



Leading the way in MICROGRID energy technology.

Soon, Bubolz Nature Preserve will be home to one of the first Microgrids in Wisconsin. This innovative vision features modern technology, allowing the new Environmental Center building to reduce energy costs and strengthen its ability to become sustainable.

Opportunity to Educate.

As more and more companies continue to seek energy cost savings, this project will serve as a prototype and educational tool. It demonstrates forward thinking of local leaders and will capture the attention of students, young professionals and world-wide industries seeking advanced methods of sustainable energy solutions.

What is a Microgrid?

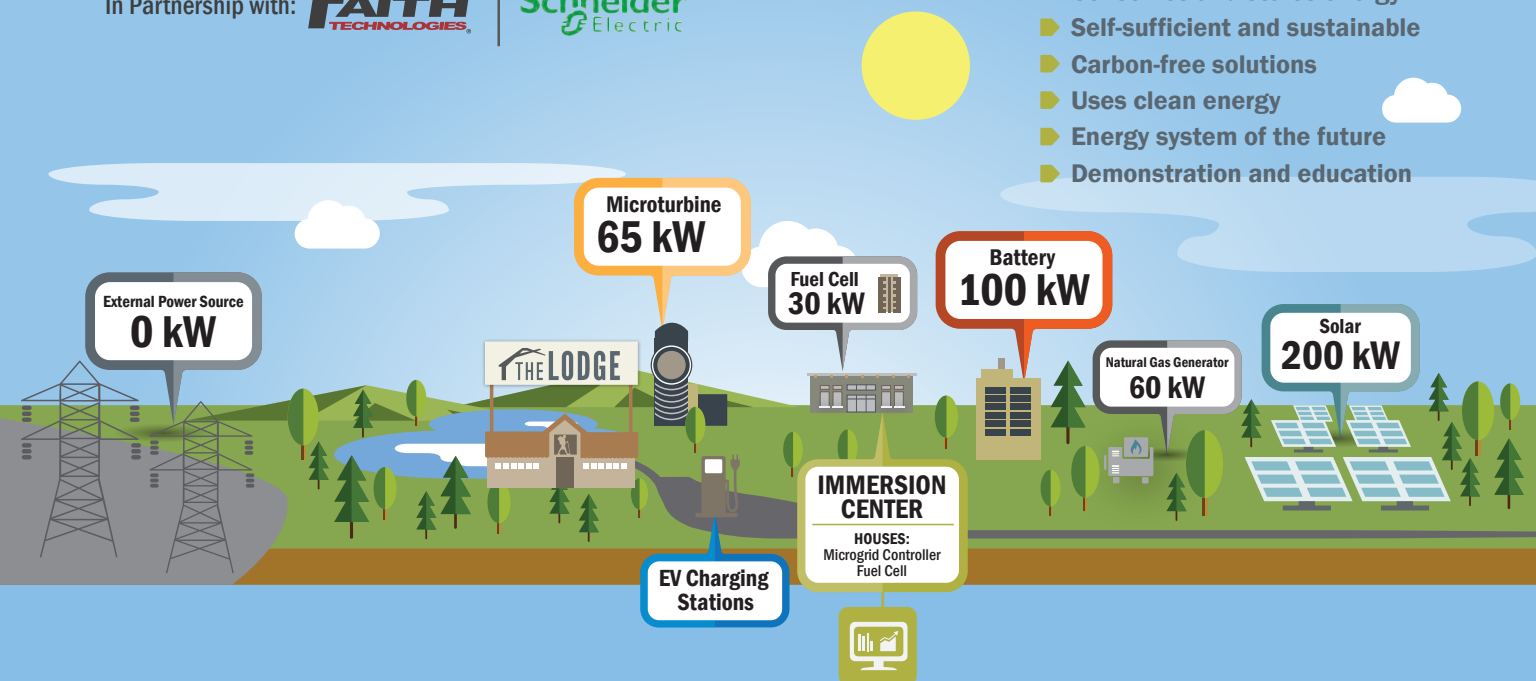
A microgrid is a local energy grid that can operate independently of the traditional energy grid, making it more efficient and reliable. It can be powered by generators, batteries and renewable resources like solar, wind or gas.

Why a Microgrid?

- ▶ More reliable than traditional grid
- ▶ Conserves and stores energy
- ▶ Self-sufficient and sustainable
- ▶ Carbon-free solutions
- ▶ Uses clean energy
- ▶ Energy system of the future
- ▶ Demonstration and education

In Partnership with: **FAITH TECHNOLOGIES**

Schneider Electric





Reducing our Carbon Footprint

Microgrids can reduce carbon emissions by 50% or more, with some even reaching zero carbon emissions, by using renewable energy and storage. Storing energy for later use is not only efficient and economical, it is a cutting-edge approach to preserving our environment.

How does the Bubolz microgrid work?

MICROGRID CONTROLLER

The microgrid controller is the computer technology that monitors the electrical current created by all sources. It makes decisions on how to use or store electrical current created by Solar-PV, the microturbine, battery, generator or the fuel cell.

SOLAR - PV Generation: 200kW AC [240kW DC]

When the sun shines, the solar PV panels produce electrical current. The microgrid controller optimizes when to use this energy at the nature center. Extra energy can be used to charge the battery and create hydrogen for the fuel cell.

MICROTURBINE: [65kW]

The microturbine is similar to a small jet engine that burns natural gas to create both electrical current and heat. The microgrid controller will adjust the operation of the microturbine to meet the needs of the nature center. The heat is recovered from the microturbine to heat the building.

FUEL CELL: [30kW]

The fuel cell consumes hydrogen to produce electrical current. The microgrid controller will use the fuel cell to produce electrical power when there is not sufficient power provided by the other sources.

EV CHARGING STATIONS

The car charging stations provide the connection between the microgrid and electric vehicles to allow their batteries to be recharged.

NATURAL GAS GENERATOR: [60kW]

The generator is similar to a truck engine that burns natural gas to create electrical current to power life safety systems in the event of a failure elsewhere in the system. The natural gas generator will be used to offset utility usages when other resources such as sun are not available.

BATTERY: 100kW [420kWh]

One of the main benefits of the battery is its ability to simultaneously provide or store electrical current. This can act as a bridge to optimize the efficiency of the entire system without waiting for the fuel cell, microturbine, or electrolysis cell to respond.

To learn more, or to become a part of this energy-forward movement:

Renee Torzala, Community Relations Manager, Faith Technologies

renee.torzala@faithtechnologies.com | 920.993.5835