

Achieving multiple goals through energy transitions: technology and policy dimensions

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ABSTRACT

Decarbonizing energy systems is a major challenge for the coming decades, across a range of sectors including transportation and electricity generation. In addition to climate impacts however, energy systems may also have adverse impacts for human and community health and well-being, and these impacts have been found to disproportionately be borne by marginalized communities. In this talk, I will discuss some illustrative examples of how engineering expertise can be combined with insights and methods from other disciplines to inform energy systems policy and planning from an integrated perspective. Examples include the technology policy dimensions of simultaneously addressing air quality and climate impacts of marine shipping, and identifying barriers and enablers to equitably electrifying passenger transport in Canada. Finally, I offer some thoughts on what tools and skills the next generation of mechanical engineers may need to help address the pressing challenges of the climate and other linked sustainability crises.