

Scale matters

Cities appear to be progressing in leaps and bounds towards a renewable energy world, but their actions may soon start to lead to increasing friction with higher levels of governance.

Early in its efforts to achieve 100 per cent renewable energy, the city of Boulder, Colorado realized that the goal would remain beyond reach if they did not have greater control over their electricity production. Thus began a nearly decade-long battle for utility and production control that saw the city engaged in extensive regulatory proceedings, at times only for procedural approvals¹. The on-going regulatory and legal battle has caused some in the city to rethink their aggressive strategy of developing a municipality owned utility², and also sheds light on the conflicts that can emerge between energy ambitions at the local level and state or federal regulations.

While this example comes from the United States, the action and commitments disparity in response to climate change between cities and national governments appears to be a global phenomenon³. In the United States, the discord became even more apparent last year: while the federal government decided to pull out of the Paris climate agreement, many cities reaffirmed their commitment to act and more than 400 US mayors issued a statement that they will uphold the stipulations of the agreement^{4,5}. In Europe, national governments may have been more responsive to the climate challenges than the United States but cities have been recognized as showing greater ambition both in voluntarily setting targets for themselves, and in developing and implementing projects to meet them⁶. The European Committee of Regions has been urging the EU to adopt Locally Determined Contributions to complement Nationally Determined Contributions⁷. Cities appear more open to experimentation in energy projects⁸ and more empowered to intervene at multiple scales from bike racks to district heating systems. The Carbonn Climate Registry, a global database of self-reported climate actions from cities, lists more than 7,000 actions initiated by cities from all over the world, many in advance stages of implementation⁹. At the IPCC's Cities and Climate Change Science Conference in March of this year, many large consortiums of cities endorsed their commitment to continue action towards decarbonizing their energy systems¹⁰. Meanwhile, at the national level the decision-making process appears to be continually mired in politics.

Part of the disparity in action also has to do with the fact that decision-making at the city level can be relatively less complex. At the urban scale, energy projects consist of community action in the area of renewable installations, schemes or projects that promote individual adoption, provision of small-scale infrastructure for decarbonization of transportation and raising awareness. Such projects are both technologically less complex to implement and low-cost compared to many proposed developments at higher levels. Additionally, decision making in cities is often less beset with the politics of entrenched interests and generally involves a smaller set of stakeholders with objectives nowhere near as diverse as at national levels. In Boulder's case, for instance, the city's decision to build a municipally owned utility was ratified at the local level in 2017 through a simple question on the ballot, with the citizens being the primary deciding stakeholders¹¹. However, for the process to progress, the city continues to need approvals — even after a decade of proceedings at various stages — from state regulators such as the Colorado Public Utilities Commission, which have to take into account the interests of the existing utility among other stakeholders.

Transforming the energy system requires action at all levels of governance, besides individual action. However, as ambitions and projects start to mature at local levels, it is inevitable that we will see more and more cases such as Boulder's where local ambitions collide with regulation or policy at the national level. Already there appears to be a perception in the United States that cities engaging in projects to decarbonize their energy system are doing so in direct defiance of the national government⁴. This can lead to an environment where urban policy, decision and action are actively hindered by developments in policy at higher scales of governance.

Evidence continues to emerge that concerted action at the urban level can take us a long way towards meeting climate targets¹². Meanwhile, it becomes increasingly apparent that individual choices will not be sufficient to avert climate disaster if energy systems are not transformed and national and international policy largely continues to dwell in the

doldrums. This is why urban action may be even more critical, with cities being the scale at which most progress can be made. However, for this to become a reality the policy conflicts between governance at urban, state and national levels will have to be navigated deftly.

Further research in this area could be vital. Maps of synergies and conflicts between different levels of governance for different countries and regions would be a useful step. Any pathways to transformation then must include strategies that accentuate the synergies and minimize the conflicts, identifying not just actions but the level of governance at which these actions would encounter the path of least resistance. This will require not only interdisciplinary research but inter-scale research between various levels of governance.

Building more resilient energy systems will necessitate a renegotiation of domains of influence between different scales of governance. Like in other areas of the energy transition, the objective here should be for this renegotiation to play out with as little violence and as much synergy as possible. □

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