Decarbonization of Cities: You’re Dreaming!


This article is part of a regular section in Solutions in which the author is challenged to envision a future society in which all the right changes have been made.

Societal and technological transformation in the face of climate change will be won or lost in our cities and urban communities. This is not just because of the global urban demographic shift with more than 50 percent of the population now living in urban conditions, or because cities contribute around 70 to 80 percent of greenhouse gas emissions, but it is as much to do with the growing economic and political importance of cities. Patterns of production and consumption are defined for—and increasingly shaped by—urban living. In spite of having no formal standing as actors within global processes to address climate change, cities have stepped up as powerful voices and loci for action.4,5,6

Studies seeking to understand the underlying determinants of the economic contribution of cities are drawing attention to the value of cultural and physical conditions that encourage social interactions, with such interactions seen as essential precursors for creativity, innovation and entrepreneurial activity.7,8 Dealing with climate change—its mitigation and adaptation—will require an unprecedented period of innovation. Well-planned and well-designed cities may be our best hope for the future.

However, our built environments have embedded dependencies on high flows of fossil fuels, and local governments and community agents face significant hurdles in redirecting development (and re-development or retrofitting) to a low-carbon urban future. Add in the vulnerabilities of existing infrastructure from changing climate and extreme weather, and the obstacles can seem overwhelming.

In response to these challenges, there is increasing attention to the possibilities for ‘cracking open’ the transformation processes for decarbonizing urban living through the co-creation of future visions involving researchers, designers, professionals, and the community. A mix of projects are popping up in Australia, Europe, Canada, and the US exploring urban futures in a climate-change constrained world through participatory and creative visioning processes.

These projects adopt a variety of approaches, but an intriguing aspect is that of facilitating ‘dreaming’ about the future: supporting people to let go of commitments to where we are now and where we seem to be heading, and to simply think about what we desire for the future. Such approaches try to break through perceived barriers to creativity that involve unquestioning acceptance of realistic goals.

The challenge of decarbonization and resilience involves no less than a transition from long established systems (technologies, infrastructures, practices, lifestyles, values, and policies) to very different ones.9,10,11,12 For existing cities the ‘old’ systems are often embedded, physically and culturally, in built infrastructure, urban form, systems of provision (energy, water, food, transport, and information), and urban lifestyles, creating dependencies that are hard to overcome.

However, there are models, frameworks, tools—and even games—that can help explore futures and the complex dynamics of technological and societal systems in order to transform those systems and our cities. Among these, multi-phase and multi-level models of system innovation, transition management, living laboratories, and urban design games are receiving attention.13,14,15,16,17

Research and engagement projects aimed at assisting cities and communities, by using various approaches to re-think futures, have emerged globally over the last few years. A few examples include Retrofit 2050,18 CRISP,19 POCACITO,20 CASUAL,21 and SPREAD Sustainable Lifestyles 2050, among others.22 A project called Creating Pathways to Decarbonization in Canada and the US is also relevant in this context.23 In Australia, there is a new flagship project of the Cooperative Research Centre for Low Carbon Living called Visions and Pathways 2040 (VP2040).24

VP2040 was established in 2013. It focuses on Australian cities (including Sydney, Melbourne, Adelaide and Perth), envisioning possibilities for those cities if they have achieved an 80 percent reduction in their contribution to greenhouse gases, along with greatly enhanced resilience by 2040. In this project, citizen engagement and ‘dreaming’ about the future is a central element complementing research, scenario formation, and analysis of pathways for innovation.25

VP2040 is a partnership with the University of Melbourne, the University of New South Wales and Swinburne University in Australia, Lund University in Sweden, and a large...
Envisioning

The PopTech summit in 2013 brought citizens, stakeholders, scientists, designers, and policy makers together in Brooklyn to envision solutions to increase urban resilience.

number of partners from industry and government. An international scientific committee consisting of renowned experts in areas relevant to the project oversee the academic quality. So far, a series of workshops have challenged around 150 participants to re-think, re-design, and re-dream the physical, technological, social and cultural fabric of Australian cities in 25 years’ time.

It is a common feature of vision projects that they focus around potential disruptive forces that could change the trajectory of the future in surprising ways. In the urban context, disruptive changes in attitudes, behaviors, and values (such as valuing public space, taking public transport or walking, buying local food, saving energy, and so on) can interact in complex ways with technological developments (such as renewable energy, electric cars, 3D printing, and so on) to produce rapid shifts in patterns of production and consumption. The research part of VP2040 involves mapping potential disruptive forces, and the way that those forces could shape cities to achieve their rapid decarbonization.

What makes the VP2040 approach unusual is its connection to design. The industry partners are either large design, planning, and engineering practices (including global consultancies like AECOM and Aurecon) or the design-led construction industry (such as Multiplex Manufacturing). The co-creation workshops included a cohort of professional designers who took the dreams of the participants as a brief for designing futures; they returned from their design practices to present the workshop participants with visualized glimpses of the dreamed-of futures.
These communicable images will be used to stimulate further co-creation activity in project workshops, and in strategic thinking processes in the partner organizations. As freely available images, they should become vehicles for expanding public interest in thinking beyond business-as-usual realities to the creative design of alternative cities and urban living. Research and visions will help shape the deliberations of a coming series of expert workshops aimed at generating scenarios for the transformation of Australian cities.

The development of modern scenario and future thinking has been described as passing through three generations. The first generation concentrated on predicting the future as accurately as possible; the second shifted the question from ‘whether something will happen,’ to the question ‘what will we do if something happens?; the third generation focuses more on the future we collectively want to achieve, where the question then becomes ‘how might we get to that future?’ The clear interest now is in the current generation of approaches about what we want.

Work in the Australian and international projects is drawing attention to the role that dreaming and visions can have in defining the futures for which we might aim, in part because visual representations of alternative futures are an information-dense vehicle for ‘carrying’ ideas. Such glimpses do not pretend to provide blueprints for futures but suggestions for new possibilities—new alignments—for the social, cultural, technological, and physical elements that could form a desirable urban condition.

Engagement facilitated by such visions, organized around coherent scenarios (with narratives for the unfolding of events that could result in the visions), is a way of framing a dialogue about pathways for change—for the innovations (social and technical), and policies that might help us meet the challenge of
Envisioning climate change. Visions can be used to problematize current sustainability trajectories and demonstrate the tension between short term actions and long term goals; they can also be utilized to build a network of actors towards a common aim. So, in short, if we want to shape our future, get your dreaming started!

References
1. OECD. Cities and Climate Change (2010) [online].

A vision “glimpse” of Melbourne 2040, produced by a visioning exercise by VP2040. Melbourne’s tennis precinct has a vast, multi-level ‘Cool Zone’ below the adjacent river—a repurposing of an old car tunnel under the Yarra. This space is well lit by a matrix of Bio Dome light amplifiers apparently floating on the river. This ‘Cool Zone’ is the perfect place to escape the ever rising summer temperatures that occur in Melbourne due to climate change. These spaces have been planned as a large underground civic plaza, available for individual relaxation and for gatherings and events. These include concerts, municipal celebrations and dance parties. Below this civic zone the rail system runs deep underground.