



# Perfect Power at IIT

## Master Controller Update

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# IIT Microgrid Master Controller Purpose

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- 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?

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- Interface with Key Campus Controllers
  - Distributed generation
  - Building controllers and meters
  - Distribution system smart switches
- Interface with utility and Independent System Operator
- Monitor weather and other external conditions
- Place the campus in the optimal mode

# Microgrid Master Controller Versions

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## ■ Version 1:

- Facilitates use of generators in demand response and real time/day ahead markets
- Software infrastructure is developed (file management, database management, modeling, ect.)

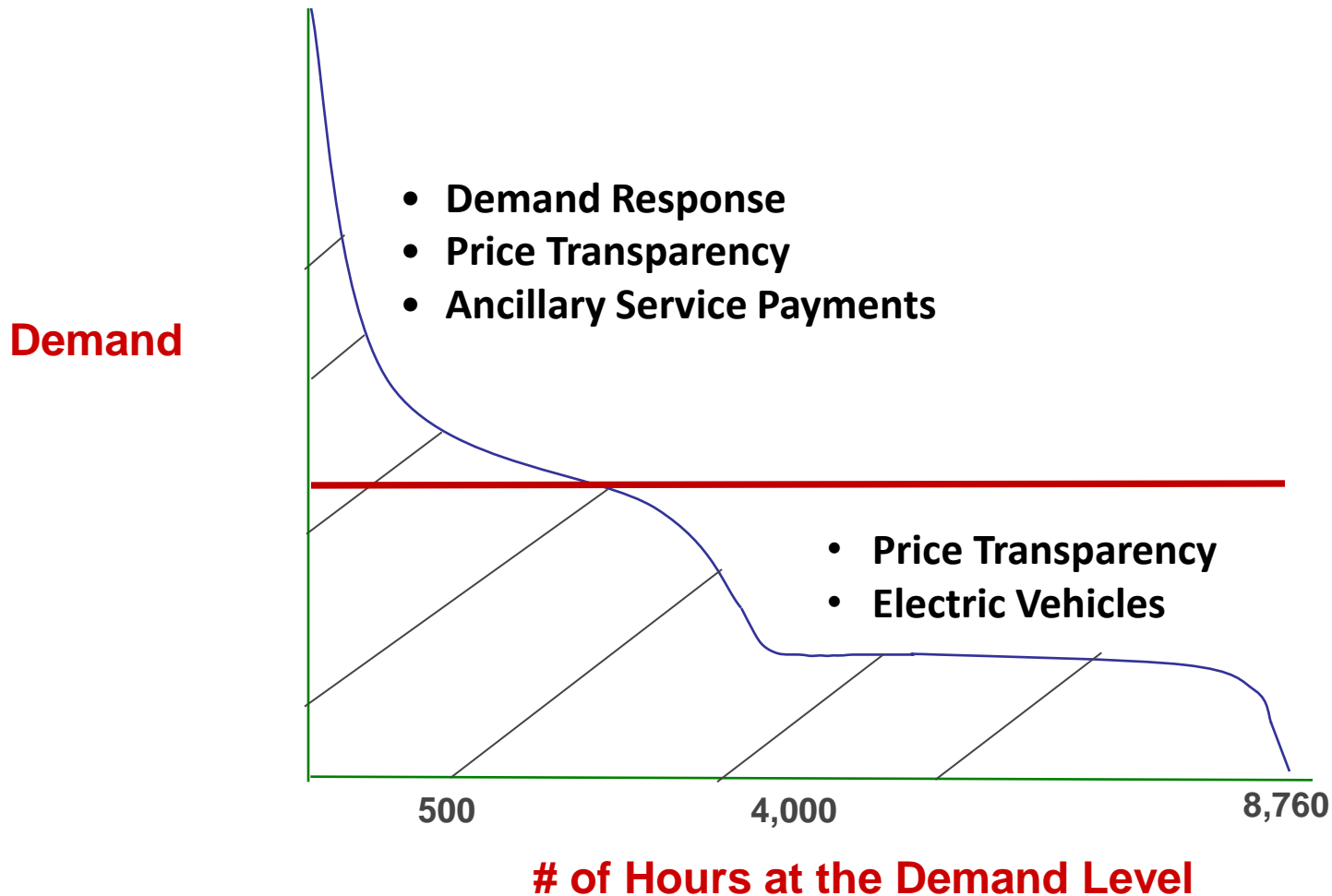
## ■ Version 2:

- smart distribution for fault monitoring
- remote control of substation breakers on the loops

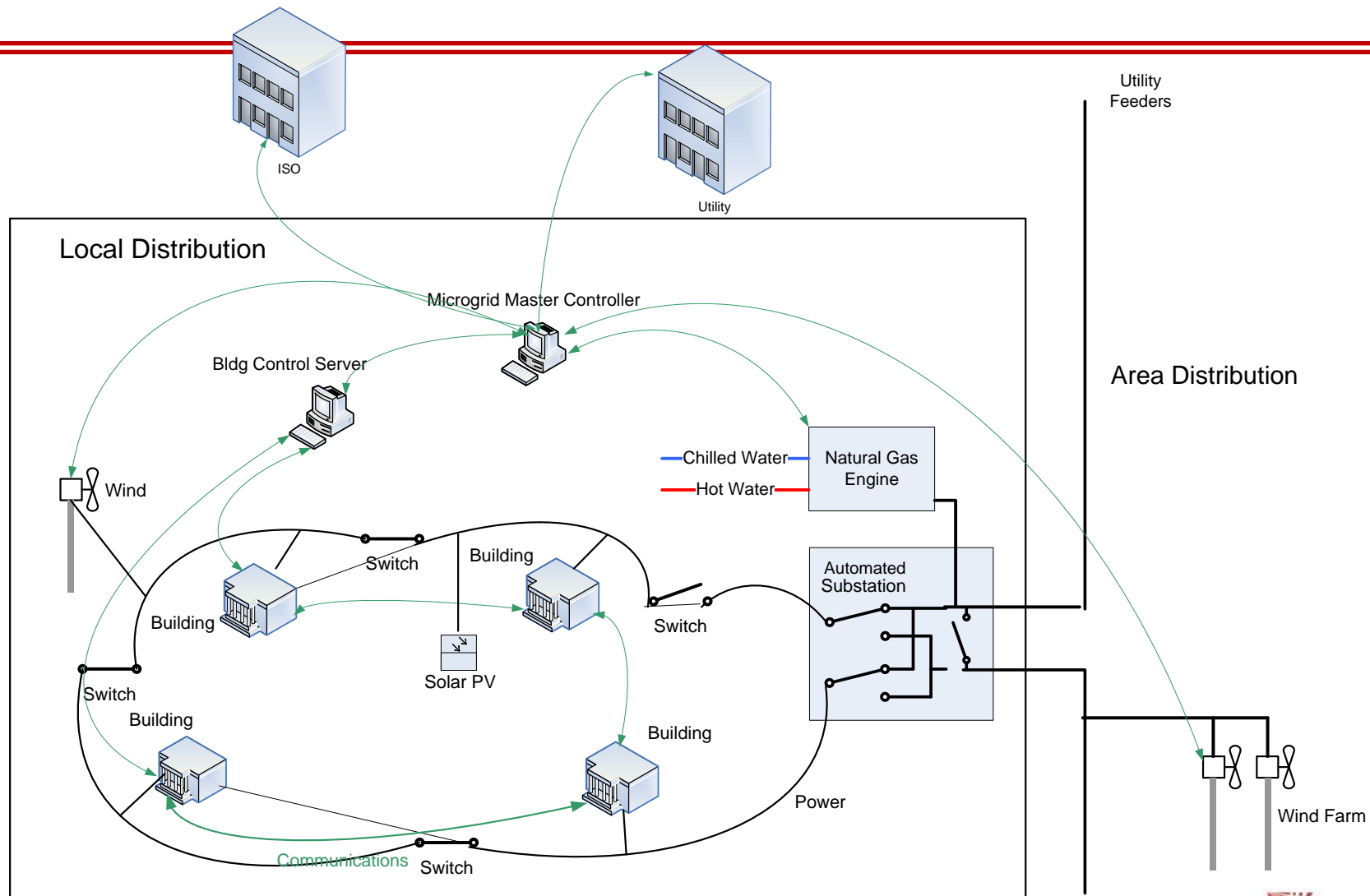
## ■ Version 3:

- coordinates responses for demand reduction modes for pricing, demand response, and island mode events

# Flatten the Curve – Improve Asset Utilization



# Microgrid Master Controller



# Project Status

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## ■ 2009

- Completed Version 1 software specification and conceptual design

## ■ 2010

- Version 1 Software Development and Deployment
- Version 2 Software Specification