Equity, Energy Justice, and Environmental Justice

Our Expertise

Clean Cities and Communities (CC&C) | Clean Cities Energy and Environmental Justice Initiative | Clean Energy to Communities (C2C) Program | EVI-Equity Modeling Tool | Framework To Center Justice in Energy Transition Innovations | Joint Office United Support for Transportation (JUST) Lab Consortium | Mobility Behavior and Decision Science Research | Mobility Energy Productivity Tool (MEP) | NREL Open Platform for Agile Trip Heuristics (NREL OpenPATH™) | Technologist in Communities

The Need

Transportation Solutions That Work for Everyone

People in marginalized and underserved communities disproportionately experience reduced access to transportation options, are overburdened by air pollution caused by transportation emissions, and encounter more hurdles on the path toward a clean energy transition. It is also common for people living in these communities to experience limited mobility options to access employment, essential services, and recreation.

Transportation decarbonization research, technologies, and solutions must be inclusive and expand access for people who have historically been left out of transportation decision-making.

The Solution

Building Equity Into the Process

NREL researchers combine their expertise with the knowledge and leadership of local partners. NREL co-leads the Clean Cities and Communities Energy and Environmental Justice Initiative, working with CC&C coalitions to incorporate equity considerations into transportation initiatives in communities across the country. CC&C coalitions also participate in the U.S. Department of Energy's C2C program, under which NREL connects local governments, Tribes, electric utilities, and community-based organizations with national laboratory experts to achieve clean energy goals driven by local and regional priorities. Through Technologist in Communities, NREL researchers partner with leaders and community members in rural areas to learn about regional transportation needs and priorities for solutions.

NREL OpenPATH allows communities to collect travel behavior data through a mobile app and has informed successful e-bike incentive programs. The MEP metric uses travel behavior data to quantify how connected a destination is by multiple modes of transportation, including transit. The EVI-Equity model uses a highly detailed spatial analysis to evaluate electric vehicle infrastructure with census block group-level resolution, providing suggestions for more equitable EV adoption and infrastructure deployment. And NREL experts collaborated with research partners to develop a framework to help decision makers ensure their technology and infrastructure development strategies integrate community needs.

The Impact

Effective and Inclusive Research and Deployment

NREL's novel tools and frameworks for incorporating equity into transportation research and planning support the development of strategies to identify, assess, and deploy inclusive and effective mobility solutions. NREL and its transportation researchers are working with a wide variety of partners to help make laboratory efforts more relevant and meaningful by continually iterating to better incorporate real-world equity considerations. Addressing inequities in clean transportation transitions helps planners and decision makers ensure that all people can experience the benefits of sustainable transportation.

Partners

Arlington, Texas | Bastrop, Texas | Clean Cities and Communities | Colorado Energy Office | Department of Energy and Environment (District of Columbia) | District Department of Transportation | Fort Erie Transit | Innisfil, Ontario | Joint Office of Energy and Transportation | Los Angeles Department of Water and Power | LUCI Mobility | New York State Energy Research and Development Authority | Toyota Research Institute | U.S. Agency for International Development | U.S. Department of Energy | U.S. Department of Transportation | University of California, Davis | World Resources Institute

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