# So you've declared a climate emergency: what next?

**APSE (Association for Public Service Excellence)** is a not-for-profit local government body working with over 300 councils throughout the UK. Promoting excellence in public services, APSE is the foremost specialist in local authority front line services, hosting a network for front line service providers in areas such as waste and refuse collection, parks and environmental services, leisure, school meals, cleaning, housing and building maintenance.

APSE member authorities have access to a range of membership resources to assist in delivering council services. This includes our regular advisory groups, specifically designed to bring together elected members, directors, managers and heads of service, together with trade union representatives to discuss service specific issues, innovation and new ways of delivering continuous improvement.



**New Policy Institute (NPI)** is a UK research institute which produces evidence-based research on a range of social and economic issues.

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# Glossary

**APSE:** Association for Public Service Excellence

**BECCS:** Bioenergy with Carbon Capture and Storage

**BEIS:** Department for Business, Energy and Industrial Strategy

**CCC:** Committee on Climate Change

**CCS:** Carbon Capture and Storage

**CHP:** Combined Heat and Power

**CPZ:** Controlled Parking Zone

**EMS:** Environmental Management System

**EV:** Electric Vehicles

**EVC:** Electric Vehicle Charging Points

**GHG:** Greenhouse Gases

**IPCC:** Intergovernmental Panel on Climate Change

**LA:** Local Authority

**LED:** Light-Emitting Diode ("low energy light")

**NPI:** New Policy Institute

**RCV:** Refuse Collection Vehicle

**SPM:** Summary for Policy Makers

**ULEV:** Ultra Low Emissions Vehicle

**ULEZ:** Ultra Low Emissions Zone

# Foreword

A large number of APSE member councils have declared a climate emergency. This is a laudable and very public commitment to tackle, at a local level, the impact and causes of climate change. These declarations are all different but share an aim to reduce greenhouse gases, most especially carbon from man-made emissions. Many also include, within their aims, a commitment to wider environmental and ecological issues. The role of the council is critical. As the steward of the local economy councils are leading the way in fulfilling their role as the leaders of place. In doing so, they are able to help shape the actions of local partners, whether businesses, transport hubs, public sector partners or residents, but translating declarations into actions is still challenging.

Councils already have a complex role to play. Balancing the on-going priorities of delivering local services, as well as their role in responding to new public policy pressures, and, as we have witnessed through the recent coronavirus health pandemic, responding to emergencies. They are doing so under stretched resources. That is why we set out with NPI to develop this report, to assist councils navigate their way through the transition of turning a climate emergency declaration into a plan for action. To point to a potential Golden thread through the extent of council's activity, operations and influence, to help meet their ambitious targets on achieving carbon neutrality.

This report draws upon the scientific evidence presented by the Intergovernmental Panel on Climate Change which is the starting point for most climate emergency declarations. The report also draws heavily upon the near-term actions presented by the UK Committee on Climate Change in 2019. Many of the suggested actions relate directly to those matters which local authorities can advance. Finally, as part of our research we explored case study councils, some of whom we may regard as 'early starters' on actioning change to reduce their emissions and indeed engage in wider area initiatives. There are many others emerging with innovative action plans and revised plans as local developments allow.

Our main findings from this report are: -

- Informed by scientific evidence, the contribution of local reductions in emissions can be significant, and should be actioned as soon as possible.
- A cut today is better than the same cut tomorrow and is worth as much as a large cut later. The priority should be to begin cutting emissions as soon as possible, rather than worrying about how to eliminate them altogether.
- Councils 'own operations' are a good starting point. Progress is being made in reducing the emissions from buildings and assets, preparing residents for a move away from fossil fuel heating systems; in environmental matters from waste and resources to public realm services; in planting trees and land management strategies; and in EV infrastructure and fleet, including hydrogen developments.
- By adopting a local leadership role, and taking urgent action on climate change councils are able to demonstrate to residents some more immediate local benefits, including fuel poverty through greener, cheaper energy, improvements to air quality and public realm. There are many more besides.

I would commend this report to you and I hope that it is a useful point of reference as you take on the task of translating a declaration into tangible actions.

Paul O'Brien, APSE Chief Executive

# Summary

## The UK Committee on Climate Change and the IPCC

1. This report aims to help UK local authorities (LAs) who have made a climate declaration decide what action to take. Individual declarations vary: most but not all mention climate change; most but not all speak of an emergency. The target is usually net zero emissions. Target dates range widely. To date, 282 LAs (out of a total of more than 400) have made declarations. More than 100 intend to publish action plans by April 2020, so far only 24 have done so.
2. Our answers as to what can be done is based on face-to-face research with LAs supported by a review of some published action plans. These answers are presented within a framework borrowed from the report by the Committee on Climate Change (CCC) in 2019 setting out what must be achieved during the 2020s if the UK is to reach its goal of net zero emissions by 2050.
3. How an LA acts in response to its climate declaration has to fit with its other duties, commitments and constraints. To navigate this course, an LA must be clear where it is going and why. The Intergovernmental Panel on Climate Change (IPCC) and especially its 2018 report offers answers to why and where. This report triggered the wave of climate declarations that began in late 2018. The CCC's framework for action is in itself part of a response to it.
4. In principle, there is a big difference between targeting emissions from "own operations" and emissions from across the local area as a whole. In practice, the divide is not so clear cut. Whatever their formal target, most LAs aspire to affect area-wide level outcomes. Early action on own operations can be a staging post, helping to build momentum while policies to reduce emissions across the area are developed with partner organisations.

## A climate change story rooted in the science

5. To exercise leadership on climate change, an LA needs a story to explain why it matters. The IPCC report presents evidence as to the desirability and feasibility of holding the rise in global temperatures to 1.5°C. Earth is on track to reach this level between 2030 and 2052, but halting net emissions would halt man-made warming. Most projections that are consistent with holding the rise to 1.5°C reach net zero emissions around mid-century. Both a net zero target around 2050 and the sense that we now face an emergency ultimately rely for their authority on the IPCC report. Any LA's story therefore properly begins with that report – even if the trigger for taking the subject seriously is the frequency with which local areas are now experiencing extreme weather events. .
6. The IPCC report also shows that stopping global warming is a not just about bringing the growth of atmospheric carbon to a halt (reaching net zero) but doing so at as low a cumulative level of emissions as possible. This focus – on the stock of emissions – has direct practical implications. One is that a cut today is better than the same cut tomorrow. A second is that a small cut today can be worth as much as a large cut later. For LAs starting out and for whom net zero looks a long way off, the priority now is to start cutting emissions as soon as possible rather than worrying about how to eliminate them altogether.
7. The CCC's advice to the UK, Scottish and Welsh governments is that net zero overall will require most sectors to reduce emissions close to zero without offsetting. Some emissions can persist beyond 2050 with offsetting but these will be the exception. For LAs, this means that all emissions matter. Early cuts across a broad range of activities should be the aim.

# A framework for LA action: the CCC's action priorities for the 2020s

8. The CCC's list of "key near-term actions" offer a strategic direction for the 2020s and provides LAs with a wider context. Most apply to all LAs and all apply to some:
    - Improvements in the energy efficiency of buildings, to improve comfort, lower bills and prepare for a switch to low-carbon heating. Prepare the public for a move away from natural gas heating.
    - Heat pumps to be seen as an established part of the solution, requiring strong progress during the 2020s. A faster build rate for low-carbon electricity generation, with improvements to the grid.
    - An end to biodegradable waste streams going to landfill after 2025, with supporting actions through the waste chain.
    - A rapid increase in the market share of electric vehicles (EVs) during the 2020s with an expansion of EV charging (EVC) networks and grid capacity to facilitate this. Low-carbon hydrogen to be produced at one or more Carbon Capture and Storage (CCS) clusters by 2030.
    - A trebling in the rate of tree-planting; improvements in diet and increased walking and cycling. Sustainable bioenergy with CCS (BECCS) to start by 2030.
9. While the CCC provides a coherent framework for LA action on climate change, it is not a sufficient one, at least for any LA whose target (formal or not) is ultimately to reduce net emissions across their whole area to zero. In itself, reducing emissions will do very little for those who live or work in an area. From the outset, an LA will want to identify wider, direct benefits – for example, in reduced fuel poverty or better air quality and health ("mitigating actions") – or develop the programme in conjunction with other actions directed at coping with the consequences of climate change – for example, reducing urban heat or the risk of flooding ("adaptations").

# Addressing climate change: what councils can start to do now

10. Using this framework, a long list of possible actions that LAs could take in the next few years includes:
    - Energy and carbon efficiency of own estate: retrofit buildings, including housing stock, e.g. lighting control, light-emitting diode (LED) lights and thermal insulation; replace street lights and signage with LED.
    - Electricity generation and the grid: install renewable energy on own estate including solar panels, heat pumps, on-site wind turbines and Combined Heat and Power (CHP).
    - Low-carbon vehicles and machinery: introduce Ultra Low Emissions Vehicles (ULEVs) for staff travel with on-site EVC and cut usage; adopt green/ULEV fleet except by exception (e.g. refuse collection vehicles – RCVs).
    - Licensing and control: to promote electric taxis; tighten controlled parking zone (CPZ) conditions to restrict large/polluting vehicles; introduce city/town centre ultra-low emissions zones (ULEZs).
    - Personal mobility: understand staff travel patterns so as to increase use of EVs, vehicle sharing, home-working; infrastructure to prioritise walk/cycle/bus/train; require developments to submit active travel plans for approval.
    - Procurement: prioritise sustainability (application of ISO14001, Environmental Management System, EMS). Introduce emissions reporting requirements into major contracts.
    - Trees and re-wilding: increase the tree canopy (adaptation to heat) and re-wild (e.g. wetland restoration); manage and maintain trees and woodland; redesign parks to be carbon neutral.

- Waste management: end single-use plastic on own estate; review office consumables and recycling to minimise waste; transfer food waste from black bin to green; stop other GHG emitters (e.g. fridges) going to landfill.

## The action plan

11. A good action plan is marked by:
    - Honesty, expressing how challenging the targets are, that it won't be able to achieve them alone and that "not all these decisions will be popular".
    - Seriousness: e.g. a document written by sustainability specialists, using independent experts to quantify the area baseline filling gaps in official data.
    - A recognition of boundaries: areas controlled by the council and areas not, reflected in a two-part operational programme and facilitation programme.
    - Detail and dates: a detailed list of actions under both programmes, with timelines (2019-21; 2022-25; 2026-30/50) – key for accountability.
    - A challenge to central government: to legislate (e.g. for planning powers) and to provide or enable financial resources.
    - A challenge – which they may not decline – to department/service heads: to embed emissions assessment as routine in their decision-making.

## Conclusion: putting the plan into practice

12. The enthusiasm for the climate declarations among LA staff themselves means they don't need to be told to take up this cause but they do need to be told how, and given the resources to do so. This cannot just be done by one or two officers working from the centre. Only by embedding the design and appraisal of climate projects inside the normal processes of the LA can actions be identified which are consistent with the multiple objectives that LAs face and take due account of the complexity of what may at first sound like a simple idea. From now on, climate change needs to be a golden thread running through council decision making, from social care to highways maintenance.
13. This decentralised approach requires: financial resources to allow a business case to be developed; unit "carbon" costs data to estimate expected climate impacts; staff across departments who can use this and other information to build a case; capacity at the centre to assess the case and make a decision.
14. Most LAs who have made a declaration probably have the last of these (at senior officer and/or member level). All LAs face the challenge of data and having people across the organisation who know how to use it. LAs whose capacity has been hollowed out by austerity struggle to find the financial resources. But not all projects cost money: energy-efficiency projects save money, yielding a revenue stream. How such revenue streams are used – and how other revenue streams are developed (for example, from an LA's own energy company) is likely to be crucial.

# 1. Introduction and overview

## Purpose

This report for APSE, researched and written by NPI, is intended to help councils across the UK decide what actions to take in the wake of making a climate declaration. By March 2020, 282 authorities had made such a declaration. The report is not aimed at those who are way ahead and sure what they are doing but at those who are just starting out and not sure at all.

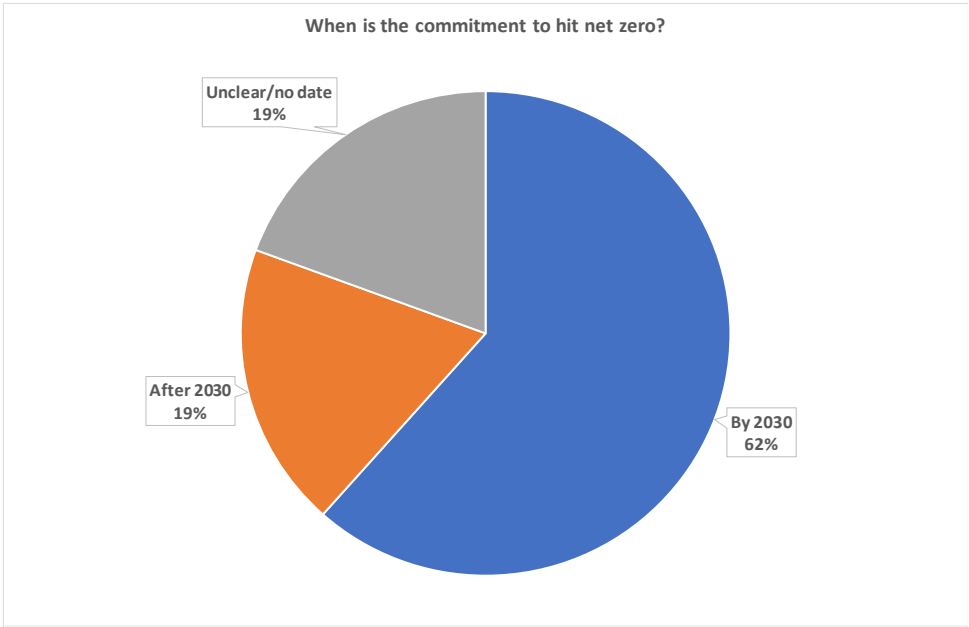
The research behind the report, carried out in late 2019 and early 2020, has three parts to it. Web-based research is used to paint a headline picture of the declarations of 268 councils who had declared by the end of November 2019. Interviews with officers and members from 10 councils across the UK provide both detail behind these numbers and a sense of the stories that councils are telling themselves about what they are doing and why. A review of the leading literature on the science of climate change and on the policy recommendations for the UK create the context.

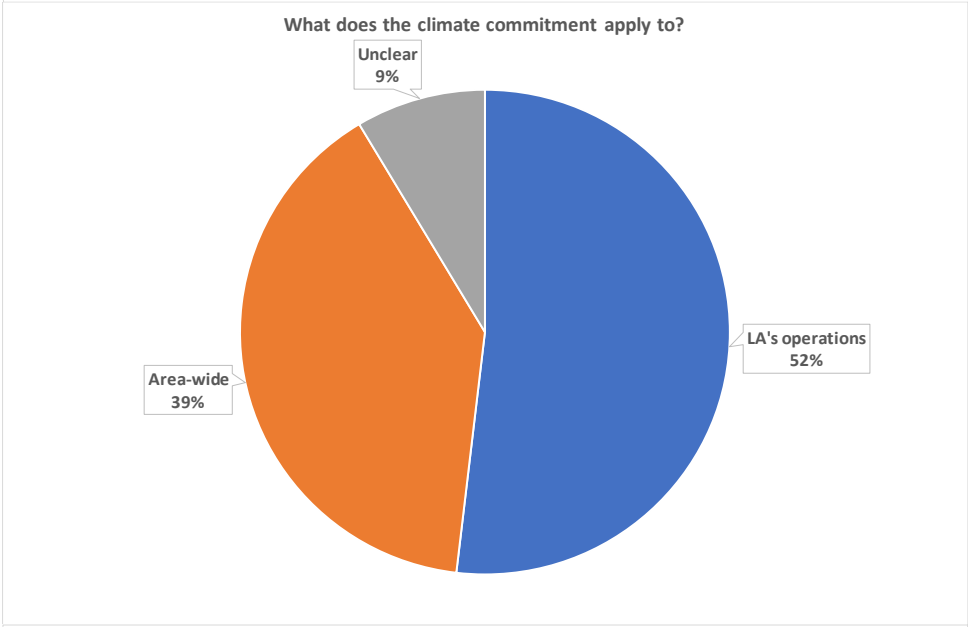
## Overview of the councils' declarations

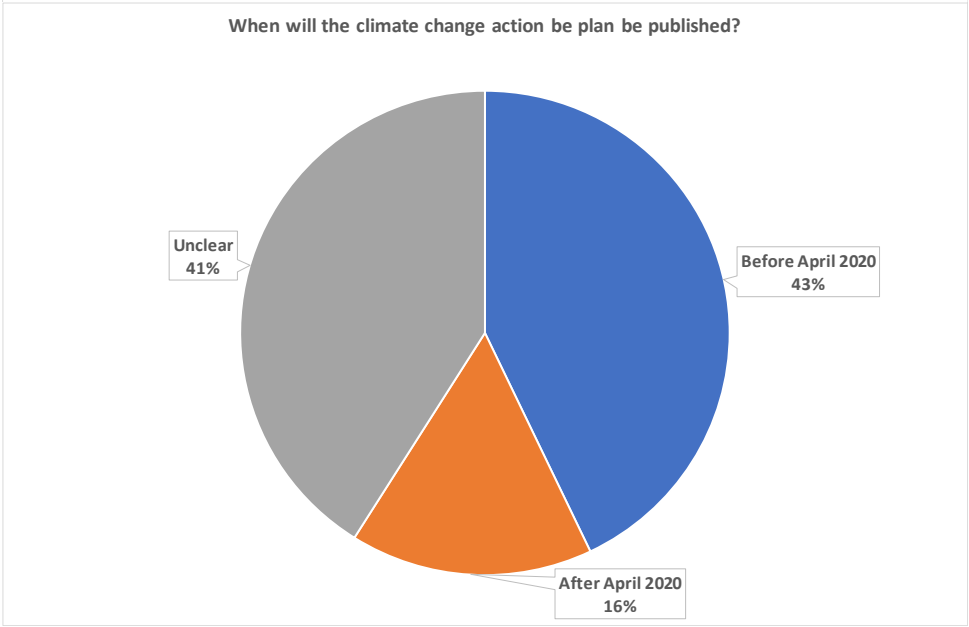
Graphs 1 to 3 provide statistics on three aspects of the declarations made by UK councils. They relate to: the date by which the council intends to reach its target; whether the target applies to the council's own operations only or whether to the whole local authority area; and the date by which the council has said it will publish an action plan. In every case where a target has been set, we believe the goal to be net zero emissions (that is, after any remaining emissions have been offset).

- Regarding the target date: 62% have set a date before or including 2030; 19% have set one after 2030; 19% have either set no date or the date is not clear.
- Regarding the geographical scope of the target: 52% aim to make their own operations net-zero; 39% aim for net zero across the whole local area; 9% are unclear.
- Regarding the action plan: 43% either have published already or intend to do so before April 2020; 16% intend to publish in April or beyond; 41% have given no date.

This is a moving picture and, as the discussions with councils in the next chapter show, headlines can hide a lot of detail. For example, not all councils speak of an emergency nor do all speak of climate change. Some acknowledge an emergency without declaring one. Some describe the scope more widely than climate change, to include environment and/or sustainability. Differences in the title of the declaration do not necessarily reflect differences in content.


When is the commitment to hit net zero?
Unclear/no date 19%
After 2030 19%
By 2030 62%


What does the climate commitment apply to?
Unclear 9%
LA's operations 52%
Area-wide 39%


When will the climate change action be plan be published?
Unclear 41%
Before April 2020 43%
After April 2020 16%

# 2. Behind the statistics: what the councils told us

We interviewed 14 officers and five members from 11 councils across the UK. The seven English councils included two shire districts, two unitary districts, one shire county, one metropolitan district and one London borough. [1]

The purpose of the interviews was to probe what lies behind the summary statistics and especially the process that councils see themselves going through as they move from declaration to action. The interviews were done on a non-attributable basis. What follows is our sense of the main messages, drawing common themes together from across the interviews.

## Declarations, focus and content

The basic language of the declarations varies

- Most, but not all, mention climate change and most but not all describe the situation as an emergency. "Environment" and "sustainability" also appear in the title of some declarations.

If there is a specific target, it is always for net zero emissions (or "neutral")

- An early question for elected members is how much to offset – and whether doing so undermines the fundamental requirement to reduce gross emissions.

The focus is either on carbon or greenhouse gas (GHG) emissions as a whole

- GHG brings wider issues into view, for example the recycling of fridges.

Almost all these councils have prior and still current plans

- Although the ambition and depth of the prior plans varies, the declaration is seen as a step up, often enjoying unanimous political support. Yet not all see it as fundamentally different from what went before: there is a tension here.

Welsh and Scottish councils operate in frameworks set by their governments

- Legislation and common systems to measure emissions (part of the public sector climate change duty in Scotland, and under development in Wales) put authorities here in a different position from English and Northern Irish ones.

## Own operation emissions versus whole local area emissions

There is a big difference between targeting emissions from "own operations" as opposed to those for the local area as a whole

- In terms of scale, emissions from "own operations" (the actions of the council as a body) are just a few per cent of those of the whole area. The fundamental challenge to meet the target – internal management versus public leadership across a whole area – is also very different.

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1 Cheshire West and Chester, Derry City and Strabane, Dundee, Eastleigh, Hackney, Oxfordshire, Shropshire, South Tyneside, Swansea, West Dunbartonshire and West Lindsey.

But in practice, the divide is not always so clear cut

- Some councils have targets both for own operations and for the local area and sometimes the breadth of ambition is deliberately not rigidly defined.

Even if the formal target is for own operations, most aspire to affect outcomes at the area-wide level

- To be achieved by influencing, supporting and/or working with others towards a goal of achieving the same net zero status for the local area as a whole.

Target dates set for net zero range widely; some remain to set target dates

- Target dates range between 2025 and 2045 and beyond. Early dates tend to be for own operations, with exceptions both ways. Councils who have been active for a long time have both early dates and much later dates.

Early action on own operations can be a staging post

- Quick moves to reduce some own operations' emissions help build momentum while policies to reduce emissions across the area are developed with partners. Commitments must be codified: institutional inertia is the enemy; enthusiasm may ebb.

Residential waste is usually included in own operations

- Seen by some as one of the most problematic and sensitive areas, whatever is decided must be easy for the public to follow. But centrally-imposed targets – in place (in Scotland) or subject to consultation (ongoing in England and Wales and anticipated in Northern Ireland) – may force this issue.

Whatever the formal target, it must be measurable

- There has to be data to allow progress to be measured. Emissions data from the Department for Business, Energy and Industrial Strategy (BEIS) is not comprehensive – for example, regarding agricultural emissions and land use impacts more widely – so it has to be supplemented via expert or independent studies. What's in and what's out must be clear cut.

Council services where provision is contracted out is a grey area

- The key issue is less contracting out itself than whether contract compliance includes emissions-related and environmental conditions. This is part of a wider question about how far back into its supply chain a council decides to go when measuring "its" emissions. For a council with many long-term contracts, "own operations" is very small indeed if the supply chain is not included.

Where there's no contract, service delivery organisations' attitudes matter

- For example, bus operators' own attitudes towards emissions, if the council has little contractual control over them. These can vary greatly between areas and between operators in the same area.

Public attitudes are crucial – and seen by some as limiting what can be done

- Some believe the public are not invested in this agenda. Getting the message over to residents is vital: communication is key. This can be seen as an opportunity to change how the council operates – more collaborative with partners, more engaged with the community.

Identifying the wider impacts of action on climate change plays a part here

- Actions to mitigate climate change can bring direct benefits to fuel poverty, air quality and health. Adaptations can ease urban heat and flood risk.

# Actions so far

Own operations actions have been dominated by energy efficiency and solar panels in own buildings, and LED public lighting

- Energy efficiency is part of a programme of asset management, involving disposal, upgrade and acquisition. Where schools are autonomous, part of the stock is not directly in reach. Austerity has been a key driver of change here.

Along with moves to green the vehicle fleet

- Tied up with fleet management policies (including own vs. lease and route optimisation). A policy of electric unless by exception – with the heaviest (e.g. refuse collection) vehicles being where there is most doubt and where alternatives (e.g. hydrogen) may be available.

Actions directed at reducing emissions across the local area have also focused on electric vehicles

- Including the provision of EV charging points, encouraging electric taxis and, where feasible, introduction of hydrogen powered buses.

# Looking forward

Appraisals must be real, quantitative and embedded

- Impact assessments won't be enough. Quantitative assessments must be done by all departments, not just centrally.

Making a business case itself requires resources

- This includes both people to do the work and data on carbon impacts that can be used to assess individual proposals. At present, this work is usually confined to just a few people contributing just a couple of full-time equivalents' worth of time.

There are trade-offs, due to limited resources and the fact that actions to reduce emissions create their own emissions

- The conflicts include building more homes versus improving the existing stock or having more refined waste collection at a higher carbon cost of collection.

Not all projects cost money: some save money, yielding a revenue stream

- Energy saving initiatives do this: the question is how the savings are spent.

Action plans due in early 2020 will have their main impact from April 2021

- Most action plans are being published in the first half of 2020 and so won't take effect until 2021. Action in 2020 is likely to depend on contingency funds.

# Conclusion: tensions and doubts in councils' positions

These discussions with councils reveal a more nuanced picture than the headline statistics alone suggest. In particular, while the declarations mark a break, actions are likely to show a lot of continuity with recent practice.

Research for APSE by Survation shows that one concern found here – that the public won't support action – may be misplaced. Three quarters of the public (according to Survation) expect local communities will have to respond to climate change which, when it comes to where the public wants more money spent, comes second only to social care. Making homes more energy efficient and improving waste and recycling are the top two priorities.

There are some obvious questions: how to turn words into action, especially when resources are so short; how to be coherent; and how not just to bring the council's own emissions down but how to persuade, encourage or support everybody in the wider local area to do the same too.

In the next two chapters, we try to answer these practical questions, by going back to the latest science, and then drawing on the UK governments' adviser. Local government's pragmatism and councils' autonomy are strengths. But here, where what is being attempted is not just national but global, what may otherwise be rather isolated council programmes can draw strength from the common, wider context.

# 3. A climate change story, rooted in the science

The thrust of this chapter is that if a climate declaration is to mark a new start, it will need a story to sustain it through the many years over which its effects will play out. The declaration itself cannot be the start of that story, because to begin there is to leave out of account both why the declaration was made in the first place, and the fact that each declaration is not an isolated event but part of a wave of declarations made by a majority of UK councils. The story, therefore, needs to start with what triggered that wave, namely, the 2018 UN report on climate change which examined what the science had to say about limiting global warming to 1.5°C. In short, the story must begin with the science.

This chapter has four parts. The first develops the argument about the origin of the declarations. The second looks at some of the benefits that rooting the declaration in the science can offer councils as well as what it needs to do to take advantage of that. The third summarises the key messages from the science. The fourth draws out some of the practical conclusions for councils, one of which is that despite its prominence, net zero is not the be-all and end-all and should not be treated as such.

Leadership on climate change requires a story that begins by explaining why it matters.

Sustained change enjoying public support requires leadership at every level, including by local government. A council's story about climate change is essential to its ability to exercise that leadership.

## What triggered the wave of local authority climate declarations?

If a council's declaration is the first thing that happens in the story, where should the story begin in order to explain that declaration and put it in context?

As we have already noted, councils' immediate reasons for making a climate declaration vary greatly, reflect specific circumstances and can be wholly uninspiring. "We were under pressure to do so" or any such reason obviously has no persuasive power at all. But in this case, that doesn't matter. That's because the individual declarations were not isolated acts but part of a wave. A council's particular reason for joining the wave may be a small part of the story but the big part is why a wave started to form in the first place. That is the story that a council needs to tell.

Looking back, the swell that became the wave began in November 2018: with the Liverpool City Region and Manchester declaring for zero carbon and Bristol for carbon neutrality that month. It looks as if Bristol was the first to declare an emergency. What triggered activity at that point was the special report by the Intergovernmental Panel on Climate Change (IPCC), on Global Warming of 1.5°C. This report was approved by the IPCC in Incheon, South Korea in October 2018.

As an overview of the scientific research, this report did not in itself make any policy recommendations. Even so, it's thrust was quite clear, serving the conclusion that the world should strive to limit the man-made increase in global warming to 1.5°C. This can be seen as a strengthening of the subsidiary goal within the 2015 Paris Agreement, which had reaffirmed a "goal of limiting global temperature increase to well below 2°C, while pursuing efforts to limit the increase to 1.5°C".

The 2018 report achieved this by assembling evidence of the adverse impacts of 2°C of global warming compared with 1.5°C and by identifying emissions pathways which would be consistent with limiting warming to 1.5°C. The key conclusion is this:

> *In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO2 emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range). [2]*

A net zero target around 2050 or the declaration of an emergency each relies for its authority on the IPCC

- Not every climate declaration made since October 2018 can be traced back to the IPCC report. But if the declaration targets net zero any time up to mid-century or describes the situation as an emergency, then whether explicit or not, its genesis lies in the IPCC report.

## Why link back to the science?

There are several reasons why a council should openly link its climate actions back to the science as summarised in the IPCC report.

One is that it is the science which provides reasons to act – the answers to the questions of "why?" and "why now?". Actions on climate that do have a tangible local impact, for example on air quality, can, if necessary, be justified by reference to that impact alone. But where we are talking about reducing emissions for their own sake, the science is needed because the impacts aren't specific to a time or a place but only make themselves felt in averages and tendencies and patterns, over large areas and lengthy periods of time.

Second, the science provides protection, not just against those who dispute the link between atmospheric carbon and global warming, but also against those who would urge the council to go faster, as well as those who believe that all is lost already. While the science supports the argument that we should act as quickly as possible, how quickly is itself a question open to scientific investigation. The science is also clear that there is still time to act.

Third, in arguing with critics from whichever direction, familiarity with the science – at least at the level of the summary for policymakers – is a resource for the council as it seeks to explain and defend its position and make, evaluate and win arguments.

To win the arguments, the council's climate change leads need to know more about the science than anyone else in the room

- Some senior figures within the council – for example, the lead member and the officer with overall responsibility – need to remain on top of this evolving body of research in order that the council can do so too. The unique institution that is the IPCC makes it possible for a non-scientist to be able to do this.

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2 IPCC (2018), SPM, para. C1.

# What does the science say?

The box below is a selection of what we see as the most pertinent points in the 2018 IPCC report, drawn from the "Summary for Policy Makers" (SPM). [3] The points, which are numbered for reference here, are presented under three headings, namely: where we are now, the projected impact of 2°C and pathways to limit warming to 1.5°C. It is easy enough to use these points to weave together a story about what has happened and what lies ahead.

First, we have already experienced 1°C of warming compared with pre-industrial times [1].

Second, 1.5°C will be worse and 2°C worse still [4], both for extreme weather [3], for many aspects of human well-being [5] and for the natural world [6].

Third, although the temperature rise has been greater on land [2], the impact on the oceans and seas may be more profound, leaving coastal areas, communities and ecosystems among the most vulnerable [7], [8]. It is, of course, not just coastal communities who rely on the sea. As part of the climate system, the importance of oceans is just one example of science pushing back against common sense. [4]

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3 See also this set of headline statements

4 For example, research published in 2020 shows that the heat content of the oceans (OHC) was at a record high in 2019. The trend here is very strong, with 16 of the previous 20 years representing record highs up to that point. See here for a discussion of why ocean temperatures matter.

5 SPM, para. A1. The years 1850 to 1900 are taken as the measure of the pre-industrial baseline. The present level of global warming (+1°) is defined as the average of a 30-year period centred on 2017 and assuming the recent rate of warming continues.

6 SPM, A1.2

7 SPM, A1.3. The upward trend in extreme events refers to hot and cold extremes (the latter being warmer), as well as more lengthy warm spells (2018 report, para 3.3.2.1). The comparison here was between 1960-79 and 1991-2010.

8 SPM, B1

9 SPM, B5

10 SPM, B3

11 SPM, B4

12 SPM, B4

13 SPM, A2

14 SPM, A2.2

15 SPM, C1

16 SPM, C1.3

# Box A: key messages from the 2018 IPCC report

The Summary for Policy Makers (SPM) is a summary of the scientific findings in the report, not a set of policy recommendations. At the same time, it is clear that the overall conclusion it serves is that the world should strive to limit the man-made increase in global warming to 1.5°C. The report and the SPM do that by assembling evidence of the adverse impacts of 2°C compared with 1.5°C and by identifying emissions pathways which are consistent with limiting warming to 1.5°C.

Each of the following key points is an abbreviated version of a paragraph from the SPM. They are arranged here under three headings.

Where we are now

1. Human activities are estimated to have caused approximately 1°C of global warming above pre-industrial levels. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate [5]
2. Warming greater than the average is being experienced in many land regions. [6]
3. Trends in the intensity and frequency of some climate and weather extremes have been detected over the period during which about 0.5°C of global warming has occurred. [7]

The projected impact of 2°C

4. Models project robust differences in regional climate characteristics between present-day and 1.5°C, and between 1.5°C and 2°C. These include hot extremes in most inhabited regions and heavy precipitation in several regions. [8]
5. Risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C and increase further with 2°C. [9]
6. On land, impacts on biodiversity and ecosystems, including species loss and extinction, are projected to be lower at 1.5°C. [10]
7. By 2100, global mean sea level rise is projected to be around 0.1 metre lower with 1.5°C compared to 2°C. [11]
8. Limiting global warming to 1.5°C is projected to reduce increases in ocean temperature and acidity, decreases in ocean oxygen [and] risks to marine biodiversity, fisheries, and ecosystems and their functions and services to humans. [12]

Pathways to limit warming to 1.5°C

9. Warming from anthropogenic emissions from the pre-industrial period to the present will persist for centuries to millennia and will continue to cause further long-term changes in the climate system, such as sea level rise, but these emissions alone are unlikely to cause global warming of 1.5°C. [13]
10. Net zero global anthropogenic CO2 emissions and declining net non-CO2 radiative forcing would halt anthropogenic global warming on multi-decadal time scales. [14]
11. In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO2 emissions decline by about 45% from 2010 levels by 2030, reaching net zero around 2050. [15]
12. Limiting global warming requires cumulative global anthropogenic emissions of CO2 [to stay] within a total carbon budget. The budget is being depleted by current emissions of 42 GtCO2 per year. An estimate of the remaining budget is 580 Gt GtCO2 for a 50% probability of limiting warming to 1.5°C, and 420 GtCO2 for a 66% probability. Uncertainties in these estimated budgets are substantial and depend on several factors. [16]

Fourth, science also shows that in facing global warming, we are not helpless. As things stand, warming is on track to reach 1.5°C sometime between 2030 and 2052 [1]. Yet halting net emissions would halt man-made global warming [10] and, if we can do so quickly enough, we can still limit the rise to 1.5°C [9]. Most of the projections that are consistent with holding to 1.5°C reach net zero emissions around mid-century [11]. This point, about why net zero by mid-century matters, is what links most councils' climate actions back to the science.

# Conclusion: practical implications for councils

Net zero has big practical consequences, but it is also vital to grasp that it is not the be-all and end-all.

A net zero target means that the question about every source of emissions is no longer if it will be cut, but when

- A net zero target means that every source of emissions matters. While offsetting will mean that some emissions can persist beyond 2050, these will be the exception (chapter 4 will look at this further). High level planning and project evaluation will need to take this into account.

What the science does not say, however, is that reaching net zero is all-important – as if once a council gets there it's fine but so long as it falls short it's not. That view is both wrong in principle and misleading as a guide to practical action.

The reason it is wrong is that limiting global warming depends on limiting cumulative carbon emissions – that is, the total amount of additional carbon we put up into the atmosphere. Putting a stop altogether to net emissions is necessary but it is what we put up there before we stop that really matters [12]. Another way of saying this is that stopping global warming is a stock problem rather than a flow problem.

The report stresses how much uncertainty there is about the amount of carbon the atmosphere can absorb before the total stock is large enough to take warming to 1.5°C [12]. Putting a couple of the numbers quoted together, if the atmosphere can only absorb another 420Gt before that happens and we are adding to it at 42Gt per year, then at that rate we have just 10 years.

What is not uncertain is that stopping global warming is not just about bringing the growth of the stock of atmospheric carbon to a halt as soon as possible but about doing so at as low a level of stock as possible.

The priority is to reduce emissions as soon as possible

- Stopping a source of emissions now, in 2020, does as much for the stock of carbon in the atmosphere as stopping a source 30 times as large in 2050.

In developing their plans, the target date for net zero, usually at least a decade away, is less important than their actions over the next few years. The imperative for early action is why it is correct to describe this as an emergency.

Cuts in emissions are worth more if done today than tomorrow – small cuts now are worth as much as large cuts later

- The best – cutting a particular source to zero – should not be an enemy of the good – cutting that source substantially – if the good is all that's feasible now.

# 4. The advice to the governments from the Committee on Climate Change

The Committee on Climate Change (CCC) is a statutory body set up under the Climate Change Act 2008 to advise the UK, Scottish and Welsh governments. If it is the IPCC which explains why we need to act, urgently and across the board, it is the CCC which provides strategic guidance for the UK on how it should do it.

This chapter looks at the implications for councils of this guidance. It has three parts. The first reviews the headline advice to the three governments, both the "ramping up" that it calls for and the warning that it attaches to it. The second looks in more detail at the developments the CCC says are needed during the 2020s if the UK is to be on track to hit a mid-century target. These actions for the 2020s are an excellent practical guide for councils, combining an understanding of what is necessary with an understanding of what is possible. The third part draws some conclusions.

## A target without credibility unless policy is ramped up

The key recommendation in the CCC's May 2019 report is that the UK should adopt net zero greenhouse gas emissions (GHGs) by 2050 as its target. [17] Judging it can get there sooner, Scotland's target date is 2045. Wales by contrast is only expected to be able to have reduced emissions by 90% by 2050. The recommendation for a UK target of net zero GHGs by 2050 is directly rooted in the 2018 IPCC report.

Net zero represents a substantial advance from the previous target for 2050 which had been for an 80% reduction in emissions compared with the level in 1990. If anything like the Pareto rule applies here – that getting the first 80% of the way takes only 20% of the total effort – then this upscaling of the target for 2050 is not just a challenging adjustment but a change in the order of magnitude of what must be done. The CCC states categorically that offsetting is not the answer:

> *The target cannot be met by simply adding mass removal of CO2 onto existing plans for the 80% target.* [18]

Net zero by mid-century has the authority of the CCC behind it and is in line with UK government policy

- The Committee's recommendation was later explicitly adopted by the Conservative party in its general election manifesto. [19]

Every bit as important as the CCC's recommendation for net zero is the caveat it attaches to it. The general observation about offsetting is part of that but there is more:

> *A net zero GHG target is not credible unless policy is ramped up significantly. Most sectors will need to reduce emissions close to zero without offsetting.* [20]

Ramping-up requires deeds not words; offsetting cannot be more than an exception

- The implications of this message apply to local government as much as anyone else.

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17 CCC report. 2019. Executive summary, p11.

18 CCC report. 2019. Executive summary, p11.

19 Conservative and Unionist Party Manifesto 2019, p55: "We will lead the global fight against climate change by delivering on our world-leading target of Net Zero greenhouse gas emissions by 2050, as advised by the independent Committee on Climate Change".

# What has to be done in the 2020s

The CCC sees two types of problem with the progress that has been made since the 2008 Climate Act. First, even where there has been progress, it has been too slow. Second, some challenges which are unavoidable have so far been ignored.

To address these, the CCC sets out what it describes as "key near-term actions to put the UK on track to net zero GHG emissions by 2050". Most of these actions apply to all councils and all of them apply to some. The CCC's UK-wide priorities can give a sense of the strategic direction to follow in the 2020s and help councils place their own efforts in the context of a wider programme of action.

The box below is a summary of these key near term actions plus one specific (and obviously relevant) recommended action set out in the report. There are several ways to group them:

- two refer either in whole or in part to the energy efficiency of buildings and in particular the carbon content of the way buildings are heated ([1], [3]);
- two refer to electricity generation and the grid ([2], [4]);
- two refer to electric and other low-carbon vehicles ([5], [6]);
- five others refer to hydrogen production [6], trees ([7]), diet and personal mobility [8], bioenergy and carbon capture and storage [9] and waste management [10].

## Box B: key actions for the 2020s from the 2019 CCC report [21]

Each of these key points is an edited version of a paragraph from the CCC report. The list represents the CCC's view of what needs to be achieved during the 2020s in order to hit the 2050 target. Each of the following key points is an abbreviated version of a paragraph from the SPM.

1. Improvements in the energy efficiency of buildings, to improve comfort levels, lower energy bills and prepare the building stock for a switch to low-carbon heating.
2. Heat pumps to be seen as an established part of the solution (as they are already in many other countries), requiring strong progress during the 2020s.
3. Public awareness of the need to move away from natural gas heating and what the alternatives are, public preferences about these to feed into strategic decisions on energy infrastructure.
4. A greater build rate for low-carbon electricity generation capacity, with improvements to the grid to
5. A rapid increase in the market share of EVs, from around 2% today, during the 2020s, so that all new cars and vans sold by 2035 are ULEVs. Expansion of EV charging networks and of grid capacity to facilitate this increase.
6. Low-carbon hydrogen produced at one or more CCS clusters by 2030, for use in industry and where major infrastructure change isn't required (e.g. power generation, injection into the gas network, depot-based transport).
7. A more than threefold increase in tree-planting rates, from below 10,000 hectares per year to at least 30,000 hectares per year.
8. Improvements in diet and increased amounts of walking and cycling, requiring the government to explain why and take supporting actions.
9. Deployment of sustainable bioenergy with CCS to start by 2030 to build up to a potentially large contribution from BECCS in the longer term.
10. An end to biodegradable waste streams going to landfill after 2025, with supporting actions through the waste chain, including mandatory separation of remaining waste.

20 CCC report. 2019. Executive summary, p11.

21 CCC report, 2019, chapter 6, S1b, pp177-8 and (for [10]), chapter 8, S5c, pp273-4

# Conclusion: management and leadership

A few of these actions – low-carbon hydrogen for industrial purposes [6] and bioenergy [9] – probably don't impinge directly on the public, need public understanding nor require public approval. But the rest, from the way we heat our homes ([1], [2], [3]) and what car we drive [5], to what we eat, how we get about [8] and what we do with our waste [10] are directly about how we, the public, go about our daily lives.

What the CCC says about one of them arguably applies to them all:

*Government must engage with people over why and how they can make these improvements, and take supporting actions*

This means leadership – and if councils aspire to be the local authority not just in word but deed, they must be able to exercise leadership themselves.

One way to avoid the public leadership challenge is to conceive of the challenge as a technical problem which can be "solved" by scientists, engineers, economists and managers. A tell-tale sign of this approach is a narrowing of the definition to a problem the particular institution can both measure and control, along with the identification of policy responses which it can then concentrate on implementing.

Are councils in danger of doing this with climate change? Restricting attention to the council's own emissions opens up that vulnerability. As a way to begin – to secure some early wins, stoke enthusiasm, build momentum and so on – this inward focus makes good sense. But as a way to carry on, an exclusively inward focus to drive the council's own operations emissions below 50% and beyond while ignoring emissions in the wider area makes no sense.

In what they've said to us, councils show they are sensitive to this, whether in their aspiration to affect outcomes at the area-wide level, their anxiety about where public attitudes really stand or their recognition of waste collection as a problematic issue. The unavoidable conclusion is that except in the short term, a council's action plan for climate change has to address both own operations and the wider area. If it takes targets to formalise this, it needs two. Four of the 11 councils we spoke to have them.

One other point about the CCC, a striking feature of the 2019 report, both in what it says (and doesn't say) and who appears to have fed ideas into it, is how little it appears to be engaged with local government. Following the wave of climate declarations, this gap needs to be addressed. We understand that some steps are now being taken to do so.

# 5. Climate change now: what can councils do?

The Committee on Climate Change's priority list for the 2020s maps out the territory where action on climate change is needed. The full message from the science, that the growth in atmospheric carbon does not just need be brought to a halt but must be done so at as low a level as possible, emphasises urgency: the short - and even medium-term goal is to get close to net zero soon. Cuts in emissions are worth more if done today than tomorrow; small cuts now are worth as much as large cuts later.

This chapter has three parts. The first offers a list of near-term actions which councils can take to reduce their emissions and in some cases the emissions across the wider area. These actions are framed within the CCC's priority list, albeit slightly extended. The second considers a few of the many issues to do with the changes to process and practice which a council needs to adopt as it moves to prioritise action on climate change. The third then draws some conclusions.

## Content: early actions to address climate change and its effects

Our presentation (chapter 4) of the CCC's priority list as it is relevant to all councils has six items on it. Replacing the CCC's reference to "buildings" with "estate" (in order to recognise councils' many responsibilities for outdoors and well as indoors), the six are the energy and carbon efficiency of the whole estate; electricity generation and the grid; low-carbon vehicles; tree planting and diversity; personal mobility; and waste management. To this, we add a seventh, namely procurement.

The box below presents a list of suggested actions that councils can take in the next few years and with the current state of technology, in order to address climate change. The suggested actions combine what we were told during the interviews with councils with a selection from the published action plans of two councils, namely Cornwall (a unitary council) and North East Derbyshire (a shire district). We decided to refer to these action plans because they were available at an early stage and also because they are, in our opinion, good. We return to Cornwall's plan again in the next section on process.

The suggested actions in the box contain no surprises. It is not meant as a complete list. It is hard to imagine there are any councils who have not done at least one of them – although sustaining progress is not assured (some food waste collections have been removed). The point is, though, that a programme of actions like this would seem to be at least of a breadth to match the priorities set by the CCC for the 2020s. As a solid starting point, a programme of actions like this at least has the potential to add up to a sufficient strategy – whether or not it gets to net zero.

# Box C: near-term council actions to address climate change

### *Energy and carbon efficiency of the council's own estate*

1. Retrofit buildings, including housing stock, e.g. lighting control, LED lights and thermal insulation (application of ISO 50001).
2. Replace street lights and signage with LED.

### *Electricity generation and the grid*

3. Install renewable energy across own estate including solar panels, heat pumps, on-site wind turbines, combined heat and power.

### *Low-carbon vehicles and machinery*

4. Introduce ULEVs for staff travel with on-site EVCs; reduce usage.
5. Adopt green/ULEV fleet except by exception (e.g. RCVs); similar regarding battery-powered tools. Don't overlook other green power sources e.g. hydrogen.
6. Use licensing to promote electric taxis; tighten CPZ conditions to restrict large/polluting vehicles; introduce city/town centre ULEZ/NEZ.

### *Personal mobility*

7. Understand staff transport/travel with a view to increasing use of EVs, vehicle sharing, home-working.
8. Prioritise walk/cycle/bus/train when upgrading/installing infrastructure. Require developments to submit active travel plans for approval.

### *Procurement*

9. Prioritise sustainability within procurement (application of ISO14001, EMS). Introduce emissions reporting requirements into major contracts.

### *Tree planting, diversity and woodland maintenance*

10. Plant trees to increase canopy (adaptation to heat) and re-wild (e.g. wetland restoration but also allowing self-seeding trees to grow); redesign parks to be carbon neutral. Manage and maintain trees and woodland.

### *Waste management*

11. End single-use plastic on own estate; review office consumables and recycling to minimise waste.
12. Extend recycling – e.g. transfer food waste from residual to compostable/organic waste – as a first step towards zero to landfill by mid-decade.

There is one obvious omission. While the list has plenty of actions that constitute mitigation – that is, replacing carbon-emitting processes with lower or no-carbon emitting ones – it does not include the purchase by the council of green electricity. Although we did not probe this in detail, it does appear that such purchases are expected to do a significant minority of the heavy lifting in getting councils to net zero within just a decade or so.

Two comments can be made about this. First, the key question is whether the purchase adds to the supply of green electricity or whether it merely grabs a share of the green electricity already being produced. If it's the latter, then although the council looks greener, there has been no change in overall UK emissions. Our tentative understanding is that purchases may or may not increase supply and that one of the factors that matters is whether the deal is struck with a supplier (in which case likely not) or a generator (in which case possibly so).

Second, it turns out that there is a rough order to the list of actions shown in box C. Broadly speaking, those at the top of the list either save revenue directly (energy management) or at least do so with investment ("invest to save"). Those in the middle are broadly neutral in revenue terms. Those at the bottom cost revenue. The purchase of green energy mostly helps with the carbon emissions from sources at the top of the list. If those emissions are 'greened' by the purchase of clean electricity, rather than saved, a revenue stream is lost. Of course, the two could go hand-in-hand – purchasing (additional) green electricity while reducing the emissions – but in that case, the purchase of green electricity should and ought to fall over time, meaning that it is a temporary measure only.

## What does a good process look like?

As noted above, the action plan published by Cornwall in July 2019 was one of the first in the field. With its breadth of ambition (the target is for emissions across the whole of the county, not just the authority's own emissions) and detailed timeline, it can serve as a model of what is required. It is not unique, but it does have some attractive features. For example:

- Its honesty, expressing how challenging the targets are, that it won't be able to achieve them alone and that "not all these decisions will be popular".
- Its seriousness: a sense that the document was written by sustainability specialists; its use of independent experts to quantify the Cornwall CO2 baseline, to fill the gaps in the BEIS data.
- Its recognition of the areas they control and the areas they don't, reflected in a two-part strategy (an operational programme and a facilitation programme).
- Its detailed list of actions under the two programmes, with timelines (2019-21; 2022- 25; 2026-30/50) – a key ingredient for accountability.
- Its challenge to central government to legislate (e.g. for planning powers to facilitate carbon neutrality) and to provide financial resources (e.g. via a climate levy, a carbon tax, support for 'green' finance).
- Its challenge to department/service heads to embed emissions assessment as routine in their decision-making – across the whole range of the council's activities and responsibilities.

This last point chimes with many of our discussions with councils. The enthusiasm for the climate declarations among council staff themselves is evident. Council staff don't need to be told to take up this cause but they do need to be told how, and given the resources to do so. Specifically, they need to be able to identify, develop, evaluate and recommend particular projects which serve the goal of the climate declaration. This cannot – again this was widely recognised – just be done by one or two officers working from the centre. Nor can it be optional; this "challenge" to departmental heads needs to be clearly understood as an instruction not a request.

Such a decentralised approach requires four things, namely: a financial resource to allow this work to take place; data that can be used to estimate the expected climate impacts of a particular candidate project; staff across the departments who can use this data and other information to build a business case; and the capacity at the centre to assess the robustness of the case and how much weight should be attached to it when making a decision about whether to go ahead.

Our sense is that most if not all councils who have made a declaration have the last of these (a climate expert at senior or near-senior officer level as well as a senior elected member behind the whole agenda). Councils whose capacity has been "hollowed out" by austerity will struggle to find the financial resources. But the fundamental difficulty therefore lies with the second and third, namely the data (and how to use it) and the people who have the knowledge to do so.

This capacity challenge is most acute at exactly the point where it is needed most. Sometimes the carbon impact will be straightforward (for example, when closing a building altogether or switching from a petrol to an electric vehicle). But where the impact is more complicated (implementing a policy to reduce the age of home-to-school transport; a new cutting regime for grass verges; the outsourcing of a service) the challenge is much greater – and such instances of greater challenge are much the more likely to be encountered.

The independence of councils is a weakness here. The necessary information is usually available somewhere and some councils have people who know where it is and can use it. Consultancies may possess it too but while they can reasonably be used for large, one-of projects, carbon evaluations done in-house need to become routine. The information gap across councils requires a collective response. Until it is filled and emissions evaluations and wider environmental impacts become routinely assessed alongside the financial impacts, action on climate change by councils will remain sporadic.

In addition, a way needs to be found to incorporate into the process the condition that, with a net zero target, the evaluation question is not any longer if an emissions source should be cut, but only by when. Well-designed carbon budgets for councils, consistent with the ones developed by the CCC at the national level for the four UK administrations, could be one way to address that need. Again, individual councils in the end depend in part on central direction and development.

# Conclusion: example action plans

It is no part of this report to judge what individual councils are doing, either those we have spoken to or those we have not. But since we have come across a number of action plans from local authorities that we have found helpful, we conclude this report by listing a number of them. In date order, they are:

- Cornwall County Council: Climate Change Plan (July 2019)
- Eastleigh Borough Council: Climate Change and Environmental Emergency Interim Action Plan (November 2019)
- Dundee City Council: Climate Action Plan (December 2019)
- Bournemouth, Christchurch and Poole: list of 153 actions (December 2019)
- North East Derbyshire: Reduce, Reuse, Recycle, Rethink: Climate Change Action Plan, 2019 – 2030 (January 2020)

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