



Clean, green, and just? Community perspectives on the renewable energy transition in a New England city

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ABSTRACT

In 2021, Massachusetts policymakers enacted a new climate law to cut carbon emissions by no less than 50% by 2030 on the way to a net zero energy system in 2050. Reaching this goal will require massive public investments in energy infrastructure, public and private efforts to make buildings and urban infrastructure more energy efficient, and shifts in personal energy consumption at the household level. We provide a case study of an environmental justice community in western Massachusetts—a mid-sized city that was an innovative industrial center fueled by hydropower and hydro-electricity from the 19th century onward, but which declined in the mid-20th century as industrial centers powered by fossil fuels drew manufacturing to regions with cheaper labor costs. Low- and middle-income and BIPOC residents of an environmental justice community have faced the challenges of deindustrialization while also organizing to protect their neighborhoods from pollution. Based on data from focus groups, informal interviews, and participant observation, we analyze community members' perspectives on energy access and use and how the transition to a low-carbon renewable energy system could affect their community in positive and negative ways.

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Figures and tables



Fig. 1. Principles of Energy Justice. The three tenets model includes procedural, distributive, and recognition justice; restorative justice is commonly included in more recent literature.

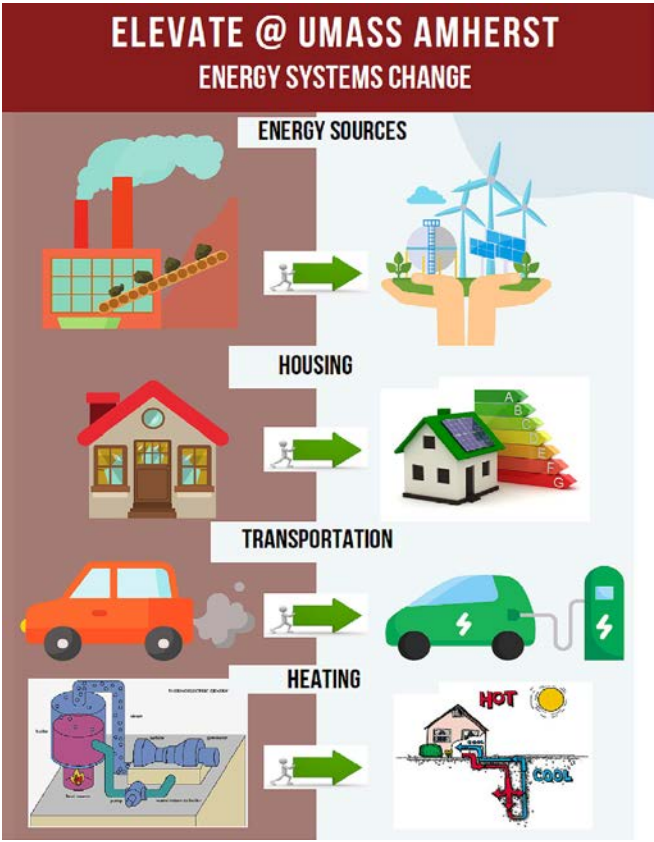


Fig. 2. Energy Systems Diagram. This diagram was provided to focus group participants to facilitate discussion about various components of the energy system.



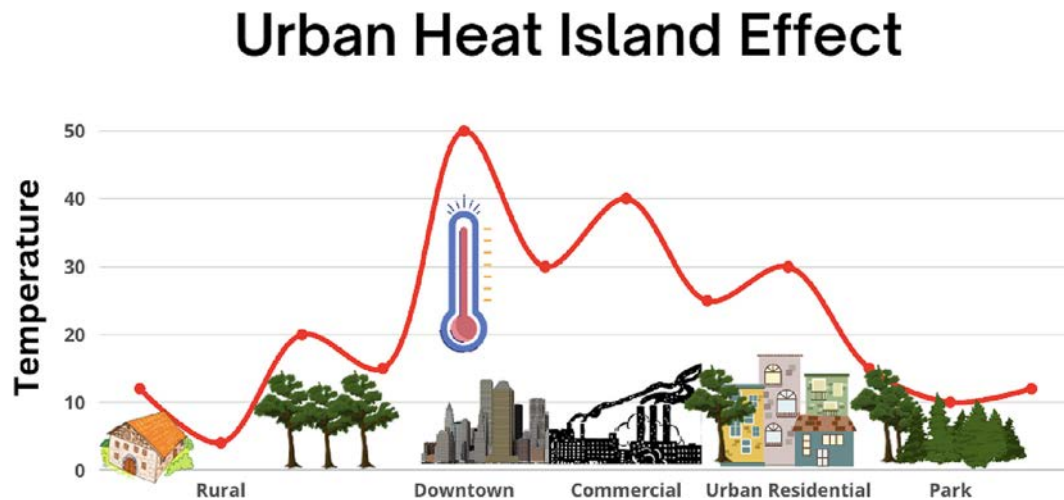


Fig. 4. Urban Heat Islands. This image represents how urban areas trap and retain heat compared to areas with more green space. This heat island effect can increase the need for household cooling to create uncomfortable living environments in warm climates.

CRediT author statement

Krista Harper: Conceptualization, Funding acquisition, Methodology, Investigation, Formal Analysis. **Alison Bates:** Conceptualization, Funding acquisition, Investigation, Formal analysis, Writing – original draft, Writing – review & editing. **Ogechi Vivian Nwadiaru:** Conceptualization, Investigation, Formal Analysis, Writing – original draft, Writing – review & editing. **Julia Cantor:** Investigation, Writing – original draft. **Makaylah Cowan:** Investigation, Writing – original draft. **Marina Pineda Shokooh:** Investigation, Writing – original draft.

Data availability

The data that has been used is confidential.

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Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Further reading

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Krista Harper is a Professor in the Department of Anthropology and the School of Public Policy at the University of Massachusetts Amherst. She studies mobilizations around the environment, food, and urban infrastructure. Harper has published two books on ethnographic, qualitative, and participatory action research methods, *Participatory Visual and Digital Methods* (with Prof. Aline Gubrium, Routledge, 2013) and edited volume *Participatory Visual and Digital Research in Action* (with co-editors Aline Gubrium and Marty Otañez, Routledge, 2015). Her latest research, “Elevating Equity Values in the Transition of the Energy System” (ELEVATE, NSF #2020888), investigates how urban residents and other stakeholders understand the transition to renewable energy technologies and decarbonization policies, with a focus on issues of equity and environmental justice in marginalized communities.



Alison Bates, PhD, Assistant Professor, Colby College. Dr. Alison Bates is an Assistant Professor of Environmental Studies at Colby College. Dr. Bates researches social acceptance of renewable energy systems and implements an equity and justice framework to inform decision-making in the energy transition. She has 15 years of experience working on conservation planning, energy policy, and analyzing social acceptance of energy systems. She researches social and environmental considerations around marine energy systems, such as tidal energy and offshore wind energy. Her expertise is in developing statistically robust surveying of communities, stakeholder engagement processes, and spatial models to identify priority areas for energy siting. Her current work focuses on establishing a just energy transition, where communities with less political power are prioritized and incorporated into decision-making processes. Dr. Bates earned her Ph.D. in Marine Policy at the University of Delaware, with the Center for Carbon-free Power Integration, and previously worked at the University of Massachusetts Amherst with the Wind Energy Center. She has worked on energy policy with U.S. Senator Coons to incentivize renewable energy infrastructure along the Atlantic Outer Continental Shelf. Prior to her academic appointments, spent nearly a decade working in forest management, developing community conservation projects with the Southern California Mountains Foundation.



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Julia Cantor is a senior at Colby College studying biology and anthropology. After graduating, she plans to pursue a graduate degree in either anthropology or public health. She is interested in environmental health and health equity.