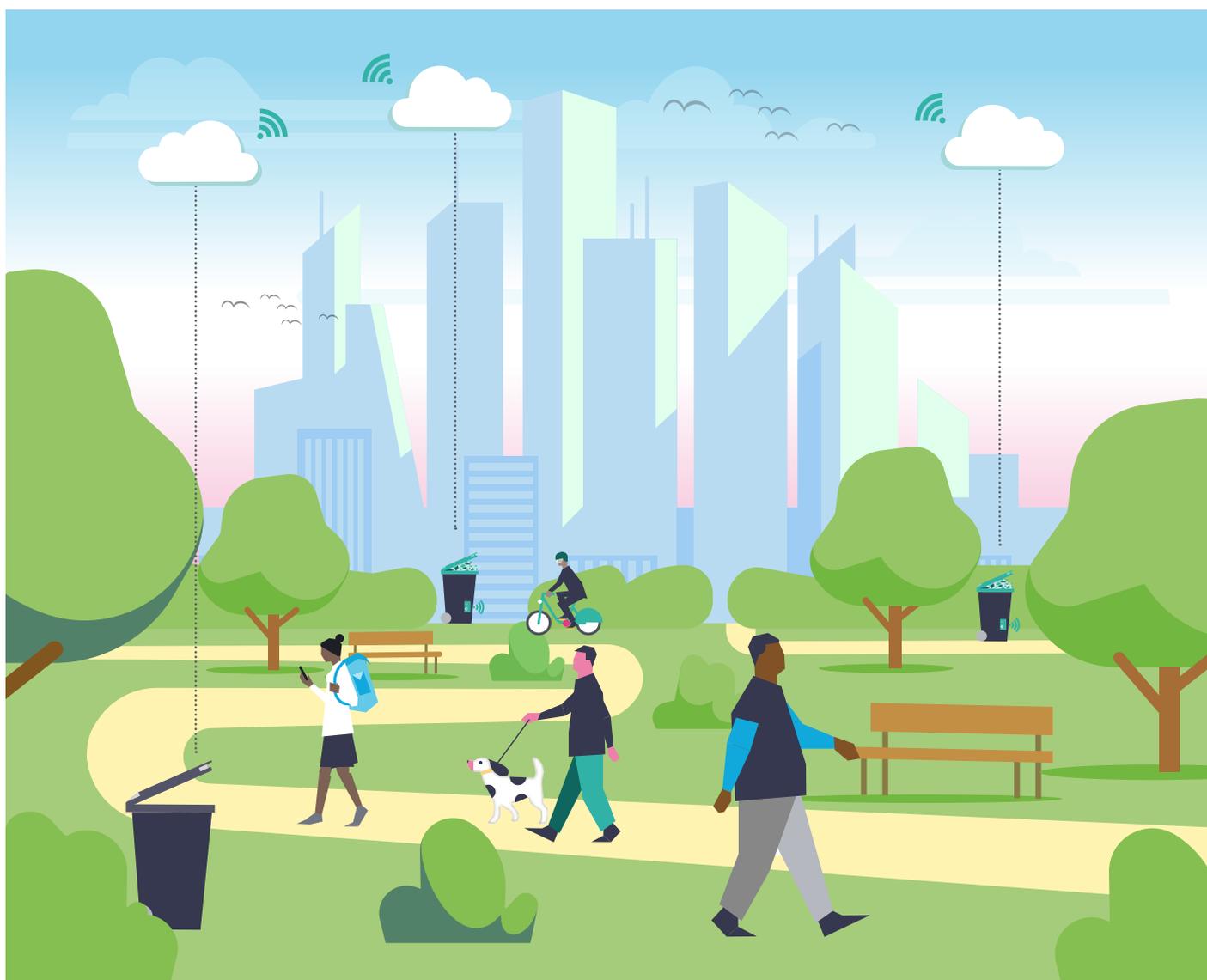


Q3

Winter 2017 edition

CATAPULT
Future Cities

CITY INNOVATION BRIEF



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FOREWORD

Cities are engines of innovation. From Roman aqueducts to Manhattan's skyscrapers, Victorian gas street lamps to contactless payment on London's public transport network, cities have a long history of inspiring and embracing innovative technologies. This in turn has delivered new levels of productivity and prosperity. The Industrial Strategy white paper, published by the UK Government in November, acknowledges this by rightly identifying 'place' as a foundation of economic productivity. Places with the right characteristics, assets and resources allow innovation to proliferate and businesses to grow, yielding prosperous communities.

In this second edition of the *City Innovation Brief*, you will read how many cities around the UK are working to foster that optimal mix of characteristics, assets and resources in their local areas. Circumstances are challenging, with significant pressures on public spending and rising demand for certain services. However, as in the past, the answer to solving the complex and expensive challenges facing our cities and urban areas lies in embracing innovation.

As the examples in this report will show, embracing innovation need not always be about new spending - local government already spends around £5 billion a year on legacy systems and tech. As we enter our second five years, Future Cities Catapult is redoubling our efforts to support city leaders and managers understand what the latest technology can offer and how to harness its potential, starting by directing more of the existing spending on tech towards today's best in class solutions.



Likewise, we will continue to work with businesses to help British firms better understand the needs of cities, bringing buyers and suppliers together to develop new solutions and services that help city administrations spend their £78 billion annual budgets differently, and ultimately ensuring that the UK benefits from a disproportionately large share of today's \$500 billion global market for advanced urban services.

Just as gaslights tackled Victorian public safety issues and high-tension lift cables unlocked new building heights allowing more people to live and work in cities, so too today's urban innovations promise not only to improve the lives of citizens and deliver efficiencies in public administration, but also to create new opportunities for businesses and more productive places where everyone can prosper.

**Nicola Yates OBE – Chief Executive Officer,
Future Cities Catapult**

WHAT'S INSIDE?

This issue of *City Innovation Brief* starts with a **digest** of key developments this quarter, with highlights including:

- £400m of extra funding will back transport improvements across the Northern Powerhouse, and the formation of Transport for the North (TfN).
- Publication of the Industrial Strategy and the £725m Industrial Challenge Fund.
- The first ever meeting of Britain's seven city-wide and regional mayors.
- The Government's 25 Year Environment Plan, which includes increasing the amount of tree planting and urban green space, and policies to reduce plastic waste and pollution.
- Milton Keynes will be the first Gigabit City under the new Vodafone and CityFibre Fibre-to-the-Premises programme.
- Bristol was named the highest-ranking UK smart city according to the Huawei/ Navigant UK Smart Cities Index, followed by London, Manchester, Birmingham and Leeds.
- The Care Quality Commission announced that social care faces an annual funding gap of £2.3bn, while Which? reported that 10 councils could face shortfalls of 42,000 care home places by 2022. The potential of technology and innovation to reduce this burden has been highlighted by initiatives such as Centrica's Active Ageing Challenge.

- The collapse of Carillion, which is expected to have widespread ramifications across the advanced urban services sector.

Our **activity tracker** identifies nearly £840m of public sector contracts advertised this quarter related to advanced urban services, with 35% of tenders attributed to the digitalisation of services and 41% to intelligent systems. Of this, £600m will deliver broadband infrastructure across Scotland. In addition, £800m of funding is announced this quarter to support investments in broadband and 5G networks, sustainable urban development, local energy generation, circular economy and innovation in mobility, business and public services.

Our **feature article** profiles developments in managing and enhancing the public realm. Finally, we summarise **insights** from our second cities roundtable, which reflected on the challenges and opportunities faced in deploying advanced urban services. This identified a common focus on a range of issues including tackling congestion, upskilling local workforces and providing improved health and care services. Opportunities were identified in the areas of data sharing, local governance and the provision of digital infrastructure.



Digest

Key developments in Advanced Urban Services and urban innovation in the UK this quarter.



POLITICAL



ECONOMIC



SOCIAL



TECHNOLOGICAL



LEGAL



ENVIRONMENTAL

POLITICAL

This quarter began with the annual party conferences producing several announcements and discussions related to the advanced urban services sector. Chancellor Philip Hammond announced funding of £400m for northern transport links, including measures to reduce congestion, and Transport Secretary Chris Grayling announced funding of £80m to introduce smart ticketing across most parts of the country by the end of the year. Environment Secretary Michael Gove called for views on setting up a plastic bottle deposit return scheme, which could save councils £35m annually.

At the Labour Party conference in September, Leader Jeremy Corbyn stressed the need to urgently face the challenge of automation, asserting that benefits should be shared and hinting that companies that profit from replacing humans with robots should pay more tax. Shadow BEIS Secretary Rebecca Long-Bailey spoke about Labour's report on Alternative Models of Ownership, that seeks to give workers a stake in digital advances alongside business.

It was announced this quarter that

TfN will become the first statutory sub-national transport body in the UK. The Transport Minister announced new legislation that will grant TfN new legal powers and duties as part of the devolution agenda.

The first ever meeting of Britain's seven city-wide and regional mayors in November called for an increase in the pace and scale of devolution, highlighting that devolved city areas represent 39% of UK GVA. The Autumn Budget announced the UK's latest devolution deal for the North of Tyne and a second devolution deal for the West Midlands, welcomed by the Local Government Association.

Discussions are underway for new or enhanced devolution deals; and similarly to create a new combined authority for the South West. The Government has agreed to support plans to create two new unitary authorities in Dorset, replacing the nine existing councils. Meanwhile, West Yorkshire Combined Authority placed a bid for £200m and more powers ahead of the Autumn Statement and Doncaster and Barnsley Councils will consult residents on their preferred devolution deal direction. The ▶



A new report suggests that SMEs in the UK's top 10 cities will contribute £241bn to the UK economy by 2025



Councils could save £35m a year if a plastic bottle deposit return scheme is introduced.

South of Scotland Economic Partnership was established, comprising public and private sector partners to bring a novel approach to economic development in the region.

Early in 2018, Prime Minister Theresa May undertook a cabinet reshuffle which saw the two top Government digital roles – Government Digital Service Minister and Digital Minister vacated without direct replacements. Following changes within Department for Culture Media and Sport (DCMS), Margot James MP was appointed Minister for Digital and the Creative Industries with responsibility for broadband.

ECONOMIC

According to PwC's Good Growth for Cities report, Oxford and Reading are the best performing cities, while Birmingham, Leeds, Leicester, Newcastle and Southampton are the most improved. Meanwhile a new report suggests that SMEs in the UK's top 10 cities (in terms of SME contribution to the UK economy) will contribute £241bn to the UK economy by 2025.

A range of initiatives to stimulate economic growth and income generation have been reported during this quarter. The publication of the Industrial Strategy ▶



The use of digital technology has been highlighted to further grow the arts and cultural tourism.

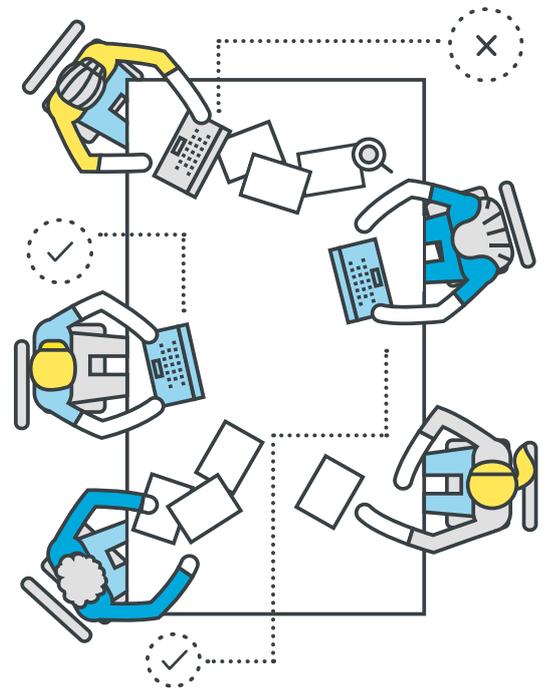
promised an £725m Industrial Challenge Fund over the next three years and a commitment to increasing the national R&D spend from 1.7% to 2.4% within the next decade. The Autumn Budget also saw the extension of Tech City UK with a £21m investment to support regional tech hubs as part of a raft of measures to create a world-class UK tech sector.

Ahead of the Autumn Budget the Local Government Association (LGA) called on the Chancellor to recognise the role of councils in creating an inclusive economy, highlighting the £23bn spent on growth, regeneration and skills spread across 70 different national funding streams and managed by 22 government departments and agencies.

Around the UK, a £4.1m Local Enterprise Partnership (LEP) project to grow the Knowledge Gateway in Sheffield is aiming to boost the local economy by £158m. A £24m Innovate UK investment in Future City Glasgow has generated economic benefits of £144m. Oxfordshire Growth Board has joined the Greater London Authority in applying for 100% business rate retention.

A participatory budget programme in Aberdeen and a new city crowdfunding platform in Wolverhampton hope to give residents more ownership over spending decisions. In Sunderland, a new Community Led Local Development Programme worth £5.8m has been designed to close the economic gap between Sunderland's neighbourhoods.

The Centre for Cities suggested that



A participatory budget programme in Aberdeen and a new city crowdfunding platform in Wolverhampton hope to give residents more ownership over spending decisions.

new cultural investments and creation of cultural programmes in 'left behind' areas does not constitute regeneration. In November however, figures showed the creative industries contribution to the UK economy grew 3.6% in the year to **£250bn or 14% of UK GVA**. The Arts Council's analysis also found that the culture sector generates £5 in tax for every £1 of public funding received demonstrating the economic impact of culture in the UK.

Analysis has found that tourism is worth £656m a year to the Bradford economy, supporting 13,000 jobs. Approximately 2.25m visitor nights were spent in Bradford in 2016 as well as around 11.6m day trips. Similar results have been released for ▶

Cheshire East
Council secured

£1m

in European
funding to create
a district heating
system to act as
a catalyst for
developing
large-scale
energy storage
combined with
smart grid
technology.

Brighton which saw 11.23m visitors in 2016, up 6.4% on 2015 with total spending of £885.9m in 2016, an increase of 3.2%.

The use of digital technology has been highlighted to further grow the arts and cultural tourism: a report recommended a digital approach to create innovative and engaging museum exhibition content. For example, Stirling and London are introducing apps to enhance the visitor experience.

January brought the collapse of Carillion. Whilst the full consequences for advanced urban services won't be known until next quarter, cities are starting to make announcements. For example, Leeds has published a list of projects potentially affected, including a £4m live project with Carillion and seven schools in the city who have 'soft services' provided by them.

SOCIAL

Local authorities have acted to address fuel poverty. Islington Council launched London's first municipal not-for-profit energy provider in more than a century which aims to provide fairer prices and tackle fuel poverty. The Greater Manchester Big Clean Switch campaign is aimed at switching to clean electricity to save residents money on their energy bills and help the environment. Likewise, Cheshire East Council secured £1m in European funding to create a district heating system to act as a catalyst for developing large-

scale energy storage combined with smart grid technology. Stirling Council has approved a £2m project to install solar panels for cheaper energy bills for its social housing tenants as part of its Renewables Technology Programme.

Ninety-two per cent of local authorities fail to deliver enough affordable housing according to the Institute for Public Policy Research (IPPR) in November. The Ministry of Housing, Communities and Local Government (MHCLG) has launched a call for evidence on how to improve the house-buying process, including potential digital solutions. Liverpool City Council has launched an empty homes matchmaker service. Richmond Council is offering a financial incentive to encourage housing association residents into smaller properties that better suit their needs. In October, the Government announced a £2bn boost to the £7.1bn Affordable Homes Programme which will provide up to 25,000 homes.

In January, the Department of Communities and Local Government (DCLG) was renamed the Ministry of Housing, Communities and Local Government (MHCLG) with Sajid Javid retitled as the Secretary of State for Housing, Communities and Local Government. Sajid Javid launched a new All-Party Parliamentary Group on New Towns as a solution to the current housing shortage, identifying New Towns as a solution to increasing housing supply. ▶



44%

of low earners are forced to reduce spending on basics to pay their rent.

The Government published new guidance for local authorities to intervene earlier to prevent families and individuals from becoming homeless. It was reported in October that 44% of low earners are forced to reduce spending on basics to pay their rent, and that an estimated 26,000 single people are homeless on any given night in England. There are opportunities for cities to deploy advanced urban services as they deliver homelessness reduction strategies. Several interventions have been made to respond to this challenge including: a social letting agency approach, intensive health support, encouraging homeless people into education or work, and enabling access to libraries; providing a joined-up response and outreach service; allowing the housing element of the Universal Credit being directly paid to the landlord (Scotland); and re-purposing shipping containers into energy efficient homes (Cardiff).

According to the Care Quality Commission (CQC) in October, young people struggle to get help for mental health issues. The CQC also stated that social care faces an annual funding gap of £2.3bn, while Which? reported that 10 councils could face shortfalls of 42,000 care home places by 2022.

During this quarter, technology and innovation that could reduce the burden on health and social care has been highlighted. Centrica has found that one third of the over 60s own or are interested in buying a smart home device, and have launched an Active Ageing Challenge. Ukactive has suggested that innovative solutions for keeping older people active could help save the NHS £12bn; the University

of Manchester's new pro-walking app is one example. Southend-on-Sea and Edge Hill University have been using robots in social care. In healthcare has launched a self-monitoring service for NHS heart patients and Changing Health is providing an app-based education and behavioural change coaching service. In Wales, the Welsh Health Secretary Vaughan Gething announced a £5.5m investment for digital priorities in the Welsh NHS.

TECHNOLOGICAL

The focus this quarter remains on investment in technological skills, infrastructure, and diversification of the talent pool to facilitate smart city development. The Digital Skills Partnership includes training opportunities pledged by businesses including Barclays and Google, to bridge the gap between the 11.5m people lacking in digital skills. The Mayor of London announced a new scheme to encourage young people, especially those from Black, Asian and Minority Ethnic (BAME) backgrounds to take interest in STEM subjects by setting them a challenge based on a real-world London problem.

A report by London's Chief Digital Officer, Theo Blackwell, and the organisation Public, suggests that some councils are failing to begin digital transformation due to retaining extensively long contracts and other practices that squeeze out smaller, more dynamic actors. Digital skills challenges were also highlighted in a survey of 100 IT leaders across UK local government, with over ▶



In response to cybersecurity fears, the Scottish Government has issued its Public Sector Action Plan on Cyber Resilience which will encourage all public bodies to implement the same baseline standards of cyber security in their organisations.

70% believing both their current data analysis capabilities and current data storage capabilities would not be fit for purpose in the next 18 months.

Theo Blackwell is using the Mayor's Smart London Board, an advisory group of experts and leaders in data and technologies, to advance the city's capabilities in data and innovation. Together they have started a Listening Exercise for a new Smart London Plan which will be launched at London Tech Week in June. Over the coming months City Hall will be talking to hundreds of experts from research, business and technology sectors as well as thousands of citizens about London's digital future. They will be drawing on the best examples nationally and internationally, in partnership with Bloomberg Associates. Explore more at www.london.gov.uk/smart-london, write to City Hall at smart@london.gov.uk or tweet at [@LDN_CDO](https://twitter.com/LDN_CDO) or [#smartlondon](https://twitter.com/smartlondon).

Bristol was named the highest-ranking UK smart city according to the Huawei/Navigant [UK Smart Cities Index](#), followed by London, Manchester, Birmingham, and Leeds. In November, Future Cities Catapult launched their Global Review of Smart City Strategies at the Smart City Expo Congress in Barcelona.

Exeter City Futures have launched their [inaugural Exeter Velocities newsletter](#) which showcases the accelerator's progress and their current cohort of start-ups and entrepreneurs.

Infrastructure developments have continued apace during the end of

2017 and into 2018. Southend-on-Sea Borough Council [reported that more than 15,000 users](#) registered for the borough's new wi-fi network since it was launched in the autumn. [Glasgow has extended its contract with CityFibre](#) to expand the existing Gigabit City network to over 500 council-owned sites, providing connections to over 17,000 businesses in the city.

A range of [police forces and fire brigades across Yorkshire and the North East](#) have teamed up to launch a framework for mobile devices and data. [Milton Keynes will be the first city to become a Gigabit City](#) under the new Vodafone and CityFibre Fibre-to-the-Premises (FTTP) programme. Most [GP surgeries and community health centres in Coventry](#) are to be connected to their own full fibre network, creating a foundation for digital health and care innovation.

In response to cybersecurity fears, the Scottish Government has issued its [Public Sector Action Plan on Cyber Resilience](#) which will encourage all public bodies to implement the same baseline standards of cyber security in their organisations. The DCMS also [announced new legislative moves to strengthen data security](#) including bringing UK law in line with the EU's GDPR through the Data Protection Bill. In October, DCLG's cybersecurity leader called on local authorities to prepare for [cyberattacks during elections](#).

The Gehl Institute, in close partnership with others, has developed a Public Life Data Protocol to standardise the collection and storage of data about people in public space. ▶



The Department for Transport has proposed a new bill giving police powers to demand drone users produce registration documents on request.

LEGAL

Legal activity has focused on transport this quarter. In January, the Court of Justice of the European Union (CJEU) has ruled that Uber is a transport service, not a digital service provider. This means that Uber can be subject to local transport regulations in different EU Member States. Sheffield City Council followed London in suspending Uber's licence to operate after 18 December 2017. However, Cambridge has announced it will grant Uber a private hire licence from 20 December 2017 when the company's current license expires.

The London EV Company's (LEVC) all-new electric TX taxi has been certified to carry paying passengers. The licensing comes just in time for Transport for London's (TfL) January 2018 deadline for all newly-licensed London taxis to be zero-emission capable. Although, the launch has not been without problems and is currently on-hold.

Following the plan announced to introduce licensing schemes for landlords and to scrap Right to Rent, the Government has introduced a draft bill to put an end to letting fees for tenants in an effort to improve the rental market. Under the Bill, the law will be enforced by Trading Standards and will constitute a civil offence with a fine of £5,000 and a criminal offence where an individual has been fined for the same offence within five years.

In order to make the UK a leader in drone applications, the Department for Transport (DfT) has proposed a new bill giving police powers to demand

A Green Finance taskforce has been launched to increase revenue opportunities for low-carbon businesses and solutions.



drone users produce registration documents on request. Moreover, the Government launched a consultation on Part 5 of the Digital Economy Act, which gives the Government powers to share personal information across its organisations. The Government also confirmed that everyone in the UK would be entitled to speeds of up to 10Mbps by 2020. Individuals without access to those speeds, however, must request them, and will not automatically receive them.

ENVIRONMENTAL

Perhaps the most important development came in January 2018 with the Government announcing the 25 Year Environment Plan. The plan aims to plant one million urban trees, create green urban infrastructure to boost health and well-being, increase resource efficiency and reduce pollution and waste, especially plastic.

Cities are already responding. Greater Manchester has been chosen as an Urban Pioneer City Region as part of the plan, whilst the City of London Corporation has set out a vision for a plastic free city through installing drinking ▶



fountains and encouraging local businesses to act as water bottle refill stations. Derby and Nottingham City Councils are set to launch a new combined 'Metro' commercial waste service to businesses.

The UK Government's Clean Growth Strategy was released in October, defining clean growth as "growing our national income while cutting greenhouse gas emissions". The strategy sets out how over £2.5bn will be invested to support low carbon innovation from 2015 to 2021.

The Capgemini World Energy Markets Observatory 2017 reported that the UK had the second highest electric vehicle (EV) sales in Europe and that implementing a higher carbon trading price would further spur acceleration in renewable deployment.

In November, a Green Finance taskforce was launched to increase revenue opportunities for low-carbon businesses and solutions. A subsequent report finds that companies have an opportunity to drive the uptake of renewables in their supply chains and outlines the support businesses need to do this.

Ofgem's State of the Market report finds that since the Climate Change Act in 2008, over half of the UK's reduction of greenhouse gas emissions has come from cleaner electricity. The latest figures show the share of electricity generated by renewables rose to 29.8%, up 4.4% from the same point in 2016. EY's bi-annual Renewable Energy Country Attractiveness Index has ranked the UK 10th globally for renewable energy attractiveness. PwC released the Low Carbon Economy Index stating that the UK reduced carbon emissions by 7.7% from 2015-2016, making it the top performer globally. Meanwhile the UK's biggest portfolio of utility-scale enhanced battery storage sites has been completed with a 40MW battery park in Glassenbury, Kent and a 10MW battery park in Cleator, Cumbria.

Severn Trent Water has pledged to embrace demand flexibility to deliver a smarter energy future with a target of providing 20MW of electricity across its network by 2020. Finally, the Government introduced the Smart Meters Bill in October, which focuses on offering every home and business a smart meter by 2020.

7.7%

The percentage the UK reduced carbon emissions between 2015 and 2016.

ACTIVITY TRACKER

Over **£837m** of funding and tender opportunities advertised this quarter related to Advanced Urban Services



Almost £800m of funding was announced and opened this quarter. Amongst UK government funding, the most significant announcements were regarding Information and Communications Technology (ICT) Infrastructure for full fibre and 5G networks, with the Local Full Fibre Networks Challenge Fund totalling £75m.

This comes as the right to minimum broadband speeds were announced by the Culture Secretary in December emphasising the Government's

commitment to rolling out digital infrastructure and enhancing connectivity. Reflecting this, also significant is £30m of funding for Rural Broadband Infrastructure and funding for Phase 1 of Innovate UK's 5G Testbeds and Trials Programme, totalling £25m. All other UK governmental funding pots were £20m or less, including support for smart infrastructure, connected transport, energy efficiency and smart energy management. 5G connectivity also

dominates European funding with the two biggest funding calls being €60m for a 5G End to End Facility and €50m for 5G for cooperative, connected and automated mobility (CCAM).

Not included in our total, or the funding listings that follow, are global scale private sector investments from smart cities and Internet of Things suppliers. For example, during this quarter Cisco announced a \$1bn fund for innovative smart city technology in cities around the world. ▶

UK FUNDING PROGRAMMES ANNOUNCED AND OPENED THIS QUARTER

TOTAL: £302.6M

▼ **Local Full Fibre Networks Challenge Fund Wave 2**

-  DCMS
-  £75m
-  The LFFN Programme aims to stimulate commercial investment in full fibre networks across the whole of UK landscape, including rural and urban locations in England, Scotland, Wales and Northern Ireland, by demonstrating approaches that encourage additional private investment and by making sustainable commercial deployments viable.
-  Public bodies
-  22 Nov 2017 – 26 Jan 2018

▼ **November 2017 sector competition: strand 2 Infrastructure Systems**

-  Innovate UK
-  £35m
-  Innovate UK is to invest up to £19m in innovation projects to encourage UK business growth in manufacturing and materials or infrastructure systems. Proposed projects must show significant innovation in smart infrastructure, energy, connected transport or urban living. Infrastructure projects must come under one or more of the four priorities: smart infrastructure; energy; connected transport; or, urban living. £16m is also available for Knowledge Transfer Partnerships for this call.
-  UK-based business, university or research and technology organisation (RTO)
-  28 Nov 2017 – 31 Jan 2018

▼ **Rural Broadband Infrastructure**

-  MHCLG, DWP, DEFRA, RPA
-  £30m
-  These grants are for capital investments in the creation of Next Generation Access (NGA) broadband infrastructure in rural areas of England where there is no NGA provision, and none is planned.
-  Local authorities
-  13 Oct 2017 – 31 May 2018

▼ **5G Testbeds and Trials Programme: Phase 1**

-  Innovate UK
-  £25m
-  Development of a '5G ecosystem' in the UK and contribute towards the delivery of the objectives in the UK's 5G strategy.
-  UK registered organisation
-  23 Oct 2017 – 6 Dec 2017

▼ **December sector competition: Open**

-  Innovate UK
-  £19m
-  This competition is open to the best business-led cutting-edge or disruptive ideas or concepts with a view to commercialisation. Proposals can come from any technology, as well as the arts, design or creative media. Grant funding for projects with eligible costs of between £25,000 & £1m.
-  Businesses
-  11 Dec 2017 – 28 Feb 2018

▼ **Connected and autonomous vehicles simulation: collaborative R&D**

-  Centre for Connected and Autonomous Vehicles / Innovate UK
-  £15m
-  Industry-led projects using holistic simulation and modelling systems to develop approval mechanisms and standards to support the deployment and development of CAVs.
-  UK-based businesses
-  15 Jan 2017 – 2 May 2018

▼ **Beyond Places of Safety scheme**

-  Department for Health
-  £15m
-  Projects to improve services for people who are vulnerable to or recovering from a mental health crisis. The fund aims to achieve this through investing in facilities and infrastructure, including rolling out technological innovations to help self-management
-  Local health authorities
-  18 Oct 2017 – 21 Jan 2018

▼ **Planning Delivery Fund**

-  DCLG
-  £11m
-  Initially, opening-up £11m of the fund, councils will be able to apply to help gain the skills

or capacity they need to deliver high quality housing growth at scale, pace and implement wider planning reforms. The fund is aimed at encouraging more innovation in the design quality of new housing developments, as well as provide design advice and support to local authorities.

-  Local authorities or third sector organisations in areas of high housing need
-  4 Dec 2017 – 11 Jan 2018

▼ **Innovations in the built environment**

-  BEIS
-  £10m
-  To develop technologies that reduce the carbon emissions associated with providing heat and hot water to UK buildings. Innovative technologies, processes and tools are eligible for support.
-  UK-based businesses
-  8 Nov 2017 – 2 Jan 2018

▼ **Investing in Building Thermal Efficiency Innovation**

-  BEIS
-  £10m
-  To develop technologies and approaches to improving the energy efficiency of existing UK buildings. Innovative technologies, processes and business models.
-  UK-based businesses
-  8 Nov 2017 – 2 Jan 2018

▼ **Innovation loans: infrastructure systems**

-  Innovate UK
-  £10m
-  Loans for SMEs working on late-stage infrastructure systems projects within Innovate UK priority areas.
-  UK-based SMEs
-  18 Nov 2017 – 10 Jan 2018

▼ **Accelerating innovation in rail 5**

-  Innovate UK/DfT
-  £7.9m
-  The aim of this competition is to create innovations that address the main goals identified in the industry's 'Rail Technical Strategy Capability Delivery Plan' 2017.
-  UK registered organisation
-  18 Sep 2017 – 15 Nov 2017



Fund



Provider



Value



Purpose



Target



Date

▼ **First of a Kind: demonstrating tomorrow's trains today**

- Pr DfT / Innovate UK
- £3.5m
- ⚙️ Projects to demonstrate 'tomorrow's trains today'. The first challenge will address rolling stock.
- 🌐 Organisations carrying out work in the UK
- 📅 30 Oct 2017 – 22 Nov 2017

▼ **Gigabit Broadband Voucher Scheme**

- Pr DCMS
- £2m
- ⚙️ Grants between £500-£3,000 to allow SMEs to upgrade their business broadband to a gigabit capable connection. Applicants must be within the four UK areas chosen for the trial.
- 🌐 Local SMEs
- 📅 14 Nov 2017 – March 2019

▼ **Non-domestic Smart Energy Management Innovation Competition**

- Pr BEIS
- £1.8m
- ⚙️ Developing new ideas for products and services that use smart meter data to reduce energy demand in small, non-domestic buildings. This includes shops, restaurants and schools.
- 🌐 UK businesses
- 📅 2 Jan 2017 – 9 Feb 2018

▼ **Funding for Innovation: Connected Vehicle Data**

- Pr DfT
- £500K
- ⚙️ The DfT is looking to fund local authority projects costing between £30k-£100k for projects demonstrating the capability of connected vehicle data, to improve the quality of road condition and asset management data, enable smart asset strategies, help support innovation within the private sector and provide the business case for deployment across the wider highways authorities network. 100% funding available.
- 🌐 Local authorities
- 📅 14 Dec 2017 – 16 Feb 2018

▼ **SBRI: roads for the future for connected and autonomous vehicles**

- Pr Highways Agency / National Infrastructure Commission
- £200K
- ⚙️ £150K is available for up to five feasibility studies with the best project receiving an additional £50K. Innovative ideas on how UK roads are designed, managed and used are sought to accommodate and maximise the benefits of connected and autonomous vehicles (CAVs).
- 🌐 Any organisation registered with Companies House with ideas applicable to UK ideas
- 📅 15 Jan – 7 March 2018

▼ **SBRI competition: agile and self-powered public space CCTV**

- Pr SBRI
- £150K
- ⚙️ Organisations can apply for a share of the money for R&D for new, innovative public space CCTV solutions.
- 📅 8 Jan – 2 Feb 2018

UK REGIONAL FUNDING
OPENED THIS QUARTER
TOTAL: £168.73M

▼ **Sustainable Urban Development (Low Carbon and Climate Change): call in the North East**

- Pr North East Local Enterprise Partnership
- £18.6m
- ⚙️ This call is looking to support the shift towards a low carbon economy and to promote climate change adaptation, risk prevention and management.
- 🌐 Entities working in the local area
- 📅 15 Sept – 30 Mar 2018

▼ **Circular Economy Investment Fund**

- Pr Zero Waste Scotland
- £18m
- ⚙️ To promote the circular economy
- 🌐 SMEs and non-profit organisations

▼ **Low Carbon: call in North East**

- Pr North East Local Enterprise Partnership
- £13.4m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- 🌐 Organisations working within the North East Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Sustainable Urban Development (ICT, SME Support and Low Carbon): call in Derby, Derbyshire, Nottingham and Nottinghamshire**

- Pr D2N2
- £9.8m
- ⚙️ Sustainable Urban Development call to run a project to enhance access to, and use and quality of, Information and Communications Technology, enhance the competitiveness of small and medium enterprises and supports the shift towards a low carbon economy.
- 🌐 Entities working in the local area
- 📅 20 Sept – 2 Mar 2018

▼ **CAN DO Innovation Challenge Fund**

- Pr Scottish Enterprise, Highlands and Islands Enterprise, Scottish Government and the Scottish Funding Council
- £9.2m
- ⚙️ The CAN DO Innovation Challenge Fund is a national fund which supports Scottish public sector organisations to find and develop innovative solutions to operational service and policy delivery challenges. The fund aims to find solutions to societal and service delivery challenges faced by the public sector and improve public service quality and reduce delivery costs.
- 🌐 Public sector organisations
- 📅 7 Nov – 19 Jan 2018

▼ **Sustainable Urban Development (Low Carbon and Climate Change): call in Sheffield City Region**

- Pr Sheffield City Region
- £8.4m
- ⚙️ This call is looking to support the shift towards a low carbon economy and to promote



climate change adaptation, risk prevention and management. 60% funding.

- ⦿ Entities working in the local area
- 15 31 Oct – 30 Mar 2018

▼ **Low Carbon: call in Sheffield City Region**

- Pr Sheffield City Region Local Enterprise Partnership
- £7.1m
- ⚙️ This call looks to support a shift towards a low carbon economy. Proposals should be aligned with local priorities which include supporting increased production; demonstration; deployment of renewable energy and renewable energy technologies; and more.
- ⦿ Organisations working within the Sheffield City Region Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in the South East**

- Pr South East Local Enterprise Partnership
- £6.98m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a focus on promoting

- energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- ⦿ Organisations working within the South East Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Cumbria**

- Pr Cumbria Local Enterprise Partnership
- £6.36m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- Pr Organisations working within the Cumbria Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Climate change: call in Lancashire**

- Pr Lancashire Local Enterprise Partnership
- £5.78m
- ⚙️ Proposals relating to climate change adaptation, prevention and management of climate change risks, and promoting investment to address specific risks ensuring disaster resilience and developing disaster management systems.
- ⦿ Organisations working within the Lancashire Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Information and Communications Technology: call in Coventry and Warwickshire**

- Pr Coventry and Warwickshire Local Enterprise Partnership
- £5.2m
- ⚙️ The aim of this call is to enhance the access to, the use and the quality of information and communication technologies, particularly regarding extending broadband deployment, and the roll out of high-speed networks, and to develop ICT products and services.
- ⦿ Organisations working within the Coventry and Warwickshire Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Environment and Resource Efficiency: call in the Black Country**

- Pr Black Country Local Enterprise Partnership
- £5m
- ⚙️ Proposals looking to protect and preserve the environment and to promote resource efficiency are sought. Proposals should be aligned with local priorities.
- ⦿ Organisations working within the Black Country Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Lancashire**

- Pr Lancashire Local Enterprise Partnership
- £5m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- ⦿ Organisations working within the Lancashire Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Tees Valley**

- Pr Tees Valley Local Enterprise Partnership
- £5m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- ⦿ Organisations working within the Tees Valley Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Black Country**

- Pr Black Country Local Enterprise Partnership
- £5m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- ⦿ Organisations working within the Black Country Local Enterprise Partnership area
- 15 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Cheshire and Warrington**

- Pr Cheshire and Warrington Local Enterprise Partnership
- £5m
- ⚙️ This call looks to support a shift towards a low carbon economy. Proposals should be aligned with local priorities which include supporting increased production of renewable energy, promoting energy efficiency in homes, public and commercial infrastructure, whole place low carbon initiatives and more.
- 🎯 Organisations working within the Cheshire & Warrington Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Climate change: call in Cumbria**

- Pr Cumbria Local Enterprise Partnership
- £4.67m
- ⚙️ Proposals relating to climate change adaptation, prevention and management of climate change risks, and promoting investment to address specific risks ensuring disaster resilience and developing disaster management systems.
- 🎯 Organisations working within the Cumbria Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Low Carbon Travel and Transport Challenge Fund**

- Pr Transport Scotland/Energy Saving Trust
- £4.25m
- ⚙️ Projects facilitating the delivery of active travel and low carbon transport hubs in Scottish Highlands & Islands and Lowlands & Uplands.
- 🎯 Public, community & third sector organisations
- 📅 26 Oct – 19 Jan 2018

▼ **Low Carbon: call in Coast to Capital**

- Pr Coast to Capital LEP
- £4m
- ⚙️ This call aims to support the shift towards a low carbon economy. Proposals should address themes such as the production and distribution of energy from renewable sources, promoting energy efficiency, support smart energy management and renewable energy use in public infrastructure or promoting sustainable multimodal urban mobility for example.



▼ **Low Carbon: call in The Marches**

- Pr The Marches Local Enterprise Partnership
- £3m
- ⚙️ This call looks to support a shift towards a low carbon economy. Proposals should be aligned with local priorities.
- 🎯 Organisations working within The Marches Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Swindon and Wiltshire**

- Pr Swindon and Wiltshire Local Enterprise Partnership
- £2.75m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a particular focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- 🎯 Organisations working within the Swindon and Wiltshire Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Environment and Resource Efficiency: call in Cornwall and the Isles of Scilly**

- Pr Cornwall and Isles of Scilly Local Enterprise Partnership
- £2.6m
- ⚙️ Proposals looking to protect and preserve the environment and to promote resource efficiency are sought. Proposals should be aligned with local priorities.
- 🎯 Organisations working within the Cornwall and Isles of Scilly Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Stoke on Trent and Staffordshire**

- Pr Stoke on Trent and Staffordshire Local Enterprise Partnership
- £2m
- ⚙️ This call looks to support a shift towards a low carbon economy. Proposals should be aligned with local priorities.
- 🎯 Organisations working within the Stoke on Trent and Staffordshire Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Coventry and Warwickshire**

- Pr Coventry and Warwickshire Local Enterprise Partnership
- £1.79m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a particular focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- ⊙ Organisations working within the Coventry and Warwickshire Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Climate change: call in Greater Lincolnshire**

- Pr Greater Lincolnshire Local Enterprise Partnership
- £1.75m
- ⚙️ Proposals relating to climate change adaptation, prevention and management of climate change risks, and promoting investment to address specific risks ensuring disaster resilience and developing disaster management systems.
- ⊙ Organisations working within the Greater Lincolnshire Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Information and Communications Technology: call in Sheffield City Region**

- Pr Sheffield City Region Local Enterprise Partnership
- £1.37m
- ⚙️ The aim of this call is to enhance the access to, the use and the quality of information and communication technologies, particularly with regard to extending broadband deployment, and the roll out of high-speed networks, and to develop ICT products and services.
- ⊙ Organisations working within the Sheffield City Region Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Environment and Resource Efficiency: call in Lancashire**

- Pr Lancashire Local Enterprise Partnership
- £1.36m

- ⚙️ Proposals looking to protect and preserve the environment and to promote resource efficiency are sought. Proposals should be aligned with local priorities.
- ⊙ Organisations working within the Lancashire Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Buckinghamshire Thames Valley**

- Pr Buckinghamshire Thames Valley Local Enterprise Partnership
- £1.12m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a particular focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- ⊙ Organisations working within the Buckinghamshire Thames Valley Local Enterprise Partnership
- 📅 8 Dec – 26 Jan 2018

▼ **Low Carbon: call in Swindon and Wiltshire – Resource and Energy Efficient Businesses**

- Pr Swindon and Wiltshire Local Enterprise Partnership
- £1m
- ⚙️ This call looks to support a shift towards a low carbon economy, with a particular focus on promoting energy efficiency and use of renewable energy, as well as promoting research and innovation in low carbon technologies. Proposals should be aligned with local priorities.
- ⊙ Organisations working within the Swindon and Wiltshire Local Enterprise Partnership
- 📅 8 Dec – 26 Jan 2018

▼ **Information and Communications Technology: call in South East Midlands**

- Pr South East Midlands Local Enterprise Partnership
- £1m
- ⚙️ The aim of this call is to enhance the access to, the use and the quality of information and communication technologies, particularly with regard to extending broadband deployment, and the roll out of high-speed networks, and to develop ICT products and services.

- ⊙ Organisations working within the South East Midlands Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **Information and Communications Technology: call in Buckinghamshire Thames Valley**

- Pr Buckinghamshire Thames Valley Local Enterprise Partnership
- £759k
- ⚙️ The aim of this call is to enhance the access to, the use and the quality of information and communication technologies, particularly with regard to extending broadband deployment, and the roll out of high-speed networks, and to develop ICT products and services.
- ⊙ Organisations working within the Buckinghamshire Thames Valley Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **EPIC Challenge Fund**

- Pr Creative England
- £600K
- ⚙️ The EPIC Challenge Fund is open to small and medium-sized enterprises (SMEs) operating in Cornwall and the Isles of Scilly looking to engage in the digital health market.
- ⊙ Local SMEs
- 📅 01-Nov 2018 – May 2020

▼ **Environment and Resource Efficiency: call in the Marches**

- Pr Marches Local Enterprise Partnership
- £500K
- ⚙️ Proposals looking to protect and preserve the environment and to promote resource efficiency are sought.
- ⊙ Organisations working within the Marches Local Enterprise Partnership area
- 📅 8 Dec – 26 Jan 2018

▼ **CSGN Development Fund**

- Pr Central Scotland Green Network (CSGN) Trust
- £400k
- ⚙️ Projects promoting active travel, woodland planting, community growing and restoring land in the central belt.
- ⊙ Organisations within the CSGN area
- 📅 10 Nov – 5 Feb 2018



Fund



Provider



Value



Purpose



Target



Date

▼ **SBRI: electric vehicle charging, sustainable energy solutions**

- Pr City of Edinburgh Council
- £20k per project
- ⚙️ The aim of this competition is to support the development of an integrated and scalable low carbon EV charging solution.
- 👤 Organisations of any size
- 📅 4 Dec – 7 Feb 2018

EUROPEAN FUNDING PROGRAMMES OPENED THIS QUARTER
TOTAL: €365M
 (£320.6M AT TIME OF WRITING)

▼ **5G End to End Facility**

- Pr European Commission
- €60m
- ⚙️ The objective is i) to validate the 5G network KPIs through representative network trials, as defined by the 5G PPP; ii) to prepare an extensive validation platform for vertical use cases.
- 👤 3+ entities established in participating states
- 📅 31 Oct – 31 Jan 2018

▼ **5G for cooperative, connected and automated mobility (CCAM)**

- Pr European Commission
- €50m
- ⚙️ The challenge is to qualify 5G as a core connectivity infrastructure to address vehicle-to-everything (V2X), both from a technological and business perspective, for the higher automation levels (4, 5) defined by the automotive industry (SAE) and for new mobility services. It supports the realisation of the strategic objective of having all major transport paths covered by 5G connectivity in 2025 through cross-border trials along roads planned for CCAM deployment (“5G corridors”

- 👤 3+ entities established in participating states
- 📅 31 Oct – 17 April 2018

▼ **Smart Cities and Communities**

- Pr European Commission
- €43m
- ⚙️ Integrated innovative solutions for Positive Energy Blocks/Districts will be developed and tested and performance-monitored in the Lighthouse Cities. Projects will consider the interaction and integration between the buildings, the users and the larger energy system as well as implications of increased electro-mobility, its impact on the energy system and its integration in planning.
- 👤 3+ entities established in participating states
- 📅 5 Dec – 5 April 2018

▼ **Demonstrating systemic urban development for circular and regenerative cities**

- Pr European Commission
- €39m
- ⚙️ Actions should demonstrate how cities can be transformed into centres of circular innovation and stimulate regenerative practices in both urban and peri-urban areas (including the surrounding industrial areas and commercial ports). Two-stage application.
- 👤 At least four cities from participating states
- 📅 7 Nov – 27 Feb 2018

▼ **Building information modelling adapted to efficient renovation (RIA)**

- Pr European Commission
- €35m
- ⚙️ Solutions to deploy attractive tool kits also for existing buildings. A particularly important challenge will be to produce compatible tools that would allow the collection of data from existing buildings (e.g. geometric data) and exploit data from different sources. This will also contribute to more accurate knowledge of the existing building stock by providing methods and tools to generate data for existing buildings. Such BIM tools will be exploited first and foremost in existing residential buildings.

- 👤 3+ entities established in participating states
- 📅 31 Oct – 22 Feb 2018

▼ **InCo flagship on reduction of transport impact on air quality**

- Pr European Commission
- €30m
- ⚙️ Proposals to address one of a range of subtopics including sensing and monitoring emissions in urban road transportation systems. All actions to contribute to UN SDG 3 (ensuring healthy lives and promoting wellbeing at all ages) and SDG 11 (making cities and human settlements inclusive, safe, resilient and sustainable). Two-stage competition.
- 👤 3+ entities established in participating states
- 📅 31 Oct – 30 Jan 2018

▼ **Integrated system innovation in valorising urban bio-waste**

- Pr European Commission
- €20m
- ⚙️ Proposals shall focus on an integrated system innovation approach in urban bio-waste recycling and valorisation to produce high-value bio-based products, including proteins for food and feed. Proposals shall ensure the full integration of the upgraded urban bio-waste value chain into the existing local waste/wastewater management schemes.
- 👤 3+ entities established in participating states
- 📅 31 Oct – 13 Feb 2018

▼ **Digital solutions for water: linking the physical and digital world for water solutions**

- Pr European Commission
- €14m
- ⚙️ Actions should develop and test new, robust and cybersecure systems, linking the physical and digital world to ensure tailored, water-smart solutions, to exploit the value of data for the water sector and to foster higher information transparency and accountability. Two-stage application.
- 👤 3+ entities established in participating states
- 📅 7 Nov – 27 Feb 2018



▼ **Sustainable multi-modal inter-urban transport, regional mobility and spatial planning**

- Pr European Commission
- €12m
- ⚙️ Research will provide cities, regional and national authorities and spatial planners with evidence of long term impacts of innovative transport technologies and business models. It will aid decision makers to better anticipate and plan necessary investments, adaptation and spatial re-design strategies in view of taking full advantage of the new forms of mobility for improving competitiveness, sustainability, social cohesion, equity, and citizen well-being. Research will also contribute to devising transport planning strategies that contribute to a balanced development between urban and rural areas.
- 👤 3+ entities established in participating states
- 📅 31 Oct – 30 Jan 2018

▼ **Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility**

- Pr European Commission
- €11m
- ⚙️ Research and Innovation Action (RIA) examining the impacts of new mobility solutions addressing the changing mobility patterns and set up of mobility services, including possible negative effects in all relevant transport modes in urban & peri-urban areas regarding passenger and freight transport. Two-stage application
- 👤 3+ entities established in participating states
- 📅 31 Oct – 30 Jan 2018

▼ **Strengthening international cooperation on sustainable urbanisation: nature-based solutions for restoration and rehabilitation of urban ecosystem**

- Pr European Commission
- €10m
- ⚙️ Actions should develop models, tools, decision support systems, methodologies, strategies, guidelines, standards and approaches for the design, construction, deployment and monitoring of nature-based solutions and restoration, prevention of further degradation, rehabilitation and maintenance measures for urban and peri-urban ecosystems and the ecological coherence and integrity of cities.
- 👤 3+ entities established in participating states & Chinese or CELAC partners
- 📅 7 Nov – 27 Feb 2018

▼ **Transformative impact of disruptive technologies in public services**

- Pr European Commission
- €9m
- ⚙️ The challenge is to assess the potential benefits and risks of using disruptive technologies in public administrations as well as the social impact, including the impact on public servants, of using them for government processes and governance.
- 👤 3+ entities established in participating states
- 📅 7 Nov – 13 Mar 2018

▼ **EU-China 5G Collaboration**

- Pr European Commission
- €6m
- ⚙️ The next phase of 5G activities running during the 2018-20 period is expected to cover, both in EU and in China, technologies and systems demonstrations and trials. The challenge is hence to demonstrate technologies and system interoperability for a number of core applications of interest in the two regions.
- 👤 3+ entities established in participating states
- 📅 31 Oct – 31 Jan 2018

▼ **Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data**

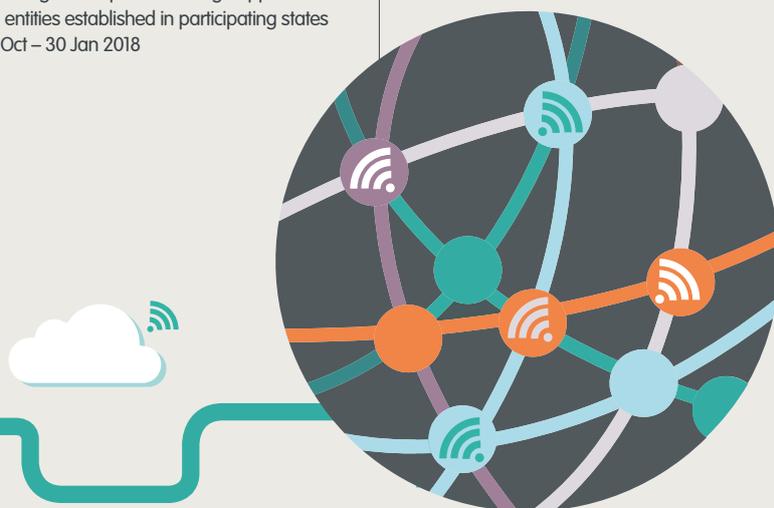
- Pr European Commission
- €6m
- ⚙️ Research should focus on the development of testing and validation procedures of highly automated driving functions for different use cases in various traffic scenarios, including cross-border travelling. Proposed solutions shall seek broad consensus and agreement among involved stakeholders across the value chain.
- 👤 3+ entities established in participating states
- 📅 31 Oct – 4 April 2018

▼ **Support for networking activities and impact assessment for road automation**

- Pr European Commission
- €6m
- ⚙️ Research & Innovation Action to support the deployment of automated driving systems at European and international level through the assessment of impacts, benefits and costs of connected, cooperative and automated driving systems.
- 👤 3+ entities established in participating states
- 📅 31 Oct – 4 April 2018

▼ **Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility**

- Pr European Commission
- €3m
- ⚙️ Proposals should address the facilitation of knowledge exploitation and support to the cooperation between projects and stakeholders in the Research and Innovation Action (RIA) of this call.



⊙ At least one legal entity in a participating state
 15 31 Oct – 4 April 2018

▼ **Support for networking activities and impact assessment for road automation**

Pr European Commission
 ● €3m
 ⚙ Coordinated Support, Research & Innovation Action to support the deployment of automated driving systems at a European and international level through networking activities to support connected, cooperative and automated driving.
 ⊙ At least one legal entity in a participating state
 15 31 Oct – 4 April 2018

▼ **EU-US Collaboration for advanced wireless platforms**

Pr European Commission
 ● €2m
 ⚙ To establish collaborative transatlantic work on advanced wireless platforms addressing the use of new ranges of frequencies from mm wave bands up to Terahertz bands, massive antenna arrays, new radio and signal processing techniques, optimised new usage of Spectrum and platform or testbeds for experimental research. Coordination & Support Action.
 ⊙ At least one legal entity in a participating state
 15 31 Oct – 17 April 2018

▼ **Innovative solutions for inclusive and sustainable urban environments**

Pr European Commission
 ● €1.5m
 ⚙ The challenge is to identify the main drivers of inequalities in different urban and peri-urban contexts and to identify best practices and initiatives, including digital solutions and alternative participatory growth models, with potential for upscaling that can promote upward social mobility, social inclusion and cohesion, resilience and sustainable development. The Urban Research Platform should bring together researchers, policy-makers and other experts on equitable, inclusive and sustainable urban development.
 ⊙ At least one legal entity in a participating state
 15 7 Nov – 13 Mar 2018

▼ **New forms of delivering public goods and inclusive public services**

Pr European Commission
 ● €1.5m
 ⚙ In the context of open government and digital democracy, the role of the government is changing due to its use of ICT and to the increasing pervasiveness of ICT across all parts of society. Coordination and Support Action for cost efficient provision of inclusive digital services. Solutions for opening-up and connecting public administration data and services will have a measurable impact for both businesses and citizens, leading to efficiency gains.
 ⊙ At least one legal entity in a participating state
 15 7 Nov – 13 Mar 2018

▼ **Coordinating national efforts in modernizing transport infrastructure and provide innovative mobility services**

Pr European Commission
 ● €1m
 ⚙ It is urgent to find innovative solutions to upgrade transport infrastructure ensuring an adequate performance level that also reflects vehicle and ICT developments. National transport authorities are facing a change in their role from infrastructure managers to service providers and a number of relevant activities are being carried out at national and international level. A close collaboration between these activities is necessary to ensure coherence at a European level, and to avoid duplication of efforts and resources.
 ⊙ At least one legal entity in a participating state
 15 31 Oct – 4 April 2018

▼ **Cities as a platform for citizen-driven innovation**

Pr European Commission
 ● €1m
 ⚙ Proposals should capture successful innovative practices that are emerging in Europe particularly from those urban areas that effectively absorb, develop and create new knowledge and ideas, and turn this knowledge into social & economic development.
 ⊙ At least one legal entity in a participating state
 15 7 Nov – 13 Mar 2018

▼ **Restricted call for proposals: Ensure the highest level of protection of privacy and personal data**

Pr European Commission
 ● €1m
 ⚙ Supporting national Data Protection Authorities on reaching out to business and citizens
 ⊙ Legal entities established in the EU
 15 24 Oct 2017 – 25 Jan 2018

**PRIVATE SECTOR FUNDING
 TOTAL: £1.1M**

▼ **Sustainable Development Fund – Highland Region**

Pr SSE
 ● £1m
 ⚙ Projects which take a longer-term view by delivering transformational social, economic and/or environmental changes in the community and develop sustainable ventures for the future.
 ⊙ Organisation working within relevant Scottish local authority areas.
 15 25 Oct – 31 Jan 2018

▼ **Active Ageing Challenge**

Pr Centrica
 ● £100K
 ⚙ Global start-up challenge to explore the role technology can play in facilitating and aiding independent living as we age. Start-ups are invited to come to a Pitch Day where the best will win investment.
 ⊙ Global start-ups
 15 15 Dec – 5 Feb 2018



PUBLIC SECTOR TENDERS ADVERTISED

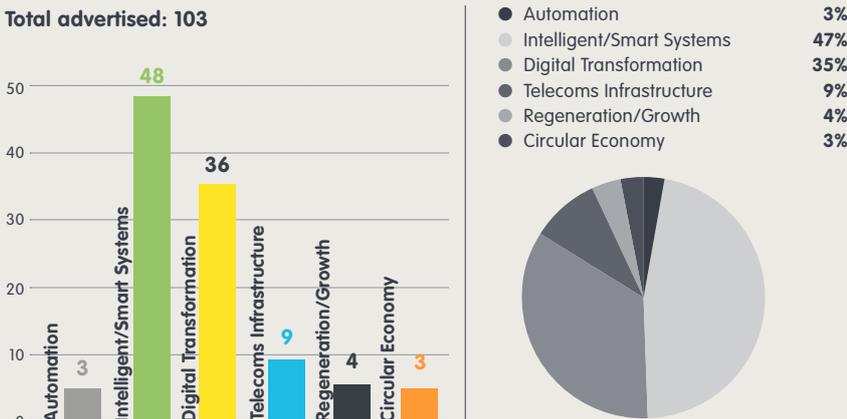
As in the previous quarter, the largest proportion of UK public sector tenders in the advanced urban services sector are in relation to intelligent systems, that exploit sensors and analytics to respond to environmental stimuli in real time. However, the number of procurements related to intelligent systems has fallen by 25% compared to last quarter.

The largest value of UK public sector tenders is in telecoms infrastructure, driven by a large tender of £600m from the Scottish Government for Next Generation Access Broadband Infrastructure.

NUMBER OF TENDERS ADVERTISED Q1

Percentage of total (rounded to whole number)

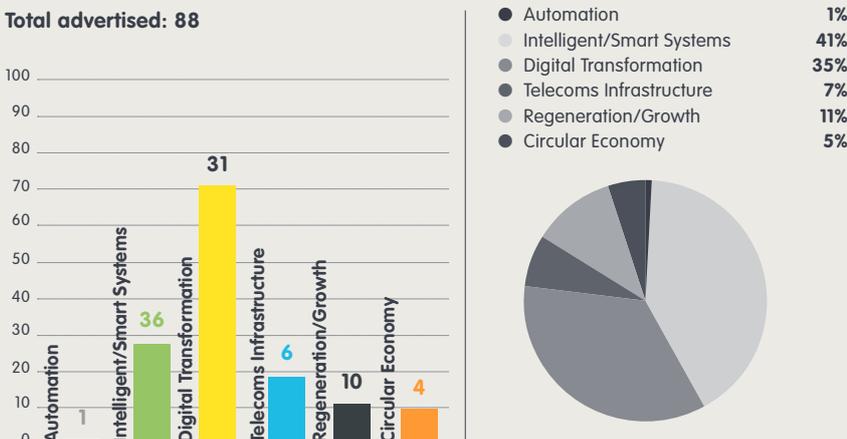
Total advertised: 103



NUMBER OF TENDERS ADVERTISED Q2

Percentage of total (rounded to whole number)

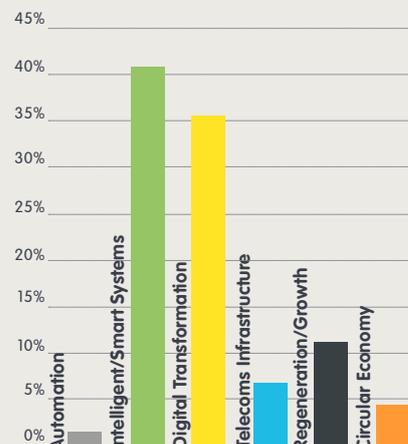
Total advertised: 88



Category	Number of tenders where the value (budget) is stated	Total value (budget), where stated*
Automation	0	£0
Intelligent / Smart Systems	29	£49.7m
Digital Transformation	27	£88.8
Telecoms Infrastructure	6	£662.5m
Regeneration & Growth**	7	£38.2m
Circular Economy	4	£0.7m
Total	73	£839.9m

*Rounded to the closest 100,000
 **Note – 'Growth' has been added to the regeneration category to better represent and capture tenders related to innovative approaches to encourage economic growth.

TENDERS IN EACH CATEGORY



NOTABLE APPOINTMENTS

September 2017 – January 2018



Chief Digital and Information Officer, HMRC

Jacky Wright

Chief Executive for Transport for the North

Barry White

Chair of Digital Technologies Skills Group, Scotland

Donald McLaughlin



Chief Digital, Data, & Technology Officer, Home Office

Joanna Davinson

Vice President – World Energy Cities Partnership

Barney Crockett

Managing Director, Bristol is Open

Julie Snell



Cabinet Secretary for Local Government – Welsh Government

Alun Davies

Project Director – 5G North East

Xavier Priem



Commissioner- London Sustainable Development Commission (LSDC)

Maria Adebawale-Schwarte, Syed Ahmed, Sarah Chare, Anna Coote, David Elliott, Samantha Heath, Julie Hirigoyen, Nick Mabey, Malini Mehra, Dimitri Zenghelis

Bristol City Council- Cabinet Member for Energy, Waste and Regulatory Services

Kye Dudd

Chair of the Board – Zero Waste Scotland

Vic Emery

Non-Executive Director – Zero Waste Scotland

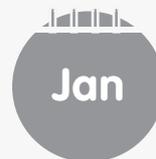
John Watt, Morag MacDonald, Gerard O'Sullivan, Janet Swadling, and Helen Wollaston

Chief Executive – Birmingham City Council

Dawn Baxendale

Director of Housing and Regeneration – West Midlands Combined Authority

Gareth Bradford



Chair of the Office of Rail and Road

Professor Stephen Glaister CBE

Director Corporate and Commercial, Royal Borough of Kingston-upon-Thames

Sarah Ireland

Director for Growth, Royal Borough of Kingston-upon-Thames

Nazeya Hussain

Director for Communities, Royal Borough of Kingston-upon-Thames

Stephen Evans

Interim Chief Executive, D2N2 LEP

Matthew Wheatley

Environment Agency Board

Judith Batchelar OBE, Robert Gould, John Lelliott OBE, Caroline Mason CBE, Lynne Frostick and Gill Weeks OBE

Chair of UK Research and Innovation

Sir John Kingman

EVENTS LAST QUARTER

September 2017 – January 2018

A new addition to the *City Innovation Brief*, this section highlights events pertinent to advanced urban services that took place this quarter. Three mayoral city regions (Liverpool, West Midlands and Greater Manchester) held their own digital/tech summits throughout the quarter as cities continue to pursue and foster digital innovation.

Smart Cities Live

- 📍 London
- 👤 Go.Konnect
- 📅 12th-13th September

Digital Transformation in Housing

- 📍 London
- 👤 ESRI UK
- 📅 19th September

Smart Summit

- 📍 London
- 👤 Smart Summit
- 📅 19th-20th September

Britain's Smart Cities Conference

- 📍 London
- 👤 The Telegraph
- 📅 10th October

Digital Construction Week

- 📍 London
- 👤 Digital Construction Week
- 📅 18th-19th October

Digital Summit

- 📍 Liverpool
- 👤 Liverpool City Region
- 📅 19th October

UK Smart Cities Index

- 📍 London
- 👤 Huawei/Navigant
- 📅 23rd October

BIN@Sheffield

- 📍 Sheffield
- 👤 The University of Sheffield
- 📅 30th October – 1st November

UrbanTech Summit

- 📍 Birmingham
- 👤 West Midlands Combined Authority
- 📅 6th November

Innovate 2017

- 📍 Birmingham
- 👤 Innovate UK
- 📅 8th-9th November

Smart Cities and Communities: Connecting Citizens

- 📍 London
- 👤 Open Forum Events
- 📅 9th November

Make:Shift 2017

- 📍 Wolverhampton
- 👤 Wolverhampton City Council
- 📅 11th November

Robots. Routes. Revenue.

- 📍 Rainham
- 👤 South East Local Enterprise Partnership
- 📅 21st November

hAQUAthon 2017

- 📍 London

- 👤 Future Cities Catapult
- 📅 22nd-23th November

How to navigate the NHS for digital health innovators: GIANT Health Event: Day 1

- 📍 London
- 👤 Digital Health London
- 📅 28th November

Local Authorities and Smarter Traffic Management Day

- 📍 Birmingham
- 👤 The IET
- 📅 28th November

The Edge 2017: the robots are coming!

- 📍 London
- 👤 Housing Quality Network
- 📅 29th November

Manchester-I launch

- 📍 Manchester
- 👤 University of Manchester, Manchester City Council, and Clicks & Links
- 📅 29th November

Smart Cities and Planning: New Urban Agenda, New Urban Analytics

- 📍 London
- 👤 UCL Centre for Advanced Spatial Analysis
- 📅 29th-30th November

Art of Possible: Internet of Things Trends & Futures

- 📍 Glasgow
- 👤 The Art of Possible
- 📅 30th November

Open data in a day

- 📍 London
- 👤 The Open Data Institute
- 📅 4th December

All Aboard! Bus Open Data Workshop

- 📍 Leeds
- 👤 ODI Leeds
- 📅 6th December

GM Digital and Tech Summit

- 📍 Manchester
- 👤 Greater Manchester Combined Authority
- 📅 8th December

HS2 Hackathon

- 📍 Milton Keynes
- 👤 Transport Systems Catapult
- 📅 8th December

21st century Digital Design

- 📍 Sheffield
- 👤 University of Sheffield
- 📅 11th December

Digital Healthcare Transformation Summit

- 📍 London
- 👤 Digital Healthcare Transformation Summit
- 📅 12th-13th December

Sharing health and care records: designing IT systems around your local population's needs

- 📍 Leeds
- 👤 King's Fund
- 📅 13th December

Festive Tech Tour

- 📍 Manchester
- 👤 Future Everything
- 📅 14th December

Mayor of London's TechInvest Programme

- 📍 London
- 👤 Mayor of London/UK Business Angels' Association
- 📅 18 January 2018



Location



Organiser



Date



Focus on: Public Realm

This edition of the *City Innovation Brief* covers policies and initiatives focussing on improving and managing the public realm through advanced urban services and innovation.

The public realm encompasses external space in cities that is open to everyone, including green space. Public realm represents the spaces where cities are consumed, understood and experienced by citizens. A well designed and maintained public realm benefits cities and their citizens by contributing to the quality and performance of the built environment.

High quality spaces are a fundamental part of sustainable urban development, helping to achieve a multitude of economic, environmental and social benefits. Valuing the public realm is challenging given the range of non-market benefits. Although a range of methods can be used such as looking at benefits to pedestrians or house prices. Social value can increase through enhanced civic pride and sense of place, improved health and wellbeing, and safer mobility.

What do cities currently do?

As cities continue to grow, public spaces will be placed under increasing pressure, with threats to their civic quality and accessibility. Smart innovations to improve public realm management can be found around the UK.

Smart litter management solutions improve streetscape cleanliness and the efficiency and impact of services. For example, the London Borough of Croydon has used the Bigbelly smart waste system to cut bin collections from 10,000 to 2,600. Innovative behaviour change campaigns can help reduce litter in cities. The 'For Fish's Sake' campaign in London used real-world games, artwork and tactile information desks along the River Thames to educate citizens to reduce the amount of litter in the river. A similar campaign in Edinburgh uses a 'ballot bin' to discourage smokers from discarding cigarette butts on the ground asking them to 'vote' on local issues.

Robots are automating maintenance and collecting environmental data to improve city landscapes and offer insight on the health of urban public spaces. Edinburgh and London for example were part of a 2017 global robotic lawnmower pilot focused on improving maintenance and sustainability in parks. ▶

Smart litter management solutions improve streetscape cleanliness and the efficiency and impact of services.



“A city’s public realm is its biggest asset, but the last time technology was integrated into our streets we redesigned them with dual carriageways, slip roads and roundabouts for cars. This time round, we need to ensure that technology builds on what has made cities great for thousands of years and ensure that our public spaces will continue to be a catalyst for human interaction.”

Euan Mills, City Planning Lead

77%

Local councils are expected to see a core-funding shortfall of 77% by 2020.

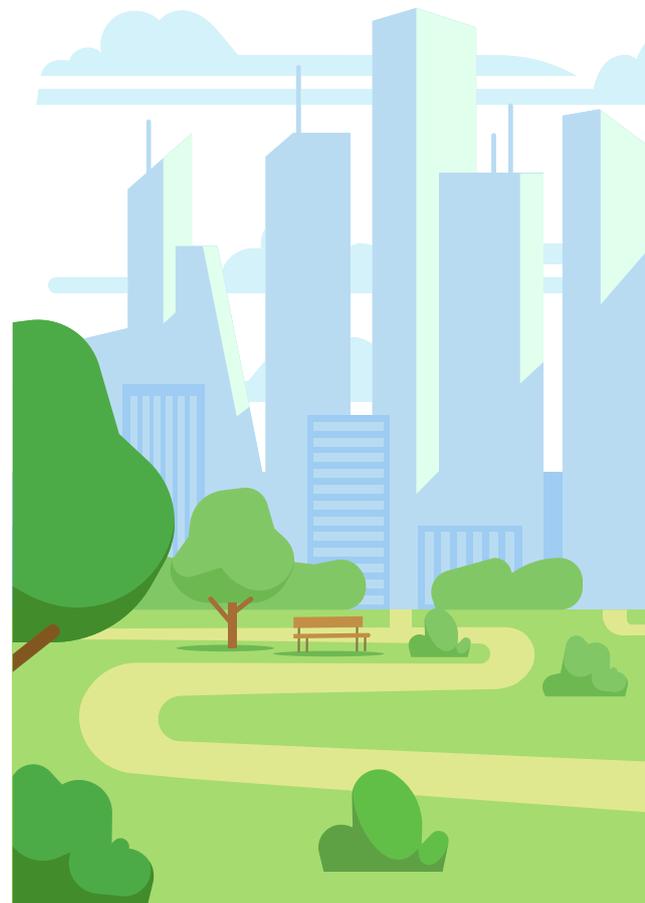
Immersive and interactive technologies can promote tourism and enhance citizen experiences in the public realm. Manchester City Council in collaboration with CityVerve, used augmented reality through its ‘Buzzin’ app to provide interactive and engaging content for visitors to the city’s Christmas markets. Stirling Council has deployed interactive Smart Screens to engage with tourists and residents by providing real-time information. The screens have also been used to provide businesses with advertising opportunities. Twenty solar-powered smart benches have been installed in London, providing a hub where the public can charge devices and access free wi-fi.

Permeable paving and tree pits are being used in a residential area of Bristol to improve drainage and reduce excess ‘ponding’ of rainwater and surface runoff as well as filtering and treating the water before it is controllably released into the local sewer system.

Newcastle’s Science Central has one of the UK’s tallest living walls as a world-leading example of urban sustainability focused on increasing local biodiversity. The wall contains more than 35,000 plants, bee hotels and a linked irrigation system. Similarly, Marks and Spencer located in the city’s major shopping street, has installed a living wall

comprising 16,000 native plant species. The wall has been designed to provide insulation and a source of nectar for butterflies and bees and seeds for birds in the city centre.

There are innovative responses to safety issues in public spaces. In London, the trial of a world-first responsive Smart Crossing was unveiled in 2017, aimed at tackling incidents between vehicles, cyclists ▶





A new version of the Greater London Authority London Infrastructure Mapping application, brings together data from various boroughs, utilities and developers to support improved planning, delivery and coordination of infrastructure projects.

and pedestrians. Meanwhile, plans have been announced to transform the western section of Oxford Street into a traffic-free pedestrian boulevard in a bid to make the area cleaner and safer.

Glasgow's Future Cities Demonstrator installed intelligent street lighting to improve safety throughout the city. In-built sensors react to citizen movements; brightening to provide a sense of security and greater visibility in open spaces, cycle paths, and streets. The lights also collected data on footfall, traffic flow, noise and air quality.

Digital platforms and tools can offer a means to improve planning and service delivery in public spaces. A new version of the Greater London Authority London Infrastructure Mapping application, brings together data from various boroughs, utilities and developers to support improved planning, delivery and coordination of infrastructure projects. Newcastle University's Urban Observatory has deployed sensors across the city to monitor environmental conditions in real-time and collect data for long-term analysis.

In Sheffield the 'Shmapped' app prompts citizens to catalogue positive things observed in their surroundings through maps, notes and photos, as they experience them. The app is enabling researchers to precisely identify

which locations and characteristics have a positive impact.

Challenges and opportunities

Local councils are expected to see a core-funding shortfall of 77% by 2020 which could position development of public realm as a low priority. Meanwhile projections to 2036 show that urban areas are expected to experience the strongest growth in the number of people over 65 requiring cities to ensure the design and accessibility of public realm supports demographic change.

Maintaining local heritage and local distinctiveness can be challenging because the use of bespoke materials with a historical association may be expensive, whilst developments can face local opposition from residents who perceive that local heritage is being damaged. Conflict can exist around the increase in reported privately owned 'quasi-public' space which place restrictions and limitations on citizen behaviour. In response, in November 2017 the Mayor of London announced a new charter regulating the management of privately owned public spaces and setting out the rights and responsibilities for users and owners.

Some urban services lead to both opportunities and challenges, especially around urban mobility. For example, the role of taxi ▶



£22.8m

A £22.8m support package announced in September 2017 will enable communities to develop Neighbourhood Plans, allowing citizen contributions on the locations and aesthetics for homes, shops, green spaces and offices.



“When developing solutions for the public realm, we should always bear in mind who the beneficiaries are. Developing services using an agile approach is a technique rooted in experimentation and incremental development. Citizen-focused and test-driven approaches ensure that the end scenario is one that has been tested with the public along the way, and not just imposed upon them.”

Yalena Coleman, City Experimentation Lead, Future Cities Catapult

platform companies such as Uber has been debated during the last year. Similarly, the roll-out of dockless bike sharing such as Mobike or Ofo has increased sustainable urban mobility options across several UK cities, but has prompted the Department for Transport to convene a meeting between local authorities and bike sharing companies to develop national standards and codes of conduct.

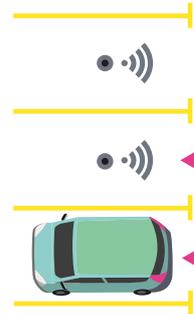
There are increasing opportunities for citizen-focused approaches being developed to ensure local communities are engaged in the development of their area. A £22.8m support package announced in September 2017 will enable communities to develop Neighbourhood Plans, allowing citizen contributions on the locations and aesthetics for homes, shops, green spaces and offices. There is considerable potential in combining local authority data, with high computing power and 3D or VR visualisation to help conceptualise and model future spaces. The Greater Manchester Open Data Infrastructure Map for example aggregates water and transport networks, property prices and brownfield land; providing an overview of physical, social and environmental infrastructure to



The roll-out of dockless bike sharing such as Mobike or Ofo has increased sustainable urban mobility options across several UK cities.

support interactive town planning. Though it has been suggested that development of common data standards could help facilitate such processes.

As seen in London’s Old Oak and Park Royal Local Development Corporation Smart Strategy emerging cross-cutting technologies such as dynamic street markings, connected devices, localised energy generation and autonomous vehicles are growing opportunities as the public realm becomes a key focus of smart cities.



Localised energy generation and autonomous vehicles are growing opportunities as the public realm becomes a key focus of smart cities.

City Insights

In this quarter of *City Innovation Brief*, we interviewed four cities across the UK who discussed their urban challenges, their engagement with national policy and the way in which innovation is driving creative solutions to a variety of problems. From Aberdeen in the northeast of Scotland, to Exeter in the southwest of England, via Leeds and Coventry, our cities ranged in size, economies, level of devolution and future aims and ambitions. Yet there were many common urban challenges and solutions, allowing for new ideas to be shared between our cities.

Contributions were gratefully received from:

Simon Brereton, Head of Economic Policy, Sector Development and Innovation, Leeds City Council.

Victoria Hatfield, Economy and Enterprise Manager, Exeter City Council.

Sarah Windrum, Board Director, Coventry and Warwickshire Local Enterprise Partnership and Board Member, West Midlands Combined Authority.

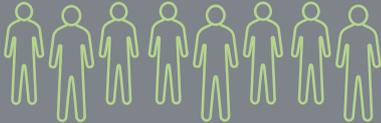
Gordon Wright, Digital Economy Manager, Aberdeen City Council.



Leeds

Population:

774,000 (2015)



Percentage working age population with NVQ4+ level qualifications:

33%
(2015)

Welfare spend per capita:

£3,157

(41/62) (2014/15)

Percentage of high growth SMEs:

12.4%



Challenges

Aging population

Enabling better coordination of health and social care services and supporting people to stay in their homes for longer.

Air quality

Improving the monitoring of air quality across the city and translating data into relevant policy changes and actionable interventions.

Workforce skills

Upskilling the local workforce to capture the opportunities presented by a rapidly growing knowledge intensive business sector through catalysing adult learning and creating an aspirational learning culture.



Local innovation

Open data platform

Leeds Data Mill, now Data Mill North, brings together open data from multiple sectors and enables the development of new service solutions.

Leeds Care Record

A system that provides health and social care practitioners with an integrated view of patient information.

LED Street Lighting

Cost savings have enabled the city to abandon its energy-saving policy of turning off 8,000 street lights between midnight and 5:30am.

City-wide 5G network

The city owns 20% of the local housing stock (57,000 homes) including tower blocks. They are investigating whether these could be used to host a future 5G network.

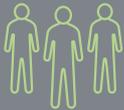
Assisted Living Leeds Innovation Lab (ALL IN)

The lab enables innovators and solution developers to connect with end users and health and social care professionals.

Exeter

Population:

128,800 (2017)



Percentage working age population with NVQ4+ level qualifications:

41.8%

Welfare spend per capita:

£2,836

(55/62) (2014/15)



Percentage of high growth SMEs: Not available

Challenges

Congestion

Alleviating city-wide congestion caused by a growing population and a growth economy, high numbers of commuters and limited scope for road network changes.

Limited land for development

Identifying new development sites and repurposing existing space for new housing and business premises.

Inclusive growth

Ensuring that all residents benefit from the high levels of growth being experienced by the city by increasing levels of adult education and addressing inequalities caused by gentrification.

Local innovation

Air quality

The City Council now purchases electric vehicles as part of their fleet replacement programme. Having already invested in a fleet of electric cars and vans, which currently represents 12% of the total fleet, the city is actively looking at electric refuse collection vehicles.

Passivhaus building standard

Passivhaus is the world's first fabric first approach to low energy buildings. With the aim of tackling fuel poverty, improving social mobility and providing the residents of Exeter with modern, warm and secure homes, the City Council have a policy to build new council houses to Passivhaus standards.

Exeter City Futures Community Interest Company (CIC)

The CIC works with communities in Exeter to set challenges that focus on the city becoming congestion free and energy independent by 2025. Innovators are invited to submit proposals and successful applicants are placed on an intensive programme to bring their idea to market.

Active health

Exeter and neighbouring Cranbrook were successful in winning a share of Sport England's £100m fund to develop new approaches to tackling inactivity. The ground-breaking pilot focuses on breaking down the barriers that stop people getting active such as poor transport, safety, cost and confidence.

Coventry & Warwickshire LEP/ West Midlands Combined Authority

Population:

352,900 (2016)



Percentage working age population with NVQ4+ level qualifications:

29.5%
(2015)

Welfare spend per capita:

£3,284

(34/62) (2014/15)

Percentage of high growth SMEs:

11.2%



Challenges

Workforce skills

In line with the challenges experienced by the previous cities, upskilling the local workforce to capture the opportunities presented by rapid economic growth.

Physical and Digital Infrastructure

Understanding how to manage the movement of people and goods through the region and how new infrastructures such as High-Speed Two (HS2) can support this movement.

Social care and mental health

Providing more efficient, lower cost health and care services, while also gaining a better understanding of the needs of those using services.

Local innovation

CovJam Platform

In partnership with IBM, the portal enables residents to say what they like and dislike about the city. This has led to the creation of some novel solutions in response to city problems, such as the need to improve navigation. ▶

“Situated at the heart of the UK, in the West Midlands we have a unique challenge and opportunity as the centre through which people and things move. The innovative thinking in Coventry is focused on evaluating when people and things need to move, how we move them most efficiently, and what investment and infrastructure we need. With the City of Culture in 2021 and the Commonwealth Games in 2022, we are keen to share best practice across our own region and with other Smart Cities to deliver our vision for the future.”

Sarah Windrum CEO The Emerald Group
CWLEP Board Director, WMCA Digital Board



Urban Technology Challenge

Focused on well-being, digital citizenship, housing and youth unemployment, the challenge gives £10k grants to SMEs along with the promise of a four-month pilot with the Combined Authority for successful applicants.

Transport technology testing

The region plays host to a number of transport technology projects and testing infrastructures, including the UK Central Connected and Autonomous (CAV) test bed and the UK CITE and UK Autodrive CAV development projects.

Energy Innovation Zones (EIZs)

The concept of EIZs has been developed in the West Midlands to provide the missing link within the UK innovation ecosystem for energy. The zones will provide opportunities to deploy energy innovations commercially and as part of an integrated system at a scale customers can relate to.

Creative R&D clusters

The LEP has created a strategy which seeks to promote movement of innovation out of universities and into less productive traditional supply chains who may not engage with the innovation or digital agendas.

Fibre network expansion

An expression of interest for full-fibre funding for the whole region has been submitted to central government. This is the first time all local authorities in the region have worked together to submit a joint expression of interest.



Aberdeen

Population:

230,000 (2016)



Percentage working age population with NVQ4+ level qualifications:

46.5%
(2016)

Welfare spend per capita:

£2,513

(60/62) (2014/15)



Percentage of high growth SMEs:

13.5%

Challenges

City Regeneration

Completing major infrastructure programmes including the £1.5 billion city centre masterplan vision (that will drive widespread social and economic change), the £745m Aberdeen Western Peripheral Route (that aims to change the transport dynamic around and across the city) and the £333m Aberdeen Exhibition and Conference Centre, Art Gallery Extension and Music Hall renovation

Budget Shortfall

Continuing to provide services in the face of budget restrictions. This is leading the council to innovate through the creation of a designated smart cities team and the appointment of PwC as their digital partner.

Diversification of skills and jobs

Having traditionally relied on the oil and gas industry, the city is now trying to address the lack of diversity in the workforce by retaining graduate talent.

SME growth

Catalysing small business growth through the provision of co-working spaces and accelerators.

Local innovation

Hydrogen Buses

Aberdeen boasts the largest fleet of hydrogen bus in the UK. Capabilities were developed through a £20m

partnership with industry other public-sector actors.

Sustainable urban mobility

Aberdeen is a lighthouse city in the European Commission's PORTIS project, which aims to show that sustainable urban mobility can increase functional and social cohesion between city centres and ports.

City-wide 5G Wireless:

The City has partnered with industry to deploy Europe's first fibre-connected multiple operator small cell network. Work underway will establish this as the most technically advanced such system globally. This network delivers greater wireless speeds, more bandwidth and will pave the way towards a city-wide 5G network in the future.

City Wireless

Dialogue and consultation is underway to support shared ownership and a single point of engagement to deliver consistent and sustainable wifi across the city, including community ownership models in our neighbourhoods.

Aberdeen Renewable Energy Group

Launched in 2001, the group is an innovative public-private, not for profit partnership that promotes and delivers large renewable energy projects.

Intelligent Street Lighting

Aberdeen is one of four Scottish Cities that has received an ERDF grant to pilot intelligent street lighting infrastructure.

INSIGHTS THEME 1: DATA SHARING

A shared priority of the cities is the desire to use data to gain insights about the operation of services and the needs of citizens, in order to better target scarce resources. While initial efforts have focused on the use of council data to improve council-run services, cities are increasingly finding that access to multiple public and private datasets is required to produce a complete picture of needs and to enable collaborative action. For example, to be able to better coordinate health and social care



Cities are finding that access to multiple public and private datasets is required to produce a complete picture of needs.

services, data is required from not only the local authority, but also multiple NHS organisations, universities and private healthcare providers.

The cities have found that by utilising impartial actors, such as the Open Data Institute, access to datasets owned by diverse organisations can be more easily brokered as the central platform is not owned by any one city entity. The use of impartial actors has delivered other benefits including enabling the expansion of data hosting platforms across multiple cities and imposing the use of common data formats and quality standards.

In addition to sharing data between stakeholders, cities were also keen to open data in order to allow external parties to create tools and services. The cities stated that open data policies had led to the creation of SMEs around these digital infrastructures. While open data has been accepted as a valuable and worthwhile activity, funding and delivery models still need to be developed to enable continued operation and to ensure the quality and relevance of data is maintained.

In one city, the opening of datasets was seen to reduce the number of freedom of information requests received. This reduction in effort led to cost savings which could be reallocated to fund open data initiatives.

INSIGHTS THEME 2: GOVERNANCE

Each city has a different relationship with central government, which brought about various benefits and challenges.

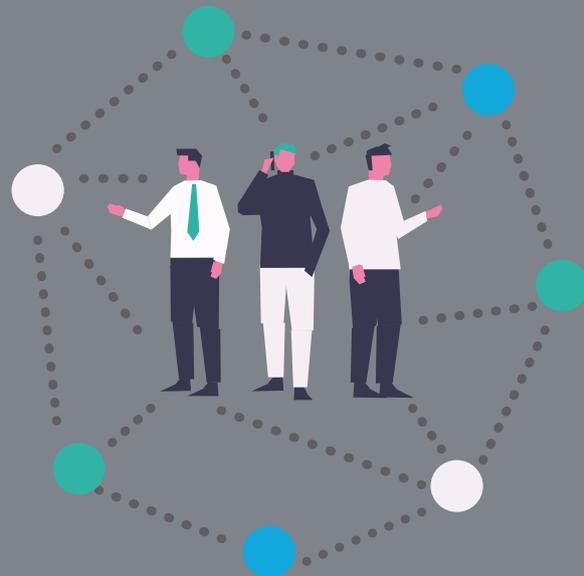
While still in its infancy, the devolution of powers to city regions is starting to deliver the promised benefits by empowering local actors, encouraging strategic thinking and improving accountability and transparency. In particular, devolution arrangements in the area of employment and skill development have provided opportunities to boost growth and improve outcomes for employers and learners through more effective implementation and increased context sensitivity. Making best use of funds and ensuring local stakeholders collaborate effectively to meet desired outcomes were cited as the key challenges to those with devolved powers.

In a similar manner, cities that had secured city deals highlighted the positive impact this had on infrastructure development, however reiterated the need to ensure investments benefited not only the city, but also the surrounding regions. In Aberdeen, every city deal must go through joint councils to ensure benefits are distributed appropriately.

Conversely, those cities without devolution agreements or city deals highlighted the challenges they face in terms of delivering services with limited resources and working with a lack of policy autonomy from central government. In these cases, more thought is required around what can

be done locally without these powers, and where additional funding can be found.

City deals and devolution agreements place regions into national focus and generate significant amounts of attention. Those cities that are not benefitting from these arrangements are looking for other ways of marketing themselves and attracting inward investment, with some calling for more effective leadership from the business community.



City deals and devolution agreements place regions into national focus and generate significant amounts of attention.

INSIGHTS THEME 3: DIGITAL INFRASTRUCTURE AND ACCESS

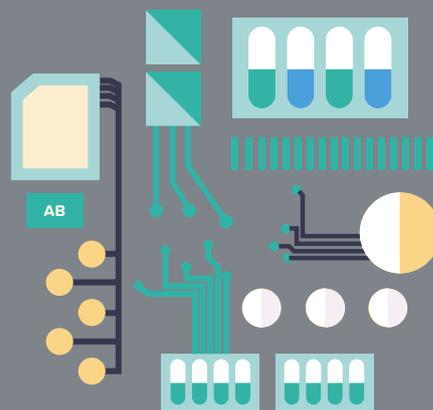
There is a drive to provide high quality communications infrastructure, such as fibre broadband, to attract businesses and enable new services to be delivered. Deploying underground fibre in cities causes significant disruption, therefore work is in progress to understand how cities can be retrofitted with fibre broadband quickly and efficiently.

In addition to deploying underground fibre, cities are also investigating how physical assets, such as lampposts, can be used to host communication networks. The ownership of physical assets at the city level is not straightforward, with private property rights, the privatisation of critical infrastructure and the outsourcing of city services complicating the landscape. Realising the value that street assets can deliver in terms of hosting connectivity networks and providing future inward investment opportunities, councils are becoming increasingly vigilant about signing away rights for the management and use of these platforms.

Lastly, cities are excited by the potential benefits that can be delivered by future communication networks such as 5G. With the promise of significantly faster data speeds, higher data capacity, better coverage and lower latency, cities are making early preparations

for the eventual deployment of such networks. These preparations have included conducting scoping studies for the hosting of access points and preliminary discussions with operators about how they can be built. Despite much enthusiasm, a strong appreciation of the challenges posed by 5G deployments remains including:

- ◆ the limited range of small cells requiring huge numbers of access points;
- ◆ the potential knock-on effects on existing fibre infrastructure; and
- ◆ the need to create a favourable environment to attract commercial operators.



“With high deployment costs and uncertain revenue streams, much of the business case for advanced networks for is still hidden from view. Ambitious trials are required to prove the impact across the value chain. Cities need to be closely involved from the outset as an active partner working with businesses and people to build trust.”

Finlay Kelly, Project and City Finance Lead, Future Cities Catapult

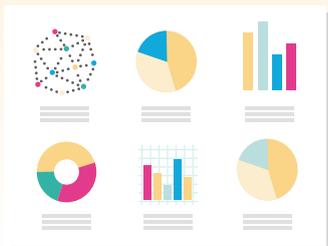
WHAT CAN FUTURE CITIES CATAPULT DO TO HELP?

From Belfast to Belo Horizonte, Future Cities Catapult has helped public authorities, prime suppliers and other buyers of advanced urban services with expert, neutral, pre-market advice and practical support to engage the innovation ecosystem and tackle thorny urban challenges. We do this through a combination of:

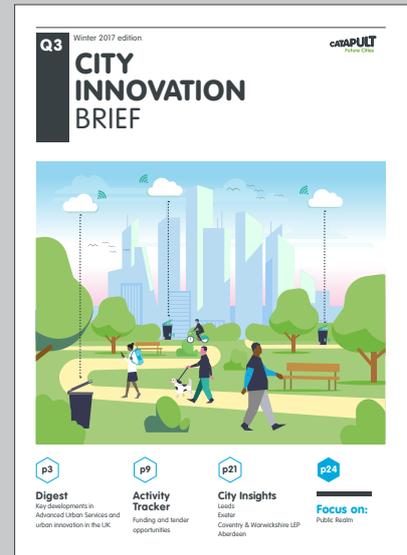
- **Research and analysis** into current trends and state of the art in advanced urban services.
- **Insight-driven** problem definition, prioritisation and articulation.
- **Challenge-led innovation** open calls that harness the creativity of the market.
- **Implementable roadmaps** to embed innovative approaches into organisations and realise change.
- **Robust impact evaluation** of projects and interventions that unlock further investment

Interested in working with us?

Contact our team at info@futurecities.catapult.org.uk



LOOKING AHEAD



The third issue of *City Innovation Brief* will be published in May 2018, updating on the trends, issues and opportunities emerging in UK cities. Our feature article will review how cities are continuing to innovate with advanced urban services, whilst facing the economic challenges posed by aiming to deliver the government strategies highlighted in this issue.

We will also update on developments in other UK cities and shine a light on emerging priorities and lessons learned. *City Innovation Brief* is actively looking to crowdsource good ideas and good practice, so please do get in touch if you'd like to contribute to our next brief.

Contact

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This report was produced by Future Cities Catapult in collaboration with Urban Foresight.