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## Energy Use in Buildings Enabling Technologies

### Title

An Integrated & Cognitive Home Energy Management System

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# An Integrated and Cognitive Home Energy Management System

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# Project Objectives

**GOAL:** *Develop an Intelligent Residential Management System that will:*

- Give the utility the ability to predict and tailor the electricity demand in multiple dwelling units simultaneously in a given residential community by:
  - providing suitable incentives to customers, and
  - scheduling and controlling appliance operation.
- Make decisions for customers in feeding the excess solar power to electricity grid through 'net metering' scheme.
- Possess seamless information flow at the customer end to control various home appliances, lighting, HVAC system and water heater, either remotely or locally on the *Master Controller*.

# Dynamic Appliance Scheduling

**Global:** Generalized adaptive fuzzy neural network inference system (GANFIS)

**Local:** Adaptive fuzzy neural network inference system (ANFIS)

