

Getting Health Into Energy Decision Making

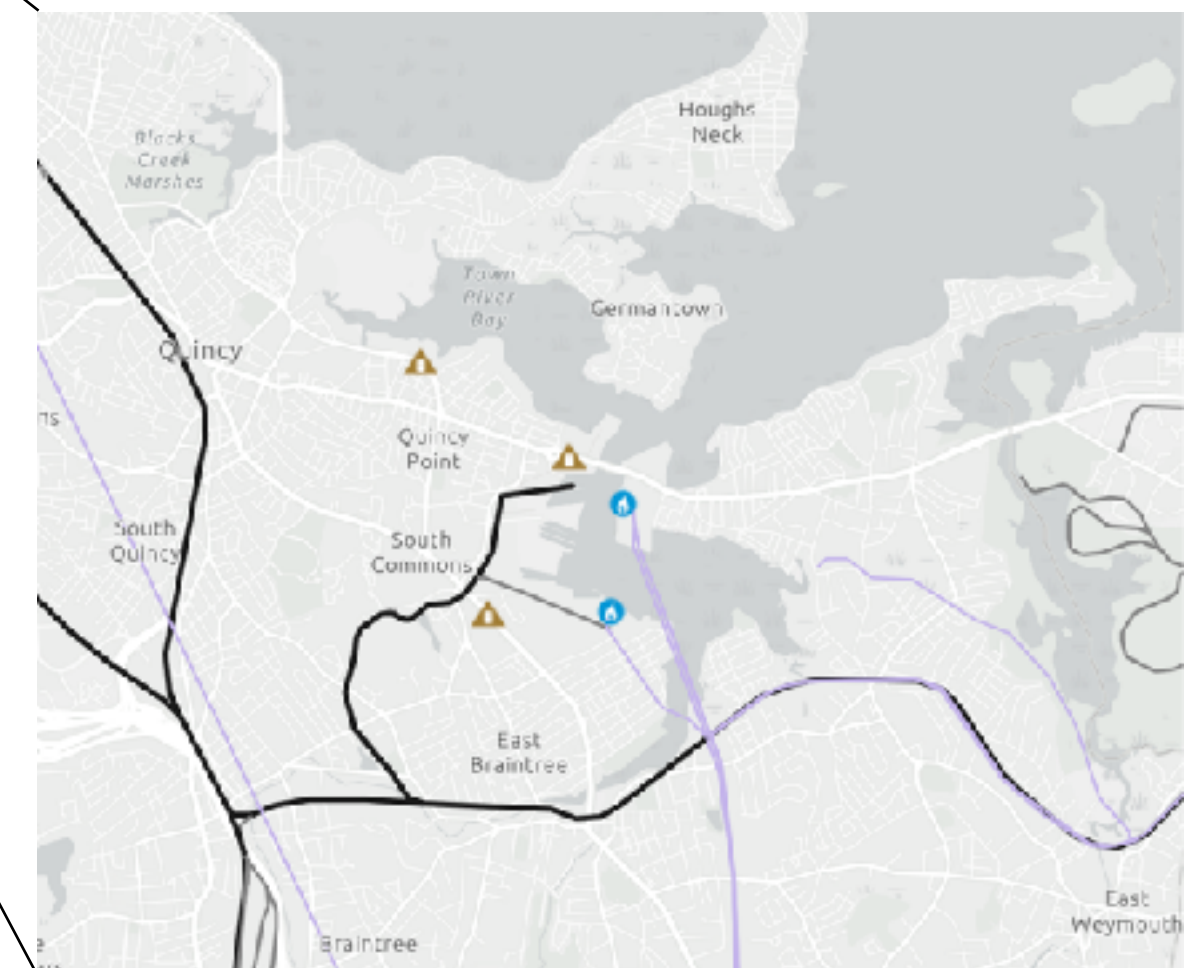
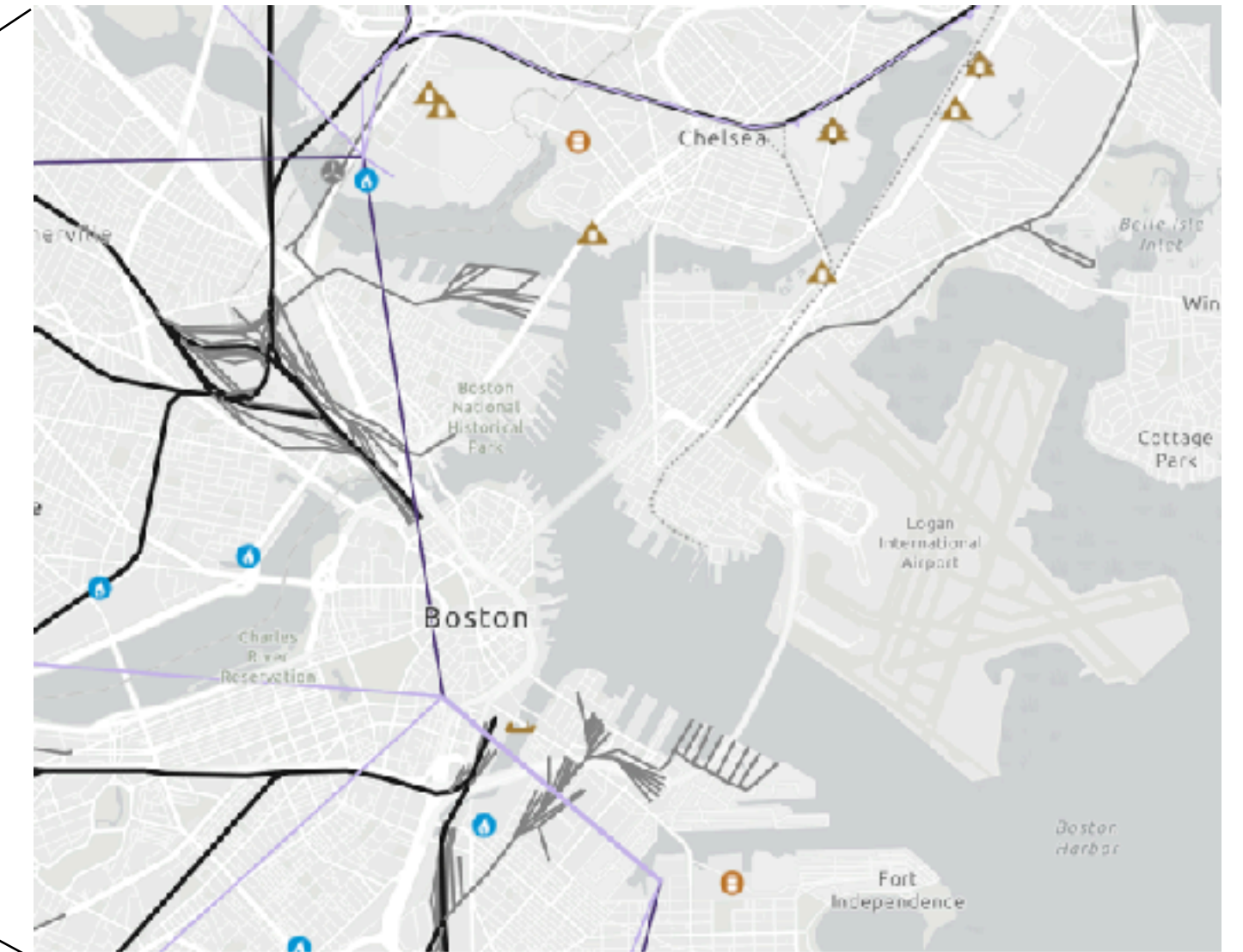
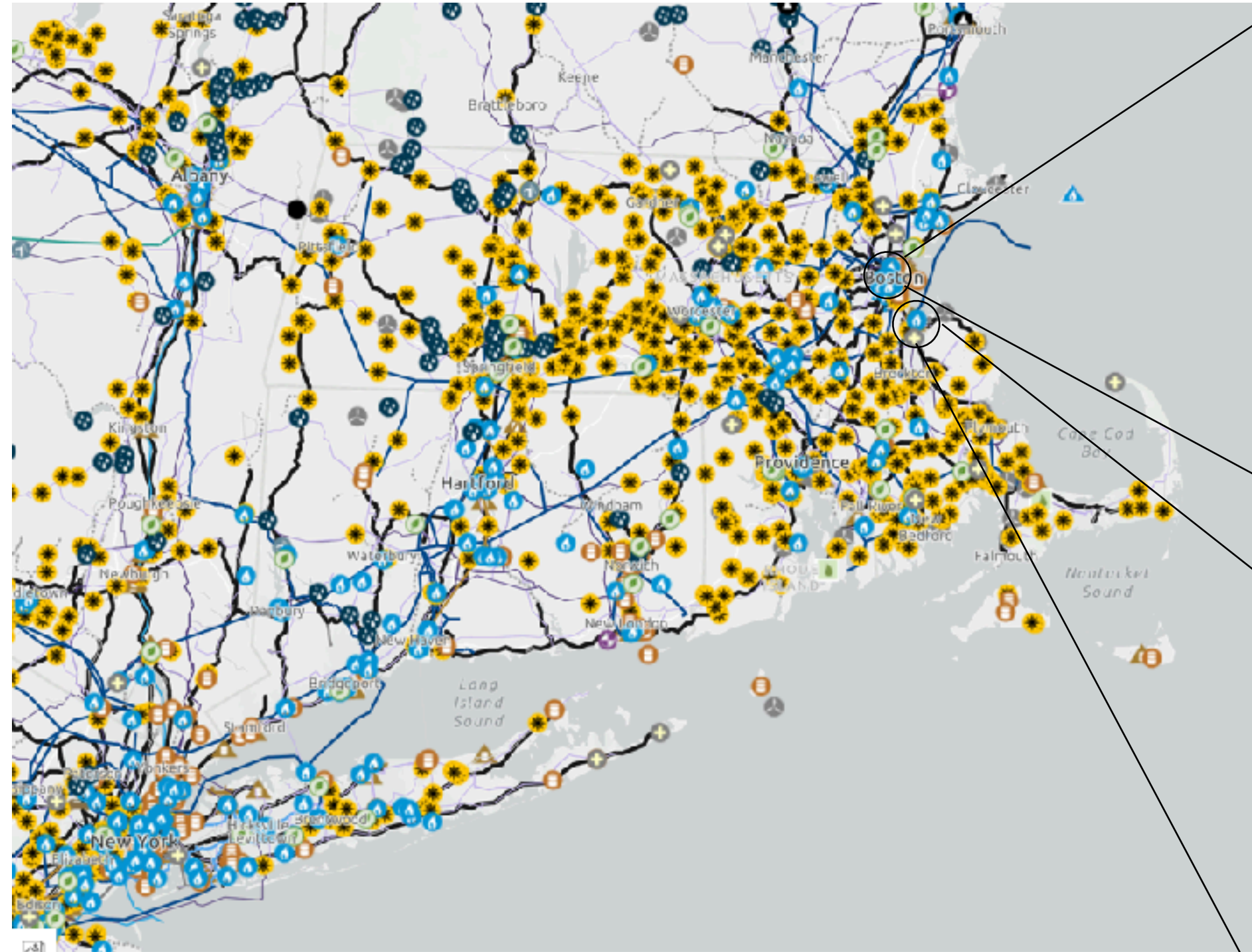
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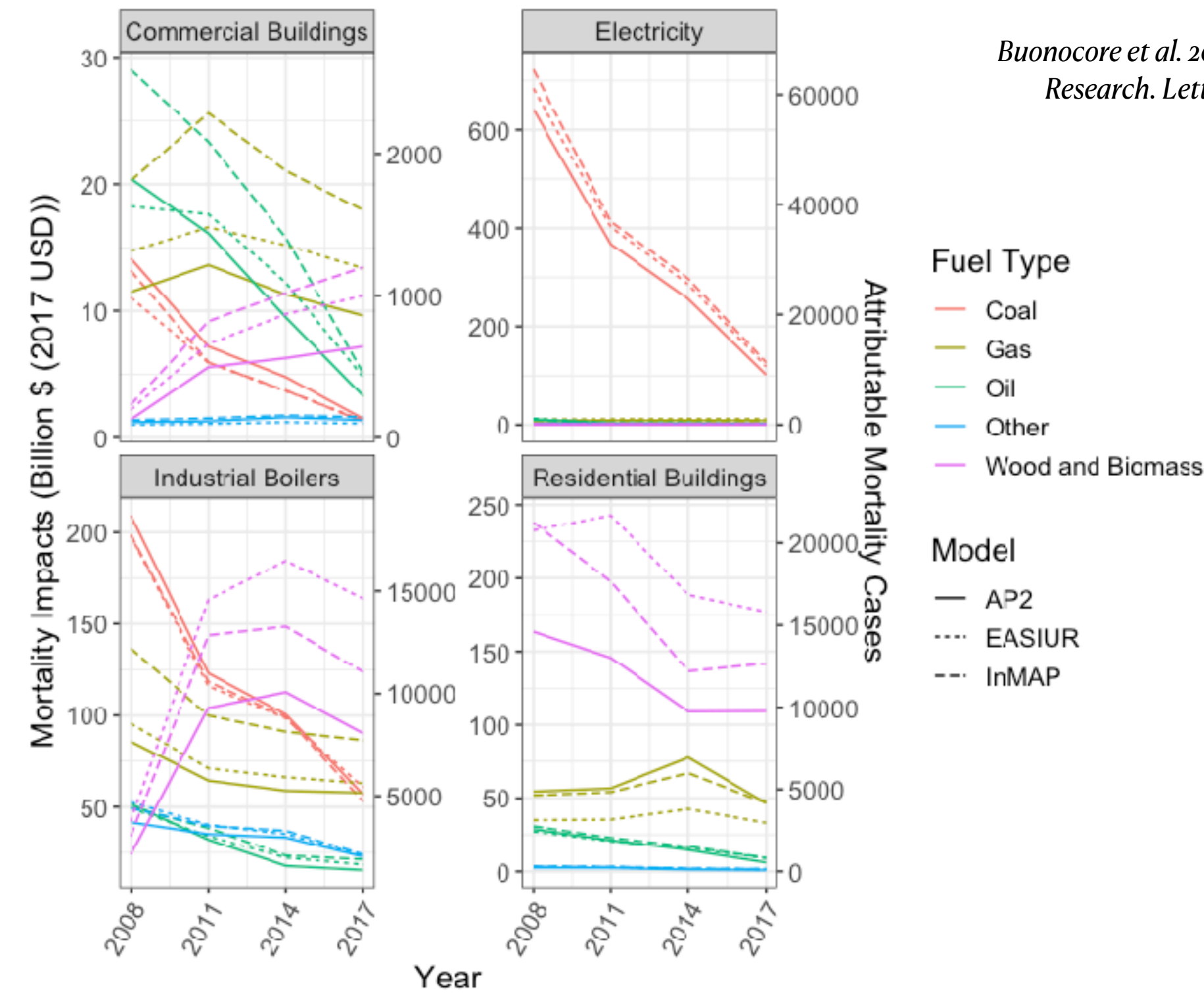
Thursday, August 17th, 2023

Big Health and Equity Impacts of Energy

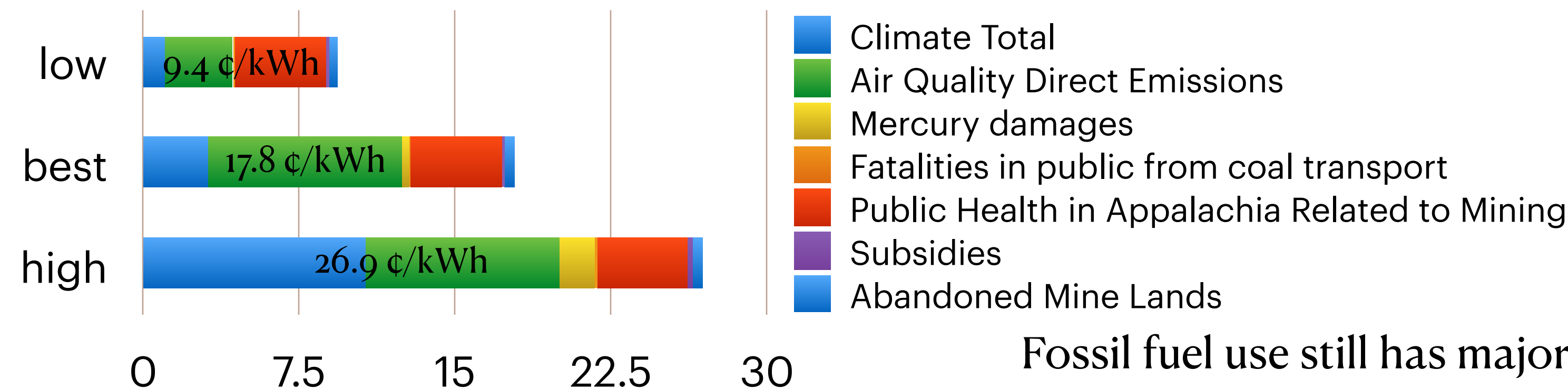
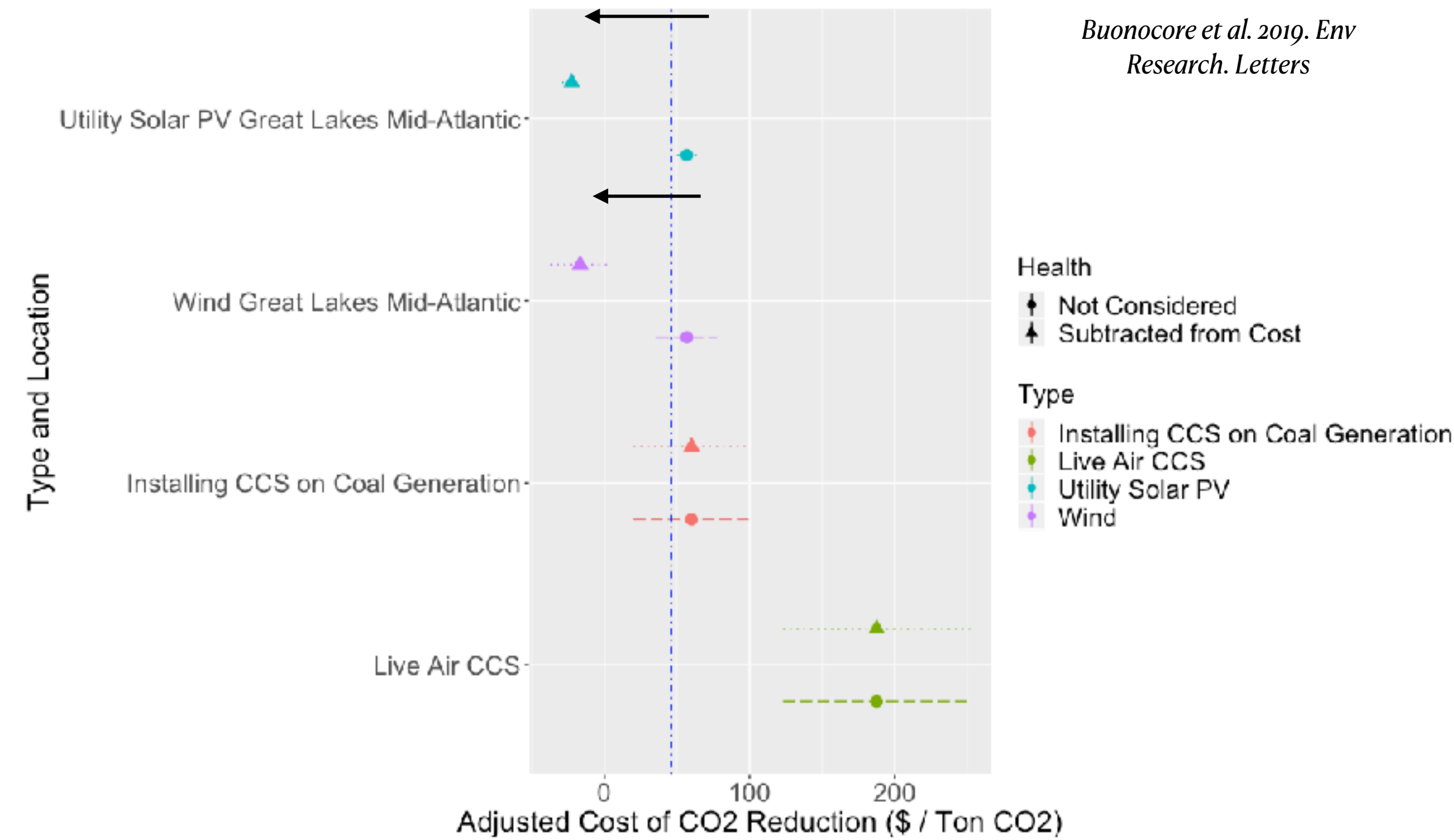
- 7 million premature deaths due to air pollution (likely underestimated)
- About 75% of all greenhouse gas emissions
- Energy is a major contributor to environmental justice (EJ) issues



Plenty of useful evidence... that is not used in decision making



Buonocore et al. 2021. *Env Research. Letters*



Coal = ~5-16 c/kWh

Onshore Wind = 2.4-7.5 c/kWh

Offshore Wind = 7.2-11.4 c/kWh

Solar PV = 2.4-9.6 c/kWh

2022 U.S. Residential Price = 12.49 c/kWh

2022 MA Residential Price = 21.47 c/kWh

Fossil fuel use still has major health burden, in all energy sectors.

Non-combustion renewables are more generally more cost effective than fossil fuels, biofuels, or carbon capture ***when health and climate is priced in.***

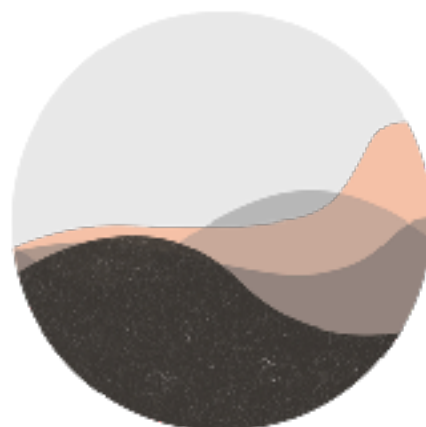
Epstein et al. 2011. *Annals of the NY Academy of Sciences*

No real bridge from energy to public health and environmental justice

Public Health and Environmental Justice Research Tools

- Rapidly growing research community
- Easy to use air quality and health impact assessment methods
- Metrics for equity and environmental justice
- Methods to monetize impacts on climate and health
- Integrated benefit-cost assessment to calculate SROI
- Research to integrate this into decision making for investors, building owners and operators, utilities, policymakers...

CACES



Center for Air, Climate,
& Energy Solutions

<https://www.caces.us/>



<https://cobe.forhealth.org/>

Mechanisms to use these tools in energy design and decision making

Current:

- Tiny uptake in ESG investing

Possible ideas:

- Adding Health and Equity to Environmental Impact Assessment (EIA)?
- Permitting?
- Pricing mechanisms?
- Purchasing?
- Impact investing?
- Others?

Consequences

- Energy decisions have ambiguous relationship to health, some harming, some promoting
- Energy projects that harm health continue to be built
- Reactive approach to decision making when something goes wrong
- Public health and environmental justice continue to be inadvertently harmed by energy infrastructure
- Policy, legal, political issues result

Benefits

- Energy decisions are made with health and equity at their core
- Energy projects that promote health are built
- Energy system intentionally designed to support health and can cooperate when things go wrong
- Public health and environmental justice communities benefit from energy infrastructure
- Fewer policy, legal, and political issues

Regarding Grid Modernization, to achieve Greater Boston's climate, health and equity goals, a critical obstacle to collectively overcome in 12 months is: **the absence of public health and equity as a design, evaluation, and decision making criteria for all energy projects.**