# "AC & DC Sub-metering"

Presentation

by

John Stratford - Measurlogic Inc.

# Measurlogic Overview

➤ Based in Centennial, Colorado - where the DTS product family is manufactured and supported.

➤ Complies with "Buy American Requirement" of the American Recovery & Reinvestment Act (ARRA).

➤ Have been in the US market for over 12 years

➤ Over 30 years of experience in electrical measurement and its associated markets

# Mission

➢ Our Mission:

  ➢ Produce an extensive range of reliable and cost-effective AC and DC electrical sub-metering solutions
  ➢ Customer driven product development – Innovate don't copy
  ➢ Provide our customers with "Value"

Meters, Systems and Support
Before, During and after the Sale

# AC Energy Sub-Meters

## Choose for best form and fit

➤ **DTS** range of AC sub-meters

- – DTS k2 & DTS 305: Front panel mount
- – DTS 310 & DTS 305: DIN rail mount
- – DTS SMX: Weather-proof Surface mount
- – DTS SKTD: Socket meter replacements



**MEASURLOGIC**

e³ energy efficiency equipment

www.measurlogic.com

# DTS – AC Sub metering

DTS Series of Single or 3 phase meters common features

- "Revenue" Grade
  - ANSI C12.1 Class 0.5 Energy Meter
- Flexible Measurement Topologies
  - Three Phase 3 and 4 wire, 208-480V, 600V option
  - Single Phase 2 or 3 wire, 120/240V
- Remote Communications,
  - Modbus, BACnet, LonWorks & SNMP
- Various I/O configurations
- 4 quadrant measurements (Net metering)
- User-definable Modbus register area allowing for flexible product emulation



MEASURLOGIC

e³ energy efficiency equipment

www.measurlogic.com

# DTS 310 – Key features

- DTS 310 is

  - ➢ ultra-compact
  - ➢ DIN rail mounting
  - ➢ Pluggable terminals for easy of install/removal
  - ➢ self powered from voltage inputs
  - ➢ Has a DC auxiliary option (if required)
  - ➢ Uses split core "safe" CTs
  - ➢ 2 x digital inputs & 1 x digital output OR
    3 x digital outputs
  - ➢ 2 wire or TCP communications interface
  - ➢ Modbus, BACnet, LonWorks or SNMP protocols

# DTS 305 – Key features

- DTS 305 is

  - ➢ Compact & DIN rail mounting
  - ➢ Isolated auxiliary supply 90-277Vac/dc or DC options
  - ➢ Uses split core "safe" OR 5A CTs
  - ➢ Pluggable terminals for easy of install/removal
  - ➢ 6 x isolated analog outputs (configurable)
  - ➢ 4 x digital inputs (status or counters)
  - ➢ Up to 10 x digital outputs
  - ➢ Configurable, Remote Display module
    - • 3 line, 8 pages
    - • LCD , back lit
  - ➢ 2 wire or TCP comms interface
  - ➢ Modbus, BACnet or SNMP protocols

**MEASURLOGIC**

energy
efficiency
equipment

www.measurlogic.com

# DTS SMX – Key features

- DTS SMX is
  - Complete metering package (Contractor Friendly)
  - Surface mounting
  - Weatherproof - NEMA 4X enclosure
  - Built-in fusing
  - Power from voltage terminals (Va-n OR Va-b)
  - Uses split core "safe" OR 5A CTs
  - 2 x digital inputs & 1 x digital output
  - Hard wire interfaces
    - 2 wire and TCP communications interface
  - Wireless interfaces (optional)
    - Wi-Fi OR GSM / CDMA cell interfaces
  - Modbus, BACnet or SNMP protocols
  - Integrated, configurable LCD Display module

**MEASURLOGIC**

**energy efficiency equipment**

www.measurlogic.com

# DTS SKTD – Key features

- DTS SKT and SKTD are

  - ➢ Socket sub-meters with communications - unique opportunity
  - ➢ Replacement for old electro-mechanical meters
  - ➢ All form factors are available
  - ➢ Integral display or blank
  - ➢ 1 x digital output (optional)
  - ➢ Configurable, Integral Display module (SKTD)
    - 3 line, 8 pages
    - LCD , back lit
  - ➢ 2 wire and TCP communications interface
  - ➢ BACnet, Modbus protocols

**MEASURLOGIC**   **e³** energy efficiency equipment   www.measurlogic.com

# DTSk2 Series

DTSk2 Series of 3 phase meters

– ANSI C12.20 Class 0.5 and 0.2 Energy Meter

– Advance PQ features

- Sags, Surges, Harmonics to 50th

- Voltage & Current Unbalance

– Display can be mounted remotely and communicate with 32 x measurement Modules

– 3 expansion card slots

– Integral Modbus TCP

– On board logging – SD card up to 2GB

– Digital Input / output cards

– Analog Input / output card

# Current Transformers

➢ Solid OR Split core OR Flexible RopeCT
  - From 5A up to 5000A

➢ 5A OR mV outputs

➢ 5A secondary for "standard" or traditional systems
  - Care must be taken when open-circuiting the secondary

➢ mV CTs – ideal for sub-metering
  - Split core or Flexible RopeCT for easy of install
  - Lower cost than 5A equivalent
  - We calibrate meter with CT for superior overall system accuracy

# DTS DC – DC Sub-meter

- DTS DC is

  - ➤ ultra-compact
  - ➤ DIN rail mounting
  - ➤ Pluggable terminals for easy of install/removal
  - ➤ 12, 24 or 48Vdc auxiliary
  - ➤ Provides DC Voltage, Current, Power and Energy
  - ➤ Up to 800Vdc DC Voltage input
  - ➤ Various current input alternatives
    - 0 – 5A direct
    - 50 – 100mV shunt
    - External solid / split core Hall effect sensor
  - ➤ 2 x digital inputs & 1 x digital output OR
    3 x digital outputs
  - ➤ 2 wire and TCP communications interface
  - ➤ Modbus, BACnet, LonWorks or SNMP protocols

# DC shunts & Hall effect sensors

- DC Shunts

  - ➤ 1A to 15kA
  - ➤ 50mV output (100mV option)
  - ➤ Non-isolated
  - ➤ Various mounting configurations

- Hall Effect sensors

  - ➤ Non contact DC current measurement (isolated)
  - ➤ Solid core or split core
  - ➤ 5A to multiple kA

# EDS Data logger

- EDS Data Logger key features are

  - ➢ DIN rail mounting
  - ➢ 200 MB FIFO memory
  - ➢ TCP or RS-485 Modbus connectivity for up to five slave devices
  - ➢ Eight potential free digital inputs
  - ➢ Six relay outputs – manually controlled via the web server and/or automatically through user configurable events
  - ➢ Ethernet connectivity to LAN/VPN or Internet
  - ➢ Data transfer initiated by EDS thus significantly reducing firewall/IT networking issues
  - ➢ Built-in PowerStudio™ web server to display data using a conventional browser  - no additional software needed
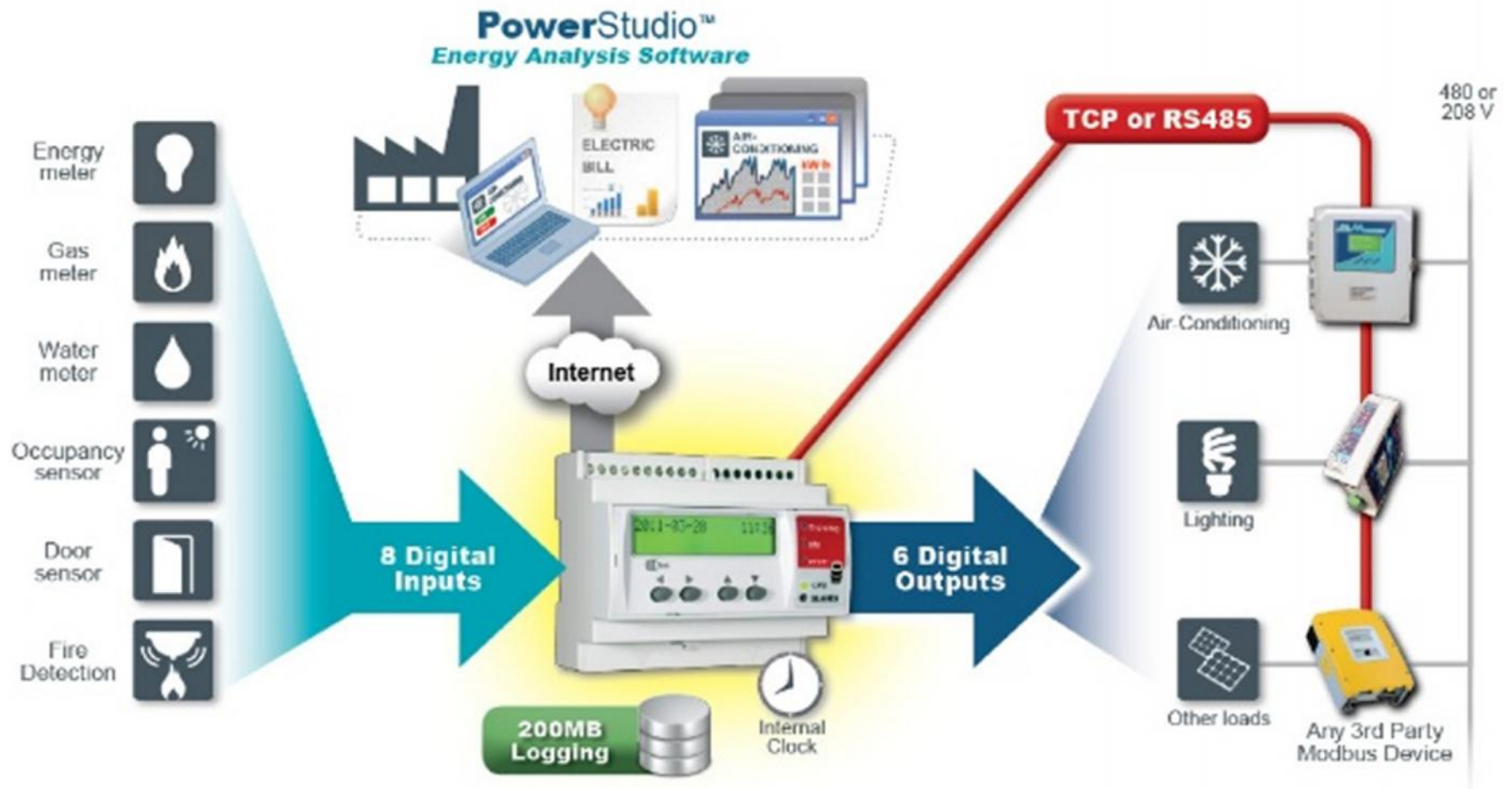
# PowerStudio

## Your web enabled key to Energy Efficiency



**MEASURLOGIC**

www.measurlogic.com
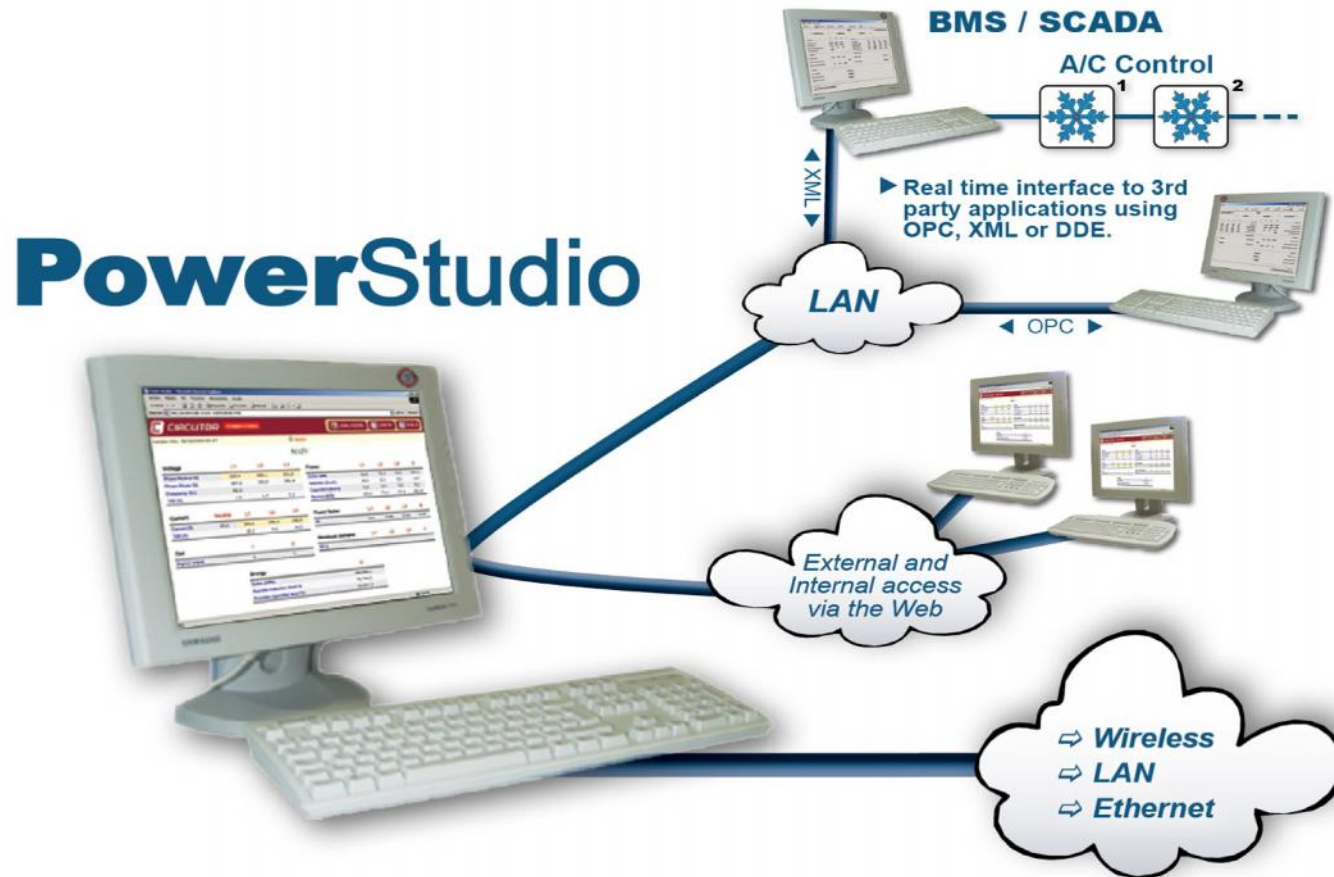
# PowerStudio (cont)

- Key Commercial Benefits of PowerStudio

  - Software is purchased and owned by the customer. There are NO additional monthly or annual licenses payable.

  - There is no limit to the number of users NOR additional cost. This is controlled by the Administrator of the system providing user access through password control.

  - Number of attached devices also is not limited so expanding the system to accommodate multiple meters can easily be achieved. There is NO per device license

  - Based on a central database that can reside on any PC/server on the LAN network.

  - Client application (included) or std browser is used to access the data.

**MEASURLOGIC**   e³ **energy efficiency equipment**   www.measurlogic.com

# PowerStudio (cont)

- Key Technical Features of PowerStudio

    - Integrates with our extensive range of meters & 3rd party meters
    - Real time display of all electrical parameters or process variables
    - Built in web-server
    - 3 main elements: Editor, Engine & Client
    - Flexible report generator included
    - Design tools for personalized screens included
    - XML Service and DDE Built in (provides ability to link with 3rd party applications in real time)
    - OPC Server also available
    - Access via the LAN or Internet with password protection providing ability to create user profiles
    - Alarm / Event module.

# Multiple Location Deployment
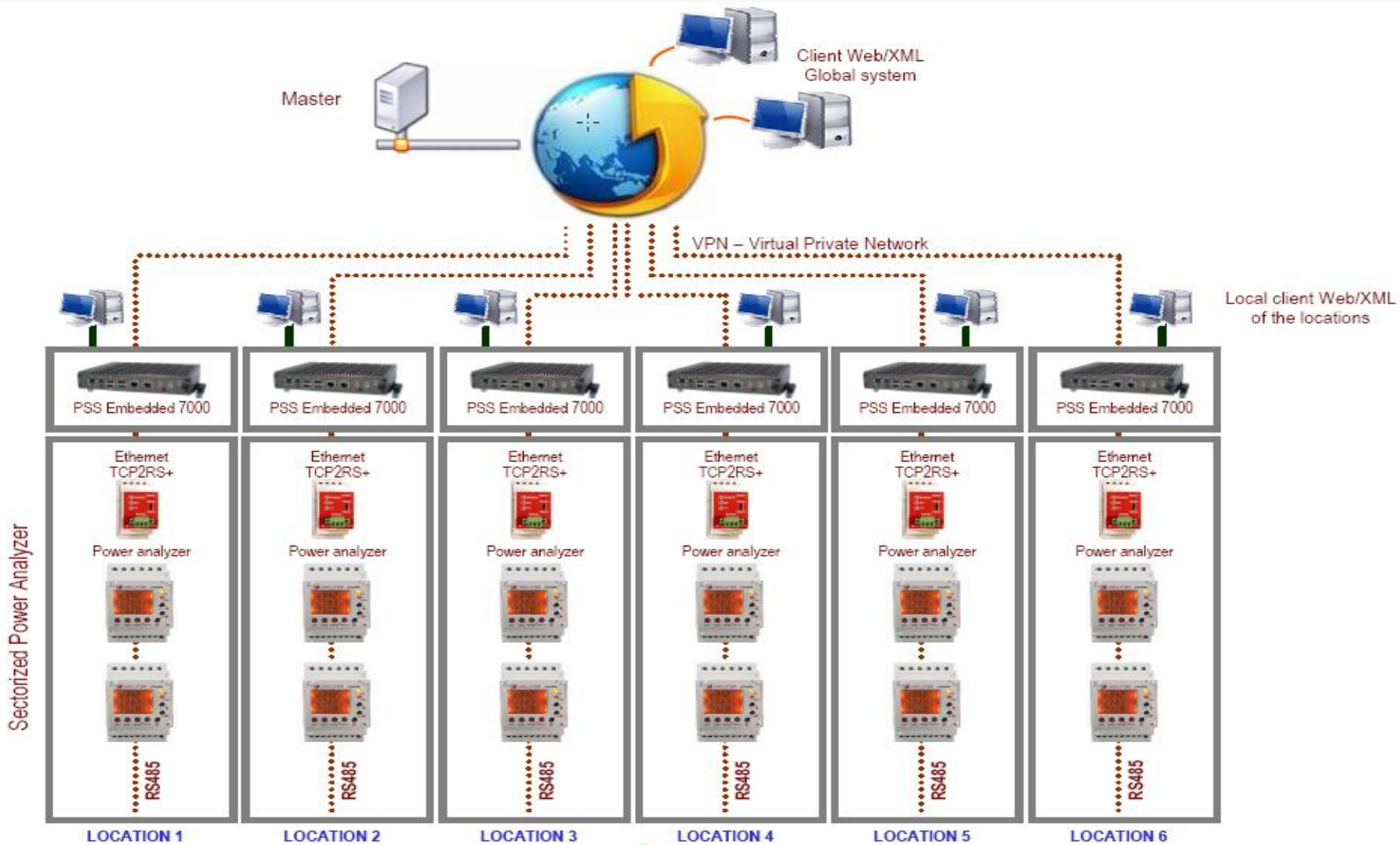
# Integrated Energy Management

YOU CAN'T CONTROL / MANAGE / REDUCE
UNTIL YOU CAN MEASURE !!

**S**ingle tool to monitor all of your utilities

**A**nalyze how, when, where energy is used & any inefficiencies

**V**erify your energy saving initiatives
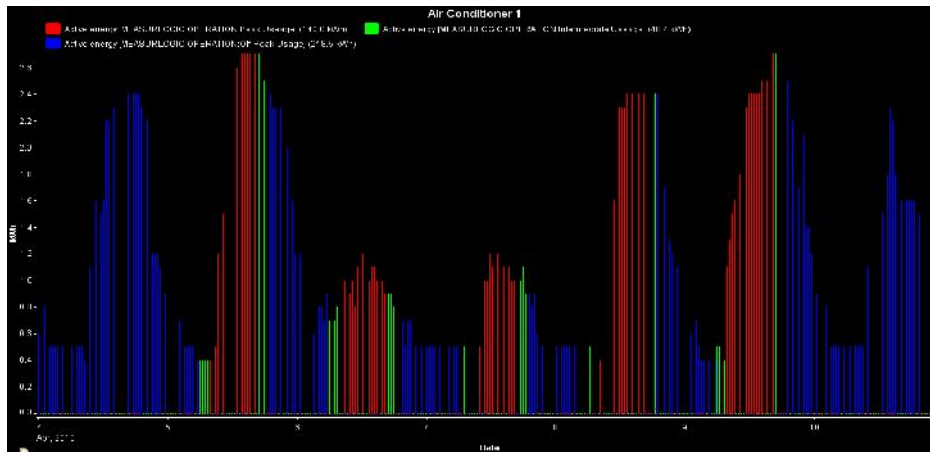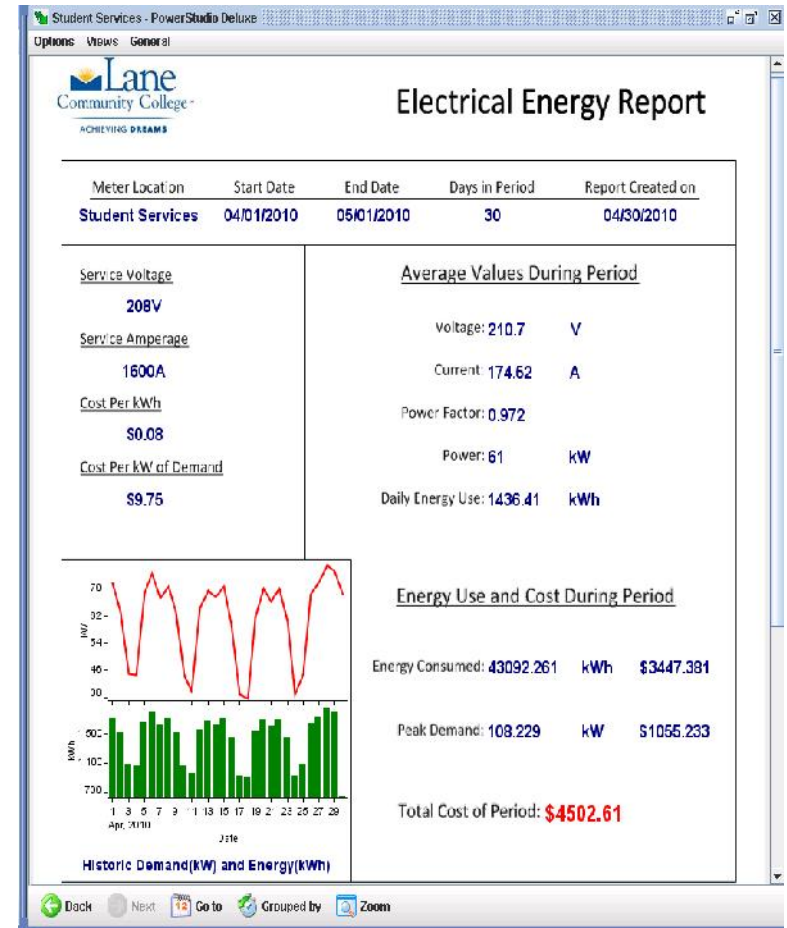
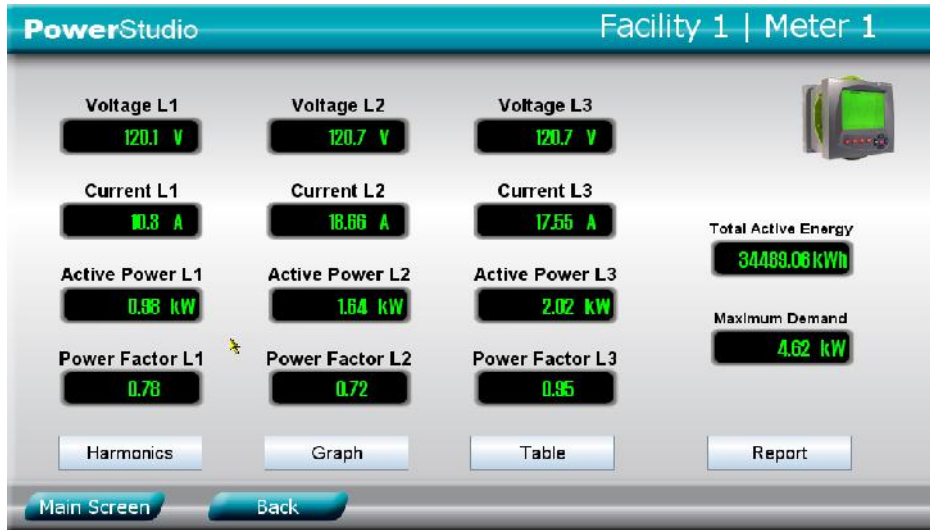**E**nergy usage allocated based on actual consumption

# What can you Monitor ?

– Utilities
  - electrical energy
  - water
  - gas

– Solar systems
  - AC & DC measurements
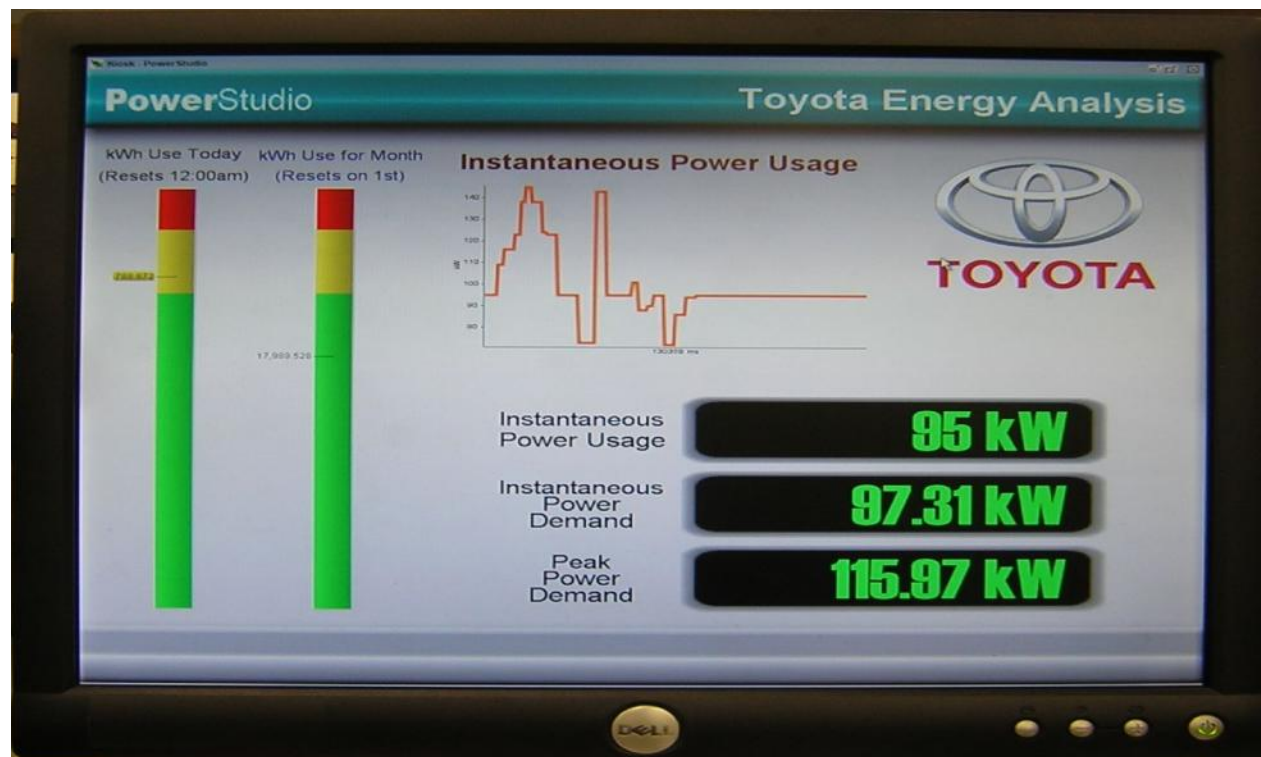
– Other
  - Weather data
  - steam

# Real-time data, Reports and Graphs

# Kiosk / Information Monitors

Customizable Kiosks and/or informational flat screen monitors are ideal ways to inform customers and/or employees of performance targets and energy reduction goals achieved

# Contact Details

| | |
|---|---|
| Toll-free | +1 (877) PQ-SOLNS (777-6567) |
| Telephone | +1 (303) 805 5252 |
| Facsimile | +1 (425) 799 4780 |
| e-mail | john@measurlogic.com |
| Website | www.measurlogic.com |
| Mailing Address | 7334 S. Alton Way, Suite 14M<br>Centennial, CO 80112 |