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Post-carbon inclusion: transitions built on justice - Introduction

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Introduction

As efforts to address the climate crisis (hopefully) continue to multiply across the urban world, two central questions are brought to the fore: First, how could these efforts be made effective and sufficient to address the climate emergency and heal the planet for future generations? Second, to what extent can effective actions also promote justice and inclusion? To address these questions, throughout the book we present case examples and empirical insights, together with consideration of both reformist and more radical ideas. Later in this chapter we introduce key terms, including but not limited to ecological modernization, circular economies, just transitions, socio-technical transitions, and degrowth.

Decarbonization and inequality are entangled at multiple scales, whether planetary, national, regional, city, local community or house(hold). The implications and ramifications of such entanglement matter insofar as they might reinforce each other; they might present as a Faustian bargain. Beyond the unacceptable prospect of decarbonization and equality being regarded as mutually exclusive, the unfolding patterns and practices of adoption of so-called low carbon technologies also raise questions about the extent to which they are actually contributing to overall arrest of climate change, or merely shifting the problem around. For example, is the rush for minerals to feed low carbon tech unacceptably exacerbating global ecosystem decline? Is automation really freeing us from drudgery or fuelling modern slavery?

The starting point for this book is an optimistic view that decarbonization efforts will continue to grow and ultimately a post-carbon and more inclusive society could unfold – one where fossil fuels are no longer extracted nor required, and where people enjoy the capability, opportunity, and dignity of effective participation in society, regardless of their identity, wealth, ability, background or culture. However, this possibility is heavily conditional and there are many different routes that could be followed in its pursuit. It is these routes and conditions that are the main topic of the book.

Post-carbon means 'after carbon' – it is about how things might be when fossil fuels are no longer coursing through the anthropogenic world's veins. It is about when the atmospheric balance of greenhouse gases is restored and when planetary repair – reversing deforestation, curbing methane, and so on, is well underway. Carbon, here, is simply a signifier for fossil fuels in direct combustion as energy and consumption (as in plastics) and as embodied in materials. Carbon (atmospheric CO_2) emissions generally refer to all greenhouse gases (GHG), i.e. CO_2 and non-CO_2 GHG. CO_2 is a standard measure of all GHG emissions due to its propensity and long lifetime. Within total GHG, carbon, methane, and nitrous oxide occur roughly in the following proportions 15:4:1. An important distinction between post-carbon and decarbonization is made here. The latter does not address consumption *per se,* whereas 'post-carbon' allows for imaginaries where de-energization and fundamentally different ways of doing things are achieved in addition to decarbonization.

Framing the book in this way is not intended to enter the realm of optimistic imagining or visioning what futures without fossil-fuel powered lives and economies may be like. We rather use it as a heuristic for bringing together critiques of current strategies for heading towards a post-carbon urban sphere, diagnosis of where exclusions rather than inclusions may

materialize, and exploration of alternative practical ways of living that have been seeking to enact the degree of transformation that becoming post-carbon will need to entail.

The idea of urban decarbonization is deceptively simple. Nearly a decade ago the Intergovernmental Panel On Climate Change (IPCC, 2015) identified reductions in residential and urban scale carbon emissions as 'low hanging fruit'. In reality, a myriad of cost-benefit assessments showing uncertain and limited paybacks have tended to ignore the sheer complexity of the numerous and various urban and domestic arrangements that explain the failure of relying on economic rationales to progress the transition. Even where policies have been deemed successful, they have tended to have uneven, perverse or short-lived effects often due to and/ or reinforcing socio-economic inequity. For example, the idea of gas as a 'transition' energy source in moving away from coal leaves much of the fossil fuel industrial complex intact – indeed, reinforced – and the inequalities of existing access to energy unquestioned.

Given the extent of the climate emergency and absolute imperative to limit warming to 1.5°C, much talk of decarbonization, net zero and low carbon transition is manifestly inadequate and reflects an unwillingness to part from an existing, damaging and exclusionary high carbon world order. At the same time, global society is highly unequal, with wealthier strata of Global North nations, global elites and transnational corporations generating the vast majority of the emissions, the consequences of which are already being felt hardest by disadvantaged communities in the Global South. Moreover, there is also widening inequality in terms of wealth, access to resources, environmental quality, health, housing, opportunity and so on, both within and between countries, regions, neighbourhoods, social groups and even within households. High carbon fossil fuelled societies are inherently exclusionary – prioritising the needs and wants of certain groups over the externalities – the grotesque damage to the planet

that the most vulnerable others will bear. Through the transition away from fossil fuels, we have a unique opportunity to reformulate who should be prioritized and to make reparations for previous exclusion. The title of this book is therefore aspirational, reflecting the dual, overlapping and very pressing need to move rapidly to a post-carbon society that redresses the exclusion inherent within the current regime.

'Ultimately, a future low-carbon world may very well become more pluralistic, democratic, and just,' writes Sovacool (2021: p 14), in a review of 198 articles analysing 332 cases of energy justice in climate change mitigation. 'But,' he concludes 'the sobering results from this review also indicate without proactive governance it could be more antagonistic, exclusionary, violent, and destructive.' This book engages with the many ways in which efforts to decarbonise necessarily disrupt and reconfigure domestic and urban scale infrastructures and practices, but with a focus throughout on who is excluded, who is included and on how patterns of difference and marginality are implicated.

This book has four starting premises. First, that rapid decarbonization is necessary and that radically more sustainable and de-energized ways of urban living, transformations in housing and urban energy efficiency, and widespread deployment of renewables are all crucial aspects of this goal. Second, that housing and urban spatial economic, social and cultural inequalities are worsening and must be addressed. If not, there will be increasingly negative consequences for humanity, not just those in increasing poverty. Third, that efforts to rapidly decarbonize and address increasing, diverse and sometimes hidden inequalities are rarely matters that are addressed conjointly, for all sorts of reasons. As Lamb et al (2020) highlight in their literature review, decarbonising actions can exacerbate inequality, and vice versa. Fourth, it is urgent, at this juncture, to examine a range of post-carbon inclusion agendas at urban and household

scales, and critically evaluate ways forward, whether via 'degrowth', more conventional 'just transitions', or some middle course, like a 'generous transition'.

So, what does 'doing' post-carbon inclusion look like? In reality, we don't, and can't, yet know. At the highest and broadest levels of decision making it means changing mundane and economic activities such that emitting carbon is not needed. Moreover, to be inclusive, these changes necessarily involve attention to the need for, and to the processes of, transitioning to new mechanisms and arrangements for economic distribution, including between social groups and across gender, race, locale, and abilities. To state a concern with 'post-carbon inclusion' means narrowing or adapting the approaches taken to transformation to a commitment to inclusion, with a diversity of forms and meanings.

The large and rapidly growing corpus of work engaging with mechanisms of change and purpose spans (at least) socio-technical transitions, justice, and indeed, just transitions. As introduced in Chapter 2, socio-technical transitions are envisaged as facilitated and managed decarbonization. For example, the multi-level perspective (Geels, 2010) defines mechanisms for regime change via protected niches, all unfolding against a backdrop of landscape factors. A managed socio-technical transition, if possible and successful, may 'deliver', for example, a renewable energy-powered city. However, at what cost to inequality? Ideas of justice and distribution need to be introduced, which have not been a focus for socio-technical transition scholars. Instead, a substantial literature now exists on the meanings of justice that have been and can be enrolled in discourses of environmental, climate and energy justice (Walker, 2012; Bickerstaff et al 2013; Schlosberg and Collins 2014; Wood, 2023), and in just transition frameworks.

The term 'just transition' has gained increasing traction alongside decarbonization, given the risk that market-based restructuring will heavily impact communities dependent upon the economic activity of fossil-fuel extraction (Newell and Mulvaney 2013, Healy and Barry, 2017; Johnstone and Hielscher, 2017). As described in Chapter 5, a just transition is a central plank in the European Union (EU) Green Deal programme (European Commission, 2019). Elsewhere the United Nations Framework Convention on Climate Change (UNFCCC) has called for it, the International Labour Organization (ILO, 2015) has supported guidelines for it, the Canadian federal government created the Just Transition Task Force to support the coal phase-out (Government of Canada, 2018), and the Scottish government established the Just Transition Commission (Scottish Government, 2020). Ostensibly, these government-supported Keynesian style interventions are designed to smooth the pathway and enlist support while also aiming to mitigate the worst excesses of market-based change. The term has broadened in scope, to encompass the consumption side of the equation, noting that those who lack the resources to invest in energy efficiency and low carbon technologies suffer disproportionately (While and Eadson, 2019). Nevertheless, a justice based approach to post-carbon inclusion requires us to look beyond just transitions (Chapter 5).

<2> Aim, scope and approach <2>

The aim of this book is to reflect upon efforts to shift towards post-carbon worlds, while also seeking to address inequality and exclusion at various scales – intra-community, regional, global, inter-generational and, inter-species. It is presented predominantly from a 'western' perspective and concerns and draws empirically mainly on western Europe and Australia, although there are several chapters that take an overtly global perspective on inclusion and thus draw out Global South-North issues. Later in this chapter we set out what work the post

carbon inclusion concept is expected to 'do'. We provide examples of the breadth of post-carbon inclusion as challenges at both domestic and urban scales, through both promising and problematic cases and patterns.

We also seek to bring notice to the traps, cautions and potential for capture of efforts towards post-carbon inclusion. Related to this, we take as an ontological starting point the failure of market-based solutions to the climate crisis to date, and the lack of time the planet and global community has remaining to wait for more attempts at ecological modernisation and neo-classical environmental economic 'solutions' to be tried. Coupled to this is recognition of the failure of mechanistic, technocentric and behavioural solutions based upon ideas of free, individual choice, and of the triumph of technological ingenuity. The last 50 years has seen a predominance of these tools and this period has seen spiralling climate crisis and rapidly worsening biodiversity loss, rapidly degrading the global commons.

Even now, in the 2020s, the circular economy is being presented as the latest solution – a largely technological magic wand (Chapter 8) – and the solution to the housing crisis is seemingly new technology to be delivered via the same market and home ownership ideal that has created the problem in the first place (Chapter 6). In seeking to peel back the façade of these proposed 'solutions' to high carbon exclusionary society, this book calls for more attention to, first, the realities of everyday life as a starting point for change, rather than the assumed relations and their causes; second, the role of power, ethics and inequalities in governing the transition towards post-carbon inclusion; and, third, the importance of practicing low carbon inclusion here and now, in ways that enhance knowledge sharing and test out how post-carbon inclusion can be.

<3> Everyday life as a starting point for change <3>

Studies of everyday life, utilising relational approaches, are now increasingly recognized as essential in understanding and informing directions for the necessary changes to progress post-carbon inclusion. This means taking seriously studies of daily lives and how they are structured by unwritten rules, meanings, obligations and a myriad of material, moral and meaning-laden expectations. Thus, instead of assuming free choice is the key driver of what people do, we draw attention to social practices (Shove et al, 2012; Hui et al, 2018) as building blocks of what happens in daily life. We present rich empirical studies of such in Chapters 3, 10, 11 and 12. We highlight the roles of space, time, and affect and the entanglements of these in shaping diversity, dynamics, and obduracies in everyday life (as in Chapters 3, 4 and 12). We seek to differentiate between people who are excluded through various means (both overtly and through more subtle mechanisms) by examining their capabilities to participate and function in society, including in particular activities and practices that might either further entrench a high carbon society, or lead towards post-carbon practices.

We see merit in utilizing the capability approach, as developed initially by Amartya Sen and Martha Nussbaum, as a normative framework or perspective on human welfare and wellbeing to engage with in considering the metrics, challenges and tensions of post-carbon inclusion (in Chapter 9, particularly, as well as in Chapters 2, 4, 8 and 12). Within this framework, justice is accomplishment-based, it 'cannot be indifferent to the lives that people can actually live' (Sen, 2009: p 18) chiming with our focus on everyday life, its differentiations and inequalities.

Where capabilities and practices connect is when we pay 'closer attention to how successful performances of practice are distributed across populations ... understanding this as a reflection of differences in the capability to perform ... one way in which theories of practice and of justice as capability might be conjoined' (Walker, 2013: p 371). Inequality is about recruitment to, and performance of, practices; analytically speaking, variations in the performance of practice should be understood as reflections of differences in capability (Halkier and Holm 2021). Linking capabilities and social practice in this way distracts attention from individual focused capabilities towards societal change that supports these capabilities and embeds social justice as central to social practice analyses (Willand et al, 2021).

<3> Inequalities, power, ethics and governing transitions <3>

Coupled with the importance of the everyday is the centrality of power and ethics in transitioning away from planetary deterioration. Inequalities, and/ or entrenched relations that hold together unsustainable practices that exacerbate climate change, are manifestations of power exercised either overtly or in a more subtle processes in shaping possible choices and silencing or side-lining others. Particular ethical stances are extended through power relations (Benatar, 2018) and, in turn, shape actual unfolding socio-technical transitions (Avelino, 2021). Normative arrangements shaped by powerful energy companies in turn entrench inequality of access to essential energy services (Sovacool and Dworkin, 2015).

In Chapter 2, we examine urban experiments and urban living labs (Bulkeley et al, 2019) as vehicles for inclusive socio-technical transitions, informing dialogues on power and possibilities through the proceeding chapters. This talks to a role for emphasizing and

communicating such processes, and to amplify alternative narratives, actions and ideas. Stephens (2023) argues for diversification of leadership on decarbonization agendas in an effort to bring more inclusion. Pel et al (2020) explore routes to more inclusive social action on climate change that seek to account for neoliberal power.

Chapter 5 argues that just transitions should go beyond 'just' ensuring 'no-one is left behind' (as the EU (2020) Green deal headline puts it) and address the core problem that created splintered industrial monocultures of mining communities in the first place. In so doing, it develops alternative ideas and complementary virtues to justice, and calls for complementary, multiple perspectives and philosophies based on generosity and care.

<2> Practicing low carbon inclusion here and now <3>

The urgency for more radical action is now reaching mainstream society and this book seeks to add to scholarship in this direction. Given the aforementioned entrenchment of power relations and investment in the status quo, it is also important to surface the possibilities of systemic change, and to allude to what this might entail, from where it might emanate, and to what end. Such possibilities require a precursor of greater cooperation, reciprocity, solidarity, care and generosity to be prioritised above competition and the current dominant growth metrics of mutually assured destruction.

The IPCC (2022) report *Climate Change 2022* not only warns of an urgent need to change direction from a path to a 3°C average temperature rise, with severe impacts – including on people's food security and heightening risks of flooding, fires and storms. The report also criticizes Gross Domestic Product (GDP) as 'a poor metric of human well-being', pointing

out that 'climate policy evaluation requires better grounding in relation to decent living standards' and that 'the degrowth movement, with its focus on sustainability over profitability, has the potential to speed up transformations' (IPCC, 2022: pp 5–105, 17–59). In fact, the report suggests that 'degrowth pathways may be crucial in combining technical feasibility of mitigation with social development goals' (IPCC, 2022: pp 5–32). Chapters 10 and 13 focus on degrowth, while Chapters 6 and 12 discuss the importance of establishing such legitimate narratives on alternative futures.

Degrowth self-evidently challenges ways of living in growth-driven societies. The degrowth movement seeks a normalising (cooling) planet in the short to medium term, facilitated by living practices of solidarity – satisfying everyone's basic needs, no more no less – with light ecological footprints. At the core of the degrowth analysis is a recognition that capitalist economies, polities and cultures are driven by economic growth at the expense of people and the planet. Essentially anti-capitalist and driven from the bottom up, degrowth advocates and activists focus on care for Earth, including reducing carbon emissions, and solidarity, which requires inclusion.

Even though the idea and initial theories of degrowth developed decades earlier, only in this century did degrowth emerge as an active movement in France and then spread through Europe. Often misrepresented and misunderstood, in a nutshell degrowth is to growth as *quality* is to quantity. Monetary quantities of costs and prices weigh down capitalists' calculations in their plans and budgets, their accounting practices, financial negotiations and arrangements, and trading targets. As with competing capitalists, the capitalist state measures its economic progress through a peculiarly quantitative, monetary, concept of growth. In contrast, degrowth advocates seek a world based on ecological and social values, applying

principles of social justice, conviviality, solidarity, security and ecologically sustainable living for *everyone*. Degrowth transformation focuses on livelihoods of 'sufficiency', which the IPCC describes as 'a set of measures and daily practices that avoid demand for energy, materials, land and water while delivering human wellbeing for all within planetary boundaries' (IPCC, 2022: pp 1–41).

The authors of this book observe that it is a narrative-making accomplishment of entrenched interests in the status quo that view degrowth ideas as 'radical'. Types of stories foregrounded matter as we contemplate and enact post-carbon inclusion. Janda and Topouzi (2015: p 529) talk about how energy-efficiency 'hero stories' – showing how energy efficiency can be achieved in practice – are by far the most common narrative found in the literature. They argue that telling more 'learning stories' would help to balance and develop the inspiration provided by hero stories. 'In contrast with the hero story, which takes place largely in an imaginary world, learning stories in both their original form and their energy counterparts occur in all the detailed richness and idiosyncratic elements of the real world,' write Janda and Topouzi (2015: p 520). Following interpretivist traditions, learning stories help reveal unintended consequences and underlying ethical bases of policy.

Global circulations of ideas and actual practices of low carbon justice, generosity, altruism, and inclusion both between nations and generations, and species are, thus, powerful antidotes. While we argue for a social structures approach, this does not absolve us of personal responsibility. It is a question of which ethical rules we live by and these are built at the community level, legally but also socially. Hence, we have well-established taboos around assault and murder, but very unclear rules and lines of responsibility about violence towards and assault of the planet. As Chapter 11 argues, it makes no sense to ask people to limit high

energy consumption while allowing advertising of such. Similarly, practices of thrift or moderation are not based in conscious, behavioural actions, but in deeper-rooted meanings, muscle memories, interpretations of social rules, and semi-automated functions.

As we are shaped by our knowledge, social rules and material surroundings, all these must be aligned to lower consumption. This is where examples of how experiments and living arrangements demonstrating and testing post-carbon life become significant (Chapters 2 and 10 offer different, arguably complementary, perspectives on this). Similarly significant, the Brand and Wissen (2021) concept of an 'imperial mode of living' (Chapter 13), and needs to amplify, legitimise, and celebrate multiple and diverse degrowth variants. What is critical in this work is to avoid judgement and, instead, heighten the validity and virtues of empathy, care, generosity, solidarity, cooperation, dialogue and sharing – as in Chapters 5, 7 and 13.

<2> What work can post-carbon inclusion do? >2

As an organising term, we make no novel claim for the idea of post-carbon inclusion. We use it as an heuristic concept, useful to the extent that it can be put to work. Such work lies in providing a substrate upon which urban phenomena can be examined, consistently raising the priority of striving for post-carbon worlds while attending to inclusion priorities. Thus, every chapter engages with post-carbon inclusion at the domestic and/ or urban scale, addressing five common lines of inquiry:

- What are the particular socio-materialities of inclusion, inequality, decarbonization and post-carbon possibilities?

- Who, and what, are the incumbents, obduracies, narratives or regime characteristics that constitute the problem?

- What promising lines of agency might promote post-carbon inclusion? Using empirical cases or thought experiments, how might they scale out, up, or otherwise become more pervasive and supersede existing obduracies and incumbencies?

- How might potential shifts take place from arrangements typified by unequal high carbon to post-carbon inclusion? What existing systems are amenable to revision so both inclusion and low carbon are central?

- What remaining dilemmas, tensions, paradoxes or problems with aforementioned lines of agency and shifts in arrangements present as priorities for future inquiry and testing?

<2> Structure of this book <2>

The four editors set out to co-author this book, but engaged a number of co-authors over time, leading to our dual role as editors and as authors. The intent is to provide a consistent thematic flow, while engaging with a broader range of topics and material than a traditional authored manuscript would. The result is a mix of empirical, conceptual and narrative work that engages with thirteen different but related, typically urban, phenomena.

Chapter 2 examines urban experiments. The authors compiled a database of such experiments for analysis and selected three cases to demonstrate how such projects morph over time. They argue for the possibilities of bringing to the fore the triple priorities of post-carbon, inequality, and inclusive governance in the design and progression of such experiments. Following other work (Evans et al, 2018; Bulkeley et al, 2019) they outline the diversity, unpredictability, and

contextual nature of urban experiments. A framework is proposed along with a call for more sharing of knowledge about promising and failed experiments, to supplement efforts towards low carbon inclusive transition.

Chapter 3 uses oral histories to chart the impacts of different strategies in domestic energy transitions in the United Kingdom and Sweden. Following the idea of looking back to move forward, it reveals how important affective and relational dimensions are to shaping the fate of transitions. Policy and governance of purposive transitions rarely takes account of these sorts of fundamental everyday experiences, and this Chapter sets out insights for would-be transition makers, to inform programme designs.

Chapter 4 sets itself the conceptual task of seeing the city through a temporal, chrono-urbanist perspective, focused on the mass of repeating and cycling rhythms that characterise the dynamic, polyrhythmic patterning of urban life. Recognizing that energy is necessarily implicated in making these rhythms, both through 'natural' rhythmic flows of heat, light and air movement and through the beats and pulses of energized technologies, leads to engaging with both decarbonizing and de-energizing how cities function. Modes of rhythm-energetic deceleration, reconnection, localization and sharing are all demonstrated to have a role to play but the question becomes whether or not they can be inclusive in how they work out. Making the chrono-urbanist agenda mean more than just the latest plaything of profit-seeking developers, and embedding it more deeply within urban activist and degrowth agendas, is seen as a necessary way forward.

Chapter 5 shows how the just transition idea has roots in particular in post-industrial restructuring following the neoliberal reforms of the 1970s and 1980s, heralding rounds of

deregulation, privatization, globalization and financialization. More specifically, as this phenomenon began to merge with initiatives to curtail domestic polluting industries, mining jobs went overseas, and industrial towns were left destitute (Abraham, 2017; Pinker, 2020). In the face of a lack of socio-economic planning for such communities, unions and other civil society organizations sought 'just transitions' through compensation, retraining, and/ or inward investment programmes. The chapter experiments with positioning alternative or complementary virtues as guiding principles for transition, and reflects on the implications of these alternative philosophies, particularly for inclusion.

Chapter 6 aims to form a bridge between contemporary mainstream narratives of housing and radical analyses of a prefigurative nature. It adopts a narratives frame to show how, the home-owning hegemony in homeowner based societies suggests there is no 'Plan B'. It argues for bold imagining of housing models for post-carbon societies, requiring a move away from home ownership and land speculation models. Reflecting on diverse sustainable housing epistemologies (Horne, 2018) and connecting normative ideas of housing as commodity-cum-asset, utility, and 'home', the chapter shows how increasing commodification and financialization undermined two other essential dimensions of home, as an affective space and useful domain. Exploring cases associated with eco-collaborative degrowth housing, the authors see post-carbon inclusive housing as necessitating the removal of housing from land price speculation.

Chapter 7 focuses on the fundamental need to breathe air and the consequences of that air being polluted to demonstrate the need to avoid easy assumptions about co-benefits between carbon reduction and air quality improvements. Co-benefits of this form undoubtedly exist, as they do in other parts of the environment-climate nexus. Yet, when viewed through this

book's approaches, whether or not co-benefits will be realised evenly and to the advantage of those already most vulnerable or marginalised has to be called into question. The timescales and pace of change of air quality improvement will not be even; investments in 'new tech' will be skewed towards core sites of consumption while 'old tech' will be exported to the 'peripheries' of the Global South; and the urban green liveability agenda carries the risk of gentrification and exclusion. Even if the goal for environmental justice activists has long been to fundamentally reduce and eliminate pollution at source, it is imperative to guard against creating and sustaining enclaves within which continued fossil fuel use, poverty and ill-health remain unchecked.

Chapter 8 mounts a critique of the circular economy idea as currently positioned, steeped as it is in ecological modernization governance and responsibilization borne from new public management ideas of pollution control. These approaches are problematic for post-carbon inclusion agendas and, as an antidote, this chapter advances approaches to understanding 'waste' that circumvent dominant narratives where consumers are problematized, but consumption is not. The authors set out social practices and capabilities as useful ways to configure post-carbon inclusion in discard studies, as ways to overcome the traps of circular economy logics.

Chapter 9 explores strong tensions between the move towards post-carbon and the need to sustain life and improve well-being in a rapidly changing climate. Attention is particularly focused, unlike most of chapters in the book, on disadvantaged communities in the Global South, where the capability to keep cool in intensely hot conditions is delimited by a whole range of inequalities, including those relating to basic infrastructures of shelter, electricity, and water provision. With temperatures increasing in some urban settings beyond the limits of

liveability, the just response might well be to actively promote and enable increasing energy consumption to enable the use of cooling technologies, even though, as argued in other chapters, there is a simultaneous need to 'de-energize' much of contemporary economic and social life in order to hold down carbon emissions. The challenge, therefore, becomes one not of blanket judgement and diagnosis but of a careful working through of questions of inclusion that are acutely sensitive to setting, circumstance and patterns of inequality and responsibility.

Chapter 10 presents pre-figurative degrowth hybrids, in the form of clusters of degrowth activities ('degrowth formations'), as pointers towards low carbon inclusion. Such hybrids exist within contemporary capitalism but strenuously experiment with degrowth livelihoods and ways of living that are both equitable, minimal, convivial and conform to Earth's limits. Driven by degrowth advocates, many of whom are activist scholars, they offer a research approach and method akin to urban living labs, characterized by collaboration and innovation, and applying both evidence-based and creative approaches to inform and create practices that might consolidate degrowth futures. They can be compared with eco-collaborative housing and ecovillages that address issues similar to degrowth concerns (Nelson 2018).

Chapter 11 argues for a focus on high consumers of energy – those who constitute the normal professional classes of wealthy westernised countries, who both shape and respond to ramping up of normal everyday consumption, from air travel to meat consumption to larger indoor-outdoor air-conditioned homes. They are deserving of special attention in decarbonization studies due to their direct and disproportionate contribution to the climate crisis, and the ways in which they set new standards and aspirations for others in societies across the world. Using a non-judgemental, empathetic, ethnographic inspired approach, this chapter provides insights for broader efforts towards post-carbon inclusion. Analysing the

relational and social structure of high consumption raises questions and possible agendas for change around shifting meanings, social rules, and consumerism itself in order to give permission and, indeed, the public responsibility to consume less.

Chapter 12 again draws upon ethnographic inspired research into everyday domestic consumption, this time revealing how conventional approaches to energy efficient housing retrofit often don't work and even worsen energy vulnerability. Approaches that might be termed 'decommodified retrofit' are needed. The authors posit ways of understanding and institution building to integrate and centralise post-carbon inclusion in practical policy approaches. Housing retrofit that is configured for universal carbon-free energy-enabled futures draws upon ideas from both socio-technical transitions and degrowth practices.

If pre-figurative degrowth hybrids are seen, somewhat simplistically, as micro-scale neighbourhood endeavours, Chapter 13 moves between challenges for individuals and households through to global scale dynamics. Certain degrowth advocates analyse the vast inequities within global production for trade, and flows of trade, to show how such structures conspire to form a typical 'imperial mode of living' (Brand and Wissen, 2021) in the minority world. Minority world activists are continuously frustrated in practising, instead, a solidarity mode of living, which would support post-carbon inclusion at a global scale. Yet, one vehicle that offers a range of opportunities for transformation is eco-collaborative housing models that incorporate aspects of an holistic feminist caring economy. Chapter 13 explores an accessible, affordable and ecologically sustainable best practice model of eco-collaborative housing to reveal avenues for transformation towards a solidarity mode of living or caring commons.

In Chapter 14, we conclude with a discussion of the dangers of decarbonisation if they follow current capitalist models. Governing post-carbon inclusion calls for systematic, structured, yet locally responsive and relevant mechanisms for building coalitions, enabled by intermediary functions to share knowledge, connect, and mediate across experiments, regions, neighbourhoods and initiatives. This entails solid links between ideas of action/ demonstration/ living models with activist calls for refocussing forces of capital and reorganising global resources. This book seeks to contribute both actual living examples and thought experiments, both speaking to each other, in authentic attempts at reflective practice.

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