

**Faculty Name:**

Bolun Xu

**Faculty Email:**

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**Lab:**

Xu lab

**Project Title:**

Social-economic analysis of electrification in New York City

**Description:**

This project focuses on the electrification of energy sectors, crucial for achieving net-zero emissions by 2050, and its challenges, particularly for marginalized communities. These communities face increased risks due to outdated grid infrastructure and volatile electricity prices, exacerbated by the integration of renewables and extreme weather events.

Centered on New York City (NYC), the project aims to combine grid capacity data with demographic and building/land-use data to tackle electrification challenges. Utilizing data from Consolidated Edison, NYC's electricity provider, and extensive demographic and building datasets, the project will deliver: 1) Forecasts of electric demand increases across NYC, integrating demographic data, building characteristics, electricity consumption patterns, and heating demand models; 2) Analysis of potential network upgrade costs, identifying areas likely to be underserved by the current grid capacity; 3) Recommendations for alternative strategies like demand response or energy storage to reduce costs related to increased electrification demands.

**Location of Research:**

Hybrid (both Remote and On Site)

**# of hrs/week:**

40

**Department/Program:**

Earth and Environmental Engineering

**Eligibility:**

BS, Second Year, BS, Third Year

**To apply, please contact:**

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