



IIT Wind Energy Consortium

Microgrid Master Controller & Wind Management Tool

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Purpose of Master Controller

Provide for Island Mode Capability

Manage System Demand

Minimize Costs

Automate and Optimize Ancillary Services

- Demand response

- Day ahead

- Capacity

- Power Quality

Minimize Carbon

How?

Interface with Key Campus Controllers

Distributed generation

Building controllers and meters

Distribution system smart switches

Wind Turbine

Solar PV

Interface with utility and Independent System Operator

Monitor weather and other external conditions

Predict Loads and Generator Outputs

Place the campus in the optimal mode

Wind Management Tool for IIT's Microgrid

■ Goals

- The goal of this work is to develop a software tool designed to help mitigate wind integration issues into the campus microgrid.
- Specifically, this tool is intended to predict wind output and output variations within multiple timeframes.
- (an 8kW Wind turbine may not have a significant impact, but the team is looking at issues that may arise from a much higher deployment of wind power).

IIT Master Controller

Smart Microgrid Architecture (local distribution and supply)

