

Carbon Neutral Cheltenham

Leadership
Through
Stewardship

October 2019 v.1.0

Executive Summary

In 2019, Cheltenham Borough Council declared a climate emergency and a commitment to be a carbon neutral Council and Borough by 2030. This goal will be met by activity that will promote the town's core vision and strategy and enhance the experience of people in the town.

The actions that the Council can take that will reduce its footprint from 5,060 tonnes CO₂e, the equivalent of 625 UK households, to zero in the timescale include the following:

- Ensuring all policies and actions align with the carbon neutral target
- Procuring 100% renewable electricity at all sites
- Introducing a zero carbon sports and leisure experience
- Upgrading the crematorium to zero carbon operation
- Introducing a Net Positive council office as the headquarters of the Council
- Developing the business case for renewable energy, like wind and solar power, on suitable sites
- Installing solar powered storage and charging infrastructure in Council owned car parks
- Moving the base of fleet operations to a Net Positive depot
- Rolling out a zero emission fleet
- Planting one million trees

The roadmap to eliminate the Borough carbon footprint includes action on leadership, engagement, energy, transport and buildings. The net result of this will be to reduce Borough emissions from a baseline of 459,491 tonnes CO₂e, or the size of a country like Belize, to zero. The process will start by including the community in co-creating with the delivery of the vision to ensure that the road to carbon neutrality is owned by the people of Cheltenham. The roadmap includes major initiatives like the following:

- The Cheltenham Standard, a visionary statement for setting a benchmark for low-carbon living
- Lead by Example, a programme of demonstration projects to help break down barriers to the adoption of zero carbon solutions
- A Climate Action Fund to finance the road to zero carbon

- Cheltenham Green Deal, broadening access to carbon reduction initiatives to communities that cannot afford the high capital expenses
- Community engagement, building capacity for local people to be fully involved
- Climate Champions, inspiring communities and enterprises to find new solutions
- Cheltenham Energy, a new local zero emission energy provider facilitated by the council
- Smart Cheltenham, a vision for integrated living in West Cheltenham that promotes a low carbon lifestyle
- Zero carbon hubs, decentralised futureproof centres promoting zero emission mobility
- Return to Regency, a competition for developers to demonstrate leadership and innovation to build carbon positive communities

In addition to the benefits that achieving zero carbon will have on climate change, a well-managed carbon neutral programme will also offer substantial positive effects on a wide range of other issues, including fuel poverty, air quality, health and well-being, resilience and economic growth.

To deliver this vision will require resources and capacity building. In addition to internal staff and external expertise, substantial project and collaboration funding will be required. The projects and programme will require detailed business cases; the viability of these may change during the period due to factors like the level of readiness for emerging technologies, particularly in low carbon heat. However, the availability of the Climate Action Fund and already identified funding streams will mean that the programme is capable of being managed in a very cost effective manner.

The programme will be monitored annually with interim milestones, ensuring that the Council and Borough targets remain on track.

The vision for 2030, is that Cheltenham fulfils its vision to be a place: where all our people and the communities they live in thrive; where culture and creativity thrives, celebrated and enjoyed throughout the year; where businesses and their workforces thrive and where everyone thrives, in a setting that is net zero carbon and recognisably, iconically Cheltenham.

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Background

Cheltenham is a place...

- where all our people and the communities they live in thrive.
- where culture and creativity thrives, celebrated and enjoyed throughout the year.
- where businesses and their workforces thrive.
- where everyone thrives.

Cheltenham Place Strategy¹

Nestled between the Severn Valley and the Cotswolds, Cheltenham is a town of contrasts. Home to one of sporting's greatest events and a string of festivals of international renown, the Regency town, steeped in architectural beauty, is also one of the world centres for cyber security, hosting the headquarters for the UK intelligent services at GCHQ. It counts some of the richest and the poorest in the county among those who call Cheltenham home, with both recent arrivals and families that have been in the area for generations.



Pittville Pump Room

Cheltenham has ambition to be “a place where everyone thrives”.¹

¹ Cheltenham Borough Council *Cheltenham. Place Vision.* 2019
<http://bit.ly/2IUHzRR>

The Place Vision for Cheltenham sets out what the town aspires to be. A place where people and their communities, culture and creativity, businesses and workforces all thrive. The town is a cultural centre, attracting over 250,000 people to Cheltenham Festivals each year and 65,000 a day to Cheltenham Gold Cup festival. It is a centre for enterprise, with over 72,000 jobs in industries ranging from electronics to fast fashion.

Part of this vision is a desire to lead in environmental stewardship, particularly in reducing the Borough's impacts on climate change. Although Cheltenham has been engaged in carbon management for decades, led by prophetic voices urging action emanating from within the Borough through organisations like Vision 21 and prominent visionary individuals like Jonathan Porritt, the urgency for action has changed radically in 2019.

In February, Cheltenham Borough Council unanimously passed a motion that called on the Cabinet to declare a "climate emergency". More than that, the Council called for Cabinet to set out a plan for taking action in response to the emergency.



On July 9th, the Cabinet declared a climate emergency and included actions to respond to the requests of Council.² These included proposals to:

- Make Cheltenham carbon neutral by 2030;
- Call on Westminster to provide the powers and resources to make achieving this target possible and to work with other governments (both within the UK and internationally) to determine and implement best practice methods to limit Global Warming to less than 1.5°C
- Continue to work with partners across the town, county and region to deliver this new goal, through all relevant strategies and plans;
- Report to full Council with the actions the authority will take to address the emergency.

² Cheltenham Borough Council *Cheltenham Borough Council declares a climate emergency* 2019 <http://bit.ly/2IMdEvP>

The Council is not alone in this venture. On April 30th, Cheltenham's MP sponsored the widely welcomed Climate Change (Net Zero UK Carbon Account) Bill which requires the UK to achieve a net zero carbon budget nationwide. Simultaneous with Cheltenham, other District Councils in the county, as well as the County Council, also declared climate emergencies.

In July 2019, following the Cabinet's declaration of a climate emergency, the first actions to achieve this were instigated. Principally, Council requested a carbon emission baseline for both the Council and the borough, a roadmap for making progress towards making the Council and Cheltenham carbon neutral by 2030, and identification of the resources needed to deliver the activities. This report aims to help meet this need.



Carbon neutrality

According to The CarbonNeutral Protocol³, to achieve carbon neutrality requires five steps:

1. Define the Subject
2. Measure the Subject's emissions
3. Set Target
4. Reduce Emissions
5. Communicate

To achieve carbon neutrality for Cheltenham, therefore, the first step is to define the boundary for the footprint. For the Council, the boundary is defined following the Greenhouse Gas (GHG) Protocol⁴ to include its operations in the borough, including a fraction of shared services in proportion to ownership. Operations of the Council's housing management company, Cheltenham Borough Homes (CBH), the buildings operated by the Cheltenham Trust and services undertaken by Ubico for the Council are included.

Not included are the impact of operations outside the Borough, including the manufacture of goods used by the Council and investments such as pensions. Activities undertaken by Council employees outside the Borough for Council business, such as travel to meetings, and the impact of significant investments where the Council is a major shareholder, are included. It also includes the positive impact of any investments that the Council makes, for example, in renewable energy.

For the Borough, the boundary defines the geographical area after the Local Government Act 1972,⁵ with the alterations effected under The Gloucestershire (District Boundaries) Order 1991.⁶ Emissions are defined according to the GHG Protocol for Cities.⁷

³ Natural Capital Partners *The CarbonNeutral Protocol: The Global Standard for Carbon Neutral Programmes* 2019 <http://bit.ly/2IM2yqf>

⁴ World Resources Institute/World Business Council for Sustainable Development *GHG Protocol Corporate Accounting and Reporting Standard* 2012 <http://bit.ly/2ISObAa>

⁵ <http://bit.ly/2kTk2AD>

⁶ <http://bit.ly/2mpsZST>

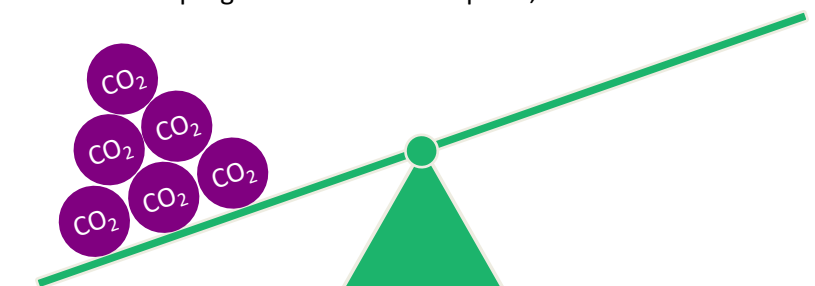
⁷ World Resources Institute *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories* 2014 <http://bit.ly/2kfeDnd>

This means that everything that takes place in the Borough is counted, including the effect of visitors and the footprint for any products or services originating in the Borough, even if these are sold outside. However, it does not include the impact of manufacturing goods made outside the Borough and of travel outside the Borough by Cheltenham residents, like catching the train to Bristol.

The carbon footprint is measured according to the GHG Protocol. Activity over a complete year will be considered, and the consequent footprint reported in tonnes of carbon dioxide equivalent (t CO₂e) so that all greenhouse gases listed under the Kyoto Protocol and currently targeted for reduction are included. These are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, sulphur- hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

The Council has defined the target as zero, but following best practice, we recommend setting a challenging interim target and monitoring arrangements to ensure that the target is met. Experience has shown that a well-run programme includes both low investment/quick return activity and high investment/high return projects that yield results later in the programme.

The reduction programme has three aspects, which can be illustrated.

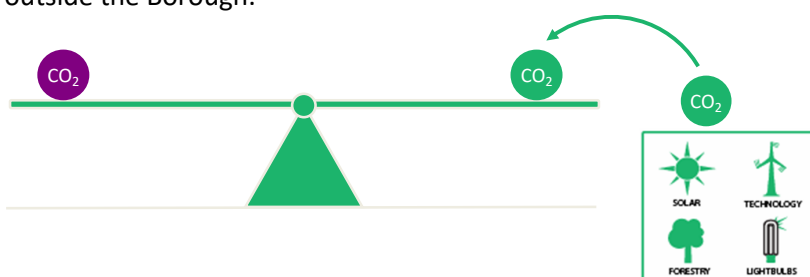


The first aspect is to reduce internal emissions. This means undertaking activities, for example, to reduce energy use.

The second aspect is to ensure that as far as is practicable, the energy used is zero carbon. This means, for example, investing in solar energy and other renewable energy sources.



The third aspect is to invest in external emissions reduction. For example, this could be by investing directly in solar energy generation outside the Borough.



The combination of these activities is to reduce the net carbon footprint to zero.

Simultaneously, a wide-reaching engagement and communication campaign is needed, to communicate the benefits of carbon neutrality and also ensure that citizens are fully involved in the project. For example, this could be through a forum like a citizens' assembly for the Borough, or a staff team for the Council.

Two key aspects underpin the programme. Firstly, there is an understanding of the cost of carbon. It is becoming more common for authorities to cost carbon to enable decision making and this is a key recommendation for Cheltenham.

Secondly, the Council will need to ensure that all policies are framed through the lens of carbon management and the carbon implications all activities are managed. Cheltenham Borough Council currently interrogates the climate change implications of every decision. To become carbon neutral, means taking into account the positive and negative carbon implications of decisions across the Borough.

The Council's ambition to be carbon neutral by 2030 requires Cheltenham to become a more sustainable community, with a better quality of life, through a process that includes all citizens.



This requires leadership, but also a clear vision of what Cheltenham will be. Let us take a journey forward and see what 2030 may hold.

A Letter from the Future

Cheltenham

December 31, 2030

Dear Jack,

We have had a lovely time in your old haunt Cheltenham. Thank you for your advice about where to stay. You are completely right about the awesome welcome and the quality of the accommodation. That has not changed in the last decade.

What you will not recognise is the atmosphere. I don't mean the festival feel, which was probably as lively then as it is now. The big change is in the quality of the air. We arrived and parked up in one of the fabulous new interchanges and were whisked into town on one of the new buses. Like everywhere these days, they are electric. But what I loved was the way they seemed so popular with everyone, not just visitors like us. I chatted to a young woman working at the cyber park. She had grown up in the town but had to leave because she could not afford to live here. She is now living in one of the new carbon positive homes that have been built near her work. She described the lovely community she is living in, with old and young together, and how easy it is to walk and bike to work. She said that the streets have never been safer.

I know exactly what she means. When we got into town, it was really buzzy. This must be the best place to shop in England. And everyone was walking. It reminded me so much of the old pictures of Cheltenham from two hundred years ago. The promenade is really well named! And there are loads of green spaces. This really is a place of tree-lined avenues. One nice touch, though, was the energy meter in the centre of town. I know I'm a bit of a geek, but it was great to see it swinging in the "green" to show that Cheltenham is making renewable energy. I think we should get one of these in our town square!

We also went to the Gloucestershire Motorshow while we were here. It was interesting seeing all the old cars. Now that new petrol cars are unavailable, it does not seem so weird that Cheltenham has so many electric vehicles, especially given the reputation the place has for the work on vehicle security, but I was also chatting with a real

petrolhead about the change. She was amazed at how quickly people dropped fossil fuels. I know it seems weird now, but there was a time when people couldn't charge their cars at home here! Can you imagine what it would do to your house price if you didn't have a charging point these days!

Anyway, we're off to another event this evening. The new zero carbon festival spaces and venues in Cheltenham are awesome.

You must come back. Cheltenham seems to have managed to combine the new with the old. It really feels like a regency town for the 2030s.

Love,

Jill

Today

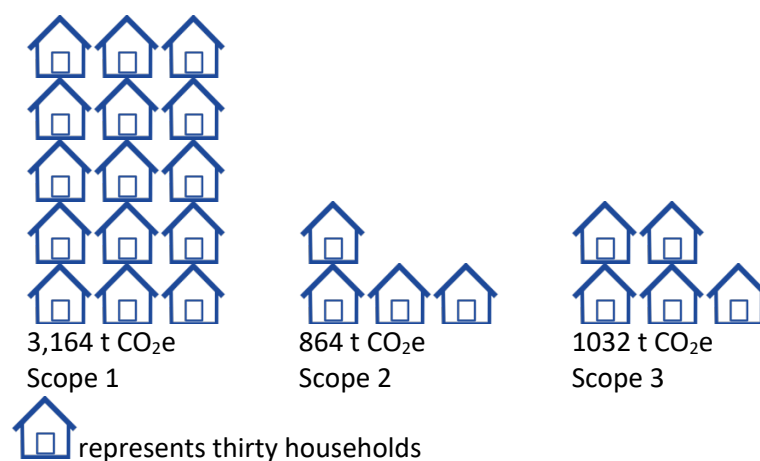
Cheltenham is the home of many activities that have reduced its carbon footprint, from large corporate investments by companies, to many small individual actions. This means that the town is working from a rolling start.



Cheltenham Borough Homes has installed over 6000 solar panels

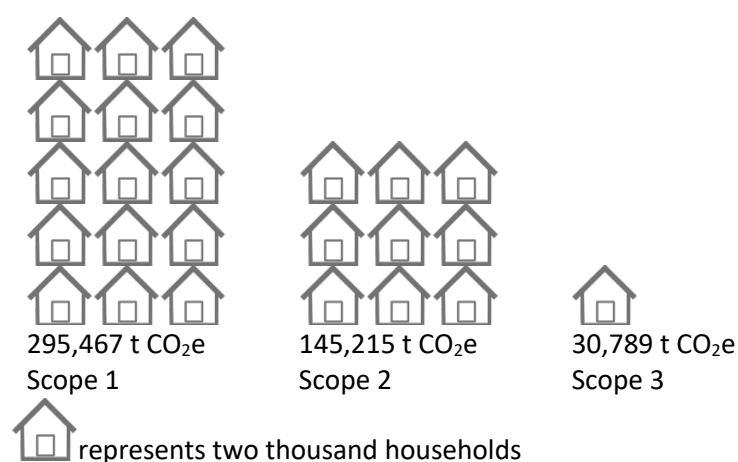
When measuring carbon emissions according to the GHG Protocol, we split them into three categories, known as scopes. Scope 1 emissions are from sources within the boundary. For the Council, this includes the burning of fossil fuels in Council assets like buildings or vehicles. For the Borough, it means all fossil fuels burnt within the Borough, like emissions from buses or domestic gas boilers. Scope 2 emissions are the consequence of the use of grid-supplied utilities, such as electricity. Scope 3 emissions take place outside the Borough. Scope 3 emissions are very broad and have been restricted to the effects of activities like business travel, commuting for Council employees, transmission losses for electricity generated outside the Borough and waste which leaves the Borough for processing.

The baseline footprint for the financial year 2018/2019 (FY2019) for the Council was 5060 t CO₂e. This is the equivalent of 625 typical UK households.⁸



The biggest source of emissions was Leisure@ Cheltenham, which produced 1,190 t CO₂e.

The baseline footprint for FY2019 for the Borough was 459,491 t CO₂e, which is similar to the footprint of a small country like Belize.



The biggest source of Borough emissions was domestic gas use, which produced 128,345 t CO₂e.

⁸ Based on figures from the Committee for Climate Change for 2014



Renewable energy in the Borough is primarily through roof-mounted solar panels and the Springbank wind turbine. The generation capacity for renewables in 2019 from the three substations that feed Cheltenham⁹ was 22,011 kVA. Not all this capacity is within the Borough and not all is likely to be running at full capacity at any time, so renewable energy generated is estimated to save 3,237 t CO₂e during the year.

Tree cover is estimated at 32% and captures approximately 200 t CO₂e a year across the Borough.¹⁰

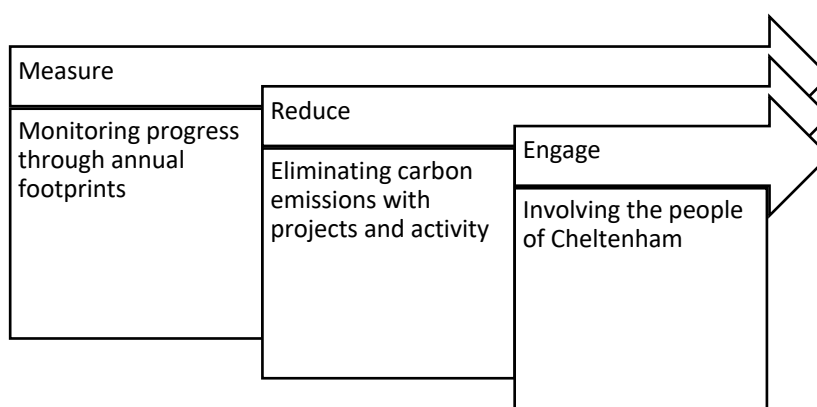
⁹ In addition to the substation named Cheltenham, the town also relies on power from substations at Marle Hill and Montpellier

¹⁰ Based on LULUCF data for 2007 to 2017 courtesy of National Statistics

Ambition

Perhaps the most dangerous misconception about the climate crisis is that we have to “lower” our emissions. Because that is far from enough. Our emissions have to stop if we are to stay below 1.5-2C of warming. The “lowering of emissions” is of course necessary but it is only the beginning of a fast process that must lead to a stop within a couple of decades, or less. And by “stop” I mean net zero – and then quickly on to negative figures.

Greta Thunberg



Achieving carbon neutrality is a journey which will definitely require a break with the norm.

To discover how this ambition can be realised, this report has relied on input from a wide range of stakeholders, including council officers and members, representatives from organisations like the Business Improvement District (BID) and Local Enterprise Partnership (LEP), major employers, other Councils and local experts. It has also drawn on a wide range of existing research, local knowledge and experience from other organisations, to ensure that the presented suggestions are feasible and capable of achieving the stated objectives. However, it is important to note that the future is unpredictable, so no absolute guarantees should be implied in any of this report. Its conclusions will need to be tested, challenged and refined as the carbon reduction programme is implemented.

Carbon Neutral Council

The potential list of projects to achieve carbon neutrality by 2030 for Cheltenham Council is extensive. To set priorities, it is essential to understand the investments required for the return, the risks associated with undertaking or not undertaking the project and the resources and timescales that will be required. It is therefore recommended that one of the first tasks is to create a business case template, that presents the environmental, social and financial case.

An example programme that would enable the Council to achieve carbon neutrality is presented below. The table is laid out with a potential timescale and carbon reduction impact. The reduction is an estimate. The actual reduction is likely to be different, not least because there will be cumulative effects, as many of them will be concurrent.

	Possible timescale	Potential annual effect
Zero carbon Leisure@	2020/2022	-1190 t CO ₂ e
Net positive depot	2021/2025	-970 t CO ₂ e
100% renewable electricity	2019/2020	-860 t CO ₂ e
Solar car parks	2021/2023	-800 t CO ₂ e
Solar farm	2025/2027	-530 t CO ₂ e
Zero carbon crematorium	2023/2024	-250 t CO ₂ e
Net positive council office	2021/2025	-180 t CO ₂ e
Zero emission fleet	2020/2026	-70 t CO ₂ e
One million trees	2019/2025	-1 t CO ₂ e

The total of all reductions is greater than the current baseline as it is expected that there will be increased demands on the Council during the period as Cheltenham grows, so there will be a need to take unexpected increases into account.

Zero carbon Leisure@ Cheltenham



One of the largest carbon emitters in the Borough is Leisure@ Cheltenham. The pool is heated by a combined heat and power (CHP) plant which is relatively efficient, but relies on natural gas, a fossil fuel. The site is well placed to explore alternative sources, like Schlumberger ground source heat pumps (GSHP), solar water heating and photovoltaic panels, as well as district heating and other technologies.

Net positive depot

Most of the vehicle carbon emissions reported by the Council come from Ubico providing services like waste collection and recycling. They currently operate from a very constrained depot site.

Creating a new net positive depot and recycling facility would eliminate nearly 1,000 tonnes of greenhouse gases by introducing zero emission refuse collection and other service vehicles, replacing fossil-based natural gas with reclaimed biogas, producing low carbon energy, eliminating cross-shipment of recyclables and utilising low carbon heat from waste. The timing of this project will rely on the availability of vehicles, which are currently in limited supply, and an appropriate new site, so it is recommended that it be initiated early in the programme to ensure timely delivery.

100% Renewable Electricity

Procuring 100% renewable electricity is a step that all organisations and people can take to reduce their impact on climate change. It is recommended that Cheltenham join RE100 and commit to using 100% renewable electricity.



Solar Car Parks

Across the town, CBC owns twenty-nine car parks, many of which are ideally sited to provide charging infrastructure for electric vehicles. They also provide an ideal location for solar charging and storage.

Other sites in Cheltenham with car parks are exploring similar installations, so there may be opportunities to collaborate.



Solar Farm

As part of the consultation on the Borough Council's 2015/16 budget, a proposal was put forward for a Council owned solar farm. At the time, the financial conditions were not ideal. However, the subsequent change in the economics of solar for the Council means that large scale installations, as well as smaller ones, are now cost-effective ways to deliver carbon savings. The economics of energy storage also need to be reassessed. Identifying sites for solar installation will require a new and accurate assessment of all Council owned property.

Zero Carbon Crematorium

The crematorium has recently been upgraded to higher energy efficiency, reducing the carbon footprint of the operation, but there are further opportunities to reduce emissions, including moving away from fossil-based fuels.

Net Positive Council Office

The existing modernisation initiative has already yielded some positive carbon benefits, but the constraints of the existing office arrangements mean that it could be very expensive for the Council to have a zero carbon operation.

However, this also provides a huge opportunity. The Council can use its choice of a new smaller headquarters designed to demonstrate leadership by showing that a local authority can be based at a centre that is an exemplar for its purpose, accessible and cost effective, whilst also being a net positive contributor to the Borough's carbon footprint.

Zero Carbon Fleet

The Council, Cheltenham Borough Homes and Ubico operate a range of vehicles in the Borough, including twenty-three refuse and recycling vehicles, street sweepers, vans and cars. A preliminary assessment demonstrates that by 2030 the entire fleet can be zero emission. Cheltenham is fortunate in being the headquarters of one of the few operational hydrogen fleets in the UK, as well as having Council employee experience of electric vehicle operation, which will help ensure that the technology roll-out is operationally viable.

Expanding this operation to include a desirable pool fleet would reduce the use of employee vehicles for work purposes (grey fleet) and thus Scope 3 emissions even further. More Scope 3 emission reductions can be gained by rolling out an 'electric vehicle for staff' scheme.



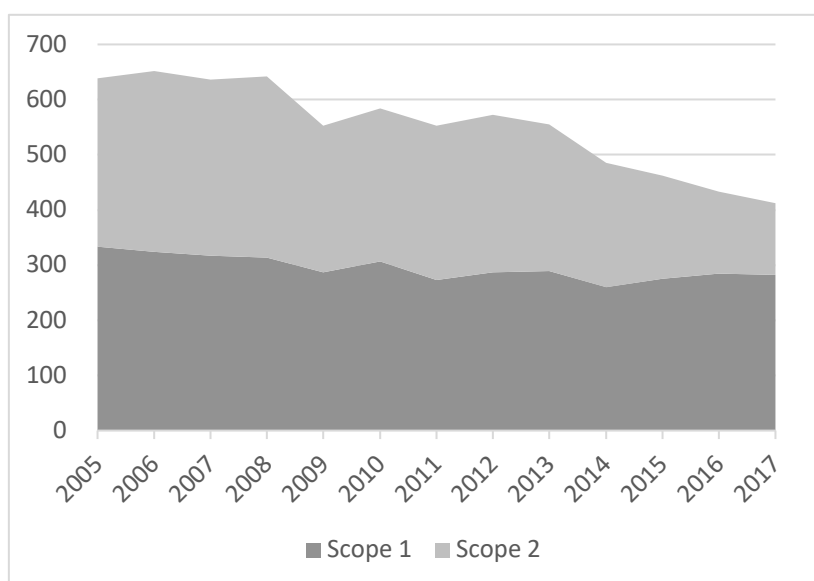
In addition to the car park infrastructure listed above, the Council will need to introduce dedicated electric charging points in areas like the Council offices, to further support the roll out of electric vehicles to replace those powered by internal combustion engines.

One Million Trees

One of the commonly requested initiatives, from elected members and the public, was for more tree planting and others have set such targets. Currently, annual tree planting measures in the low hundreds, which will not keep pace with natural losses. It is recommended that the Council works with partners such as the Rotary Club, County Council, Parish Councils and The Woodland Trust to facilitate the planting of a net million trees. Not only would this contribute to the net zero target, but it could also form a key part of the communication campaign. Although initial gains are low, over the lifecycle of the tree, greenhouse gas mitigation gains are potentially very high and trees have other benefits in relation to biodiversity, air quality and mental well-being.

Carbon Neutral Borough

For more than a decade, carbon emissions for Cheltenham Borough have been on a general downward trend, but there is a need to go further and faster.



Historical emissions for Cheltenham Borough (1000s t CO₂e)¹¹

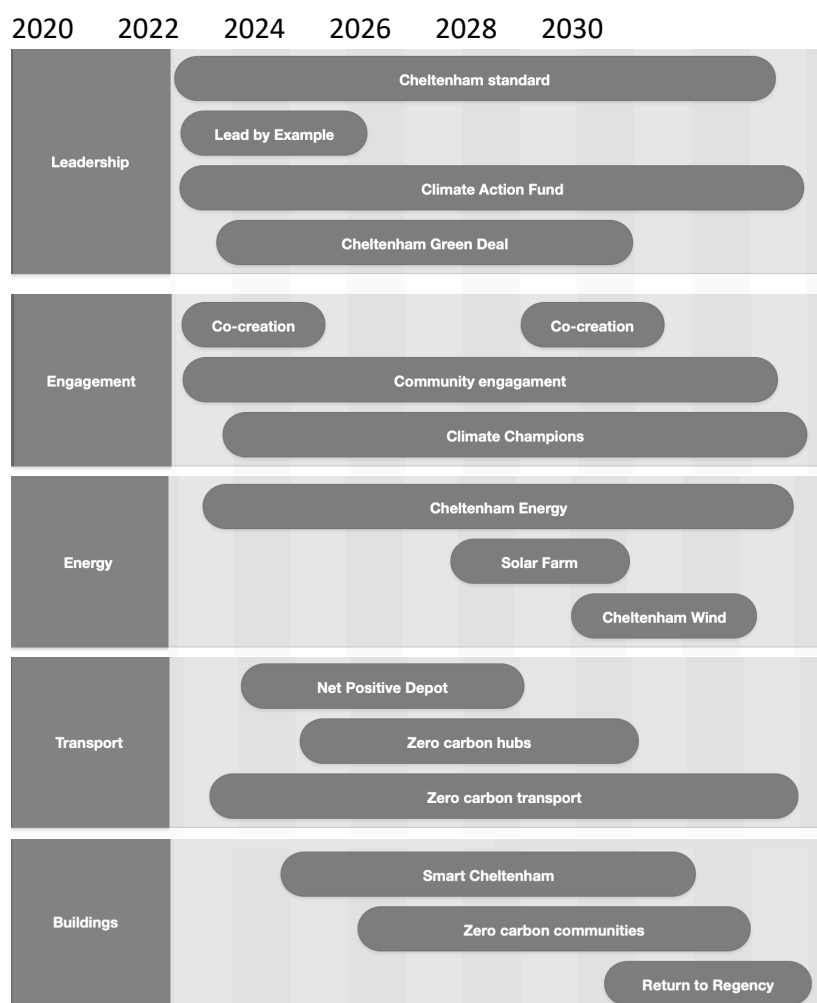
This trend provides an excellent position from which to push for future reductions. This is supported by public opinion in the Borough, which has been consistent in vocalising a desire for Cheltenham to invest more in climate-friendly initiatives like green spaces, renewable energy and public transport.¹²

¹¹ Data from BEIS

¹² For example, The Community Plan and Local Development Framework consultation in 2006 and the Budget Consultation 2015/16

Roadmap

The following outline roadmap is proposed to achieve zero net carbon in Cheltenham Borough by 2030.



The roadmap covers a wide range of activities that are grouped to ease understanding, rather than to imply priority. The timescales are forecasts based on current knowledge and a reasonable assessment of dependencies but will require regular review.

Leadership

The Cheltenham Standard

Cheltenham has inspired visitors for over two hundred years with its motto “Salubritas et Eruditio”. Salubritas means health and wholesomeness, exemplified by the wide green spaces and health-giving waters which were the town’s hallmark. Eruditio comes from the town’s reputation as a seat of learning and inspiration; it implies a spirit of exploration and innovation.



For Cheltenham to thrive in the 2020s, the town needs to reclaim its identity. It is too often, “underrated”¹³ and treated as “just another town”. Yet Cheltenham as a destination is known for four things: its cultural and sporting life, its architectural and green heritage, its retail offering and its leadership in cybersecurity.

The Cheltenham Standard is a way to bring the values that make Cheltenham unique back to the forefront, through the lens of the zero carbon ambition. To achieve the Cheltenham Standard means operating in a way that is consistent with carbon-neutral Cheltenham values. This means designing an infrastructure that promotes promenading (walking) over driving, tall crescents of elegant carbon positive townhouses with balconies to reduce solar gain, health giving green spaces built for cultural activity, integrated transport that uses technology to eliminate car dependence and breaking down barriers between the old and young to promote lifelong learning.

Implementing the Cheltenham Standard will require setting up the brand, criteria, verification and accountability structure. The Standard will cover many activities, potentially including cultural events, building development, private hire operation and education. Depending on the application, it will cover the full life-cycle of the product or service, which may include design, implementation, operations and repurposing, or content development and delivery.

¹³ Harriet O'Brien “There's so much more to underrated Cheltenham than a day at the races” *Daily Telegraph* 8 March 2019

This is an elegant gem of a destination that oozes cultured charm
Harriet O'Brien, Daily Telegraph

Lead by Example

Fear is a potent barrier to adopting low carbon technologies. Cheltenham can help remove the fear by leading by example.



For instance, Cheltenham Borough Homes (CBH) owns a wide range of dwellings. With sufficient resources, CBH can retrofit these to demonstrate how any homeowner can reduce their impact on climate change or become net carbon zero.

Preliminary discussions show that between six and twelve property areas could be used to demonstrate a range of solutions to climate change, fuel poverty and the health risks of excess cold, as well as increasing biodiversity and citizen engagement. Following these demonstrators, a business case will be co-created with the Council and other agencies to make the entire CBH portfolio carbon neutral. Based on current predictions, the business case is expected to improve over the period due to economic, social and technological changes so a phased implementation is likely to be followed.

The commitment shown by this leadership will encourage the growth of the sustainable green economy around green retrofit, improving skills and employment opportunities. Cheltenham is well-placed to encourage this through apprenticeships and education programmes that build on existing relationships.



Climate Action Fund

A significant barrier to climate change mitigation is often the availability of resources to invest. While there are many grants and funds available, there is a need for unrestricted funds to help ensure that the Borough achieves its target. To this end, it is proposed that an Action Fund be created to issue Green Bonds, manage applications and ensure the smooth financial running of investments. The Action Fund will provide a useful outlet for funds divesting from fossil fuels, including those held by local authorities and local investors.

It is recommended that the management of the Action Fund be undertaken by a responsible and accountable organisation, which will be structured according to social values. The experience of local energy co-operatives may be valuable.

Cheltenham Green Deal

It is recommended that the business case for the Action Fund providing financing for individual projects under a green deal mechanism be explored. Working in partnership to reduce risk and ensure appropriate expertise, this could support activities like insulation and draught-proofing by providing finance to individuals and small enterprises. Preliminary research indicates that there is a substantial opportunity for a trusted brand like the Council to provide this service.

Engagement

Climate change has implications on all levels of society and engaging with the wider Cheltenham community is essential. This is best achieved through co-creation with the community, through forums like citizens' assemblies. Existing entities like Parish Councils, community groups in Hester's Way, Oakley, Springbank and elsewhere, faith communities and voluntary groups, including those that are part of Cheltenham Voluntary and Community Sector (VCS) Forum, and collaborations to reach young people such as InterClimate Network (ICN), who run the Climate Conference for Gloucestershire. Newer initiatives, like Plastic Free Cheltenham, will also furnish allies, but there is also a need to engage hard to reach groups, which may be best achieved through mechanisms like Action Competence.

It is expected that this co-creation cohort will continue to input throughout the next decade, potentially to a midway point, to assist with the initial adaptation to demographic and social changes.



Cheltenham will also use its successful twinning links and its extensive reach through its sporting and cultural festivals, to be an ambassador for carbon neutrality, with the pioneering legacy of Edward Wilson to inspire a wider audience. This will help engage people and organisations outside the Borough that will be key enablers of success.

Collaboration will underpin the success of this venture and so, in addition to partner local authorities and the LEP, there will be a need to engage other actors. To achieve this, it is recommended that a secretariat be created to coordinate climate champion groups for cohorts like local business owners, working with the BID, high impact business operators, including those headquartered outside the Borough, and leaders of school and communities. A Climate Champions Award scheme will reward success and best practice guides can promote sharing of experience.

Energy

Research undertaken as part of this study and the Gloucestershire County Council Renewable Energy Study, demonstrates that Cheltenham has a huge untapped renewable energy potential.¹⁴ It is proposed that the Council leads on developing this through the Climate Action Fund. Projects could range from the small domestic scale to large developments.

Using this resource, it is further proposed that the business case for Cheltenham Energy be developed. This entity will sell renewable energy directly to local customers, including the Borough Council itself, supported by 100% renewable energy generated outside the Borough.



Cheltenham Energy will complement the Climate Action Fund and provide an additional mobilisation force and financial instrument to enable decarbonisation at scale. Preliminary discussions have shown that there is interest in collaboration from other agencies, including some based in other areas of Gloucestershire, so it will be essential that wider conversations be had early to ensure that any business model is robust, scalable and viable in the long term. It may also prove a valuable model for implementation at County level.



Among the projects that Cheltenham Energy could support are solar farms, in addition to those schemes developed on Council property. According to the Gloucestershire County Council Renewable Energy Study, Cheltenham has limited opportunity for wind energy, but there is still the potential to install over 27.7MW. This is more than the current total of all renewable capacity in the town.

¹⁴ Gloucestershire County Council *Renewable Energy Study Phase 2 – Resource Assessment* 2011 <http://bit.ly/2lVrs6R>

There will be a need for collaboration to implement many of the projects. Some will require the strengthening of existing partnerships, such as decarbonising the Lido, while others will take forging new relationships with a focus on eliminating carbon emissions. Similarly, there will be a need to combine efficiency and generation so as to optimise investment. It is expected that the Climate Action Fund will prove a helpful mechanism to allocate finances efficiently.

One mechanism that could be used to support the expansion of renewable energy in Cheltenham is to operate a “rent a roof scheme” for small scale solar. It is proposed that this be considered independently from the energy provision, as a separate business case supported by the Climate Action Fund or other investment finance.



Preliminary data demonstrates that there is a potential for Cheltenham to become carbon neutral on electricity utilising Cheltenham Energy based on a linear Scope 2 curve before 2030.¹⁵

It is recommended that Cheltenham support the work of the Gloucestershire Heat Decarbonisation task group decarbonising non-electric heating, such as oil and gas. Options of using biogas, hythane and hydrogen inputs, particularly drawing on the local business expertise, may prove invaluable. However, it is recommended that the main focus on decarbonising heat is through the use of more efficient building envelopes as this has additional benefits such as saving money, reducing fuel poverty and improving health. The business case for this will also need to be considered in light of changes in national policy that are likely to take place as the UK achieves its own net zero carbon target.

¹⁵ Based on current trends in the electricity grid mix. Should the national electricity mix decarbonise less quickly, there will be a need for more activity in the Borough.

Transport

Eliminating emissions from transport is a key challenge to carbon neutrality. The first pillar of this endeavour is the creation of a net positive depot, which could provide key support to the wider transport domain.

The second pillar is the creation of a network of zero carbon hubs. These will be both micro-hubs among the communities of Cheltenham and larger interchanges at the periphery and the railway station. Research undertaken for the Borough Council indicates that six district micro-hubs would provide coverage for the town.¹⁶ Implementation could involve partners like Intermodality, parish councils and local transport operators. The interchanges would facilitate modal shift to zero carbon transport for passengers and goods.



Zero emission last-mile deliveries and shuttle services must be more attractive than using a private vehicle, which gives the opportunity for entrepreneurial innovation, with leadership from the private sector. Cheltenham can draw on its hydrogen experience here.

Simultaneously, the Council will put in place policies that enable the movement to zero carbon public transport, working with National Rail, the Highways Agency, Gloucestershire County Council and other interested parties. Particular focus will need to be paid to vehicle owners with long replacement cycles, such as bus operators.

The Climate Action Fund could be a useful tool here, along with other incentives following Oxford City Council's model. Incentives to move public transport to zero carbon modes will need to be effective, so that all modes are zero carbon by 2025 as required.



¹⁶ For more information, see *Connecting Cheltenham – Strategy Report 2019*.

By 2025, Deloitte predict that electric vehicle sales will break the 20 million barrier and restrictions on non-plug-in vehicles will be enacted across the country.¹⁷ Cheltenham will not be immune to this trend, but alternatives like walking and cycling need to be encouraged. In addition to the proposed cycle superhighways and Cheltways,¹⁸ there need to be safe and secure storage areas and coordination to ensure routes are useful.



Collaboration with county-level activity undertaken by Active Gloucestershire and Think Travel will prove invaluable.

The inevitable transport redesign that new shared and connected business models will bring will also give Cheltenham the opportunity to rethink public spaces.



A closer alignment between public and shared transport modes, along with the new infrastructure, will mean that Cheltenham will be able to reclaim cultural spaces, increasing the amount of walking in the town centre, which will have positive effects on the local economy as well as health benefits.

¹⁷ Deloitte *New market. New entrants. New challenges. Battery Electric Vehicles* 2019

¹⁸ Systra *Connecting Cheltenham Strategy Report* 2019

Buildings

Cheltenham's architectural heritage is one of its defining characteristics and will be a key enabler to ensure that the Borough achieves carbon neutrality by 2030. Key to this is the development of clean and healthy communities which are fossil fuel free.

Working in collaboration with developers and house owners, a programme will need to be agreed to achieve the goal of zero carbon by 2030, particularly in light of the long timescales that can be a feature of the industry.



Amongst the existing housing stock, creating zero carbon communities will be essential. Some of this will be driven by consumer demand, corporate innovation to gain market share, the need to reduce social inequality and national policy. Existing examples like the Nottingham Energiesprong homes prove that such work is possible, although Cheltenham's particular challenges with conservation areas and listed buildings will need to be addressed through a combination of innovative solutions and external emissions reduction. Particularly, it is recommended that options for owners to procure carbon credits so that they can be carbon neutral be explored.

Simultaneous with the retrofit programme, there is an opportunity for Cheltenham, as part of the new development in the west of the town, to demonstrate how a Regency town can embrace smart technologies to create an environment that is attractive, affordable and net carbon positive.

The new development, designated a Garden Community, can integrate smart homes, connected and autonomous vehicles, circular business models, zero carbon building techniques and more flexible ways of working at the design phase.



For new build, the immediate opportunities across the town, as well as the large development to the west, give an opportunity to create net carbon positive dwellings, which will be critical due to the constraints of the listed housing stock. These will be a key proving ground for the Cheltenham Standard, enabling developers and other stakeholders to be involved in driving best practice.

Net Zero Carbon Buildings¹⁹ provides a framework for carbon neutral constructions but good developers will, when they see the value, be keen to demonstrate their leadership credentials through innovative solutions to the climate emergency. For example, a minimum SAP of 100 could be set for future developments. This will be supported by the government carbon neutral target and the Planning Act 2008, that states that “development and use of land in the local planning authority’s area contribute to the mitigation of, and adaptation to, climate change.”²⁰

Cheltenham can lead this by being prepared to be an early adopter of technologies, utilising mechanisms like the Climate Action Fund, Cheltenham Energy and Climate Champions to ensure that the benefits of low carbon energy are felt across the community.



A key part of this activity will be rewilding that increases biodiversity and climate resilience as well as removing emissions. Preliminary discussions have demonstrated that a programme led by the Council with partners like CBH can deliver substantial benefits in carbon reduction as well as increased amenity, health benefits and resident satisfaction.

The wider implications of integrated living, the convergence of the transport, technology and energy sectors and the requirement for affordable and desirable living spaces gives Cheltenham the opportunity to re-embrace features of Regency living. It is therefore proposed that the Council create a competition for carbon positive communities that are consistent with Regency Cheltenham.

¹⁹ Green Building Council *Net Zero Carbon Buildings: A Framework Definition* 2019 <http://bit.ly/2laDfht>

²⁰ <http://bit.ly/2mk2Fta>

Resources and Capacity

To deliver the programmes above will require resources. For the Council to initiate and run the programme will initially require two full time staff (FTE), one focusing on internal activity and the other external. As well as having relevant skills to deliver the project, these people will be accountable for the secretariat and the relationships with partners and stakeholders. Bristol City Council is currently recruiting a member of staff to manage their zero carbon programme at a salary of between £34,788 and £37,849 pro rata.

There will be a need for external specialist help for particular aspects of the programme, along with additional costs for individual projects. Exact details of these are currently unavailable but will typically range between £10,000 and £9 million. For example, Lead by Example may require a budget between £100,000 and £480,000.



It is expected that the programme will be cost neutral over time but that substantial funding will need to be allocated at the start. Funding for the programme will come from five sources.



The first is direct support from the Council. Gloucestershire County Council has set aside a climate emergency fighting fund and it is proposed that Cheltenham follow suit. The second is from ring fenced income, which could include an allocation of car parking earnings. The third is income generated through the Climate Action Fund.

There will also be specific funding needs for projects, which may be available through various financial organisations, including Public Works Loan Board and Salix. A preliminary approach on Salix funding demonstrates that match funding of up to £1 million is currently available. This is likely to expand if success is proved. Project funding

may also be available through specific grant funds such as the eCargo Bike Grant and Rural Community Energy Fund.

The fifth stream is collaboration funding through partnering with organisations like the LEP, Severn Wye Energy Agency, and private sector organisations through schemes like the European Regional Development Fund and the Industrial Strategy Challenge Fund. Cheltenham's position as an award-winning commercial council, recognised by the Municipal Journal and APSE will support this activity.



Green roof on a low carbon house in southern Gloucestershire

There is a cost involved in becoming carbon neutral but continuing as business as usual will also incur costs. As well as costs from climate change adaptation, there are likely to be higher energy costs and social costs in the future. Therefore, consideration of costs must take into account the potentially high cost of "do nothing".

Overall, capacity will also need to be increased, internally in the Council, amongst community leaders, climate champions and the wider population. This may be aligned with behaviour change and engagement.

It is recommended that capacity building be aligned with devolving responsibility and resources. This will have the effect of increasing staff autonomy and impact, as well as involvement. The delivery of the Cheltenham Crematorium project is a good practice example of how this can work successfully, with relatively light-touch governance.

Critical Success Factors

There are a wide range of factors that will affect the success of the programme.

Political leadership at all levels

There is a rising understanding that climate change is an issue that affects all levels of society from the local to the international and that political responses need to be bold and effective, crossing party and geographic boundaries. It is particularly essential that national policies and strategies support the Cheltenham endeavours. For example, there will need to be governmental support for approaches around planning, technologies and priorities.

Political focus



To achieve carbon neutrality on this short time scale will require a singleness of purpose. Cheltenham has many good practises that reduce carbon emissions, but this programme means eliminating carbon. This means that hard decisions may have to be made in favour of carbon reduction against other priorities.

While there are many examples where carbon elimination also brings other benefits, such as an increase in cycling helping improve health, there are other instances where priorities will need to be realigned to achieve carbon neutrality in the timescale.

Countywide collaboration

The solutions that Cheltenham requires to achieve carbon neutrality will both support and be supported by activity in neighbouring District and City Councils, and at the County level. Existing relationships will need to be strengthened and new relationships formed to ensure that collaboration is smooth across the whole organisation. These will include other agencies, such as Gloucestershire Hospitals NHS Trust, who will be critical partners to successfully deliver the target.

Devolved leadership

For Cheltenham to succeed in leading, it will be necessary for the town to challenge developers and operators to higher standards than will hold in the other boroughs. It is therefore critical that the Borough Council has the ability to set standards and requirements that exceed those at national level.

Corporate engagement



The involvement of the private sector will be key to the success of the programme. Past experience with the Cheltenham Low Carbon Partnership and other mechanisms demonstrate the importance of active and appropriate engagement, and the need to balance creating a level playing field to promote fair competition with the flexibility to allow the innovation that will enable the target to be reached.

Open-minded partnerships

Achieving carbon neutrality will mean organisations in the private, public and third sector will have to work together across industries and sectors. Success will rely on those organisations having an open mind, ready to accept new solutions, and to put the community of Cheltenham at the centre of their thinking.

Local entrepreneurship

In addition to a willingness to implement a programme that means working in new ways, there will be a need for new ideas. Local entrepreneurship will be key, particularly new business models as well as more traditional arenas like the development of new products and services.



Community cohesion

In the main, the people of Cheltenham are proud of the town and of their communities. This programme will need a rethink if that cohesion changes. Should this happen, the programme will need to be reassessed. However, one feature of the programme is that an effective implementation will reduce the likelihood of this taking place and instead will boost community cohesion.

Conducive financial landscape

The programme has been developed on the basis of support from national government, such as the Growing Places Fund, and a financial landscape that supports zero carbon investment. Should circumstances be different, for example, with higher interest rates or import tariffs, or sources of funding dry up, these could radically affect prioritisation and even the programme itself. At the same time, new funding may become available and this may require a reassessment of business cases.

Technology availability

The programme relies on the development of technologies, such as smart grids and connected vehicles, that are not currently developed to scale. Should there be a market failure or other set back, there is flexibility in the programme, but this will need to be managed so that decarbonisation is still financially and socially beneficial.



There also needs to be awareness of technological developments that could negatively impact the programme, such as the increased electricity needs of the cyberpark and electric vehicles.

Individual by-in

While the objective of this programme is to make an organisation and a geographic area carbon neutral, success will rely on the involvement of every individual that lives, works and visits in the Borough and their ability to take responsibility for their part in the endeavour.

Programming

Cheltenham's success in achieving carbon neutrality does not depend on the action of a single person or entity. Collaboration will be key. Empowering communities to reduce carbon inside the Borough, creating forums where ideas can be pooled and experience shared, coordinating activity to ensure that the target is met, these will be critical. Relationships with external parties will also have to be managed. There are already many allies in the public, private and third sector that will make the delivery easier. In particular, there are many other local authorities, including Nottingham City Council, Oxford City Council and Stroud District Council, that have embraced the challenges of climate change and will have good wisdom to share.

Carbon neutrality for Cheltenham is achievable by 2030 if the town is prepared to challenge itself and see carbon elimination as a way to reclaim its identity. In 2017, as part of the development of the visitor strategy, people in Cheltenham were asked what adjectives they felt described the town and they came up with: creative, pioneering, nurturing, connected, celebratory, energising and charming.²¹ Preliminary discussions have demonstrated that there is good will across the board for Cheltenham to become a beacon to show that a zero carbon future is compatible with these values.



"We are living in an emergency but behaving as if nothing much is going on that is out of the ordinary."

Jonathan Porritt

²¹ Kelly Ballard *5-Year Strategy to Grow Cheltenham's Visitor Economy 2017*

About DCA

De Courcy Alexander Ltd (DCA) is a new team that has come together from different areas of sustainability and business with a single aim – to empower organisations and communities to create a more sustainable world. The team has experience of working with a wide range of industries, in the public, private and third sector, including major employers in Cheltenham, on areas like carbon reduction and understands well the cultural and psychological as well as the procedural and technological challenges ahead.

DCA is committed to creating positive social, economic and environmental change. The company has managed a number of funded collaboration projects in areas like the circular economy and low carbon transport, NEET employability and the hydrogen economy, innovation in engineering and new business models.



DCA's methodology combines the excitement of innovation with the long-term success of high empowerment to deliver real sustainable business value.

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