key projects across the breadth of City Leap theme areas prior to the appointment of the Strategic Partner.

These projects focus predominantly on the fuel poor, council tenants and the council's estate. These projects will allow us to build capability and experience, to establish the network of suppliers required to install and maintain assets, to drive out cost, and to be ready to scale up these offerings to City Leap scales of deployment and make offers to private sector customers.

Working with the council as the prime customer achieves many social value objectives for the council, and speeds up the implementation of these project types for Bristol Energy.

City Leap Theme	Proposition	Benefit to Bristol
Heat Networks	• Heat-as-a-service expansion into Bristol City Council social housing post trial • Water source heat pump as source of heat for network • CHP in 100TS supplying heat into the local network	• Savings to heat-as-a-service customers from avoiding overheating and transferring cost management to BE • Reduced cost of heat from Heat network users from more efficient generation of heat • Carbon saving in Bristol from renewable / low-carbon heat sources
Smart Energy Systems	• City Hall Battery • BE BESST project and follow on	• Cost reduction for City Hall • Enables refinement of proposition for future commercial residents of Bristol • BESST project working to develop Bristol-centric smart energy solutions
Transport	• 60 on-street chargers	• Supply with renewable power to make zero carbon transport • Aid faster uptake of EVs by removing charging points as limiting factor
Domestic Energy Efficiency	• Replicate project exploring energy efficiency in the home • ECO measures implementation by BE	• Lowering total energy demand from residential sector, enabling lower investment in generation and distribution infrastructure
Commercial Energy	• 50 Building Energy Efficiency projects on the Bristol City Council estate	• Savings on energy bills for Bristol City Council, releasing more funds to be spent on critical services
Renewables	• Community Wind project at Avonmouth • 100 Rooftop PV / PV+Battery on social housing	• Financial return to Community funding wind turbine • More low carbon electricity for Bristol, sold to Bristol residents by BE • Lower costs for social residents from PV • Lower carbon emissions from social sector by use of PV

Financial benefits to Bristol

The primary objective of City Leap is to leverage private sector investment into energy infrastructure in Bristol for the benefit of Bristolians. The main theme areas of City Leap are already underway, with the initial projects being implemented today. Through this experience, and forecasting how these project types will expand over time allows us to gain an early insight into the benefits to Bristolians that City Leap could bring.

Thus, as well as looking at the value of City Leap for the council and a potential Strategic Partner, we have also sought to estimate its impact on the residents and businesses of Bristol over the next ten years, the results of which are set out below.

	CUMULATIVE BENEFIT to customers to 2030
Heat networks	**City Leap will lower users bill by £9.4m** in the period to 2030
Smart Energy Systems	Users will benefit by having their **bills lowered by £3.5m to 2030**
Transport	Bristol residents benefit from a cleaner environment from reduction of particulates and harmful gases, and reduced death rates from respiratory causes
Domestic Energy Efficiency	This will result in collective **savings in excess of £3m on the energy bills of those living in fuel poverty** to 2030, and future-proofing social housing stock.
Commercial Energy	**£4m of energy bill savings in the commercial sector**
Renewable Energy	Would be sold directly to site users more cheaply than grid prices. Or if more electricity is generated than the site requires the excess would be sold to Bristol residents at the same or cheaper prices than today's grid prices

Legal Matters, Governance and Control

Risk Mitigation – Legal Considerations

Whilst a joint venture represents the recommended option for City Leap, there are still legal risks associated with this form of model. These have been reviewed by external legal advisors and can be broadly categorised as follows.

Corporate Structuring

1. **Legal form**

It is anticipated that City Leap JV will be a company limited by shares given that it is:

- a familiar form for the private sector,
- sufficiently flexible to facilitate future investment,
- able to accommodate changes to ownership relatively easily,
- able to return a profit to its shareholders,
- a vehicle that can be used by the council to trade for commercial purposes, and
- familiar to the council given its other trading entities.

2. **Governance**

A company limited by shares is primarily run by its board of directors. Those directors are subject to statutory duties, set out in the Companies Act 2006. Their freedom to run the Company will be subject to any provisions of the Shareholders' Agreement which require the Company to act in a certain way or prevents the Company from acting in a certain way without the prior consent of its shareholders. There may also be schemes of delegation setting out the extent of their decision making authority.

The composition of the Board should support good governance with a range of executive and non-executive directors, in addition to any directors the council or strategic partner may want to appoint. Reporting requirements for the board to the shareholder should be set out in the Shareholders' Agreement to ensure that an open and transparent flow of information is received by the council and the strategic partner.

However, in determining the detailed governance arrangements, a balance must be struck between the council's desire to achieve the Outcomes for City Leap versus allowing the directors to operate the City Leap JV in accordance with their duties.

3. Control

The council wishes to ensure that it is able to exercise an appropriate degree of control over the City Leap JV in order to:

- ensure the Strategic Objective and Outcomes for City Leap are achieved; and
- protect the supply of essential services to residents.

It is anticipated that the council will use the following blend of mechanisms to achieve the desired outcomes for the joint venture:

- equity shareholding and rights attached to shares
- Reserved Matters and positive undertakings
- Key Performance Indicators
- board composition
- financial covenants
- social value obligations

The exact nature of the above will be determined during the procurement process, and the council will set out any minimum requirements as part of that process.

4. Position within the council's group structure

Various options for where City Leap JV should sit within the existing council structure have been considered. The primary option being considered is for City Leap JV to be owned by Bristol Holding Limited, thereby bringing City Leap JV within the existing group of companies.

The alternative structures considered included:

- City Leap JV owned directly by Bristol City Council (outside of the Bristol Holding structure) – this was not considered to be a preferred option due to the resources required to manage the corporate entity. It would be more efficient to manage it within the existing Bristol Holding structure.
- Being held by the council but sitting above Bristol Holding in the group structure – this was not considered practicable, as it would change the Teckal status of Bristol Waste.

The council's Client Function for City Leap

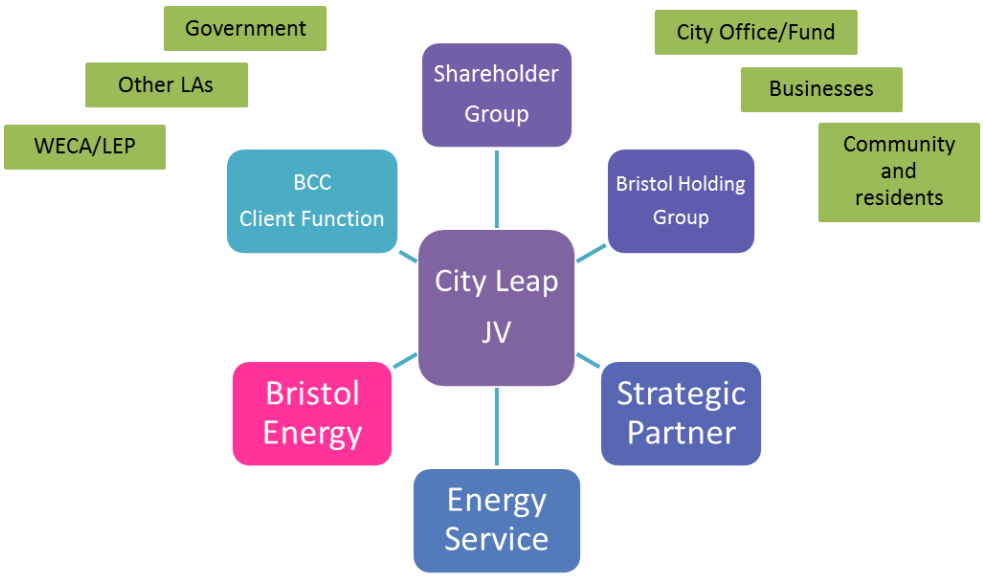
The council's current approach to managing its day-to-day relationship (as opposed to its governance relationship) with its companies is via its Client Functions, e.g. Waste Client Function for Bristol Waste, which consists of technical experts employed by the council who are able to understand the relevant company's business plan and liaise between the council and the company.

Our previous experience suggests that an appropriately resourced Client Function with the necessary technical expertise is important to ensure that our companies remain aligned with our strategic priorities and perform in line with our expectations. It is proposed that the City Leap Client Function is structured as follows:

- A City Leap Client Function Group (CFG) consisting of the Director of Management of Place, the Sustainability & Climate Change Service Manager and Head of Community Services.
  The proposed make-up of the City Leap CFG provides a strong link to the council's strategy regarding Smart City and energy (including carbon neutrality) and previous experience of overseeing the Energy Service at Director level.
- The City Leap CFG to be supported by dedicated technical resource plus the council's Finance and Legal teams.

Future stakeholder engagement capability of City Leap

A critical success factor for City Leap will be its ability to engage the city and support the delivery of city-wide action. Given the number and range of of stakeholders that will need to be engaged (the diagram below gives an indication of the scope of engagement envisaged) this activity will require substantial resource if it is to be undertaken on a comprehensive and consistent basis. The precise level of resource required will need to be negotiated and agreed with the future City Leap Strategic Partner.



In addition, there is likely to be a need for other groups and committees to form part of the broader governance of City Leap, including:

- An Investment Committee
- A Technical/Innovation Committee
- A 'One City Leap' advisory group to provide a link to the One City Plan/City Office
- Depending on the make-up of the One City Plan advisory group, potentially an advisory group focused on communities to provide a clear and unambiguous route for the people of Bristol to have a say in City Leap.

Risk Review

The City Leap risk register is a living document used by the project team to identify, track and ultimately mitigate potential project or organisation risks / issues that could have a negative impact on the council's intended outcomes. The risk register includes all information about each identified risk, such as key causes, consequences, level of risk, who owns it and what mitigation measures have been put in place to respond to it and will remain a key component of the City Leap project execution plan going forwards.

There is risk inherent in every strategic project with lots of moving parts so, by undertaking due diligence on potential risks, risks are quickly identified and mitigations put in place before risks crystallise into issues.

The following summary of 'key risks' sets out a snapshot extract of '*Appendix D'* to the City Leap Energy Partnership Cabinet Report.

Risk Description	Key Consequence / Impact	Key Mitigations
Risk of losing control of any/all future benefit of opportunities arising from intellectual property associated with City Leap process.	Unable to leverage services in other authority areas.	Procure external legal counsel to review the opportunity and secure this position through the negotiation stage. All 'partnership' documentation must be robustly locked down.
Risk that 'the person in the street' doesn't pick up the City Leap story.	Lack of buy-in and support once partnership is established. Unknown benefits of a low carbon economy.	Communications team to further build upon established City Leap messaging with a detailed engagement strategy.
Uncertain application of procurement law in 2019.	Delays in implementation of new procedures, or having to adhere to more stringent new processes.	Advice from government is that the broad functions of existing Public Contracts Regulations and Concession Contracts Regulations will remain in place from April. Notices will be published in the UK rather than OJEU.
Risk of conflicting council objectives delay delivery, e.g. controls vs financial returns vs flexibility.	Delay to achieving "day 1" operation of City Leap JV, higher operational and procurement costs, outcomes may be mixed.	Focus on key outcomes. Determine negotiation approach and redlines prior to entry into detailed procurement negotiations, review on a regular basis.
Lack of private sector interest in investing in strategic partnership/SPV/sector opportunities.	No strategic partner available to establish preferred vehicle and therefore no commencement of City Leap. Insufficient interest in SPVs/sector means execution projects cannot be taken past origination phase.	Lack of private sector interest in investing in strategic partnership/SPV/sector opportunities.

Risk Description	Key Consequence / Impact	Key Mitigations
Risk of cost inflation for projects.	Reduces viability of innovative project.	Robust modelling, consider headroom for inflation. Conduct regular business planning and forecasting processes.
Increasing finance rates or changing funding conditions (across public or private sector).	Reduces viability of innovative projects.	Flexibility for sources of finance (across public and private sector) helps ensure best rates accessed. Seek fixed rate borrowing where possible.
Vehicle established does not operate effectively with strategic partner (due to complex contractual arrangements with partner).	Delays to delivery of innovative projects, cost of dispute resolution, potential reputational damage if poor working relationships.	Establish clear objectives and outcomes prior to commencement of procurement with procurement process designed to ensure these are mutually acceptable.
Risk of innovation projects not meeting market needs.	Slower rates of return on innovation projects.	Market testing and commercial diligence during project origination phase. Structure has flexibility to respond to changing market preferences.
Wider legislative change (e.g. energy regulation).	Increase costs to the council/City Leap structure and impact on viability of business plan, proposed exploitation of assets.	Flexibility within City Leap structure to enable adaptation to changes in legislation.

Schedules

Schedule 1 – One City Plan and Sustainable Development Goals

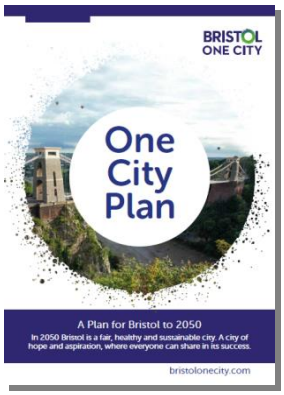
In January 2019, Bristol published its first ever One City Plan. It is the product of our city's commitment to come together to agree and work for the future we want to see by 2050. This plan is a first iteration, a starting point from which we will develop ever-stronger future versions beginning with the refresh to be published in January 2020. It should be read with this in mind. Its publication marks the start of an exciting collaborative journey for the many different communities, institutions, organisations and individuals who make up Bristol.

Bristol is currently working to produce an interactive version of the Sustainable Development Goals (SDGs) and the One City Plan objectives. In the interim, we wanted to share the work that we have undertaken to map the UN SDGs onto the One City Plan.

Each objective within the One City Plan has been mapped onto a relevant SDG. While they are interrelated, each SDG sits underneath a One City Plan theme (denoted by the theme and vision at the start of each new SDG section). Additionally, where relevant, SDG targets have been mapped onto One City Plan objectives until 2030. After this, only goals that were underserved within the One City Plan were mapped for objectives beyond 2030.

Environment

By 2050 Bristol will be a sustainable city, with low impact on our planet and a healthy environment for all



More information on Bristol's One City Plan and Sustainable Development Goals can be found at: www.bristolonecity.com

One City Plan and the Sustainable Development Goals

Taken from the One City Plan and Sustainable Development Goals document.

Year	Theme	Goal	SDG Target(s)
2019	Environment	Establish a long-term, flexible 'City Leap Energy Partnership' to strategically develop, co-ordinate, deliver and facilitate low carbon, smart energy infrastructure that supports Bristol on its pathway to carbon neutrality	**7.1,7.2**
2021	Environment	Enable new developments to be run at carbon neutral levels due to local planning standards for energy efficiency	**7.3**
2022	Environment	Implement smart energy technology in over 50% of homes in Bristol to support the efficient use of energy, particularly from sustainable sources and contributing to ending fuel poverty	**7.1, 7.2, 7.3**
2025	Economy	Develop a programme and facilitate others to retrofit homes and buildings in the city to reduce energy demand and costs, contributing to ending fuel poverty	**7.1,7.3, 9.4**
2027	Environment	20% of all electricity consumed in the city is generated from clean sources	**7.1, 7.2,**
2028	Environment	The Bristol Heat Network provides district heating via a network of underground pipes, which are connected to a number of energy centres	**7.1**
2030	Environment	Every public building in the city meets the highest standard of energy efficiency	**7.1, 7.3**
2030	Environment	It is standard practice that major developments in Bristol are net carbon negative and smart-energy-enabled	**7.1, 7.2, 7.3, 13.2**
2030	Homes & communities	Nobody in Bristol will suffer from a cold home due to fuel poverty and/or inability to have the necessary insulation and heating	**7.1, 7.3, 11.1**
2031	Environment	75% of domestic homes in Bristol are insulated to a high standard (C+), reducing the energy needed to heat homes	
2031	Environment	80% of electricity consumed in the city is generated from clean sources	
2032	Environment	100% of Bristol City Council housing stock homes are rated as high energy performance (C+)	
2032	Environment	Data on all sources of energy generation will be shareable so consumers are better informed about the source of their energy use	
2034	Environment	Domestic energy consumption data is shared openly with local authorities, as reported by connected applications	
2038	Learning & skills	100% of school buildings are insulated to a high standard which means that energy used to heat buildings has been reduced	
2039	Environment	100% of electricity consumed in the city is generated from clean sources	
2039	Health & wellbeing	The rate of fuel poverty in Bristol will have been halved from 12.9% in 2018 to 6.45%	
2042	Environment	95% of all energy (power, heat and transport) consumed in the city is generated from clean sources	
2042	Environment	Solar panels are commonplace on buildings with large roof spaces across Bristol	
2043	Environment	Next generation wind power generators have been built on suitable sites across the city region	
2045	Environment	All energy to heat homes in Bristol is obtained from zero carbon sources and 100% of homes are supplied with renewable energy	
2046	Environment	75% of non-domestic buildings are insulated to a high standard, reducing the energy needed for heating	

About the Sustainable Development Goals

The Sustainable Development Goals are the United Nations blueprint to achieve a better and more sustainable future for all. The goals address the global challenges we face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.
The Goals interconnect and in order to leave no one behind, the UN believes it is important that we achieve each Goal and target by 2030.

SDG Target(s)	Goal
7.1	By 2030, ensure universal access to affordable, reliable and modern energy services
7.2	By 2030, increase substantially the share of renewable energy in the global energy mix
7.3	By 2030, double the global rate of improvement in energy efficiency
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
13.2	Integrate climate change measures into national policies, strategies and planning

Schedule 2 – Engagement

Date (Reverse chronological order)	Event	Presenter
2019		
28 March	City Leap – City Partners Meeting	James Sterling
20 March	Policy Network Briefing	James Sterling
2 March	Bristol Energy Network Meeting: The Way Forward	David White
12 February	En-genius Podcast Live	James Sterling
12 February	Engineers Without Borders Gathering	James Sterling
2018		
6 December	Bristol Green Capital Partnership – Green Mingle	James Sterling
3 December	Department for International Trade Investor Day	David White
30 November	City Leap – City Partners Meeting	James Sterling
29 November	Bristol Energy Company Board	David White
22 November	Bristol Waste Company Board	David White
22 November	All Member Briefing	James Sterling
15 November	All Member Briefing	James Sterling
14 November	Bristol Holding Board	David White
12 November	Schumacher Institute Meeting	James Sterling
7 November	Innovation team update	James Sterling
18 October	GGBW: The Time is Now for EV	James Sterling
17 October	GGBW: Financing the Low Carbon Economy Event	David White
19 September	Costain Event	Sarah Sims
2 August	Bristol Green Capital Partnership Green Mingle	David White
24 July	Low Carbon South West Business Breakfast	James Sterling
9-12 July	DIT, Singapore / Kuala Lumpur investor events	Marvin Rees
7 July	Bristol Energy Network Meeting	James Sterling
5 July	DIT/JBIC investor event, London	David White
5 July	Bristol Green Capital Partnership Green Mingle, Bristol	James Sterling
19 June	Regen Smart Energy Marketplace, Exeter	James Sterling
6 June	Mayor's Investor Day	James Sterling

Schedule 3 – Media and publications

The following links are just a sample of the digital coverage received during the soft market test phase of City Leap.

Bristol Newsroom: https://news.bristol.gov.uk/news/council-launches-city-leap-prospectus-3

Bristol Post: https://www.bristolpost.co.uk/news/bristol-news/bristol-city-council-offering-1billion-1547334

Energy live news: https://www.energylivenews.com/2018/05/09/bristol-seeks-1bn-investment-in-energy-infrastructure/

South West Business Insider: https://www.insidermedia.com/insider/southwest/bristol-to-seek-1bn-renewable-energy-investment

South West Business: http://www.southwestbusiness.co.uk/regions/bristol/bristol-city-council-asking-business-community-for-investment-to-help-develop-energy-infrastructure-10052018141908/

British Utilities: https://british-utilities.co.uk/2018/bristol-seeks-1bn-investment-in-energy-infrastructure-energy-live-news-energy-made-easy/

Renewable energy magazine: https://www.renewableenergymagazine.com/panorama/bristol-city-council-seeking-partners-to-assist-20180510

Solar Power Portal: https://www.solarpowerportal.co.uk/news/bristol_city_council_seeks_40_million_renewables_investment_in_carbon_neutr?utm_source=rss-feeds&utm_medium=rss&utm_campaign=general

Government business: http://www.governmentbusiness.co.uk/news/10052018/bristol-seeking-partner-carbon-neutral-target

Government opportunities: http://www.govopps.co.uk/bristol-launches-search-for-partners-to-help-build-sustainable-future/

EIN world news https://world.einnews.com/article/446488102/tjn1MDpb_GJ49z1r

Bristol & Bath: https://www.bristolandbath.co.uk/a-giant-leap-for-bristols-green-future/

Public Now: http://www.publicnow.com/view/64F987D4981F588067803C26F50E8C4B3F3A7DD7?2018-05-09-11:00:19+01:00-xxx2869

ADE: https://www.theade.co.uk/news/market-news/bristol-launches-search-for-partners-to-help-build-sustainable-future

Bristol Green Capital Partnership: http://bristolgreencapital.org/bristol-launches-search-partners-help-build-sustainable-future-city-leap/

UoB Cabot Institute: http://www.bristol.ac.uk/cabot/what-we-do/city-leap/

Bristol Newsroom: https://news.bristol.gov.uk/news/bristol-leaps-towards-carbon-neutrality

Bristol Live:https://www.bristolpost.co.uk/news/bristol-news/heres-180-businesses-across-globe-2318136

GOV.uk: https://www.gov.uk/government/news/5-billion-of-energy-investment-projects-announced-as-the-board-of-trade-meets-in-wales

SERA – Labour's Environment Campaign: https://www.sera.org.uk/bristol_a_leading_green_city

Bristol Live: https://www.bristolpost.co.uk/news/bristol-news/bristol-mayor-marvin-rees-annual-1800974

Smart Energy International: https://www.smart-energy.com/news/bristol-city-smart-partners/

Schedule 4 – City Leap Project Governance

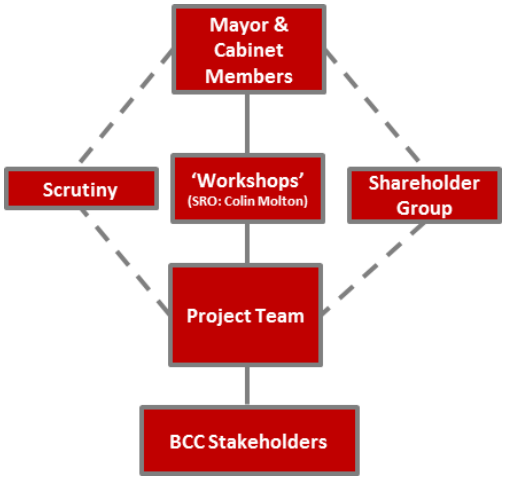
Both the Soft Market Test (Phase 1) and the 'Options Appraisal (Phase 2) of the City Leap project necessitated significant cross Directorate stakeholder inputs to establish the council's strategic and value requirements for the City Leap initiative:

- The City Leap Phases 1 and 2 Terms of Reference (ToR) sets out how each committee, office and group has delegated authority to undertake all responsibilities and actions falling within its terms of reference.
- The function of the City Leap Phase 1&2 ToR sets out how the programme operates, how decisions are made and procedures followed to ensure that:
    - Decisions are taken efficiently and transparently.
    - Those who make decisions are accountable to the Mayor, Cabinet / Full Council and the Bristol community.

The City Leap Phase 3 (Procurement) process focuses on the procurement of the future City Leap Strategic Partner(s) and the set-up of the agreed 'Target Operating Model' (TOM):

- City Leap 'Terms of Reference' (ToR) will transition into an approval forum for Senior Officer referred to as 'workhops' with Delegated Authority to provide:
    - Timely decisions required during Strategic Partner (candidate) negotiations.
    - Governance approval of all corporate/asset/people activity(s) necessary to execute the approved City Leap Target Operating Model(s).
    - Authority to review and approved Project Team recommendations leading to award of any/all related City Leap Energy Partnership contracts.

Phase 3 process will necessitate significant inputs and approvals from multiple Members and Officers each with predefined delegated Authority(s). ToR set up to allow for timely delegated authority decision making in order for the City Leap team to facilitate ongoing negotiations, corporate structure modifications, asset transfer(s), etc. The governance structure for Phase 3 of City Leap is set out below:



Key Dates and Activities

'Phase 1' Milestones

Date	Activity
Autumn 2016	Initial partnership meeting.
Spring 2017	Outline Partnership approach.
July 2017	Draft prospectus.
Oct 2017	Submission to Exec Board.
May 2018	May Cabinet Meeting (1st May 2018*)* *'Soft market testing exercise through the publication of the City Leap Prospectus'*.
Sept 2018	'Expressions of Interest' (EOI) submission window closed.

'Phase 2' Key Milestones

Date	Activity
November 2018	• November Cabinet Meeting (6th Nov 2018): **Approval of City Leap Energy Partnership concept and 'Phase 2' funding request**. • **'Workshop 1'** (6th Nov 2018). • Project team appraisal of City Leap delivery vehicle / mechanism options. • Appoint City Leap 'Phase 2' Legal & Financial advisors. • G&R Scrutiny Meeting [Exempt Session] (29th Nov 2018).
December 2018	• Preparation of outline City Leap delivery strategy. • **'Workshop 2'** (18th Dec 2018).
January 2019	• Review of BE strategic role in City Leap. • Review of Bristol City Council assets strategic involvement in City Leap • Review of City Leap procurement options. • Shareholder Group Meeting (10th Jan 2019).
February 2019	• Preparation of shortlisted City Leap strategic delivery options, corporate governance, investment and risk/reward opportunities. • Mobilisation of Bristol City Council team to develop preferred procurement strategy. • Shareholder Group Meeting (12th Feb 2019). • **'Workshop 3'** (18th Feb 2019). • G&R Scrutiny Meeting [Exempt Session] (21st Feb 2019).
March 2019	• Finalisation of City Leap strategic delivery option(s), corporate governance impact, investment and risk/reward profile(s). • City Leap procurement strategic readiness/optionality. • Shareholder Group Meeting (7th Mar 2019). • **'Workshop 4'** (14th Mar 2019). • Cabinet Final Report Deadline (20th Mar 2019). • Statutory Publication of Report by Democratic Services (25th Mar 2019).
April 2019	• OSMB & G&R Scrutiny Commission [Joint & Exempt Session] (1st Apr 2019). • April Cabinet Meeting (2nd Apr 2019): Approval of City Leap Energy Partnership strategy, procurement planning, funding and implementation activities.

Schedule 5 – Glossary of Acronyms and Key Terms

Glossary of Acronyms

Acronym Used	Meaning
BCCES	Bristol City Council Energy Service
BE	Bristol Energy
BEIS	The Department for Business, Energy and Industrial Strategy
BESST	Bristol Energy Smart System Transformation
BETS	Bristol Energy Technology Services (Supply) Limited.
BIO	Bristol is Open
BNet	Bristol Network
BWC	Bristol Waste Company
CCR	Concessions Contract Regulations 2016
CFG	Client Function Group
CHP	Combined Heat and Power
CLEAP	City Leap Energy Partnership
CMA	Competitions and Markets Authority
CO2	Carbon Dioxide
CSE	Centre for Sustainable Energy
EBITDA	Earnings before interest, tax, depreciation and amortization.
ECO	Energy Company Obligation
ELENA	European Local Energy Assistance
EOI	Expressions of Interest
EPC	Energy Performance Certificate
ESCO	Energy Service Company
EMU	Energy Management Unit
EU	European Union
EV	Electric Vehicle
FINERPOL	Financial Instruments for Energy Renovation Policies
FTE	Full-Time Equivalent
GLOMO	Global Mobile Awards

Acronym Used	Meaning
HNIP	Heat Networks Investment Project
JV	Joint Venture
KPI	Key Performance Indicator
LED	Light-Emitting Diode
MVP	Minimum Viable Product
MW	Mega Watt
OJEU	Official Journal of the European Union
O&M	Operations & Maintenance
OM	Operating Model
PCR	Public Contracts Regulations 2015
PFER	Prospering from the Energy Revolution
PV	Photovoltaic
REPLICATE	Renaissance of Places with Innovative Citizenship and Technology
SALIX	Salix Energy Efficiency Loan Scheme
SDG	Sustainable Development Goals
SME	Small or Medium-sized Enterprise
SPV	Special Purpose Vehicle
SRO	Senior Responsible Owner
SP	Strategic Partner
TOM	Target Operating Model
ToR	Terms of Reference

Glossary of Key Terms

Term Used	Explanation
Candidate	Economic operator that has sought an invitation or has been invited to take part in the City Leap 'concession' contract award procedure.
Concession Contract	Means a works concession contract or a services concession contract within the meaning of The Concession Contracts Regulations 2016.
Consortium	A group of delivery partners coming together to provide a solution with BCC as a partner. This could be a contractual consortium (with one consortia member taking the lead role) or an incorporated consortium vehicle.
Delivery Vehicle	A vehicle through which the overall strategic delivery of City Leap will be planned, co-ordinated and delivered
Joint Venture (JV)	A partnership with one or more other parties. This can be through an incorporated entity (with BCC a shareholder with one or more parties) or through contractual arrangements (BCC can be a direct contracting partner or contract through a wholly owned subsidiary).
Phase 1	Phase during which prospectus was issued and entities submitting EOIs were met. This phase has now been completed.
Phase 2	Phase during which an analysis of the Project Delivery Strategy will be considered, financial and legal consultants required to assist with the analysis will be engaged and a report recommending the preferred options will be prepared for Cabinet approval, prior to commencing a procurement process for the Delivery Partner.
Phase 3	Phase during which proof of concept and procurement of a Delivery Partner will be undertaken. Financial and legal consultants required to assist with Phase 3 deliverables will be procured target Feb/March 2019.
Programme of Work	The programme of strategic works currently being undertaken by the Council to help deliver a carbon neutral city, together with potential programmes which provide an opportunity for investment under City Leap.
Project Execution	Stage at which the project is operational, and can be taken to the external market (for further development and funding/monetisation if required and/or for commercial/industrial use).

Term Used	Explanation
Project Origination	The initial stage in which proposals for specific energy solution and infrastructure delivery projects are reviewed for viability, potential Execution Partners and structure
Special Purpose Vehicle	This is a type of joint venture arrangement where the company is set up for a specific limited purpose. An incorporated entity will be set up with specific objectives; in this case the likely purpose could be to carry out the functions of delivering city leap.
Subsidiary Company	A subsidiary is a business entity or corporation that is fully owned or partially controlled by another company, termed as the parent, or holding, company.