



 **PECAN STREET**

- Pecan Street Inc. Non-Profit
  - Public Interest Research in Water and Energy
  - Texas Municipal Water Consortium
  - OpenARMS Alliance (Energy)
  - Dataport energy and water data portal
- Pecan Street Labs For-Profit
  - Product development
  - Product field trials
  - Corporate and Start-up



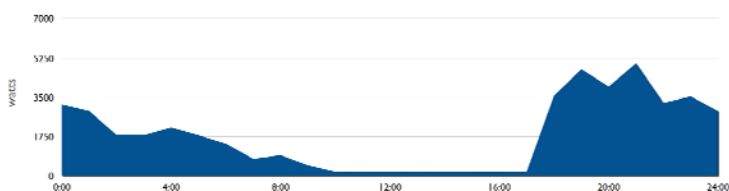
# PECAN STREET

- Facts
  - Worlds largest high-resolution residential energy use database
    - 2,000+ devices being monitored
    - Energy monitors, electric/water/gas smart meters, smart thermostats, residential gateways
  - 1,100+ residential participants in TX, CA, & CO
  - 300 in core test-bed at Mueller neighborhood, Austin, TX
    - 210 with rooftop PV averaging 5.5kW
    - 73 with Plug-in EV
    - 3 transformers monitored
  - Over 20,000 IoT sensors deployed, measuring high-resolution energy and water consumption

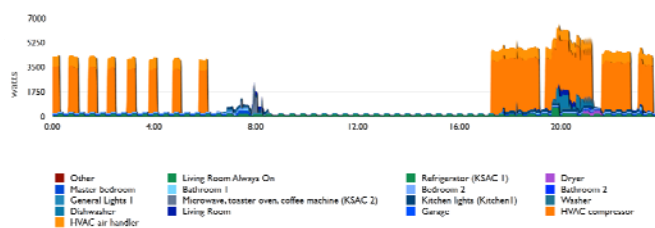


# PECAN STREET

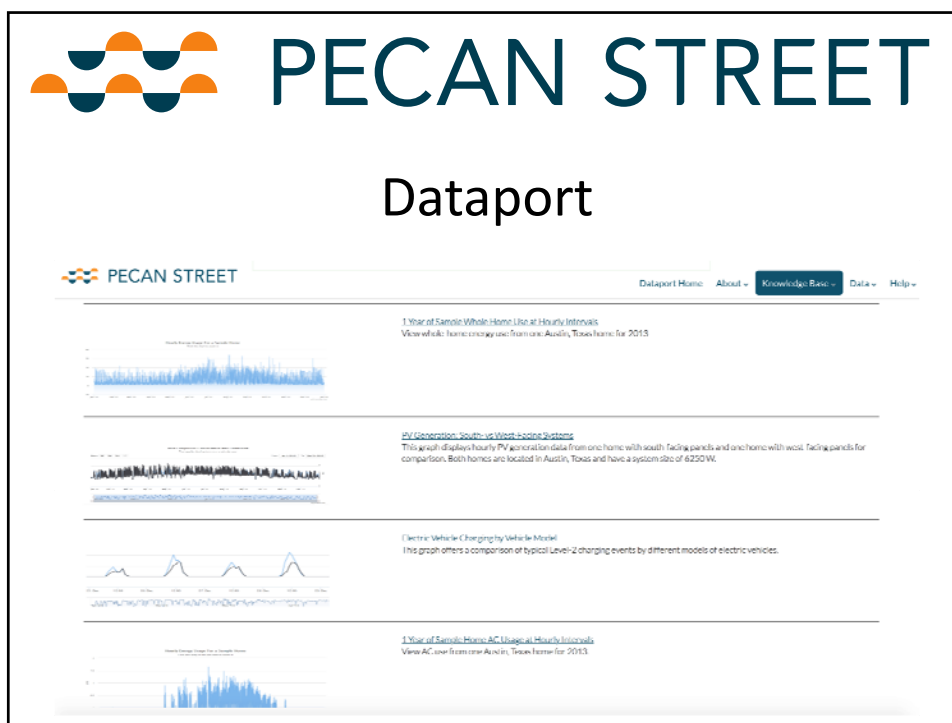
July 31, 2012 Daily electric use: 1-hour interval smart meter



Same Day Pecan Street Inc. Data: 1-minute interval



Source: Pecan Street Research Institute



## Research Reports

- Value of South vs. West facing PV arrays
- Electric utility behavior and demand management programs
- Rooftop solar panel generation compared to home electric use
- Net impacts of rooftop solar panel generation on home grid demand
- Portion of home electricity use devoted to heating and cooling
- Residential Water Use Index - First Edition



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Pike Powers Lab

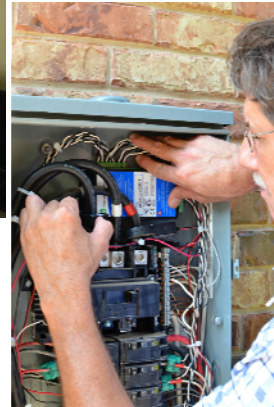


# PECAN STREET





# PECAN STREET



## IoT assets and capabilities

1) Pecan Streets's research solution for energy monitoring



2) Pecan Street's mobile apps for consumer research



3) Pecan Street's rapid prototyping and lean product development lab

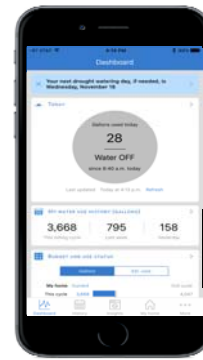


4) Pecan Streets residential testbed





## The BluCube system

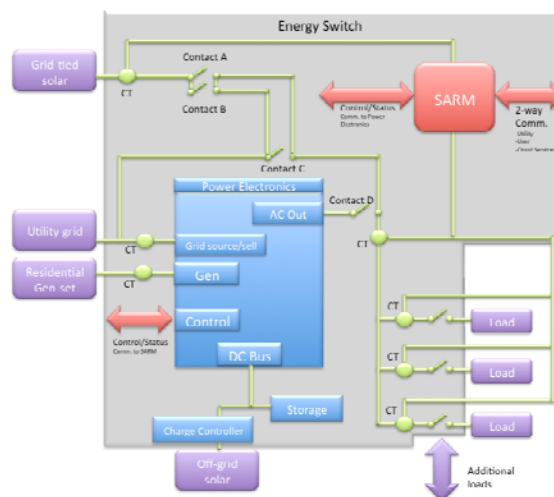


BluCube    BluBand    BluWater



## PECAN STREET

### Energy Switch





# PECAN STREET

- Connectivity issues related to IoT
  - Highly distributed infrastructure
  - Resilience is paramount
    - Autonomous systems
    - Redundant backhauls
    - QoS variability
    - Cloud back-up
    - Cloud optimization