

ROAD MAP FOR WIND-POWERED ELECTRIC VEHICLES FOR DISABILITY

This feasibility study will develop a road map for a project to harness wind energy on campus and convert it to electricity to power vehicles that can be a campus shuttle service for students with disabilities or temporary injuries.

The UI needs to improve building accessibility to comply with the 1990 Americans With Disabilities Act (ADA). There are 250 UI students registered with UI's Disability Support Services, including 81 students with physical disabilities who must move from one building to the next every day. At least 50 (2%) of faculty and staff have mobility impairments as well. It is estimated that on a typical day, 130 people at UI may need at least one ride to reach a campus destination. Temporary and disabled parking permits do not fully solve the problem of getting disabled or temporarily injured students to the door of their building, given UI's parking locations.

Vans fitted for people with disabilities can be a large part of the solution, but if they are fossil-fuel powered, they in turn contribute to another problem - air quality and global warming. Fossil fuel vehicles emit approximately 22 pounds of CO2 per gallon for even a fuel-efficient car. When gasoline and diesel vehicles idle while boarding passengers, this additionally creates health effects for the people involved and all nearby. By investigating ways to power campus shuttles with renewable, clean energy, the problem of full accessibility on campus without contributing to other human and environmental problems.

Wind power already exists on the UI campus (at the ITED building) and other universities, such as Cal State-Chico and Arizona State, already have electric fleets of up to 191 vehicles, and including pick-up trucks, vans and buses.

GOALS

Environmental Health: decrease UI's global warming output through shifting this transportation area to renewable energy

Social Responsibility: Improve campus mobility for people with disabilities

Sustainability Leadership: Demonstrate nationally the UI commitment to student leadership across the spectrum of social and environmental responsibility

HIGHLIGHTS

The roadmap project information is being used by Mechanical Engineering (Professor Edwin Odom) and Electrical Engineering to develop a senior design project to build an electric car prototype for campus

The roadmap project information is being used by UI DSS to refine their proposal for both fixed-route and on-call transportation systems for campus

The new and restored partnerships generated may lead to a revival of student-funded shuttle services such as Vandal Taxi



DATA

Award Date:

Spring 2007

Award Amount:

\$2290

Expected Completion:

April 2007

Location:

Campus-wide

TEAM



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PROJECT TEAM LEADERS:

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