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City Leap Energy Partnership

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Bristol City Council's Energy Service



Bristol is the only Core City outside of London that makes a positive contribution to the UK Exchequer.





Bristol was voted GLOMO Smart City 2018, named European Green Capital in 2015, and has delivered over £50m of low-carbon energy infrastructure since 2012.



Developing a low-carbon, resilient and truly sustainable city is key to remaining competitive in the global economy...



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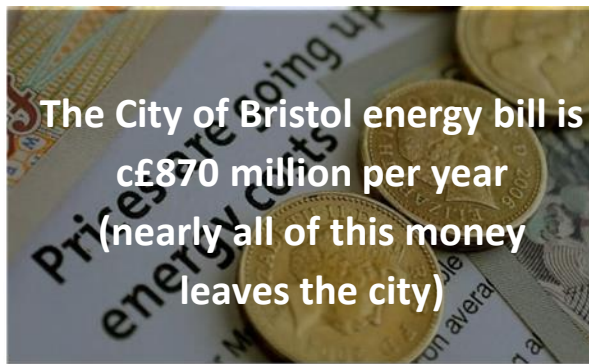
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The future local energy system



Energy is hugely significant to Bristol

Economy



Society



Environment



The UK is transitioning to a
decentralised energy system



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Enabling smarter and more flexible local energy

Maximising the use of local energy will support new business models, increasing local energy use and generation....

Baseline wind and solar PV sites

Local authority boundaries

Onshore wind baseline by capacity

Below 5 MW

5 - 10 MW

Above 10 MW

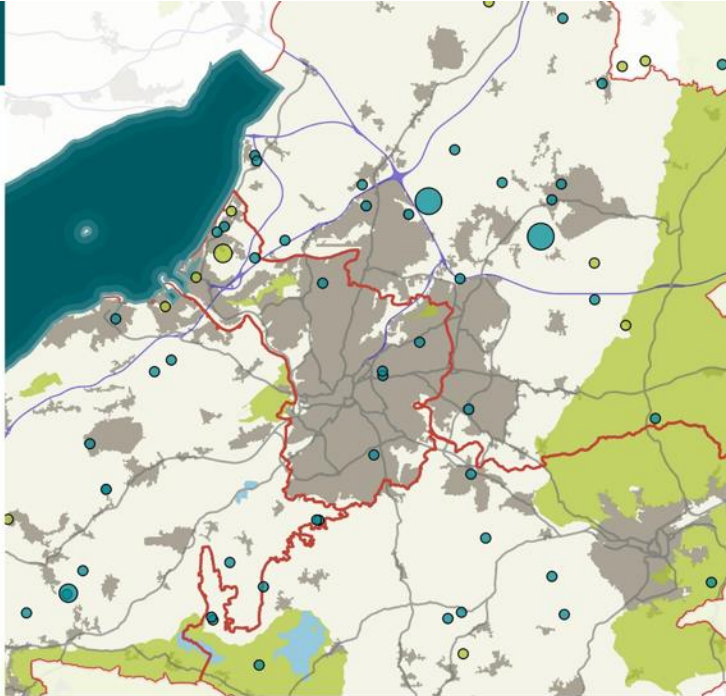
Solar PV baseline by capacity

Below 5 MW

5 - 10 MW

Above 10 MW

regen
transforming energy



Decarbonised, decentralised and democratised.....

- Community energy
- Digital platforms
- Heat networks
- Local generation tariffs
- Peer-to-peer trading
- Microgrids
- Local energy markets
- Energy services
- Access to flexibility markets

Smart energy city

- Energy is a key area of need and opportunity for the application of smart technology.
- Realising the decentralised, renewable energy system will require smart grids and systems to manage demand, supply and storage.
- Smart technologies also 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 provide the basis of other services – such as health and social care services which can improve effectiveness or reduce costs.



Key



Smart Data



Low Carbon
Heat and Energy



Battery Storage

Low Emission
Transport



Energy-efficiency
for existing housing



In-home
Smart Appliances



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Heat Storage

Marine and
Hydro-electricity

Bio-gas

Capturing energy
from Avonmouth

Utilising our own land to
enable renewables

Waste Heat from
industrial processes

Peak Power
Demand Response

Low Carbon,
Enterprise Zone

High Energy
Demand City Centre

Locally owned
renewables

Hydrogen
Production

Distributed
Energy Centres

Local
Battery Storage

Smart Data
Centre

Local Micro Grid
and renewables

Electric
Vehicle Charging

Urban Density

High Energy
Efficiency Standards

Cities taking the lead



- **Leadership and innovation** - unique role in developing and demonstrating new low-carbon energy solutions.
- **Inspiring change** - through the assets they own, services they deliver, as social landlords, trusted community leaders and major employers, and their regulatory and strategic functions.
- **Securing local benefits** - lower energy bills, economic regeneration, creation of local jobs, improved health.
- **Creating partnerships** – between public and private sector, and between communities and city
- **Delivery at scale** - leveraging assets and infrastructure.



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City Leap



The vision for City Leap

Taking advantage of the opportunity presented by the move to a local, decentralised energy system to:

- Create an interconnected, low-carbon, smart and resilient energy ecosystem that Bristol and its communities can be proud of.
- Deliver up to £1bn of low carbon, smart energy infrastructure investment in Bristol over the next 10 years.
- Leverage the council's energy expertise, assets and companies to drive city-wide action.
- Take a significant step towards carbon neutrality by increasing the deployment of renewable energy and low-carbon technology.
- Maximise and share the social, environmental and economic benefits that will arise from this opportunity.
- Cement Bristol's reputation as a global energy leader and take full advantage of City Leap – a global first.



The council's delivery to date

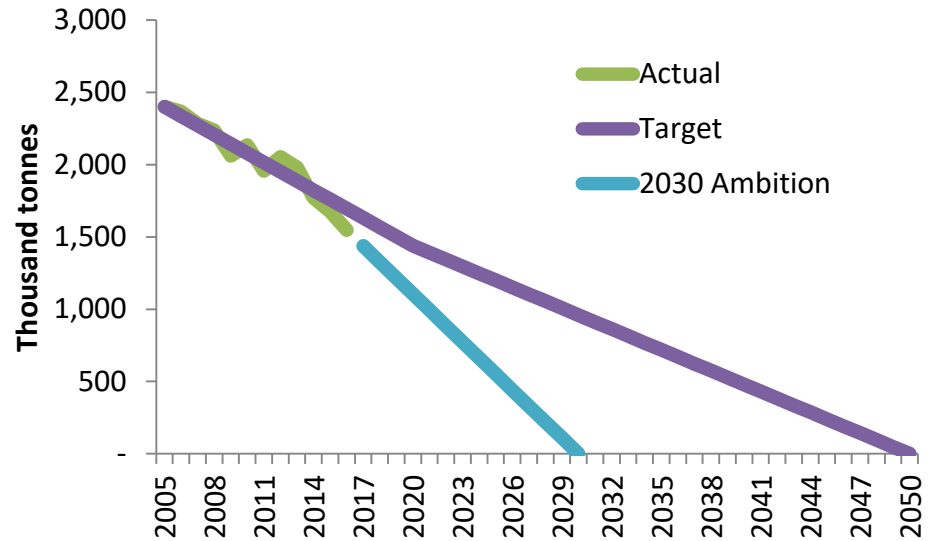
- The only local authority in the country to own large-scale wind turbines having invested £7m in the installation of two 2.5MW wind turbines in 2015.
- Invested £5m in the installation and/or facilitation of 8MW of solar PV on council-owned buildings and land.
- Invested over £2m in biomass boilers with a generating capacity of 5.2MW.
- Invested £5m in low-carbon heat networks to date, connecting over 1,000 social housing properties to the network.
- Set up Bristol Energy, one of the only two municipally-owned energy companies in the UK, which now has over 150,000 customer meter points and is rapidly developing its energy services proposition and capability.

Other achievements

- Delivered an energy efficiency programme which has cut emissions in the council's buildings by 60%, achieving the council's 2020 carbon reduction target three years ahead of schedule.
- Manage a £1.8m SALIX revolving loan fund, which has been “revolved” three times, i.e. £3.6m of investment with sub five year payback.
- Delivered energy efficiency upgrades to 10,000 social housing and private domestic properties.
- Installation of energy efficient street lighting across the entire city.

Progress towards carbon neutrality

- We are making good progress but much of this is due to national action.
- We will need to accelerate local action to deliver carbon neutrality.
- 82% of residents are concerned or very concerned about the impact of climate change.
- Over two-thirds of citizens in every ward are concerned about the impact of climate change.



Working in partnership

- The challenges of shrinking public budgets mean we need to find innovative and inclusive ways of delivering and funding our ambition.
- We need to seriously up the pace of delivery and strategically co-ordinate the programme of work required to take the city to carbon neutrality.
- This cannot be achieved without the support and consent of the residents and business of Bristol
 - Engagement and, crucially, a level of ownership.
- Bristol has a unique energy eco-system:
 - highly engaged residents and a thriving community energy scene
 - home to a network of sustainability-focused organisations and businesses
 - world class research capability
 - our own energy company
 - a leading local authority

City Leap partners



E3G



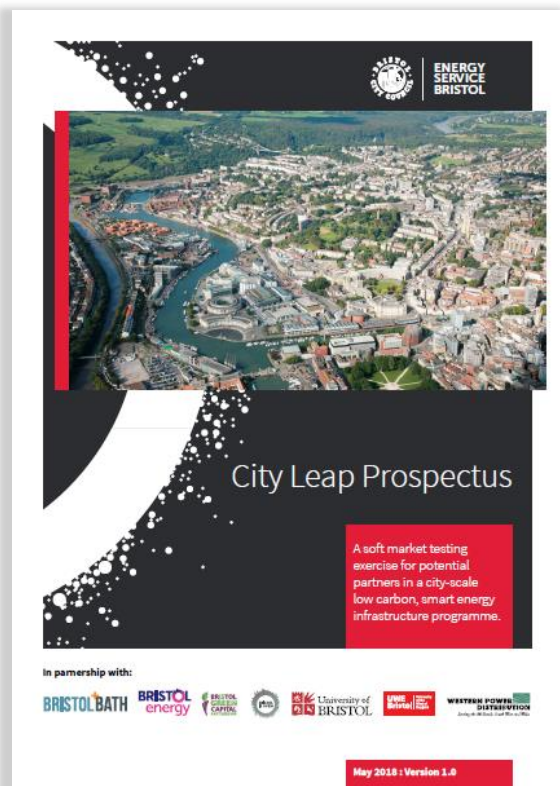
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The City Leap Prospectus

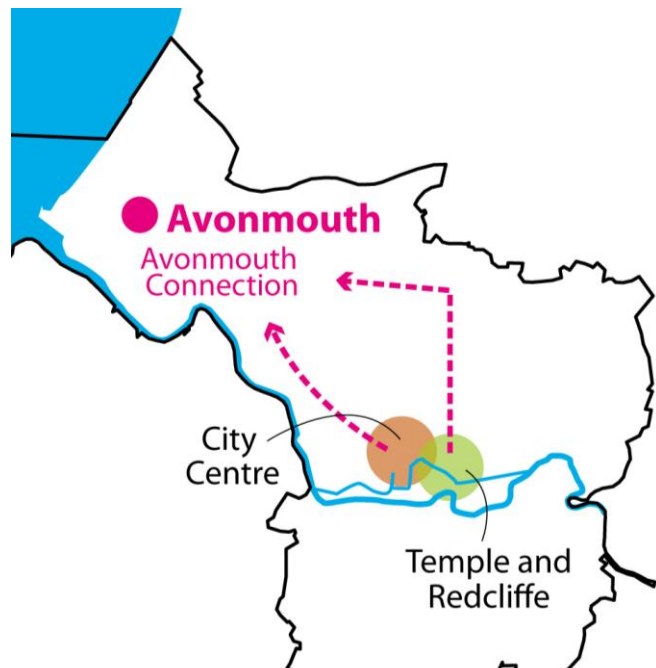


A slender document with unparalleled opportunities for our city...

- A soft market testing exercise launched on 9 May 2018.
- Our expression of interest window closed on 31 August 2018.

www.energyservicebristol.co.uk/prospectus

Heat networks



Estimated investment potential up to 2027
£300m

- The council has been installing heat networks for several years, with a focus on the densely populated city centre.
- Strategic heat main linking city centre to low carbon waste heat produced by industrial processes.
- The attraction of partners to support this area of activity would accelerate and enable the largest city-scale heat network in the UK.

Smart energy



Building on our reputation as GLOMO Smart City 2018, there are a number of opportunities that will be unlocked through investment, including:

- The creation of a 'Bristol battery', including solar PV, batteries, smart white goods, EVs and associated infrastructure, providing balancing services to the local and national transmission networks.
- Development and deployment of hardware and software solutions linking the above activities to maximise and equitably distribute the value generated.

Renewable energy



- Significant potential (>150MWe) for further renewable energy deployment across wind and solar PV.
- Utilisation of Council land and property to deliver and facilitate deployment.
- Generation can be either standalone or in conjunction with battery storage.
- Investment potential could be substantially higher if installation costs continue to fall and/or new revenue streams can be accessed, e.g. local tariffs, peer-to-peer trading.

Energy efficiency

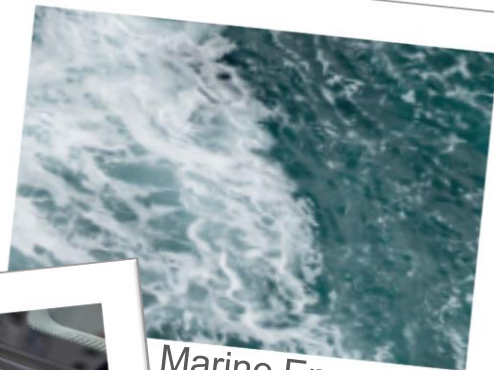


- Significant potential in both domestic housing and commercial sectors.
- Seeking to deliver an energy efficiency programme at scale.
- Will likely require a revolving loan fund that can be accessed by the commercial sector and homeowners.
- Comprehensive and targeted suite of advice and support to SME business.

Other areas



Electric Vehicles



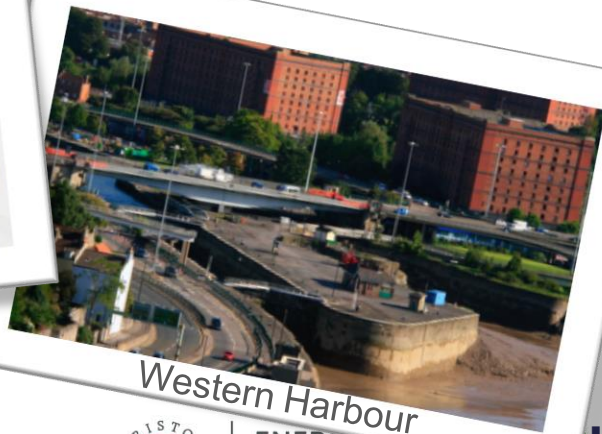
Marine Energy



Hydrogen



Temple Quarter



Western Harbour



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Soft market test



EOIs received

181

Website Hits

4,465

Downloads

2,627

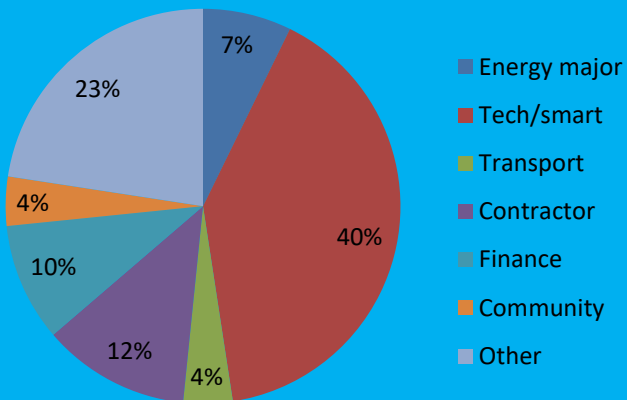
Media Coverage

42

Events

10

Organisation Type



Top media Tweet earned 5,157 impressions

There are just a few days left to express an interest in our City Leap initiative - partnership and investment opportunities to build a carbon neutral [#Bristol](#) | energyservicebristol.co.uk/prospectus pic.twitter.com/UwxxTkbPKW



13 7

[View Tweet activity](#)

[View all Tweet activity](#)

Areas of interest

Heat Networks

58

Smart energy

89

Energy efficiency

120

Renewables

101

Transport (inc EV)

46

Finance

34

What's next?

Expression of Interest Window

31 August – EOI window now closed

Sept/Oct – EOI meetings completed

6 Nov – Workshop 1: Objectives and scope of options appraisal

17 Dec – Workshop 2: Option appraisal review & recommendation

Post Expression of Interest

April 2019 – Cabinet Decision

April-Sept 2019 – Procurement

End 2019 – Implementation

Delivery



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Conclusions



Conclusions

- The move to a smart, local, decentralised energy system presents a significant opportunity to decarbonise and democratise energy.
- In order to realise these opportunities, we will need to work in partnership with a wide range of organisations and strategically co-ordinate activity – this is the concept behind City Leap.
- We are currently in the process of completing our own options appraisal, with options being tested against objectives and outcomes.



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Thank you!

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