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Climate Change and the End of Consumer Society

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Session Abstract

Urban planners, policy makers, and others are beginning to recognize the need to urgently achieve significant absolute reductions in energy and material consumption to avoid the already palpable risks of dangerous climate and related ecological change. Given the role that cities play as crucibles for consumerist lifestyles, communities in both the global North and South will need to implement measures that go beyond customary emphases on “smart cities,” “greening” the economy, resource efficiency, renewable energy, and technological innovation. These conventional interventions tend to be politically palatable but typically generate perverse rebound effects and have other untoward impacts. They also do not account for the dissimilar throughput volumes associated with different lifestyles and income levels as well as the effects that technological changes have on production-consumption systems. In addition, cities are manifestly reliant on precarious supply chains for goods and vast hinterlands for the appropriation of energy and disposal of wastes. These circumstances raise profound questions for current conceptions of “sustainable cities” and the cultural constructs that underpin prevailing modes of urban living.

By contrast, numerous efforts are afoot to experiment with novel provisioning arrangements and these efforts include shifts toward non-motorized mobility, urban agriculture, cooperatively-organized systems of production and consumption, co-housing, local currencies, repair cafes, and numerous others. These initiatives promise to reduce the carbon footprint of urban dwellers and speak to some modest income groups but remain limited in size and scope and are distinctly fringe activities. Moreover, they are extremely hard to scale up, to replicate, and to substitute for dominant lifestyle modes.

To pursue answers to these questions we need to formulate more encompassing strategies toward sustainable cities, to include the underlying systems of social organization and associated configurations that enable the co-existence of dense aggregations of people. This challenge cannot be pursued by researchers or policy makers strictly on a top-down basis and primarily through technological innovation. Rather, effective measures will need to be undergirded by credible physical and social sciences and engineering while also entailing intensive processes of co-production of knowledge, transdisciplinary engagement, and higher order learning processes.

1. Overview | Maurie J. Cohen (*New Jersey Institute of Technology*)

The physical form of human settlements throughout history has been a manifestation of their underlying systems of social and economic organization. For instance, during the late medieval period in Europe, cities (really large towns by contemporary standards) were trading centers that served a circumscribed agricultural hinterland. With the industrial revolution beginning in the late eighteenth century, urban space was reconfigured for mass production based on increasingly efficient manufacturing techniques. As this phase of social and economic organization dissipated during the twentieth century, new technological capabilities enabled

post-industrial “cities” to disperse across vast metropolitan landscapes, a process that oftentimes involved effectively abandoning the outmoded and decaying infrastructures of the prior era. Enabled by digitalization, business models predicated on hyper-convenience, and new patterns of work, the present period is gradually coming to be characterized by a subsequent transition toward “post-consumerism.” In time, the widening diffusion of robotics, artificial intelligence, and related technologies will augment unfolding trends. Aside from the degree to which these technological innovations might contribute to the design of low-carbon “smart cities”—a dubious inference as this session will demonstrate—the ways in which cities will be upended by changes in social and economic organization have rarely been part of discussions on the formulation of efficacious climate policies. Concomitantly, megacities in the global South are not currently predisposed to embark on a similar transformation and will continue to face a very different set of challenges. This session aims to shed light on the need to consider processes of socio-technical change and how the reconfiguration of urban form will affect the dynamics of a prospective low-carbon transition.

2. Global Change and the Uncertain Future of Cities | William Rees (*University of British Columbia*)

The starting point for this presentation is the observation that techno-industrial society is already in ecological overshoot. *H. sapiens* is altering vital global systems including the climate. We are using even self-producing resources beyond the regenerative capacity of ecosystems and filling nature’s waste sinks beyond natural assimilation rates. The proximate drivers are obvious: since 1800, world population has increased more than seven-fold to over seven billion; real global GDP has multiplied by a factor of 100; average per capita incomes are up 13-fold (rising to 25-fold the richest countries); consequently, material consumption has been exploding hyper-exponentially—*half the fossil fuels and many other resources ever used by humans have been consumed in just the past 40 years.*

These trends are fundamentally unsustainable on a finite planet, i.e., they are potentially fatal to global civilization. As early as 1992, the world’s top scientists issued a *Warning to Humanity* that “...a great change in our stewardship of the Earth and the life on it is required, if vast human misery is to be avoided”; a “second notice” issued on 13 November 2017, stated that most negative trends identified 25 years earlier “are getting far worse.” Nevertheless, the United Nations expects the population to increase to 9.7 billion by 2050 while economists project a 130% increase in world gross domestic product (GDP). Remarkably, such projections take no account of shifting biophysical context. Growth on this scale is incompatible with maintaining stable climate or other life-support systems vital to modern urban society.

Indeed, humanity’s ecological predicament has major, largely unrecognized, implications for urbanization and the future of cities. For example, the modern city is a product of, and remains dependent on, abundant cheap energy, particularly fossil fuels. But fossil fuels are a major source of carbon dioxide, the most important anthropogenic greenhouse gas. Avoiding possibly catastrophic climate change therefore requires the virtually total decarbonization of the economy. There are, however, as yet no quantitatively practical substitutes for fossil fuels in bulk transportation, agriculture, construction and space/water heating all of which are essential to urban civilization.

In this light, some of the questions the world community should be asking include: How should these realities affect urban planning and design? Should we not abort prevailing trends in

fossil-based urbanization? What is the most adaptive human settlement pattern in present circumstances? How can large cities adapt to rising resource costs or a breakdown in the global supply lines upon which they depend? Can existing megacities even continue to exist absent abundant cheap energy? Finally, assuming satisfactory answers to the previous questions, how can high-income cities achieve the 60–75% reduction in energy and material consumption (including personal consumption) required for “one-planet” material standards of living? (Corollary: what can they learn from contemporary low-income cities?)

3. Sustainable Consumption and Cities, Halina Brown (*Clark University*) and Philip Vergragt (*Tellus Institute*)

Technological solutions to the challenge of dangerous climate change are urgent and necessary but insufficient. Reducing the total level of material production and consumption must also be considered, for three main reasons. First, affluence is a primary driver of greenhouse gas-emission (GHG) levels. Second, infrastructure and capacity-building investments needed in the coming decades will require extensive energy investments, largely based on fossil fuels. Third, improving the standard of living of the world’s poor will consume a major portion of the two-degree carbon budget.

Decades of research on sustainable production and consumption systems confirm that income levels are the primary predictors of material and energy consumption and GHG emissions. The promotion of a culture of consumerism in highly industrialized countries continuously redefines upwardly the expected basic level of comfort, which translates to growing consumption of materials and energy per capita. For example, in the United States the size of houses and their amenities has been growing every year since the 1950s (except small glitches during recessions). This culture is hard to change because it is part of a “system of consumption,” including established institutions, infrastructures, economic planning, and political priorities. The expanding middle classes worldwide are rapidly adopting the consumption-based model of social organization.

Compact cities present an opportunity to reduce a per-capita consumption of energy and materials. The concept of a sustainable city most often conjures images of superior infrastructure—public transit, dense walkable neighborhoods full of life, restaurant and cafes, and high-performance buildings—as well as cultural amenities and green public spaces. But such “smart neighborhoods” also become quickly gentrified. Current trends in the United States and around the world provide ample evidence of this process. As the upper-income classes increasingly show preference for urban life the cost of housing and other life necessities in economically thriving cities is rapidly rising and the longtime residents are being pushed out. Thus the two sets of objectives—environmental and social—compete with each other. Furthermore, with increasing wealth of its inhabitants the carbon footprint of cities also increases, driven by their high-consuming lifestyles.

To counteract these trends, the pursuit of a sustainable urban environment cannot be achieved through infrastructural and technological innovations alone. Environmental and social policies must be integrated to retain the longtime residents with modest incomes (and footprints) and to foster less carbon-intensive and more community-oriented lifestyles among the wealthier residents. To that end, young professional families may be an especially promising target group for experimenting with small-scale initiatives in alternative lifestyle models.

4. Discourses of Creative Continuity Rather than Transition: The Centrality of Existing Low-Carbon Realities for Building Sustainable Cities, Manu V. Mathai (*Azim Premji University*) and Govindan Parayil (*University of South Florida*).

Urbanization in the global South is central to the success of efforts to address climate change. The environmental governance regimes in China, India, Indonesia, and Nigeria juxtaposed with the scale and pace of socioeconomic change in such countries, will qualitatively shape global climate in the twenty-first century. But crucially, and unlike the OECD economies, the predominant reality for significant populations of the global South is that of living with low-carbon footprints. We use the example of urban transportation in India to convey this point. The urban climate-governance question then confronting urbanization in these contexts is not one of transitioning toward “low-carbon cities.” This is more-or-less the reality as it exists. Instead, the governance challenge is one of building an enabling context for existing low-carbon realities to provide greater well-being and dignity for citizens, while simultaneously approximating a sustainable and equitable carbon footprint.

This reasoning reorients the climate-governance problematic. The existing suite of tools and technological means that populate climate governance prioritize instrumentalities, such as carbon-intensity improvement, technology transfer and the cost of carbon abatement. The unprecedented construction of urban metro rail systems with regenerative braking technology (as in Delhi) is an example. The effectiveness of such rational choice, techno-economic interventions however is limited. Even Annex 1 countries not lacking in capital and know-how have little to show as success in mitigating greenhouse-gas (GHG) emissions. More importantly, these nations take the dominant development discourse as a given, believing that techno-fixes can be found. It fails to problematize this discursive dominance by engaging notions of well-being and justice. This failure is counterproductive. It obscures and limits possibilities for societies that still know widespread low-carbon realities.

In place of the prioritization of “transitions” to low-carbon cities, this presentation presents an argument for the creative continuity of existing low-carbon realities while also achieving gains in human well-being and dignity. We outline a framework for building an enabling context for low-carbon cities. The point of departure for this proposal is insights from development and post-development scholarship and practice, the vocabulary of the human development and capability approach, and participatory planning and political ecology as applied to inform climate governance.