

# Delivering change

## How cities go low carbon while supporting economic growth

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## Executive Summary

Almost every UK city's economic development strategy recognises and prioritises low carbon growth in their longterm visions. These visions are often accompanied by grand narratives calling for a paradigm shift towards a green economy. However, many cities struggle with how to translate these visions and strategies into practical projects.

This report aims to help cities address these challenges.

**The report provides pragmatic, practical and proven examples of how cities in the UK and across the globe are tackling the environmental and economic challenges they face.**

Cities across the globe, rather than waiting for their national governments to act, are taking action to support economic growth whilst reducing their carbon emissions. The most successful cities combine experiences and examples from other cities with the insights and resources of local partners to develop their interventions.

There are three fundamental criteria that underpin the examples highlighted in the report:

**Leadership:** Strong leadership is vital to both determine priorities and set an example. It is through clarity and commitment to the low carbon agenda that leaders can 'set the tone' for their city. For example, Bristol's Mayor George Ferguson and Mayor Michael Bloomberg of New York act as demonstrator-champions by publicly backing the vision of going green with practical policies, publicising the city's green industries and highlighting tangible economic benefits.

**Knowledge:** Detailed understanding of a city's industries, businesses and citizens enables better policies to be developed. Good information enables cities to target strategies at the chief polluters, monitor their performance and amend them as appropriate. For example detailed analysis enabled New York to identify that most of its carbon emissions came from buildings (rather than transport or industry). As Mayor Bloomberg of New York said to the C40 network of cities, "If you can't measure it you can't manage it".

**Networks:** The scale of the challenge in moving to a low carbon economy requires public, private and third sector organisations to work together. Robust networks allow partners to share information, implement best practice and feedback on which interventions are necessary, and the impact that they are having. Networks can help businesses to address issues which are acting as a barrier to green investment: for example 'red tape' (as in Liverpool) or informing partners about the successes and challenges of pilot projects such as low carbon vehicle use and instalment (as in London and Leeds).

## Moving from Strategy to Action

This report provides a co-ordinating framework which includes five types of interventions that cities can use to make going low carbon work for the city, its residents and businesses.

### ***Support business***

- Focus on the largest barriers to business growth (e.g. high energy costs or red tape) and find low carbon solutions to those problems. For example, providing planning support, low cost loans and green energy to businesses locating on a sustainable business park.
- Provide targeted business support that builds networks and partnerships, skills and scale to support local businesses. By ‘spreading the net’ cities avoid the risk associated with specific businesses and instead can support growing industries and practices that promote green growth.
- Develop local skills and supply chains through working in networks with partners. This could be, for example, further education providers or local universities.



### ***Regulation***

- Identify and target regulation at the city’s main sources of carbon emissions (for example planning codes for residential buildings). Targeting regulation at specific emitters minimises the overall burden on businesses and residents.
- Use existing powers as well as advocating for new ones. In the UK, many regulatory options that are available to cities, such as the Code for Sustainable Homes, stem from national government. Cities should maximise the use of these as well as introduce appropriate local regulations (for example Local Plan regulations or those secured through City Deals) that encourage green business practice.
- Support policies with related initiatives such as financing advice and assistance that eases the financial, administrative or other burdens on businesses and residents. This helps establish buy-in and reduces unnecessary costs.

### ***Incentives***

- Help businesses become greener by developing incentives that ‘nudge’ them in the appropriate direction. For example, using planning criteria that supports the provision of cycle infrastructure encourages behavioural changes that have the possibility of aggregating to larger benefits. This can also increase demand for green goods and service providers.
- Acknowledge the relevant scale of incentive required. It might be appropriate to introduce large schemes, such as residential waste recycling incentives, on a pilot basis. This approach enables the city to measure its success and make improvements before scaling up the policy. Alternatively, reputational incentives often work better at a larger scale that encourages more awareness, credibility and buy-in from businesses or residents.
- Make sure that incentives are supported with relevant initiatives such as awareness raising campaigns. This enables more businesses and people to engage with the process and a greater understanding about the benefits associated for them and the environment.



### ***Procurement***

- Choose ‘smart criteria’. It is important to be specific in setting procurement frameworks and criteria so that they reflect the desired goals and minimise limiting factors or unnecessary red tape for businesses, to ensure competition and low prices for the city.
- Think and act longterm. Providing longer term certainty gives businesses the opportunity to invest in their supply chain, in training and recruitment, and in machine investment.
- Look for partnerships. Working with public, private and third sector organisations ensures that local businesses capitalise on procurement opportunities through awareness of demand and building contacts within the city departments.



### **Finance**

- Use alternative funding and financing mechanisms such as innovation prizes, co-investment funds and crowd sourcing to lever in both private and public investment to meet goals. This enables funding projects that would be socially useful but not commercially viable.
- Harness local community support for and involvement in low carbon projects. For example supporting co-operatives can reduce development and investment risks for private partners as there is community 'buy-in' and demand.

The examples set out in the report show that moving towards a low carbon economy cannot and should not be implemented in the same way in Newport and New York or San Francisco and Southend.

**Ultimately the most effective city policies and projects focused on moving towards a low carbon economy are those that are locally tailored and make good economic as well as environmental sense.**

## Introduction

City leaders across the UK and internationally are increasingly asking: **How can my city reduce its carbon footprint and make it work for the wider economic growth strategy?**

**This paper responds to this question by highlighting pragmatic, practical and proven ways that cities in the UK and elsewhere are tackling their environmental and economic challenges.**

### What is the low carbon economy?

This report uses a broad definition of the 'low carbon economy'. It includes not only the new activities and value created by low carbon focused businesses e.g. insulation-fitters, but also the jobs and savings that existing businesses benefit from in reducing carbon emissions. This approach also includes the wider impacts of a low carbon economy beyond the narrower Department of Business, Innovation & Skills's (BIS) LCEGS<sup>1</sup> definition which is confined to "environmentally and low carbon-focused activities in the economy".

It's important to recognise that there are limits to the new jobs created. Many programmes and projects that have a large and positive impact on the environment, such as wind farms, employ very few people, especially locally. Reflecting this, the report is less concerned with the number of additional green jobs created, instead focusing on the transferable lessons of different cities' experience in implementing low carbon measures that support local economic growth.



### Context

Globally, larger cities account for 70 per cent of the world's CO<sub>2</sub> emissions.<sup>2</sup> In the UK, whilst the 64 largest cities accounted for 45 per cent of emissions in 2010, they also lead the way on efficiency, with emissions 17 per cent lower per capita in UK cities than the rest of the country.<sup>3</sup> It

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1. Includes activities that may appear under the overlapping headings of Environmental, Eco, Renewables, Sustainable, Clean Tech, Low Carbon or No Carbon BIS Low Carbon Environmental Goods and Services (LCEGS) measurement. Reports are available on <https://www.gov.uk/government/uploads>

2. <http://www.c40cities.org/ending-climate-change-begins-in-the-city>

3. Centre for Cities (2013), *Cities Outlook 2013*. London: Centre for Cities

is clear that cities have a central role, but with national policy driving the agenda, it is sometimes difficult for cities to see exactly what this role is.

### ***National CO<sub>2</sub> targets set the local context***

Unsurprisingly, given its highly centralised government structure, **much of the activity on reducing carbon emissions in the UK has been driven by national Government.** The 2008 Climate Change Act set CO<sub>2</sub> emission reduction targets for the country and established the Department for Energy and Climate Change (DECC) to oversee the delivery of these targets.

#### **National strategies: The Green Deal**

The Government's flagship low carbon initiative is the Green Deal. Launched in January 2013, it aims to encourage households and businesses to install energy efficient measures in their properties by offering loans to be repaid over a number of years. Under the scheme, customers can install loft insulation, new boilers, or other measures without paying an upfront cost. By 2030, the government aims to retrofit 26 million homes and 2.8 million commercial properties through the scheme estimated to create 65,000 construction jobs.

To date, take-up has been slow. As of September 2013 only 954 of the 85,177 households assessed had signed up for the deal according to DECC figures. This might be due to the high interest rate (6.96 per cent) and long pay off periods on Green Deal loans, while other reasons for slow take-up include high upfront cost of improvements, a delay in setting up the funding mechanism and uncertainty about the benefits or quality of work done through the scheme. The Green Deal has been most effective when implemented locally, as shown in Bristol (see final chapter).

Nationally, the Government has legislated for a target of reducing CO<sub>2</sub> emissions by 34 per cent by 2020 and 80 per cent by 2050 from 1990 emissions levels. Achieving this will require cities to play an important role in supporting this aim through the policies, programmes and infrastructure they manage. However, the introduction of the Localism Act in 2011 removed the Local Area Agreements that many authorities had used to structure their responses to meeting these national targets. There is now no official legal requirement for local areas to reduce their emissions or meet any specific targets.<sup>4</sup> Although National Indicator 188<sup>5</sup> goes some way to help local authorities identify the risks and opportunities associated with climate change.

In addition to the removal of a local mandate, they also face financial, governance and legislative restrictions that limit the scale and scope of their actions to reduce carbon emissions. For example, the Localism Act (2011) also gave local government the power to do anything a citizen could do (through the General Power of Competence), but councils still face constraints on their

4. How local authorities can reduce emissions and manage climate risk Committee on Climate Change 1 May 2012

5. DEFRA National Indicator 188 aims to embed the management of climate risks and opportunities across all levels of services, plans and estates to ensure that assessing the risks and opportunities from climate change is embedded across decision making, services and planning.

ability to make use of this power. For example, local authorities face limits on the amount they can borrow to invest in their housing stock, limiting their ability to retrofit housing. In addition much of the institutional economic development landscape has changed dramatically over the last three years. New policies including City Deals, Enterprise Zones and the Regional Growth Fund are now in place alongside Local Enterprise Partnerships.

These policy and institutional changes have increased the level of uncertainty in many cities which challenges their ability to undertake longer term decisionmaking. And the current state of local government finances – with central government funding set to fall by almost 20 per cent from 2010/11 to 2014/15 – means these challenges are likely to increase over the next decade.

### **Leading not waiting: the increasing role of cities in reducing CO<sub>2</sub> emissions**

Despite lacking a clear mandate and operating in difficult financial and policy contexts, **many cities in the UK are pursuing low carbon growth strategies.**

Some are pursuing jobs growth in low carbon sectors such as green manufacturing, renewable energy, and green R&D, often through the City Deals process. Others are working with business and community leaders to reduce energy demand and consumption to make buildings more energy efficient, to moderate car dependence and to shift towards low carbon energy production.

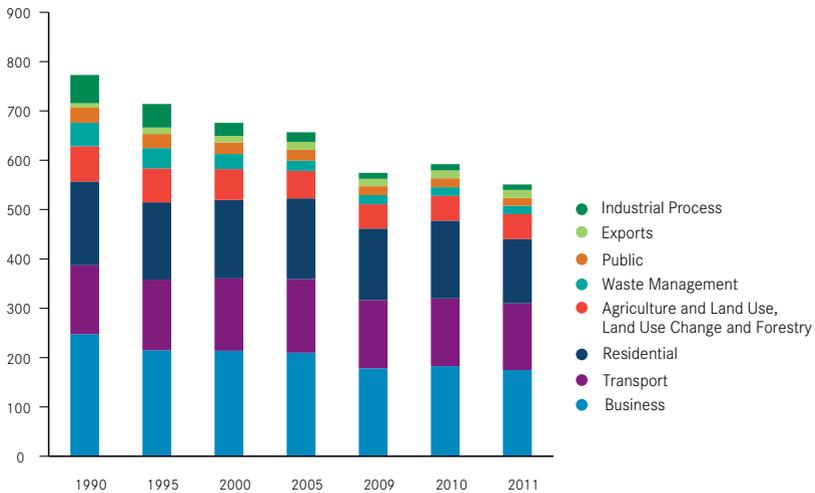
And many are finding that low carbon policies and programmes can provide a positive return on investment while also providing additional environmental and social returns. For example, by retrofitting their own buildings and saving money, local authorities can act as a leading example to the community.

Cities are also acting on the guidance from Committee on Climate Change that states that “Local authorities should draw up low-carbon plans which focus on drivers of emissions over which they have influence (e.g. number of homes insulated, car miles travelled).”<sup>6</sup> Barnsley, Birmingham, Leeds, Manchester, Nottingham, and York have commissioned mini-Stern reviews to map out a strategy for reducing CO<sub>2</sub> in their city. Through building accurate city level information, cities are tailoring national policy to develop local responses to target their chief sources of carbon emissions.

**‘Smart cities’ and ‘smart technologies’** are tools that can help local government achieve better outcomes more efficiently or to support business and the environment in new ways. But technology is a means to an end, the information gathered can assist monitoring and identification of challenges but is not itself the solution. Smart energy metering, for example, can help enforce building regulations and feed in to financial models for energy savings and retrofit but it needs to be used practically with the appropriate changes made.

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6. Committee on Climate Change (2012), *How local authorities can reduce emissions and manage risk*, London

**Figure 1: Levels of CO<sub>2</sub> emissions by source in the UK**

Source: How local authorities can reduce emissions and manage climate risk Committee on Climate Change | May 2012

## Purpose of this report

To highlight what is possible, this report sets out a framework for understanding the roles that cities can play in reducing CO<sub>2</sub> emissions. The framework is used to organise case studies which demonstrate that reducing CO<sub>2</sub> emissions in a city can also create jobs and support the business environment. Whilst no one case study has all the answers, collectively they show the range of different and complementary approaches that cities can use in supporting low carbon economic growth.

The framework of interventions for cities is outlined first. Each role is then taken in turn, highlighting one case study, another lesson, and a case that is “one to watch” – newly developing policies or programmes that offer lessons for cities but are not yet proven to have worked. The importance of tying each of the five roles together is highlighted in the case study of Bristol, the 2015 European Green Capital.

Each of the examples in the report highlight the critical importance of strong leadership, comprehensive and accurate information and strong, extensive city networks in moving towards a low carbon economy.

## How can cities drive change?

### Provide leadership, vision and strategy

Strong local leadership – from local government, community groups and businesses – is a prerequisite for policies and programmes that deliver change.

Without strong local leadership, the vision and strategy that acts as a blueprint for achieving low carbon change is neither created nor executed. For example, organisations across Bristol have stressed that the commitment of Mayor Ferguson toward supporting green businesses, reducing CO<sub>2</sub> emissions, and creating a greener way of life for the city has helped make local projects (many of which started before his tenure) successful.

However, as important as it is, political leadership on its own will not drive change. Ultimately, it is not the development of a carbon emissions reduction strategy that drives down CO<sub>2</sub> in cities, but rather that the strategy is a reflection of local desires and actions to reduce emissions.<sup>7</sup> One of the reasons that cities such as Manchester and Brighton have moved to the forefront of the low carbon movement is because the political leadership reflects the wider community's values and actions; they want a greener city and elect leaders that reflect their desires.<sup>8</sup>

### Co-ordinate to maximise impact

Given the economic, political and environmental context laid out in Section 1, the ability for cities in the UK to support 'green growth' is constrained by their financial and legal powers. In practice, it is also limited by capacity issues, for example some cities' environment departments have sole responsibility for action on 'low carbon issues' and most have stretched and declining resources. Despite these challenges the cities that are succeeding in making low carbon changes work for their local economy are approaching the challenges from different but complementary angles.

**There are five roles that cities can use to support the move towards a low carbon economy:** supporter of businesses, regulator, incentiviser, consumer and financier (Figure 3). In each of the roles set out, cities need to identify the tools they already have at their disposal and the new ones they will need to acquire.

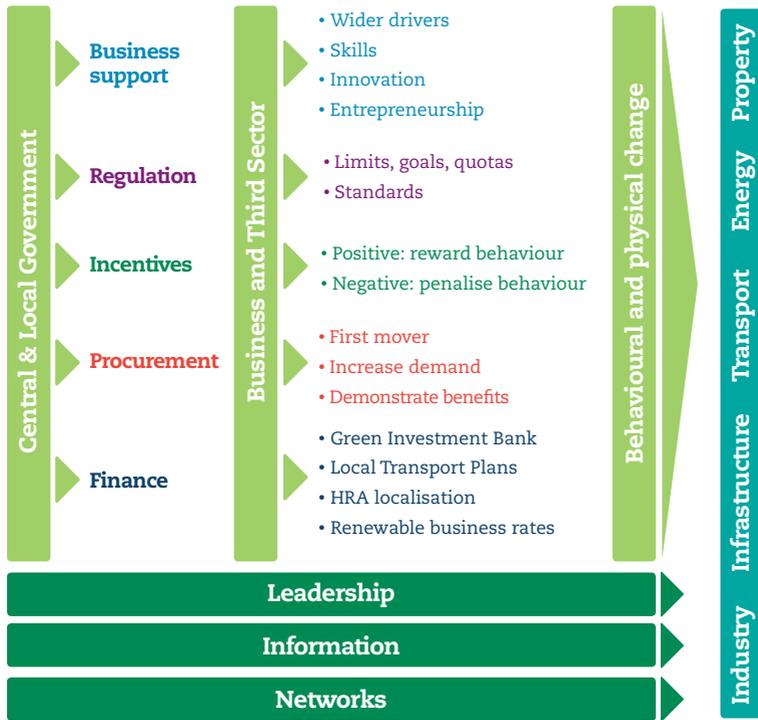
*Supporting business:* One of the best ways cities can support low carbon activities to grow is to ensure the wider skills, innovation, infrastructure, and entrepreneurial support for businesses is effectively provided. That means cutting red tape, ensuring policy certainty, and providing education and training programmes that reflect the needs of the business community.

*Regulator:* Cities have the power to set local rules that are enforceable and require behaviour change. In the UK, local government can use planning and transport regulations as well as set

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7. Centre for Cities interviews.

8. Centre for Cities interviews.

**Figure 2: The roles for local government in supporting jobs through greener cities**

energy standards to reduce emissions. But the opportunities to use this type of intervention are limited by their lack of powers compared with cities internationally.

***Incentiviser:*** Incentives can be a low cost and flexible way of changing behaviour. Cities can both take forward incentives provided by national government (such as Green Deals or Recycling Reward schemes) and implement their own incentives (such as Carbon Challenges).

***Consumer:*** Cities buy goods and services, own properties and deliver services. Local government procurement was approximately £62 billion in 2012<sup>9</sup>. Thus, councils' procurement decisions can substantially create and expand markets and opportunities in, for example, low carbon goods and services. In doing so, they can use the procurement process as a test-bed supporting low carbon innovation and purchasing green goods.

***Financier:*** Cities can create a positive investment environment by increasing the certainty of projects, and be a longterm guarantor for finance. For example, councils can develop and

9. Local Government Association, 2012; Procurement Pledge for Local Authorities: [http://www.local.gov.uk/c/document\\_library/](http://www.local.gov.uk/c/document_library/)

support the use of certain financial instruments – such as co-investment models – that leverage local money (borrowed at lower than market rates) with private partners' finance and expertise to yield financial, social and environmental benefits.

**These five interventions offer approaches that are applicable across cities and not just in the council's environmental or economic development teams.** Leaders in business, housing, transport, education, environment, and health have important contributions and roles to play in driving low carbon initiatives.

Each of these five roles is discussed in turn, using examples of how cities have used interventions to improve the outcomes, environment and the economy of the city.

## Supporting business

### Introduction

To support growth in low carbon businesses, cities should first and foremost **create an environment where businesses are able to grow**. Working with local chambers of commerce, local networks, Business Improvement Districts and other partners helps councils understand and learn from their business base about what's important to them.

The case studies highlighted in this section are developing and delivering services in response to the specific challenges that many low carbon businesses experience in relation to regulation, research, innovation and production. They have addressed these challenges by:

- Developing networks for knowledge sharing and connecting supply chains;
- Raising industry profile for attracting inward investment;
- Identifying and helping supply the skills local green businesses need to succeed.



### South West, England and London: Business support to foster growing green businesses

Business support networks such as Regen Southwest and Low Carbon Southwest provide a platform for local businesses and non-profit partners to work with one another. Bath and North East Somerset Council, Bristol City Council and South Gloucestershire Council are also all partners and play a key role in networking, advice and strategy.

#### Supporting growth without picking winners

Rather than choosing one sector or a few firms, Low Carbon Southwest works with businesses from construction, renewable energy and professional services to share information and build networks across sectors.<sup>10</sup> These organisations use their close links with the local councils to communicate the challenges they face and how local government can help overcome them, through for example networking events or regular surveys.

Case study

10. [www.lowcarbonsouthwest.co.uk](http://www.lowcarbonsouthwest.co.uk)

## Key questions for cities

### **Raising the profile of the industry and region: building scale and marketing investment opportunities**

By joining up related businesses across the wider region, Regen South West and Low Carbon South West are able to build enough impetus to attract investors and build supply chains. For instance, Low Carbon Southwest organises members to attend trade missions and build trade relationships for the region. Regen South West members have also had opportunities to talk with key policy makers such as the Secretary of State for Energy and Climate Change and Chief Executive of the Office of Renewable Energy Deployment at DECC.<sup>11</sup>

### **Building trust and sharing knowledge**

Close working relationships between councils and firms in the south west has opened up new business opportunities, improved business confidence, reduced longterm planning risks and created momentum for building the sector in the local economy. In turn, business groups have helped councils make informed decisions about their economic development frameworks and understand the current and future status of green sectors. These working relationships have allowed for knowledge and experience to be shared, encouraging better dialogue and understanding.

- *What new skills and trades will be required to carry out low carbon programmes (e.g. Green Deals) and how can these be supported locally?*
- *What partnerships can local government form with business support providers to make these programmes work effectively for business?*

### **Developing skills**

Regen South West helps develop the skills for its member firms by working with local FE colleges and universities to supply workers with the skills they need. For example, Regen South West partners work with the University of Bristol to support research networks within the cluster as it has a strong research expertise in low carbon technologies. Meanwhile the University of West of England has strong business links so Regen South West is working with them to deliver SME support and business skills programmes.<sup>12</sup> The relationships work as they identify expertise in local institutions and capitalise on existing strengths.

11. <http://www.regensw.co.uk/information>

12. Centre for Cities interviews.

Other cities are also working with schools, FE colleges and local training programmes to develop skills where businesses have identified a deficit. For example, a new business support organisation, the London Clean Tech Cluster, has developed a mentor programme to match growing low carbon firms with mentors to help develop the skills base within the organisation. They have already successfully matched 20 mentors with clean tech firms to help them get to the next level.<sup>13</sup> Similarly, Low Carbon South West supports Teen Tech, a programme to inspire teenagers to pursue career choices in science, engineering and technology.

- *What can cities do to ensure they are creating the most supportive environment for local low carbon businesses?*
- *What are the challenges identified by low carbon businesses, how can cities target support to help them overcome these?*

Key questions  
for cities



### **Belfast, UK: Responding to local economic challenges**

Through its close links with local businesses, Belfast City Council identified that fuel costs are a barrier for businesses in the city, as energy costs are some of the highest in the UK.<sup>14</sup> To help companies reduce these costs and support a small, but growing, energy cluster, the City Council is developing a Sustainable Energy Business Park.

The business park will be located on a 65 acre landfill site. The gases produced from this waste will be used for energy alongside solar and wind power, which will be sold to the tenants at a discounted rate. To help the green energy sector, the business park will also host part of Queens University's Centre for Advanced Sustainability to further support research, innovation and knowledge sharing in the park.

The Belfast Green Energy Business Park brings together a close-knit group of businesses and localises the solution to high energy costs whilst minimising emissions. The City assists by providing planning support and in marketing the park's development. Most importantly, the park is developing the local skills and networks these businesses need to develop the sector organically.

One to watch

13. Centre for Cities interviews.

14. Quarterly Energy Cost Statistics list Belfast as having the most expensive electricity in the UK [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/244580/qep\\_sep\\_13.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244580/qep_sep_13.pdf)

## Regulation

### Introduction

Compared to cities in other less centralised countries such as Germany and the US, UK cities have limited powers to introduce their own regulation. However, they do have powers in areas such as land-use and transport planning which can support low carbon economic growth. Cities such as London, Brighton & Hove and Bristol are increasingly using regulations in these areas, such as requiring new developments to minimise the use of energy or to meet the Code for Sustainable Homes (although this national building code is now under consideration). Other cities are focused on removing regulatory barriers to low carbon businesses. For example, Liverpool has used its City Deal to reduce restrictive legislation on green infrastructure.

Internationally, some cities are championing green legislation in the building and waste sectors. New York is a good example of a city which is trying to achieve maximum benefits by implementing targeted laws and complementary support at its biggest source of carbon emissions – large buildings.

Whilst UK councils do not have the same breadth of powers as New York or San Francisco, they can still use the powers they have (for instance in relation to transport and planning) to target their city's main emitters. They can also ensure that any new national regulations are complemented by relevant local support such as information hubs or awareness raising campaigns, and look to create or partner with local institutions in implementing those regulations.

### Case study



#### New York City, USA: Supporting targeted laws with institutions

In New York City, large buildings are responsible for 45 per cent of the city's carbon emissions and are an important target group of the city's climate strategy.<sup>15</sup> The **Greener, Greater Building Plan (GGBP)** launched in 2009 by New York's Mayor Michael Bloomberg<sup>16</sup> constitutes four laws targeting energy efficiency in the city's largest buildings and is supported by a number of complementary initiatives such as a finance corporation and business training.<sup>17</sup>

According to the estimates issued by the Mayor's Office,<sup>18</sup> GGBP is expected to reduce city-wide carbon emissions by 5 per cent compared to 2009 levels, save £4.5 billion in energy costs and create 17,800 construction-related jobs by 2030.

15. The City of New York (2011), *A greener, greater New York*,

16. Part of PlaNYC which consists of 132 initiatives aimed to reduce GHG emissions by 30 per cent by 2030

17. Laws 84, 87 and 88 enacted in 2009 and law 85 enacted in 2010

18. New York City Mayor's Office of LTPS (2012), *Overview of the Greener Greater Building plan*

- *What are the largest sources of carbon emissions in the city?*
- *What regulatory powers does local government have to target these priority groups?*

Early figures from the GGBP show that implementing cost-effective measures can reduce businesses' energy use by up to 31 per cent.<sup>19</sup> The New York City authority has also retrofitted the Empire State Building and used it as a high profile example. Alone, it is saving £3 million in energy bills annually and created 250 new construction related jobs during the course of the work.<sup>20</sup>

Since the launch of the GGBP, the City has also ensured there is effective monitoring and that this information is communicated clearly to building owners. For example, the authorities made benchmarking procedures easier to complete and ensured all changes are in the annual report.<sup>21</sup>

**In addition to enforcing new laws, the City provides building owners with the support to implement the changes required.** It established a finance corporation to fund retrofitting works, provided training to businesses on compliance procedures and made all the relevant information available through a new call centre and website.<sup>22</sup> The additional support aims to reduce confusion regarding implementation and maximise compliance with the new laws.

- *What financial, institutional and other support do those regulations need in order to be effective?*
- *Is there a monitoring system in place in order to determine what's working and what's not, and how can it be improved?*

19. The city of New York (2012), *New York city local law 84 benchmarking report*. Data submitted in 2009 by 75 per cent of large private buildings in New York City.

20. Robbins Schneider A (2013), *How The Empire State Building is Redefining Sustainability and Supporting the Economy in New York City*, C40 New Team; City Solutions

21. New York City Mayor's Office of LTPS (2012), *Overview of the Greener Greater Building plan*

22. ICLEI, IMT (2011), *Case Study: New York city's greener, greater building plan*

## Case study



### San Francisco, California, USA: Comprehensive rules drive greater change

San Francisco demonstrates how **longterm, targeted and complementary laws can drive change and create jobs**. Between 1990 and 2010, the recycling rate in the city increased from 20 to 77 per cent, and Recology, the city's primary recycling factory, reported a 10 per cent increase in its workforce due to this surge in activity.<sup>23</sup>

San Francisco's high recycling rate is the result of a culmination of efforts that started in the 1980s. These include the emergence of volunteer-run recycling programmes driven by an environmental movement,<sup>24</sup> the introduction of the California Waste Management Act in 1989 and the introduction of a number of pilots (such as a colour-coded system to separate waste and a Pay As You Throw scheme).<sup>25</sup> In 2002, the city set itself the goal of a 75 per cent reduction in landfill waste by 2010 and zero waste by 2020.

Finding that these initiatives were still not enough, the city enforced over 20 new laws targeting residential waste, production waste, public procurement and other sectors. A recent example includes the 'mandatory recycling and reposting ordinance' passed in 2009 which requires all persons residing in the city to separate and recycle their waste. It also supports them with training, raising awareness and a website.<sup>26</sup> San Francisco is already ahead of its targets, and similar to New York demonstrates that comprehensive, targeted and well supported laws and regulations are a key component of both good environmental management and green growth.

23. Tellus Institute with Sound Resource Management (2011), *More jobs less pollution*, U.S.A

24. Janse K (2013), *Recycling is deep in San Francisco's roots*, Recology; USA: San Francisco

25. Pay as you Throw schemes are explained in the 'Incentives' section of the report.

26. San Francisco Environment website <http://www.sfenvironment.org/zero-waste>



### Liverpool, UK: Using City Deals to promote green growth

Liverpool city region has identified low carbon technologies as a key sector for attracting investment and generating jobs in the region. However, they also found that businesses investing in low carbon infrastructure are facing building delays due to lack of clarity in the planning process and slow responsiveness from local authorities and regulatory agencies.<sup>27</sup>

To address these regulatory challenges, Liverpool used their City Deal to commit Whitehall and regulatory agencies to improve coordination and set a 13-week deadline for responding to permit applications for low carbon infrastructure (for example offshore wind turbine projects). In addition, the city region has committed to provide a brokerage support service for businesses and work closely with the Local Enterprise Partnership and the Green Investment Bank on delivering new projects. By easing the regulatory burdens, Liverpool is hoping to accelerate £100 million of investment in offshore wind and create 3,000 new jobs.<sup>28</sup>

To date, the Merseyside Environmental Advisory Service (MEAS)<sup>29</sup> has appointed an environmental account manager to establish the brokerage support and is also working with Defra to find the right operational mechanisms for the pilot. A number of low carbon projects are in the pipeline, although none have yet reached the final consent stage.<sup>30</sup>

Other cities such as Manchester, Leeds and Birmingham also included green initiatives in their City Deals. If well designed, City Deals offer a good opportunity for cities to accelerate growth in green investment by easing regulatory burdens or targeting funding to green projects.

One to watch

27. Centre for Cities Interview

28. Liverpool City Council (2013), *City deal extract, accelerating investment in the low carbon economy*, Liverpool: Liverpool City Council

29. A sub-regional service that provides environmental and technical advice to councils.

30. Centre for Cities interview

## Incentives

### Introduction

**Incentive-based policies are often used to encourage residents and businesses to amend their decisions and behaviours.** They can be a lower-cost and more flexible alternative to regulation<sup>31</sup> and take different forms such as economic (financial), reputational (awards and recognitions) and administrative (reduced inspections for businesses).<sup>32</sup> Broadly, there are two types of incentives: *positive incentives* which offer rewards to those who do things ‘right’ and *negative incentives* which punish those who ‘do things wrong’.

Some cities are using the incentives offered by central government such as City Deals (such as Liverpool) and Feed-In Tariffs or implementing other low cost incentives such as carbon challenges (for example see the Bristol case study). In both cases, the proactive role that cities are playing in promoting and implementing them is proving critical to their success.



### Case study

#### Cities in the UK and abroad: Encouraging more recycling

In the UK, landfill tax (currently £72 per tonne and increasing each year) is becoming a significant burden on councils’ budgets, which makes cutting the amount of waste produced increasingly important. With only 44 per cent of municipal waste currently recycled, there is substantial potential for councils to save money, reduce their environmental impact and even add recycling jobs to the economy.<sup>33</sup>

One way to incentivise recycling is by implementing **Pay As You Throw schemes (PAYT)** which charge customers based on the amount of waste they throw away. Waste becomes a chargeable utility and users are incentivised to produce less waste and to recycle more of that waste.

Evidence from international examples shows that PAYT schemes can be effective.<sup>34</sup> These work best when accompanied by the supporting initiatives such as running high profile residential awareness programmes. For example, cities such as San Francisco (77 per cent

31. Environmental Literacy Council (2008), *Regulatory Policy vs Economic Incentives*, <http://www.enviroliteracy.org/article.php/1329.html>

32. Ecorys, (2012), Commissioned by European Commission, Netherlands: Rotterdam

33. A study by Friends of the Earth suggests that recycling 70 per cent of municipal waste in the UK would create over 50,000 direct jobs. Friends of the Earth (2010), *More jobs, less waste*, London

34. Waste Watch, *Pay as you throw*, [<http://www.wastewatch.org.uk/pages/pay-as-you-throw.html>]

recycling rate), Portland (63 per cent) or the German town of Neustadt an der Weinstrasse (70 per cent)<sup>35</sup> all use PAYT schemes. Based on the evidence, a number of UK policy organisations including Green Alliance, IPPR<sup>36</sup>, and Waste Watch<sup>37</sup> have also been in favour of PAYT schemes.

Local authorities in the UK currently do not have the powers to introduce a PAYT scheme. Previous PAYT programmes introduced under the Labour Government were labelled a ‘bin tax’ by sections of the media and the opportunities for councils to introduce them was paradoxically removed in the Localism Act 2011. The strength of international evidence suggests this decision needs to be revisited.

- Which financial incentives are most effective in creating long term behavioural change? And are they financially sustainable?
- What complementary measures (such as awareness campaigns) need to be implemented alongside the introduction of any financial incentive?

Local authorities can instead implement **Recycling Reward Schemes**, whereby households are offered financial or other rewards for recycling. In 2004–2005, DEFRA pledged £3.1 million to a number of local authorities to pilot such reward schemes. Similar more recent programmes include the Recycle Bank and ‘London Green Point’.

The effects of reward schemes on recycling and waste is still not widely researched<sup>38</sup> although some evaluations show moderate increases in recycling among targeted communities.<sup>39</sup> Whilst more popular than PAYT programmes, reward schemes are criticised for failing to reduce waste as effectively, often encouraging the production of more recyclable material.<sup>40</sup> Reward schemes also require longer term funding, which might not be available to councils under current conditions.

35. Hickman L (2011), ‘A small town in Germany where recycling pays’, *The Guardian*, 18 March 2011

36. Green Alliance and IPPR (2006), *Zero Waste UK*, London

37. A sub-regional service that provides environmental and technical advice to councils.

38. Leedham E (2013), Investigating the effects of recycling incentives, [http://www.resource.uk.com/article/Latest/Investigating\\_effects\\_recycling\\_incentives](http://www.resource.uk.com/article/Latest/Investigating_effects_recycling_incentives) Resource Magazine

39. Over half (57 per cent) reported an increase in recycled material, of which the maximum increase was 15 per cent. <http://archive.defra.gov.uk/environment/waste/localauth/documents/aeat-householdincentives.pdf>

40. Ottery Ch (2013), *Insight: Is it too early to invest in rewards schemes?* Material Recycling World: 14 June 2013

## Key questions for cities

- Which business sectors would benefit from being recognised as sustainability leaders?
- Can the incentives be scaled up to include more sectors in the future?

## Case study



### New York City, USA: Challenging businesses to lead the way

Reputational incentives can be a **low-cost way for cities to encourage businesses to reduce their carbon emissions**. For example, Carbon Challenges ask businesses to reduce their CO<sub>2</sub> emissions by a certain percentage within a deadline, in return for being recognised as top carbon-savers. Businesses respond best to the incentives when there are clear benefits such as savings on energy costs, networking opportunities and branding as leaders in sustainability.<sup>41</sup> But there must be meaningful buy-in from the business community to ensure it is a significant and desirable prize.

In New York, the Mayor first launched the Carbon Challenge to healthcare facilities and universities in 2007. By 2013, 27 universities had cut their emissions by an average of 12.8 per cent and 22 hospitals by 8 per cent<sup>42</sup>. The Challenge was recently scaled up to include commercial offices, residential co-ops and Broadway theatres.

In the UK, similar initiatives have also been implemented such as the West of England Carbon Challenge in Bristol and Green 500 in London.<sup>43</sup> The cost effectiveness of such initiatives, their appeal to businesses and the potential of achieving scale through progressively including different sectors make them a feasible and effective way to induce behavioural change in local businesses.

41. Centre for Cities Interview

42. New York City (2013), *New York city mayor's carbon challenge progress report*, New York: New York City

43. The programme was discontinued after the closure of the London Development Agency



### The Carbon Trust, UK: Helping businesses and residents adopt greener habits

Encouraging residents and businesses to adopt greener habits and use greener products is an important way to support the move to a low carbon economy. **Behaviour change campaigns** can be an effective alternative to traditional campaigns.

Posters, letters, stickers and even ‘green champions’ within firms rarely change individuals’ energy use or recycling behaviour. Responding to this, the Carbon Trust has run a number of innovative projects in cities across the UK to change behaviours within both households and organisations. For example, the Trust developed online tools which help business leaders to estimate how much money and carbon they can save within their organisation.<sup>44</sup> This simple tool, alongside information and advice, changes the emphasis towards the benefits - of a change in behaviour - to the business, and away from the more intangible arguments of environmental responsibility and “Thinking Global”.

**To influence decisions and behaviours that emit CO<sub>2</sub>, incentives must understand and target the underlying motivations that inform the behaviour.**<sup>45</sup> The most successful programmes use the nudge principle to help individuals “make better choices (as judged by themselves) without forcing certain outcomes upon anyone.”<sup>46</sup> For example, a London police authority reduced energy costs by shutting down their computers each night because they were concerned for information security rather than energy savings. And working from home initiatives have been more successful when promoted as saving workers’ time rather than saving on transport related emissions.<sup>47</sup>

Councils can use this principle more widely to reduce energy consumption and pollution, and increase recycling efforts that can support greener business practices and reduce carbon emissions in their area. For example in California, recycling became socially desirable and even competitive between residents when the waste pick up was moved from the back yard to the more visible front lawn.<sup>48</sup> This change resulted in a significant rise in recycling and a reduction in waste. By increasing the desirability of greener lifestyles and products-through for example introducing planning criteria that supports cycle infrastructure or car clubs over private car parking-cities can nudge individuals and businesses to make green decisions.

44. <http://www.carbontrust.com/resources/tools/empower-savings-calculator>

45. <http://www.instituteforgovernment.org.uk/sites/default/files/publications/MINDSPACE.pdf>

46. <http://www.nudges.org/>

47. Centre for Cities Interviews

48. Centre for Cities interview

## Key questions for cities

- Is the new technology reliable and easy-to-use, i.e. ready for mass-use?
- Is the supporting infrastructure, both hard and soft, in place?
- What more can local councils do to promote the new technology?

## One to watch



### London, UK: Incentives to adopt new technologies

Incentivising businesses and residents to use low carbon vehicles is important for saving energy and reducing carbon emissions. For example, a recent study suggests that if 10 per cent of vans in London became electric, this would reduce fuel costs by £200 million.<sup>49</sup> In addition to government subsidies for the purchase of Electric Vehicles (EV) and the cost of installing charging points, the GLA offers 100 per cent discounts on the Congestion Charge and some boroughs offer free parking spaces and discounts on parking permits for EV. There is also a London wide membership scheme which allows users to charge their vehicle for free at charging points across London.<sup>50</sup> However, despite these incentives, by spring 2012, only 2,400 EVs were registered in London and charging points were only being used rarely.

Despite good intentions, the London experience shows that incentives do not always achieve the desired results. A recent study attributed this slow take up to a lack of knowledge and awareness about EVs in general and the lack of information on the location of charging points. Other reasons include the perceived problems of the high upfront cost of the car, a short battery life and the lack of rapid charging facilities in key locations.<sup>51</sup>

While cities have little or no control over the cost or effectiveness of EV technology, they can ensure the enabling infrastructure – in this case charging points – are in place and that an effective marketing strategy is issued to build awareness. Similarly, it is not enough for cities to simply implement government incentives as given. These need to be accompanied by local actions tailored specifically to the needs of the city (such as infrastructure needs or awareness raising) in order for them to meet their purpose and accomplish the best results.

49. Energy Saving Trust (2013), *Plugged-In Fleets Initiative: Charging Forward*, London

50. Information obtained from the GLA website <http://www.london.gov.uk/priorities/transport/green-transport/electric-vehicles-for-london>

51. Greater London Authority (2012), *Charging ahead? an overview of progress in implementing the Mayor's Electric Vehicle Delivery Plan*

## Procurement

### Introduction

As part of a **wider procurement strategy, cities can help develop the low carbon economy, and in turn deliver green jobs locally**.<sup>52</sup> Procurement by local authorities accounts for £62 billion each year; equivalent to 4 per cent of UK GDP.<sup>53</sup> But there is widespread agreement that it is not currently used to its full potential in supporting the local economy.<sup>54</sup>

The European Commission<sup>55</sup> laid out three types of benefits to councils of adopting green public procurement (GPP).<sup>56</sup>

**Politically**, it's an effective way of demonstrating commitment to the low carbon agenda;

**Economically**, it saves authorities money (often over the life cycle), can promote markets and products, and provides incentives as a test bed for innovation;

**Environmentally**, it enables authorities to meet targets and raises awareness.

GPP strategies can be implemented in two ways. The criteria may be *mandatory* (obliging the contracted firm to demonstrate its ability to satisfy them in order to be considered as a qualified bidder) or *recommended*.<sup>57</sup> Whilst mandatory GPP criteria can produce stronger green investments they can also reduce competition compromising price and quality.

OJEU (Official Journal of European Union) restrictions<sup>58</sup> are often cited as a hurdle to procurement innovation, as businesses are put off by a complicated and lengthy procedure. However councils can still use these guidelines to procure green goods and services. Whilst EU regulations state public procurement must go for the Most Economically Advantageous Tender (MEAT), this can still include environmental considerations such as sustainability and life cycle costs. Moreover EU guidelines increasingly recognise the potential of procurement as both a driver for innovation and a source of savings for local authorities.<sup>59</sup>

52. Li L & Geiser K (2005) *Environmentally responsible public procurement (ERPP) and its implications for integrated product policy (IPP)*. Journal of Cleaner Production 13, 705–715

53. Local Government Association, 2012; *Procurement Pledge for Local Authorities*. [http://www.local.gov.uk/c/document\\_library](http://www.local.gov.uk/c/document_library)

54. House of Commons, 2013. PASC Sixth report of session 2013-14 'Government Procurement' Lansard. Quotes Lords Adonis and Heseltine amongst other witnesses.

55. Adapted from: EU 2010, *Green Public Procurement Benefits* [http://ec.europa.eu/environment/gpp/action\\_plan\\_en.htm](http://ec.europa.eu/environment/gpp/action_plan_en.htm)

56. GPP refer to goods, services and works which have a reduced environmental impact throughout their life cycle compared with their equivalent.

57. Brännlund R, Lundberg S & Marklund PO, (2009), 'Assessment of Green Public Procurement as a Policy Tool: Cost-Efficiency and Competition Considerations' (May 8, 2009) <http://ssrn.com/abstract=1831089>

58. Under the Public Sector Directive, contracting authorities must generally advertise contracts by an EU wide advertisement in the OJEU

59. Under the Public Sector Directive, contracting authorities must generally advertise contracts by an EU wide advertisement in the OJEU

59. EU, 2011 *GPP Handbook* <http://ec.europa.eu/environment/gpp/pdf/handbook.pdf>

To make the most of procurement in meeting low carbon goals, cities must:

- Set specific goals based on local emissions;
- Set targeted procurement criteria without unnecessarily restricting competition;
- Include flexibility in any framework so they are relevant to a range of partners and uses;
- Encourage public and private partners to collaborate to ensure 'ownership of the model'.

Some critics argue that GPP can restrict competition and reduce value for money. To avoid this, only strictly relevant conditions should be included. And it is important for local authorities to set appropriate targets that make commercial as well as environmental sense and can be met by businesses at a competitive price.

### **Pooling procurement**

Some cities are using procurement frameworks to simplify the purchasing of low carbon infrastructure as well as to create and develop long term markets or opportunities for local businesses. The benefits of pooled green public procurement contracts include:

- Allowing better terms for local authorities and larger orders for suppliers;
- Creating jobs and training opportunities in local communities;
- Increasing demand for low carbon technology through simplification and cost reduction;
- Stimulating innovation through a long term commitment;
- Creating funding streams that can then be invested in the local supply chain.

If implemented appropriately pooled procurement initiatives offer benefits to local authorities, private businesses and third sector organisations. But the procurement criteria and process needs minimise the burden on businesses and safeguard competition. And local authorities need to ensure they are not merely 'propping up' unsustainable businesses.



## Birmingham: Buy for Good Community Interest Company

Buy for Good (BFG) is a Birmingham based Community Interest Company that aims to simplify procurement and cut the costs for public bodies. BFG develops, sources, and delivers locality-based contract frameworks for public, private and third sector organisations to invest in low carbon measures. A standardised contract means that each user of the framework avoids the lengthy and expensive procurement process (estimated at up to £40,000).<sup>60</sup>

Motivated by potential savings, **Birmingham City Council were a founding member** of BFG. This helped provide both the credibility of an established institution, and the scale of purchasing needed to make the model viable.<sup>61</sup> Despite this, selling the concept and raising start-up funding were cited as issues to begin with.<sup>62</sup> The Council made substantial savings, estimating it saved £300,000 from just one framework for Photo Voltaic panels<sup>63</sup> and the risks were minimised as running costs were recovered by a 2 per cent charge in the contracts.

**The City Council maximises the benefits for the local economy by working closely with BFG and local suppliers.** Local suppliers are actively engaged through BFG, either mandatorily in the framework agreement or recommended through promoting local contractors (through local workshops and a website created to share procurement information).<sup>64</sup> Around 80 per cent of BFG's income is from West Midlands based contracts.<sup>65</sup>

Birmingham City Council in collaboration with BFG partners is also **developing new skills in the local workforce** through the contracts. The City and CIC develop local businesses' capacity to win business through targeted training, sharing information and running workshops that ensure they can exploit the opportunities. The Council's employment access team liaise with local colleges to ensure coordinated training requirements. This, in combination with the West Midlands 'Green Bridge'<sup>66</sup> supply chain programme, means that local SMEs can benefit from the contracts.

60. Centre for Cities Interviews

61. Centre for Cities Interviews

62. Centre for Cities Interviews

63. Centre for Cities Interviews

64. [www.finditbirmingham.com](http://www.finditbirmingham.com)

65. From Centre for Cities Interviews

66. Green Bridge is a West Midlands LEP grant supporting SMES with between £20,000 and £100,000 to develop new markets, new products, skills development and purchase of capital equipment in the Green sector.

By building capacity and networks with the local business community, BFG is ensuring that local contractors are best placed to benefit from the procurement opportunities and improve their capacity and skills in delivering green infrastructure at competitive prices.

## Key questions for cities

- *How could green public procurement (GPP) support businesses in your city?*
- *What training and support systems need to be implemented along with a GPP to ensure local businesses benefit?*



## Case study

### Hamburg, Germany: using the city as a test-bed

Cities can use their **procurement to drive innovation**. In Hamburg, the city authority did this by making use of recycled materials mandatory in road construction. The City encouraged a group of local businesses to experiment with using 100 per cent recycled road material on the city's road network. The City also set up a 'rubble exchange' auction website for local businesses to source and sell material and benefit from networking.

By building links with businesses and creating feedback loops, both the city and local businesses can benefit. The city gets a tailored product and local businesses gain a competitive advantage through testing new products and services in the city.

The UK has committed to reducing the amount of construction, demolition and excavation waste materials by 70 per cent from 2008 levels by 2020. This gives councils the impetus to maximise the use of recycled material in road building (over 60 per cent already do)<sup>67</sup> and could be a catalyst for councils to follow the Hamburg example. Indeed Hampshire has attempted a similar approach engaging local businesses in recycling aggregate road surfacing through their Material Resources Strategy. Within the first three years, Hampshire reduced the tonnage of material sent to landfill by in excess of 40,000 tonnes per annum.<sup>68</sup> Both these examples highlight the advantages gained if cities are willing to use the procurement process as a means for encouraging innovation.

67. WRAP, Recycling in Local Authority road networks. <http://www.wrap.org.uk/sites/files/wrap/RR2%20Recycling%20in%20LA%20highway%20works%20-%20Scotland.pdf>

68. Hampshire County Council; Road Aggregate Recycling Use: <http://www3.hants.gov.uk/sustainability/environment-sustainability-whatishantsdoing/environment-sustainability-aggregate.htm>

- *Who are the green innovators in the city? How could their products' benefits be used and demonstrated by the council?*
- *What changes in procurement can encourage early adopters to take up green technologies?*



### Leeds, UK: stimulating consumer demand through GPP

The Low Carbon Vehicle Public Procurement Programme (LCVPPP) **aims to stimulate the market for low-carbon vehicles in the UK**. LCVPPP's principal aim is to test whether there is a sustainable long-term market for such vehicles and provide evidence of the potential for this technology to reduce CO<sub>2</sub> emissions. Leeds City Council is one of the largest investors, trialing a 24 vehicle fleet.

The city aims to reduce the risk for 'first movers' by improving the local infrastructure from first hand feedback gained from the trial. The collection of 'real-world' data about the vehicles' performance and usage helps the suppliers with technological development and improvements in the product. For example installing short-cycle charge points at strategic docking sites meant the electric vehicles could top up their charge when in use off-loading or being stacked. The trial also helped the council demonstrate the existing capabilities of these vehicles to partners in a visible way.

Whilst it is too early to evaluate the results of the pilot (as the bidding framework process ended only in June 2013), the policy remains one to watch for the near future.

## Funding and Finance

### Introduction

Over the last two decades there has been growing emphasis on the role of innovative and private finance in economic development both in the UK and internationally. Historically, the approach has been for the public sector to 'buy-out' market weaknesses by offering subsidies to firms and projects that cannot attract private investment. The latest international thinking and practice has sought to move away from this approach towards a 'market making' approach which addresses all aspects of the market for investment, and provides longer term incentives for the market to respond.

Building this framework presents some challenges for the public sector in the way that it thinks and operates. The experiences of UK cities such as London, Manchester and Glasgow over a number of years suggests a number of key principles that should be adopted if the leverage of commercial funds into low carbon projects is to be maximised and sustained:

- Leveraging private finance is a commercial activity which demands an entrepreneurial approach by local authorities, as well as organisational structures to encourage and facilitate this
- Public sector interventions must be flexible and capable of adaptation to reflect different circumstances and different points in the investment cycle
- Public sector involvement should move away from grant aid transactions for single deals towards public financial participation in portfolios and specialists funds
- The public sector should continuously work with investors and recipients to identify and test the merits of new and existing business and investment opportunities
- 'Market failure' is not only about supply-side issues. Priority should be placed on stimulating and sustaining a continuous level of good quality propositions
- Experience and lessons – good and bad should be evaluated and proactively shared.



### Cities across the UK: Energy Co-operatives

By harnessing the power of communities, councils can do much more than they could on their own and can ensure public services such as energy provision benefit citizens. For example, co-ops across the country are increasingly investing in energy efficiency, energy provision and building retrofit through flexible investment models. Community Energy Warwickshire invested in solar energy for a local hospital; Bristol Energy Co-op is investing in community assets; and the Carbon Co-op in Greater Manchester invests in whole home retrofits. Because these co-ops are embedded within the community, they can reduce the costs of identifying projects and building community support for them.

But while co-ops and community investment models offer many benefits, in reality the UK has had a slow take up relative to other EU countries, especially Germany. Whilst there were 31 co-ops managing local energy projects in the UK in 2012, Germany has over 600 co-operative energy groups, and Hamburg residents recently voted to buy back their energy grid from the private sector.<sup>69</sup>

With support from local councils, co-ops could play a greater role in providing cheaper utilities emitting less carbon. The support required is often quite small but can be critical, especially in the early stages. For example, providing opportunities for project trialling including within public buildings (for example using a school roof to test photovoltaic panels); or providing planning and environmental information to support emerging community schemes.

- *What can be provided at little or no cost by local government to help co-ops grow?*
- *Does the council have skills, spare meeting space, networks or information a co-op may need to be successful and grow?*

69. <http://www.uk.coop/sites/storage/public/downloads/energymanifesto2012.pdf>

## Case study



### London: Co-investment model

Low carbon projects can encounter significant barriers to their development due to being innovative or high in set-up costs. These barriers include access to finance, sharing risk, and policy uncertainty. Because of these challenges, **green projects are often on the margins of viability for private investors and developers.** Urban Development Funds (UDFs) tackle these problems by using a co-investment model matching the different approaches of public and private partners.

The benefits of co-investment funds like UDFs include:

The different risk and return appetites of public and private funders are matched at various stages of the investment process. Risk-averse and institutional investors fund the UDF, while investors seeking a higher return invest at the project level.

The Fund allocates money for multiple projects and investments, hedging risk and building confidence for investors at the project-level.

Fund managers provide the interface between the public and private partners, investors and developers, and drive the project from conception to completion.

London has three UDFs that focus on the low carbon agenda. The London Energy Efficiency Fund, for example, has £100 million to invest in retrofitting public and voluntary sector buildings such as universities, hospitals and schools to make energy efficiencies. Each UDF is run by a Fund Manager (a single institution or consortium of partners) who helps source potential projects, manage legal and financial due diligence for each project, contract projects and subsequently monitor project performance.

None of the projects funded through the London Green Fund (LGF) would have been brought forward if left to the market, because the returns cannot be fully internalised by investors and the risk profiles would be hard to manage for any single partner. But, by setting up a transparent, formal arrangement, the LGF is bringing forward investment in green projects that provide financial, environmental and social returns.<sup>70</sup>

70. Sources: <http://www.london.gov.uk/priorities/business-economy/championing-london/london-and-european-structural-funds/european-regional-development-fund/jessica-london-green-fund>; <http://www.centreforcities.org/assets/files/2013/13-03-21-Developing-Interest-no-appendix.pdf>; <http://www.leef.co.uk/>; <http://www.buildup.eu/sites/default/files/content/LEEF.pdf>

- *What are the benefits and drawbacks to co-investment models?*
- *What market failures could be overcome through co-investment?*

## Moving away from grants: rewarding innovation

**Innovation prizes provide rewards for measurable outcomes rather than funding a process.** They have been used by cities to inspire citizens and businesses to find solutions to public problems, but without bearing the up-front costs and risks faced by grant programmes. A report on NESTA's Big Green Challenge prize found the programme helped focus communities on specific problems, identified and involved new talent and excellent ideas then mobilised new capital by attracting financial and non-financial support to the participants.<sup>71</sup>

Cities can use innovation prizes to encourage new ideas and find solutions to local problems. Even with limited resources, they mean councils are getting value for money by paying for outcomes. The Innovation Hub from Gauteng in South Africa has inspired and rewarded projects that have inexpensively reduced water waste, developed waste-to-heat energy platforms and even mobile apps for energy efficiency, all with the top prize receiving £15,000.<sup>72</sup>

As with all forms of funding, innovation prizes have their limitations. The NAO found that a UK government innovation prize for carbon capture did not sufficiently gauge the business risk and cost structure associated with the project, which led to its dismantling years later.<sup>73</sup>

In turn, cities can offer innovation prizes to support creative solutions to green issues, but the goals and risks of the prize must be taken into account and the rewards should match accordingly.

- *What small scale or scalable innovative solutions can address local challenges and support cities in reducing their CO2 emissions?*

71. NESTA. A practical guide: Using social challenge prizes to support people-powered innovation. Based on lessons from the Big Green Challenge.

72. <http://gic.theinnovationhub.com/past-competitions/gic-2011/>

73. <http://www.nao.org.uk/report/carbon-capture-and-storage-lessons-from-the-competition-for-the-first-uk-demonstration/>

## Bristol: European Green Capital

### Introduction

**Bristol has the ambition of becoming a European hub for low carbon industry** and has enjoyed some success, with a 4.7 per cent growth in its 'green economy' in 2012.<sup>74</sup> It has also received accolades such as being the first UK city to be designated the 'European Green Capital 2015' and became the first UK 'cycling city' in 2008. The importance of the green agenda is also reflected by the West of England Local Enterprise Partnership which highlights low carbon as a key sector for growth in the city.<sup>75</sup>

The city has a long term low carbon strategy – much of which was started before the Mayor took office – including the Bristol Climate Protection, Sustainable Energy Strategy and the Local Transport Plan 2026. It was this longterm vision and commitment spanning local government, businesses and the community that was integral to the success of the European Green Capital 2015 bid. The city council worked with a range of stakeholders including the local LEP, Low Carbon South West, the Environmental Technology Innovation Network, third sector organisations and neighbouring authorities such as Bath to ensure that objectives were closely aligned to the city and the wider area's needs.



### Pulling it all together: Combining the roles of local government

This report has set out how cities in the UK and elsewhere are meeting low carbon objectives whilst supporting their economy by intervening in five different ways (supporting business, regulations, incentives, funding and finance, and procurement). This case study explores the extent to which Bristol is using these five interventions in combination.

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74. EU 2013, Green Cities 2015 press release <http://ec.europa.eu/environment/europeangreencapital/winning-cities/2015-bristol/>

75. The technical bid for European Green Capital Award 2015 used location quotients to show the strength and resilience of Bristol's green jobs in comparison to the rest of the UK and 'other' jobs. [http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2013/06/Indicator-10-Eco-innovation\\_BRISTOL1.pdf](http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2013/06/Indicator-10-Eco-innovation_BRISTOL1.pdf)

## Supporting business: Home Energy Upgrade Scheme – the Green Deal implemented locally

To date nationally, the Green Deal has been slow to take off. But Bristol is adapting the Green Deal to make it work for the city. As a Green Deal Pilot, the Bristol Home Energy Upgrade Scheme has already completed over 120 retrofits and converted over 20 energy systems.<sup>76</sup> The early successes are due to Bristol City Council working with Green Deal customers to make the system as easy as possible to navigate. The council has implemented a Case Manager to help customers work through the process rather than leave them to deal with several different organisations. The council also produced a guide for the Planning Department to streamline the system and is looking to offer a low cost loan to further increase take up. Together these administrative, financial and planning strategies have helped Bristol bring forward the Green Deal at a faster pace than otherwise.

This business support strategy works because:

- It works to overcome a problem businesses face by simplifying the system
- It is focused, but it does not ‘pick winners’ in the industry
- It targets the underlying reasons why consumers do not change behaviour and reduces the effort required for change

### Regulations: Planning: new developments with renewables

Whilst local authorities in the UK lack regulatory power in many areas, they do have the power to legislate in land-use planning. For example, Bristol Council has set planning regulations in its Core Strategy to reduce the environmental impact of new developments. The Policy (BCS 14) states that “*Development in Bristol should include measures to reduce carbon dioxide emissions from energy use in accordance with the following energy hierarchy: 1. Minimising energy requirements; 2. Incorporating renewable energy sources; 3. Incorporating low-carbon energy sources*”.<sup>77</sup> In addition, new developments are required to produce enough renewable energy generation to reduce energy related CO<sub>2</sub> emissions by 20 per cent.

This policy is working because it is:

- Targeted and specific in its objectives
- Limited to what the local authority can directly influence and implement
- Focused on the largest local contributors of carbon emissions.

Whilst the policy regulation is proving effective, it was a challenge to get these policies approved by the Planning Inspectorate. Councils looking to replicate this approach need to ensure they have

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76. Centre for Cities Interviews, also Centre for Sustainable Energy, September 2013. Bristol Home Energy Upgrade. Bristol. <http://www.cse.org.uk/projects/view/1203>

77. Bristol City Council, 2011. *Bristol Core Strategy Development Framework*. Bristol [http://www.bristol.gov.uk/sites/default/files/documents/planning\\_and\\_building\\_regulations/planning\\_policy/local\\_development\\_framework/Bristol%20Development%20Framework%20Core%20Strategy%20June%202011.pdf](http://www.bristol.gov.uk/sites/default/files/documents/planning_and_building_regulations/planning_policy/local_development_framework/Bristol%20Development%20Framework%20Core%20Strategy%20June%202011.pdf)

a robust evidence base showing it will not adversely affect development viability (in accordance with the National Planning Policy Framework). Significantly, despite now being operational and successful, these policies could be undermined by the Housing Standards Review which is currently under consultation.

### **Incentives: Carbon Challenge**

The West of England Carbon Challenge (WECC) was set up by the Forum for the Future with Bristol City Council and partners. The incentive is similar to the New York initiative (Chapter 5) in that businesses pledge to reduce their emissions by at least 10 per cent over four years (2009-13) and, in return, make savings and embolden their 'green credentials'. The competition also gives an award each year which can be used by the winner in its marketing and branding. It is these networking and cost-saving benefits that WECC has increasingly sought to sell after feedback showed that pursuing a purely 'low carbon' agenda was less attractive to businesses. @Bristol (one of the 2013 winners) was motivated primarily by the networking benefits of the scheme's business community.<sup>78</sup>

This incentive works because it is:

- Low cost to the local authority
- Targeted at specific business behaviour
- Making a difference at the margin
- Encouraging business buy-in

### **Procurement: Hydrogenesis – the Bristol-made hydrogen fuelled ferry**

Bristol is currently trialling the high profile hydrogenesis (Bristol-made) hydrogen ferry. The ferry was commissioned as part of the Green Capital bid and is sponsored by the city council. The consortium of local businesses claims it is "putting Bristol on the world map amongst the pioneers of the emerging hydrogen economy".<sup>79</sup> The ferry is a high profile symbol of a wider message promoted by the city that Bristol is a 'laboratory for change'. However it came at considerable cost and is not envisaged as a trial for the introduction of a fleet of hydrogen ferries. Instead the ferry is the nation's first of its kind and showcases local low carbon, maritime and advanced manufacturing industries in the city in an eye-catching way.

This procurement strategy works because the council is:

- Supporting innovation where the market wouldn't
- Attracting investment to local businesses
- Raising the profile of the city's key industries

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78. Centre for Cities Interviews

79. 2013, Bristol city council, UK's first hydrogen-powered ferry to showcase green technology  
[www.bristol.gov.uk/press/business-bristol/uks-first-hydrogen-powered-ferry-showcase-green-technology](http://www.bristol.gov.uk/press/business-bristol/uks-first-hydrogen-powered-ferry-showcase-green-technology)

## Finance: Bristol Energy Services Company

The city used a €100 million ELENA investment from the European Investment Bank to form the Bristol Energy Services Company. Whilst this initiative was introduced before the election of the Mayor since taking office he has been a strong advocate for the company. As well as meeting 'green objectives' by using renewable energy (e.g. Bristol Solar city) the city hopes to benefit from creating up to 1,000 new jobs in the long term.<sup>80</sup> Bristol City Council also believes localised energy production will help the city plan its finances with greater certainty in the longer term and provide local businesses with stable fuel prices.

This finance strategy works because, the council is:

- Willing to accept higher risks in return for higher rewards
- Levering in significant public and private investment funds
- Supporting local businesses with by reducing energy costs



## Challenges to pursuing low carbon economic growth

Although Bristol has enjoyed some successes in moving towards a low carbon economy and delivering green jobs, there are significant challenges to this city-wide approach.

**It's a long term commitment with significant risks.** Many of these policies require upfront investment and will not produce tangible returns within traditional political cycles. Whilst Bristol benefits from having a Mayor who can instil his vision, it is the culture and networks across businesses, residents and the public sector within the city that ensure 'low carbon goals' remain a priority beyond political cycles. Maintaining this city-wide ethos requires significant community and business support. If low carbon values are held and shared, it is easier for local government and businesses to prioritise measures that drive green growth.

**It can be difficult to make evidence-based decisions which cut through the 'green wash' of inflated claims.** Bristol has benefited from good relations and ensured information is

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80. Bristol City Council, 2013. 'Bristol Secures Funding to develop energy services company' <https://www.bristol.gov.uk/press/business-bristol/bristol-secures-funding-develop-energy-services-company-%E2%80%93-uk-first-local>

shared with businesses through its active networks. This has enabled informed decisions. Good quality information and independent monitoring is crucial to support targeted strategies and ensure realistic and practical policies are implemented and improved upon.

**Co-ordinating complementary interventions is important to support the low carbon agenda.** Bristol's successes as both a 'green city' and a low carbon businesses hub show that for a city to create an environment for businesses to thrive, a strategy of policy co-ordination is required. Underpinning the five levers of change is a long term culture of environmental awareness and strong leadership in the field which ensures that the policies have a larger impact together than separately.

## Conclusion

A city's ability to reduce its carbon emissions are, in many ways, limited by the parameters of the national agenda. However, the case studies in this report show that increasingly cities in the UK and across the globe are not waiting to be told by national government what to do. They are taking action themselves, working with their business and residential communities to find practical responses to global issues.

Cities operate under financial constraints, with less money and resources than they have had in the past. Nevertheless, there are many ways to work towards carbon reduction targets with minimal costs. In turn, many of these projects offer financial as well as environmental returns.



## How to make the transition to low carbon work for UK cities

The report has set out five types of interventions that cities can and have used to maximise the economic advantages in pursuing the low carbon agenda:

- 1. Supporting Business** – City leaders are charged with creating an environment where all businesses can grow. This means improving networking opportunities so firms can learn from one another, building supply chains, local skills and growing the scale of the market to attract investment.
- 2. Regulator** – While UK cities have limited regulatory powers, councils can use land use planning, building regulations and licensing to target the largest local emitters. They can also negotiate with Government to remove red tape that hinders green growth and implement national government policy.
- 3. Incentiviser** – Using positive and negative incentives to influence carbon-emitting and polluting behaviours and actions are increasingly important, particularly in a finance-scarce context. Incentives are most successful when supported by complementary measures.
- 4. Procurer**– Cities are attractive markets for low carbon goods and services. Councils can use targeted procurement strategies to support new and innovative products and supply underlying infrastructure for low carbon projects.
- 5. Financer** – With reduced funding, new models of sharing risk and rewards can help green projects get off the ground. Cities need to explore how to harness the power of community groups and use co-investment models to leverage private sector capital.

The indicative case studies highlighted in the report offer different but complementary ways for cities to approach low carbon growth. To exploit the opportunities effectively requires: clear long term strategies championed through strong **leadership**; Effective **networks** between public, private and third sector organisations to enable opportunities to be innovated and shared; and, underpinning this, detailed **knowledge** about the city's business structure and emissions breakdown so that local resources can be effectively targeted at the most important issues.

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All views expressed in this report are those of the Centre for Cities and do not necessarily represent the views of those we interviewed. All mistakes are the authors' own.



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