

Center for Microgrid Research

2021 Legislative Request - Renewable Development Account

The Center for Microgrid Research at the University of St. Thomas is a unique, flagship microgrid research and educational facility located right here in Minnesota. With initial state funding and further investment from St. Thomas, the UST microgrid has developed into one of the premier microgrid hands-on research and educational facilities in the nation, with the potential to create incredible and relevant research opportunities to benefit students, industry partners and the state of Minnesota.

The Center is a distinctive workforce development and renewable energy education asset to Minnesota. It is the only facility in the state that can educate and train our Minnesota grid workforce on microgrids and distributed energy resources. Not only does the microgrid allow us to provide hands-on education to our BS and MS Electrical Engineering students, it also provides experience and testing using real-scale equipment for industry partners. The Center supports partnerships with state and regional companies in the development of distributed energy resources for microgrids. Built-in test bays in the microgrid allow local industry to literally “plug-in” their systems to test near-commercial products, accelerating renewable energy development in our state.

The Center attracts national research partners and has the potential to draw more research and industry

collaborations to our state. Since its inception, the facility has worked with partners such as the Pacific Northwest National Lab, General Electric Global Research, and many national universities. In addition, the Center has recently been invited to join the national Grid-forming Technologies Research Consortium sponsored by the U.S. Department of Energy.

A \$5.4 million request

\$1.5 million – Foundational support for facility operations, equipment modernization and to promote further educational, industry and research opportunities.

\$3.5 million - Advanced hardware and controls equipment and to extend the microgrid to additional buildings.

\$400,000 - Expand our two-year community college partnership program to grow the power systems workforce.

Why should the State of Minnesota invest in the Center for Microgrid Research?

Funding will help prepare Minnesota’s grid workforce for the future and provide relevant research on Minnesota’s grid reliability and resiliency. As we have learned from the Texas experience, there is no better time so support measures that improve grid reliability. Microgrid research would improve local resiliency and can “future-proof” the electric grid in Minnesota.

The funding will allow the Center to expand training to the Minnesota grid workforce as a true learning lab on new concepts through workshops and certifications. The funding will also allow St. Thomas to develop a two-year community college partnership program to provide students hands-on power systems research experience and training through paid summer internships.

With additional investment in equipment and technology, the center can be leveraged to bring more research collaborations to Minnesota. We estimate that this \$5.4 million investment would bring in \$10-15 million in federal research grants over the next 5-10 years and bring national visibility to the region as an innovative partner for microgrid research and education.