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Local Authority Climate Action Beyond a Carbon Budget

Position Paper

By Dr Chris Jones and Professor Carly McLachlan – Tyndall Centre for Climate Change Research, University of Manchester (2025)

NB – The views are solely those of the named authors and do not necessarily reflect those of researchers within the wider Tyndall Centre for Climate Change Research.

Introduction

**This position paper was written as a follow on to the Tyndall Centre local carbon budgets for climate change targets project. That project ended in 2021 and the associated support website is now going offline. This paper is a resource for local authorities working to deliver on climate change goals.

Many UK local authorities have set climate change commitments for their areas that aim for zero or net zero carbon emissions within the next decade and a half.¹ While these commitments may yet still be achieved, current trends suggest that many are at risk of missing these targets. As local authority areas come close to missing key milestones on emissions, this briefing note considers what comes next in ensuring that effective action for tackling climate change and building climate resilience is achieved at the local level.

UK local authorities are in a difficult position on climate action. They have committed to addressing a global crisis that requires transformational change, but often find they do not have the levers, funds and political will to reduce emissions rapidly. Although public concern about climate change is high² there can be barriers to delivering specific climate actions locally. While acknowledging that powers and resources for climate action vary between authorities, our recommendations to local authorities that believe their area will soon exceed its carbon budgets are:

- Have a clear narrative that acknowledges previously set milestones might be missed but retain science and fairness-based targets to guide policy ambition.
- Make a public commitment to increased short and medium term delivery of carbon reductions (even if this falls short of existing targets) with detailed plans aligning all parts of decision making with climate action.
- Demonstrate that even if local priorities have shifted towards local renewal, regeneration and economic prosperity, climate action is embedded within these agendas. If such alignment has not yet been developed, commit to reviewing priorities on this basis across local strategies. Make this alignment clear to citizens and stakeholders. If local authorities build climate action into all areas of decision-making they have the potential to unlock considerably more impact.
- Continue to enhance knowledge and experience sharing between and within authorities on what does and does not work on reducing emissions.
- Do not use carbon offsetting and negative emission accounting in lieu of reducing local emissions (but do develop and support nature recovery plans).
- Enhance preparedness and planning for extreme weather resilience in line with average global temperature increases of 3°C degrees and above as a contingency.

Climate Change Commitments

Many new or revised climate change commitments were set in the build up to the 2021 UN climate conference (COP26) held in Glasgow, with the Paris Agreement 1.5C global warming temperature target in mind.

The Tyndall Local Carbon Budgets (TLCBs) tool³ has helped local authorities to set climate change goals that align with this. In the tool, a carbon budget (see Box 1) for local buildings, industry and travel CO₂ emissions is calculated based on 'global carbon budgets' from the IPCC in 2019⁴, and an approach to fairly allocating budgets set out by Anderson et al (2020)⁵. This is a science-based approach to playing a fair part in meeting global commitments on limiting climate change.

BOX 1: What is a carbon budget?

Carbon budgets help us to understand how much CO₂ we can emit from activities that use fossil fuels, such as driving or making steel, for a particular level of global temperature change.

They can be used to determine targets for reducing CO₂ emissions based on temperature goals and ways of sharing out the remaining budget. CO₂ has a cumulative effect on our climate - every tonne emitted contributes to the atmospheric concentration of CO₂ now and for centuries to come. Concentrations of CO₂ and other greenhouse gases (GHGs) in the atmosphere are important for regulating the Earth's temperature.

By trapping more of the sun's energy within the Earth's atmosphere, increased GHG emissions change our environment. CO₂ released by humans to date is the primary cause of the unprecedented rate of warming we now observe. Carbon budgets help us understand how much more CO₂ from human activity will make an outcome like 1.5°C or 2°C of warming likely.

Only stopping our contribution to increasing concentrations of GHGs in the atmosphere will stop further warming, but as of 2024 our global emissions have continued to rise. The global carbon budget is being used up at an ever-increasing rate and action to compensate must bring down emissions at an even faster rate.

As is typical for equity-based approaches, these local budgets provide localities in developed countries, that have significant historic emissions, with a carbon budget that is smaller than average allocated per capita share of the global budget. Targets based on this approach are more challenging than the current UK Climate Change Act. As such, while the global goal for limiting climate change to 1.5°C has called for global emissions to be 'net zero' by around 2050, TLCB targets reach zero around a decade earlier. In most cases meeting these carbon budgets entailed annual reductions in CO₂ emissions of 10% to 15% per year – but data⁶ shows that such change has not yet happened and we expect many LAs to exceed TLCB budgets within the next 4 years.

Local authorities are not alone in this. Localities in developed nations that have adopted science based and equity informed (See Box 1) climate change targets necessarily have goals that are ahead of the global target curve, and are a bellwether for global progress on meeting climate goals. The UK's own national targets – themselves argued by some to be insufficient in terms of making a fair contribution to the global challenge (Anderson et al 2020) – risk being missed on current progress.⁷ Global CO₂ emissions reached a new high in 2024.⁸ At current emission levels, we may use up the whole global carbon budget for a 50% chance of limiting climate change to 1.5C (see Box 2) by 2029⁹. By any measure we are in a critical moment.¹⁰

Much of the UK CO₂ emission reduction in the last decade has been from using less coal and more renewables to generate electricity. The priority is now phasing fossil fuel use out from surface transport and building energy use; issues that more directly intersect with local authority powers and influence. Local authorities however often lack the decision making, revenue raising and spending powers to make a significant impact outside of national policy¹¹ – a policy framework that is currently inadequate for the climate challenge.¹² However, many local authorities have made significant investment and progress in building capabilities and experience around decarbonisation. Changes in how local government is organised, increasingly affordable low carbon technologies and innovative new practices, provide opportunities to deliver change in this context.

Implications of Missing Targets

Being close to exceeding carbon budgets that are aligned with a chance of limiting climate change to 1.5C has implications for local authorities and wider policy. Working with local authorities over recent years has highlighted to us three key aspects that should be recognised. Firstly, the fact that targets are being missed in different sectors and nations, and that our global progress is not in line with the commitments we have made, means a redoubling of efforts and rethinking approaches to reduce emissions significantly and urgently are needed across all scales. Secondly, local authorities can engage stakeholders including citizens on the challenges in delivering against their adopted local carbon budgets and the reasons for this. Reaching out to a diverse pool of ideas, and gaining buy-in, will be essential if meaningful change is to be realised. Thirdly, given the situation we now face, it is imperative that authorities and other actors have sufficient resilience planning for new average and extreme weather conditions.

If climate change targets are missed without a clear narrative and plan to reduce emissions significantly, whilst building resilience in tandem, there is a risk of inaction. Such a response would stand entirely counter to the demands of this challenge and potentially undermines the positive climate action work being done at the sub-national scale. We recommend that authorities are direct about the nature of these targets in terms of them relating to a fair international allocation of effort and retain them to make clear their ambition and commitment to global equity. However, we would also recommend that an immediate focus on developing and communicating clear plans for emissions reduction in the short and medium term is required. These should of course be ambitious but importantly, they must also offer a clear plan for delivery. Up to this point many targets have been adopted without

this, continuing this trend risks it being seen as inevitable that climate targets will be missed, slowing progress and reducing confidence. Even if these more concrete delivery pathways fall short of carbon budget commitments, we argue that they are an important part of making progress on decarbonisation and building the confidence and experience needed to accelerate action.

BOX 2: 1.5°C, 2°C and beyond.

The most common way to measure climate change is to look at the change in average annual global temperature compared to the time before humans started making big changes in the composition of the atmosphere.

The last ten years have been the warmest on record.¹⁰ This has significant impacts. The risks and impacts of heat stress, extreme rainfall, food supply disruption, species extinction and sea level rise are greater for each part of a degree increase. In 2024 new temperature records were set around the world. We are already seeing climate change impacts on rainfall patterns and summertime temperatures in the UK that require adaptation and resilience planning. A 2°C warmer world will be significantly different to a 1.5°C warmer world as the impacts associated with each fraction of a degree are not linear.

Delivering on changes to emissions that support 1.5°C or 2°C outcomes requires more action and leadership from local authorities, particularly in cases where more powers are being devolved. Significant amounts of work and development have happened across local authorities to prioritise and act on climate change, at a time when financial budgets have been reduced and services stretched. National policy support on building retrofit and transport has been slow, and in some cases regressive. However local authorities can act to make climate goals central to decision making. At all levels there are decisions that can lock-in current levels, or more, fossil fuel use. If local authorities seek to embed climate action in all that they do, their levers will multiply and strengthen compared to focusing only on 'green' projects.¹³ Embedding climate standards and best practice in procurement, planning, investment, skills and convening networks means that all financial and political effort can be part of delivering greater climate action. Given the financial pressures on local authorities, sharing experience and knowledge to improve practice is more important than ever. It must be understood that this will mean doing things differently – long standing ways of working, priorities, preferences and expectations must be challenged and changed if we are to expect substantially better climate action outcomes than in the past.

There are excellent examples of local authorities around the world piloting and developing climate actions that reduce emissions. Knowledge and experience sharing, directly between authorities and in forums like LGA, ICEI and C40, can help to expand the benefits of individual schemes. This can also apply to sharing of learning and communication across teams with local authorities. Effective learning can also come from sharing experiences of projects that did not work.

When authorities look set to miss climate change targets they may opt for incorporating carbon offset or negative emission credits into strategies. We recommend not doing this. The voluntary carbon market for offsetting has several credibility issues that include: the precariousness of nature based projects to securing store fossil carbon long term; diverting funds from emissions reductions projects that, if designed well, can have co-benefits locally; cheap offsetting that deters directly measurable emissions reduction measures; value for money (particularly if spending tax revenues); the insufficient availability of secure negative emissions products to cover sectors without a current zero emissions alternatives such as agriculture. Local plans for nature recovery and restoration are essential for addressing the biodiversity emergency and have the potential to offer various co-benefits for citizens and an important area to prioritise in its own right.

Planning for current and future changes in the climate is still at a relatively early stage nationally and locally, but it is increasingly important.¹⁴ The more we change the atmosphere with greenhouse gas emissions, the more we move into uncertain and unprecedented outcomes in extreme weather and erosion. Predicting these outcomes for local areas is challenging and still in development, but there are 'no regret' actions available for building community resilience to dangerous heat, flooding and power network disruption. Much of this expands on existing processes to identify and ensure effective communication with vulnerable groups, and increasing green and blue infrastructure to cool urban areas and manage water.

Conclusion

Local authorities have a lot to offer in limiting further climate change and supporting communities to adapt to climate impacts. Many of the biggest challenges for future decarbonisation are place-based – in particular changing the infrastructure and practices in our transport systems and buildings. While bold and transformative action in the next few years to get back onto a 'well below 2°C' path is desirable, if this is not what authorities can or want to do this must be acknowledged. Being open and transparent about any expectation that climate change goals will be missed is important, and must come with detailed supporting plans to reduce emissions at a quicker pace than has been achieved to date and a much greater emphasis on building resilience to future changes in climate. It is imperative that a situation where doing less as a response to falling behind is avoided – any mitigation effort is future damage limitation – to both protect local citizens, and particularly those in vulnerable communities world-wide.

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- ³ <https://carbonbudget.manchester.ac.uk/>
- ⁴ IPCC Special Report of 1.5C <https://www.ipcc.ch/sr15/>
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- ¹⁴ Information on specific local climate risks for local authorities can be found at <https://uk-cri.org/> and <https://climatedataportal.metoffice.gov.uk/pages/lacs>