
# Interface Switch for Distributed Energy Resources

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**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an improved interface switch that seamlessly and automatically connects and disconnects a DER microgrid from a utility grid.**

## OVERVIEW

Distributed energy resources (DER) are small power generators that are typically located near the customer's load, where energy is used. Small DER produce low emissions, can be manufactured at low cost and take advantage of waste heat. These devices, which are generally grouped with loads into a microgrid with a single interface to the local utility, offer a promising means of meeting the rapidly growing demand for more reliable power across the United States.

## THE INVENTION

UW-Madison researchers have developed an improved interface switch that seamlessly and automatically connects and disconnects a DER microgrid from a utility grid. The interface switch disconnects the DER from the utility grid for protection and power quality events, allowing the cluster of loads and DER to continue to operate as an island. During island conditions, the frequency of the DER microgrid differs from that of the utility. When the conditions that created the islanding are gone, the interface switch exploits this frequency difference to rapidly and seamlessly reconnect the microgrid to the utility.

## APPLICATIONS

- Allows the DER microgrid to quickly and seamlessly switch between island mode and utility mode

## KEY BENEFITS

- Operates automatically, using only locally available information
- May be operated manually

## THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.

- Minimizes voltage transients, current surges and other undesirable strains on the system

## STAGE OF DEVELOPMENT

A prototype has been built.

## ADDITIONAL INFORMATION

**Tech Fields**
Clean Technology - Energy & resource efficiencies
Engines & Power Electronics - Utility & microgrid

## CONTACT INFORMATION

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842.