

Power Up! Generating Energy and Innovation with the Detroit Windmill Microgrid

Team Name: Detroit Windmill

Dearborn, Michigan and Detroit, Michigan

Key Project Members:

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Video Pitch Link: <https://www.youtube.com/watch?v=GMsZrj5mAI0>

SHORT DESCRIPTION

The goal of the project is to optimize the design of a low-altitude wind-solar microgrid (known as the Detroit Windmill) for application in underserved urban neighborhoods. The Detroit Windmill is not just an energy device; it is a platform for innovation that demonstrates principles of circular economy through strategic integration of green energy production, upcycling, and skilled trades. This project builds on a partnership between researchers at the University of Michigan-Dearborn and C.A.N. Art Handworks Inc., a Black-owned entrepreneurial firm based in Detroit. This partnership, developed over the last ten years, has resulted in the installation of wind-solar microgrid prototypes in diverse community settings throughout Detroit. These have been well-received by residents, who have communicated a range of energy needs. The Inclusive Energy Innovation Prize will enable enhanced technical partnership between the university and C.A.N. Art Handworks through the hiring of an engineering master's student research assistant to work on technical barriers to wind energy generation at the university site and fund work at C.A.N. Art Handworks on project management, integration of an improved alternator-generator and electronics design, and securing component suppliers for unit production as the platform prepares to enter a new phase of broad community implementation. Once the wind power production and storage for the Detroit Windmill platform is up-rated (or "powered up"), the project will be well-positioned to integrate custom-crafted microgrids in community contexts through local partnerships that will provide workforce development and youth green energy education while also addressing energy gaps based in legacies of racial segregation in Detroit.