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Climate Emergency and Cities: An urban-led mobilisation?

The Climate Decade's priorities for urban climate action, policy and research

By Philipp Rode

Philipp Rode is Executive Director of LSE Cities and Associate Professorial Research Fellow at the London School of Economics and Political Science.

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1 Introduction

A week is a long time in politics, Harold Wilson once said. Yet until recently, this did not seem to apply to climate politics. Engagement with climate change was mostly a gradual affair, with occasional peaks in interest at global climate summits, when individual countries made controversial shifts in their carbon reduction commitments, during major climate anomalies or freak weather conditions, or after the publication of a new warning by the Intergovernmental Panel on Climate Change (IPCC).

In the past 12 months, however, we have seen an acceleration in climate policy debates, consciousness and activism that had long seemed unimaginable. Some might argue that this new momentum is "beyond politics" – that is open for debate. What is undisputable is that over the past year, particularly since the release of the 2018 IPCC report, the global climate policy community has been confronted with a powerful new narrative, put forth by an increasingly vocal and effective global "climate emergency" movement. A new generation alarmed by the climate impacts already before us has found its voice, eclipsing long-used arguments for sustainable development and future generations.

Their activism has resonated around the world: from the School Strikes for Climate initiated by Greta Thunberg in August 2018, to her "how dare you?" speech at the United Nations this September, the non-violent actions of Extinction Rebellion kick-started by the blocking of Central London bridges in November 2018, and the Sunrise Movement in the US, which gained prominence during the 2018 midterm election and through its advocacy for a Green New Deal. Whether these efforts reflected changes in the public mood, or actively shaped it, the trend has been confirmed by several surveys and polls, possibly most reliably expressed during the European Elections in May 2019, where Green Parties achieved their best results ever (Henley 2019).

Government institutions, political parties and third-sector organisations have started to declare climate emergencies as well. In the US, the Democratic Party in July 2016 called for a "World War II-type national mobilization to save civilization" (Green 2016); in May 2019, the UK Parliament declared an "environment and climate emergency" (Parliament 2019). Cities and local governments have been equally vocal, with globally more than 1,000 jurisdictions in 20 countries having passed climate emergency motions by October 2019. Together, they represent over 250 million citizens (CED 2019).

In practice, though all aim to accelerate climate action, proposals vary in their urgency; the more ambitious ones refer to a 10-year transition period to zero emissions. Still, as many have observed, the coming together of public activism, increasingly visible climate change impacts, and ever-more troubling warnings by scientists (McGrath 2019) are changing the climate policy landscape.

This discussion paper unpacks the climate emergency movement from the perspective of cities, examining what has changed over the last year, what the climate emergency framing adds to the well-established climate action narrative, and how cities and local governments fit into the climate emergency agenda. It concludes with priorities for policy-oriented research on climate and cities.

2 Revising the narrative

The recent climate protests, movements and initiatives share one central message: We urgently need far more radical action to prevent catastrophic climate collapse. While a sense of urgency has always been part of the climate change narrative, the latest 2018 IPCC report and the popular interpretation of its conclusion, that "we have 12 years to limit climate change catastrophe" (Watts 2018), have been transformational. Keeping warming to less than 1.5°C and avoiding an entire range of tipping points are central to the "time is running-out" message. As the UK Government's former chief scientific advisor David King put it: "The next decade will determine the future of humans on this planet for 10,000 years" (King 2019). It is also noted that by no means have we come even close to achieving the change required in accordance with the Paris Agreement (Burck, Hagen et al. 2019). In addition, the loss of plant and animal species, increasingly referred to as ecocide, are part of the new climate and environment narratives (IPBES 2019, Levitz 2019).

The year 2020 is also seen as pivotal, identified as the latest year when carbon emissions must peak to keep the planet below 1.5°C of warming (IPCC 2018). Speaking in 2017, Hans Joachim Schellnhuber, IPCC report lead author and founder of the Potsdam Institute of Climate Impact Research, offered this assessment: "The Climate Math is brutally clear: While the world can't be healed within the next few years, it may be fatally wounded by negligence until 2020" (McGrath 2019). If current trends continue, however, emissions will not peak before 2030, and we will be on course for around 3°C of heating by 2100, potentially crossing multiple tipping points (UN 2019). This is why the 2020s are going to be the "Climate Decade" requiring us to halve global emissions over the next 10 years (Clarkson 2019).

2.1 Gradualist vs emergency approaches

The climate emergency messaging breaks with the types of environmental public engagement and communication that had prevailed for many years. One way to describe this is to differentiate between a gradualist and an emergency narrative. Gradualism as part of climate action refers to decarbonisation over decades, net zero emission targets by 2050, and a range of economic policy instruments such as emission trading and carbon

taxes. These, it is argued, could have been appropriate actions if implemented decades ago. Today, however, a gradual impact of climate action would fail to deliver the emissions reduction required for a safe planet in the future. A related critique of gradualism points to a preference for political and financial realism "over scientific and moral responsibility" (Salamon 2019b).

The debate on gradualism vs emergency directly connects to the environmental movement's earlier communication turn away from "scare tactics", "fear" and "pessimism" and towards a "polite" emphasis on co-benefits, opportunities and positive change stories. Climate emergency perspectives strongly refute this approach and emphasise the importance of truth-telling, which must emphasise that we are rapidly running out of time, that we are not making the progress that is urgently needed, and that gradual transitions will not suffice. Truth-telling here is about the real possibility of a "hothouse earth" (Steffen, Rockström et al. 2018) and includes references to mass extinction, mass migration and the premature deaths of millions of people (Watts, Amann et al. 2018, IPBES 2019). By communicating solutions with these hard truths, advocates of the new approach aim to cause not panic, but a concerted emergency response (XR 2019).

Yet unlike immediate and intentional threats like terrorism, the climate emergency lacks many of the triggers to which humans immediately and reflexively respond (and often overreact) to (Gilbert 2010). Many have suggested that the main risk on the climate front is under-reacting, as we cannot rely on a reflexive response. Instead, the new climate movement argues that the trigger is education, organising and example setting (Salamon 2019a). It is in this spirit that major news outlets are increasingly updating the language they use to discuss climate change. For example, The Guardian is shifting to terms such as "climate emergency, crisis or breakdown" instead of "climate change" and "global heating" rather than "global warming". As the newspaper editor-in-chief Katherine Viner notes: "The phrase 'climate change', for example, sounds rather passive and gentle when what scientists are talking about is a catastrophe for humanity" (Carrington 2019).

Thus, referring to and declaring a climate emergency becomes a form of "social proof" that something is going terribly wrong; it also takes advantage of emergency modes being "highly contagious" (Salamon 2019a). Ultimately, getting the general public and government institutions to enter "emergency mode" is seen as the only real possibility for accelerating action to the required level.

The rational analysis of how much time is left and the conclusion that radical action is needed is complemented by a moral argument, a key component of mass social movements throughout history. Carbon emissions are framed as morally wrong, creating injustices and inequalities between polluters and victims at present and across generations. Even the concept of a "Carbon Abolition Movement" in reference to slavery (without claiming equivalence) has been floated (Beinhocker 2019). The "moral clarity" of "fighting mass extinction versus fossil fuel interests" (Beinhocker 2019) seems to be resonating more widely.

2.2 An urban-led response

From an urban perspective, it is particularly important to recognise the degree to which cities and local governments have become leaders in climate emergency declarations. Not only have they often been among the first public institutions to declare emergencies, but they have done so in very high numbers. Within just a few months, more than 500 local governments declared emergencies (CED 2019). While the conventional networks of city climate action, above all C40 Cities Climate Leadership Group, ICLEI Local Governments for Sustainability and the Global Covenant of Mayors for Climate & Energy, were initially not driving these declaration efforts, they have been instrumental in an urban translation of the urgency of climate action. C40's (2017) "Deadline 2020" report and pledge to peak emission by 2020 is a striking example.

City networks are now also catching up with the emergency narrative. For the 20 September 2019 Global Climate Strike, leading C40 Mayors from Paris, New York, Los Angeles and Copenhagen issued a statement of support and called for emergency responses (C40 2019b). Previously the

city network has also endorsed the Fridays for Future initiative.

By far the most important push by the world's most influential cities embracing the climate emergency happened just last week at the 2019 C40 Summit in Copenhagen. C40 cities have recognised the climate emergency as one of the four principles of a Global Green New Deal (Hidalgo and Garcetti 2019) and the network has emphatically added its support for such a global response as advocated for by the UN in September 2019 (UNCTAD 2019). Related statements by C40 Mayors included (C40 2019a):

- "We are entering a make-or-break decade for the preservation of our planet and environmental justice for every community" - Mayor of Los Angeles, Eric Garcetti
- "Climate emergency is an agenda that must be recognized for all and cities have a great role to play in fighting climate change." - Mayor of São Paulo, Bruno Covas
- "In Milan, the motion for the declaration of climate emergency by the City Council has further enhanced the engagement of citizens, students, schoolchildren, business and the third sector." - Mayor of Milan, Giuseppe Sala
- "The impacts of the climate emergency will be felt by us all, but especially our most vulnerable, remote and marginalised communities, and those living in poverty." - Lord Mayor of Sydney, Clover Moore
- "We are the last generation that can accomplish the necessary change." - Mayor of Lisbon, Fernando Medina
- "The stark reality is we are running out of time to stop the worst impacts of Climate Change. Cities around the world are united in our frustration over a lack of global government action." - Mayor of London, Sadiq Khan

As cities and their networks increasingly embrace the "deadline" perspective, they are also looking beyond the carbon emissions that they themselves produce (either directly within the city, "scope 1", or in the production of their energy supply, "scope 2") to also account for and address consumption-based emissions ("scope 3"), including emissions associated with the food, clothing and goods consumed by city-dwellers, from international travel and embedded emissions in building materials. For example, a recent report co-authored by C40 calls for halving urban consumption emissions by 2030 to avoid climate breakdown (C40, University of Leeds et al. 2019).

3 Two critical concepts

Before exploring an urban response to the climate emergency in greater depth, it is important to clarify two concepts that play a central role in related communications, demands and actions: emergency mode and mobilisation.

3.1 Emergency mode

The most important concept is the emergency idea itself. Beyond its role as political proclamation, it is helpful to appreciate the implications of declaring an emergency. Climate emergency advocate Salamon (2019a) considers emergency mode as the optimal functioning in an existential or moral crisis. Maximising the resources and attention to address the emergency supports such functioning. In other words, it requires adjusting the hierarchy of priorities so that solving the emergency is the top priority, placing climate change at the centre of policy and planning decisions (Turney 2019).

Comparing emergency mode with normal politics, Spratt and Sutton (2008) identify several differences: the speed of response is seen as crucial, the crisis becomes the highest priority, there is a focus on a rapid transition and scaling-up, planning is key, critical targets may not be compromised by political trade-offs and failure is not an option.

While typical emergencies may last only a few hours or days, there are numerous examples of "long emergencies" which require emergency actions to become the new "normal life". The climate emergency is obviously an example of a particularly long emergency.

Emergencies also require specific governance arrangements ranging from entirely new organisational structures to effective mechanisms for multi-agency cooperation. Careful planning and management are equally important. Highly productive cooperation and effective coordination are fundamental components of emergency responses. Psychologists refer to a "hive switch"

(Haidt 2012) that allows groups to achieve unusually high levels of cooperation in case of an emergency.

3.2 Mobilisation

Analogies between the current climate crisis and past situations often highlight WWII as a reference point for a collective emergency mode (Spratt and Sutton 2008). This is particularly the case in the US, where references to a WWII-scale mobilisation to address the climate emergency are increasingly common.[1] Along such lines, Joseph Stiglitz recently invoked a war analogy, stating that "the climate crisis is our third world war" (Stiglitz 2019). Going beyond the scale and ambition of major missions and initiatives such as the Apollo Programme, the New Deal or Marshall Plan, the mobilisation advocated by some is a comprehensive emergency restructuring of the economy and a shift away from consumerism to a singular purpose (McKibben 2016, Silk 2016).

The war analogy must of course be carefully examined, and advocates of the mobilisation approach also emphasise several key differences between WWII and a climate mobilisation: There will not be a trigger moment such as Pearl Harbour, it will not involve enormous loss of life and sacrifices in living quality, and it should not curtail civil liberties for any subgroup of society. Instead, its advocates argue, this mobilisation will save lives and lead to enormous economic opportunities linked to innovation, a better quality of life and the protection of civil rights (Silk 2016).

Accepting an emergency rather than a gradual climate response, climate mobilisation also implies many statist, "big government" characteristics of collective action: large-scale deficit spending, command-and-control regulation, higher taxes and redistribution (Silk 2016). It is for this reason, that the promotion of a "Global Green New Deal" as well as a "just transition" are identified as the most fundamental component of a climate emergency response (C40 2019a). Broader governance approaches will have to enable these through new legal and administrative structures to pave the way for mobilisation agencies, empower the executive branch of governments, and set up commissions and other oversight agencies.

As drastic as such approaches may appear today, ultimately, it could be argued, an emergency declaration and mobilisation will be inevitable. The choice will be to have either a more controlled and democratic mobilisation now or even more draconian measures once climate change effects have become even more disruptive, imminent and threatening. Hopefully, a third possibility of collapsing ecosystems in a militarised world controlled by global elites overseeing the distribution of scarce resources can be avoided by either alternatives.

[1] Silk 2019 lists a few characteristics/effects of the WWII mobilisation in the US:

- 10 per cent of population relocated to find a "war job".
- In 1942, all private automobile production was banned: about 75 per cent of existing auto manufacturing was retrofitted for war production. Annual vehicle production fell from 3.8 million cars to 143 vehicles by 1943.
- Public transport went up from 13 billion to 23 billion trips between 1940 and 1946, intercity travel by train increased from 8 to 32 per cent between 41 and 44. Rail share of freight went up from 61 to 72 per cent from 1940 to 1943.
- Per capita travel by private vehicles declined by 41 per cent from 1941 to 1943.
- A national speed limit "victory speed", of 35 miles per hours was imposed, and pleasure driving was banned.
- Government banned/restricted many activities that did not directly contribute to the war effort, including the production of civilian refrigerators, vacuum cleaners and washing machines.
- 9 per cent of the entire American population was directly employed by government.
- In 1944, defence spending was about 45 per cent of GDP.
- Rationing programmes were introduced to ensure equitable distribution of scarce resources: gasoline, coffee, butter, tires, shoes, meat, cheese and sugar.

4 Urbanising the climate emergency

So how are cities interpreting and operationalising the climate emergency? A concerted effort of signing up cities to declare climate emergency emerged in October 2017 with the City by City programme by the Climate Mobilization initiative (TCM 2019). Part of the wider Climate Emergency Declaration Campaign, this programme has documented a rapid increase in such declarations (CED 2019). Among all countries, the UK has recently been the most active with the 435 councils of the Local Government Association in England and Wales choosing to declare a climate emergency in July 2019 (Bristol Council 2019). By contrast, such declarations have until very recently not been issued by emerging economy and developing world cities, possibly an indication for the current emergency focus on climate change mitigation rather than adaptation.

In higher-income countries, many big cities have declared climate emergencies, including London – "the world is now clearly in the midst of a climate emergency" (GLA 2018, p5); New York – "converting to an ecologically, socially, and economically regenerative economy at emergency speed" (NYC Council 2019), and Sydney – "Declaring an emergency signals the need to go beyond business as usual. It recognises that time is running out to stop irreparable harm to our environment" (City of Sydney 2019). But they were not the first, and in all countries so far, it was smaller cities that first made emergency declarations, such as Darebin in Australia in 2016, Hoboken in the US in 2017, Bristol in the UK in 2018 and Konstanz in Germany in 2019. These city declarations typically recognise that accelerating climate action is a top priority, and that efforts and planning so far will not limit warming to 1.5°C (Stadt Konstanz 2019).

4.1 Climate emergency actions

What concrete actions are being demanded as part of emergency declarations? And to what degree do cities actually have control over such measures? Here the spectrum varies from a simple acceleration of established climate action to radical interventionism. Across the board, newer and more ambitious net-zero targets have become commonplace.[2] The main question is whether they will be enacted by law, which would make emissions (or at least those that are not offset) illegal after a certain year. Most climate emergency advocates aim for net-zero targets for developed countries as soon as 2030 or even 2025, with longer timelines for developing nations. Interestingly, the most ambitious target date is precisely what the Copenhagen City Council already decided in 2009: a carbon neutral city by 2025 (City of Copenhagen 2013).

Some observers have noted that this spectrum is reflected in preferences for different policy instruments. The use of economic instruments (e.g. carbon tax and carbon trading) tends to be more aligned with conventional acceleration, while stronger regulatory instruments, including proposals for carbon rationing and dedicated regulation for major industries, are part of more enhanced levels of interventionism (Cox 2013, Silk 2016). The latter is also proposed to address increasing concerns about economic inequalities and justice as part of more radical climate action.

Broadly (not just in cities), common priorities for emergency action include decommissioning of coal fired plants, rapidly expanding renewables and new energy grids, electrifying transport, efficient buildings, adopting "circular economy" strategies, sustainable agriculture, abolishing all fuel subsidies, reforestation, and major shifts in consumer behaviour. At the more radical end and moving

[2] The frequent references to net-zero require further clarification, particularly when applying them to city targets. Generally, net-zero means that the total sum of carbon emissions are balanced by the same level of carbon removal. Future carbon emissions that are unavoidable therefore need to be offset by extracting the equal amount of carbon from the atmosphere. Offsetting will be costly, so it is not a viable way to keep emissions at existing levels. There is also a question of the extent to which carbon removal needs to take place within the territory of a government targeting net-zero, or whether others located elsewhere could be paid to do so. The climate emergency narrative is quite clear that net-zero targets should not preclude efforts to achieve true zero emissions (Silk 2019).

beyond carbon, goals such as setting aside half of the Earth's surface for ecosystem preservation, reversing population growth, considerably raising taxes to enable a climate mobilisation, rapidly shifting away from meat consumption, minimising carbon-intensive long-distance travel (e.g. international flights), ending fossil fuel exploration, and overcoming an economy based on consumerism are typically highlighted.

Within cities, emergency actions that have recently been highlighted as particularly relevant include mandating passive house standards, banning the construction of glass towers, rapidly phasing out combustion engines for road transport, major shifts to public and active transport while reducing motorisation, car-free days, terminating highway and airport expansion, repurposing planning to deliver compact and connected urban growth, extensive retrofitting programmes, and advocating for high-speed rail connectivity for intercity travel while (re-)establishing vast green and blue infrastructures across urban hinterlands.

4.2 The new commitments by cities

Detailed references to specific actions are rarely part of cities' climate emergency declarations, however. Instead, there are usually general references to updating existing climate strategies, along with new carbon neutrality targets. London, for example, has set that target for 2030 (Taylor 2018). The city's declaration also reemphasises more conventional climate actions linked to building retrofits and energy efficiency, grid decarbonisation and decarbonisation of transport as priorities. Some cities have made specific announcements, generating international headlines, such as New York Mayor Bill de Blasio's plan to ban all-glass buildings (which actually referred to excessive use of glass) (Tapper 2019).

Some city emergency declarations include new governance components. Bristol, in the UK, is creating a new City Office Environmental Sustainability Board and as Advisory Committee on Climate Change (Bristol Council 2019). Los Angeles' City Council established a Climate Emergency Mobilization Department by unanimous vote, and the city operates with a Climate Emergency Commission (City News Service 2019). The first German city to declare a climate emergency, the university city of Konstanz, included a commitment to evaluate the climate impacts of every decision taken by the city on a simple negative, neutral or positive scale (Stadt Konstanz 2019). Permanent monitoring and frequent reviews every six months of progress on climate action were also part of the city's declaration.

Advocating for other tiers of government to respond, above all national government (GLA 2018), but also other cities and local authorities (Bristol Council 2019, Stadt Konstanz 2019), is another key part of city-level climate emergency declarations. Sydney asks for a federal "just transition authority" to mitigate the social impact on redundant carbon industries (Turney 2019). In many instances, cities clearly communicate the framework conditions that need to be put in place by other tiers of government in order to allow for effective urban climate action.

4.3 Connecting with the wider emergency concept

An important question being asked by many advocates is to what extent emergency declarations actually mean anything and whether such declarations by cities really connect with the basic concept of an emergency as outlined above. References to wartime mobilisation are included, for example, in New York's declaration (NYC Council 2019) and, as mentioned earlier, Los Angeles has established a dedicated climate mobilisation department (City News Service 2019). But it is also evident that none of the cities, and indeed any other tier of government, that have declared an emergency so far have translated such statements into radical action or intervention on the ground that would be noticeable to residents and visitors, in the way that other emergency responses typically are (such as those addressing rioting, terrorism or disasters).

That is not to say that climate emergency responses will have to look exactly the same as "short" emergencies. The point is that, so far at least, there may be a risk that climate emergencies do not actually get the top-priority treatment that the term implies. This is a further reminder that cities and individuals cannot do this alone; national and international governance entities remain critical and need to be lobbied hard (CUT 2019).

At the same time, and in the spirit of truth-telling, cities have clearly started to contribute to the important educational process of alerting the global community to a fundamental crisis just as other action groups, social movements, media outlets and environmental organisations are targeting our collective sense of urgency, risk and potential ecological catastrophe.

5 A new agenda for research and policy advice?

Where does all of this leave the global climate policy and research community? Our work strand at LSE Cities that addresses the nexus of urban development and climate mitigation is a helpful reference point. Over the past 15 years, this work cut across research and policy input for individual cities; city networks including the C40 Cities Climate Leadership Group, ICLEI and UCLG; UN agencies such as the United Nations Environment Programme and UN Habitat; and with our global network partners via the Global Commission for the Economy and Climate, the Coalition for Urban Transitions, the OECD and the LSE Grantham Research Institute.

Most of our policy-oriented research since the mid-2000s has focused on two central narratives. The first is about the economic case for urban climate action and the large co-benefits that may result from emission reduction even in the short term. Our collaborative work confirmed considerable economic opportunities, above all linked to innovation, productivity and employment gains that could be induced by more ambitious climate targets in cities (Rode, Burdett et al. 2011a, Floater, Rode et al. 2014a, Floater, Heeckt et al. 2016).

The second narrative focused on the "win-win" urban returns of more compact and connected urban development and investigated the economic, ecological and social opportunities of higher-density, mixed-use urban development alongside transport systems based on public, shared and active transport. This work not only emphasised the particular role of city-level governance in informing the physical and infrastructural development of urban settlements, but the considerable long-term lock-in created by any decisions linked to urban form. These two narratives feature centrally, for example, in our cities chapters of the 2011 "Green Economy Report" (Rode, Burdett et al. 2011b) and the 2014 report "Better Growth, Better Climate" (GCEC 2014). This has also been a central tenet of the 2013 report "Going Green: How cities are leading the next economy", alongside our city-level green economy leader reports (Floater, Rode et al. 2013, Rode, Floater et al. 2013, Floater, Rode et al. 2014b) and urban strategies (Rogers Stirk Harbour & Partners, LSE Cities et al. 2009).

Compared with the climate emergency narrative, these arguments could be said to be part of a gradualist agenda for climate action, for two main reasons. First, the urban green growth and co-benefit perspective tries to make the case that the ecological crisis can be addressed without major shifts in the current political economy and its approach to markets and economic growth. Second, the emphasis on urban form is essentially attached to medium- and long-term impacts that result from the (re-)structuring of urban territories. As important as these are for medium and long-term climate targets, such restructuring will have little immediate impact on carbon emissions over the coming months and years.

By contrast, the emphasis of policy-oriented research that may support cities with their current emergency ambitions may have to refocus on actions with instant impact. The baseline question for advanced economy cities will have to be how to considerably reduce carbon emissions per capita over the coming few years (including consumption emissions). In middle- and lower- income country cities, emissions will have to be prevented from growing further and reduced as soon as this is possible.

5.1 Far beyond business as usual

This will elevate a better understanding of instant and equitable reduction approaches to current operational emissions in cities linked to buildings, transport, industry and appliances. New analysis on the rapid and safe decarbonisation of supply-chains, above all for food and other critical goods, cities depend upon is equally important. It will also require more analysis of embedded emissions as part of urban construction processes currently under way and, of course, a full account of consumption-based,

scope 3 emissions linked to clothing, food, international travel, etc. of urban dwellers.

Particularly the latter will have to incorporate politically less convenient and possibly more controversial perspectives. For example, in recognition of the critical role of consumption related emissions in cities, C40's recent consumption report already explores the following hypothetical "ambitious" targets for the year 2030 which would help to close the emissions gap for a 1.5°C warming trajectory. The report stresses that it does not advocate for the wholesale adoption of these targets in C40 cities but considers them a reference point for developing reduction pathways and urban visions (C40, University of Leeds et al. 2019):

- Switch building materials so that 90 per cent of new residential and 70 per cent of new commercial buildings are timber buildings (p74)
- Zero meat consumption and zero per cent household food waste (p78)
- Reduce the number of new clothing items per person to three per year (p82)
- Reduce private vehicle ownership to zero and increase design life of other vehicles to 50 years (p86)
- Cut aviation emissions by reducing the number flights to one short-haul flight every three years and a 100 per cent adoption of sustainable aviation fuels (p90)
- Seven year minimum design life for laptops and similar electronic devices (p94)

Essential future policy-oriented research will have to put forward fresh input and ideas on how to construct fair and equitable transition policies. It will have to explore new opportunities for progressive pricing of consumption emissions, operating with clearly defined carbon budgets and possibly even consider acceptable approaches to carbon rationing. It will have to help cities to understand their own remits and limitations as part of such accelerated actions. Once again, such research will have to continue breaking down disciplinary boundaries and establish currently underserviced connection points between urban studies and science, engineering and sociology, political science and economics, public administration and psychology.

Such input will further have to take account of the fundamental struggle between collective and individual action with cities somehow positioned at the middle point of this spectrum. The idea of "going it alone" ahead of respective national governments and certainly independent from globally agreed and binding frameworks may have to be re-examined and accelerated. While transferability between national and city-level policy is limited, fresh work on regulatory unilateralism and arguments for acting on climate change based on economic, geopolitical and moral grounds may be an interesting point of departure for cities (Drahos and Downie 2017). New synergies and tensions between self-interest and collaboration in an age of climate emergency will also require a new analysis of the relationship between urban climate action targeting either adaptation, mitigation or both.

Cities as institutions also play a unique role blurring the line between social movements and governments. Their emergency declarations seem to connect more to the former, while their climate action policy relates to the latter. Bridging the two will require a new translation between activists' demands on the one hand and climate policy, programmes and projects on the other. Equally important, future research will have to continue providing advice on how to report back to other tiers of government, particularly the national level, to ensure the required framework conditions are met.

More research will also have to be dedicated to institutional analysis and governance regimes part of emergency modes. Balancing the need for fast, effective decision-making and action on the one hand and democratic, inclusive consultation, participation and co-production on the other will require significantly more attention. The fact that to date no Scandinavian municipality has declared a climate emergency (CED 2019, P4FS 2019) may indeed suggest that a state of emergency can be seen as implying democratic deficits too severe to tolerate even for the most environmentally conscious local governments.

5.2 Contributing to the Climate Decade

Some of this is already beginning to emerge. Our latest multi-partner report by the Coalition for Urban Transitions, "Climate Emergency. Urban Opportunity", not only recognises the new urgency in its title but has put forward a set of more immediate and ambitious actions. The report links these actions to its focus on alerting national governments of their critical role on behalf of cities and better urbanisation and under the banner of "raising the ambition" suggests, for example, to (CUT 2019, p104ff):

- Adopt alternatives to conventional steel and high-carbon cement by 2030
- Shift away from building detached housing in established cities
- Scale land-based financing instruments to fund sustainable urban infrastructure
- Shift national transport budgets from building roads to supporting public and active transport
- Establish "regulatory sandboxes" for low-carbon innovations in cities
- Allocate at least a third of national research and development (R&D) budgets to support cities' climate priorities by 2030
- Anticipate, protect and support the workforce of the future, including by developing transition plans for fossil fuel-based workers and industries

The extent to which such climate emergency-relevant research and policy work will be possible fundamentally depends on the type of research funding that may enable it. Some have highlighted that existing funding by governments, large green philanthropies and the private sector may risk missing the boat on the climate emergency agenda as a result of self-imposed constraints of not communicating ecological urgencies in full.

A final implication of a climate emergency for the research and policy community concerns its own operational carbon footprint. As universities and research organisations start to declare climate emergencies – Bristol University was first in the UK – they will have to find new ways of maintaining and increasing their global knowledge and impact while reducing travel- and convening-related emissions. Hopefully, this will not only be felt as a constraint but lead to new innovative ways of researching, collaborating, teaching and building capacity.

As much as cities will hopefully become important laboratories for a climate emergency across wider territories, universities could become practice labs, which may inform the city level in the spirit of Local Agenda 21 initiatives as already envisaged during the mid-1990s. Universities' roles as urban citizens, conveners, educators and knowledge creators alongside their independence and trustworthiness not only implies but demands to take on a special responsibility, not unlike the one of cities, for the coming Climate Decade.

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