PROPOSAL TO THE PLANNING COMMITTEE FOR THE
PRESIDENT'S INAUGURATION
FACULTY SYMPOSIUM

Real-Time Energy Impact Monitors for Residential, Industrial and Policy Applications

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This project extends, improves and deploys a technology with great potential to effect changes in the consumption of energy in a way that promotes the health of the Great Lakes and Great Lakes region. The project advances tools that can be used to reduce GHG and heavy metal emissions through modifications in the timing of energy use. Information technology, power utility distribution modeling, and progressive marketing tools combine to launch a service that can integrate with residential smart meters, industrial control software, smart appliances, and environmental policy scenario analysis to significantly alter the environmental impacts of electricity generation that have created a legacy contaminant footprint in the Great Lakes region.

The project is funded by the Great Lakes Protection Fund (GLPF) and is being executed by an interdisciplinary team of researchers from the departments of Civil Engineering, Electrical Engineering, Computer Engineering, and the School of Business Administration. The project team and advisory board has grown to include researchers and stakeholders from a broad range of organizations including Carnegie Mellon University, DTE Energy, Consumers Energy, Shepherd Advisors, National Wildlife Federation, ERB Institute, and Illume.

Two products have evolved from this project thus far: HERO and PEPSO. HERO (Home Emissions Read Out) is an android app that gives users a wide range of information regarding the environmental effect of energy choices and offers feedback tools that assist the user in determining the most environmentally advantageous periods to use energy. PEPSO (Polluting Emissions Pump Station Optimization) which is provides Real-Time system optimization for sustainable water transmission and distribution. The project team has worked with the City of Detroit’s Department of Water and Sewerage (DWSD) on beta-testing early versions of this product. The project team is working with smart appliance manufacturers to embed the HERO logic for automated smarter home energy use.