Energy Monitoring and Visualization Utilizing FactoryTalk® EnergyMetrix™
Agenda

- Energy Management
- Product Overview
- Information Architecture
- Hands on Lab
Key Features of Energy Management

- Cost Allocation
- Shadow Billing
- Power Quality
- Benchmarking
- Improve Uptime
- Comply with Government Requirements
- Monitor Emissions
Energy Management Application Cycle

Analyze
- Negotiating Better Utility Rates
- Managing Production Schedules
- Determining Actual Manufacturing Costs
- Driving Simple Behavioral Changes

Monitor
- Understanding What-When-Where Energy is Consumed

Optimize
- Efficient Energy Usage
- Improving Equipment Performance
- Handling Power Outages

Reduce Energy Cost, Waste, Emissions and Downtime
The PowerMonitor 5000 is the next generation of high-end, power quality metering product from Rockwell Automation. This new family leverages new technology and capabilities to capture an exhaustive amount of data about your energy network.

- Monitors 4 voltage and 4 current channels for every electrical cycle
  - 3 Phase (WYE, Delta, Open Delta, Delta High Leg), Single Phase Metering
  - 1024 data points across 8 channels every 12-17 milliseconds
  - Revenue Metering Accuracy (0.2%) 
  - Internal webpage for configuration and data review
  - Option for two communications ports
  - 4 digital inputs for WAGES data collection
  - 4 outputs for connection to SCADA or control systems
  - Configurable setpoints, alarms, data and energy logs
  - Calculates over 6,000 parameters every cycle
  - Virtual Wiring Correction
  - Waveform Capture [M6 and M8 Models]
  - Measures up to the 127th Harmonic [M6 and M8 Models]
  - Sub-Cycle Transient detection & Flicker [M8 Model]
New stuff – PowerMonitor 5000

- USB web page for initial setup
- Native EtherNet/IP communications
- Wiring diagnostics and virtual wiring correction
- Component PanelView for display of up to 3 PowerMonitor 5000 meters
- FactoryTalk Live Data
- Logix AOP with symbolic tags
- Multiple account security
FactoryTalk EnergyMetrix

- Plant-level energy information system
  - Web interface – only a browser required
  - Resides on MS SQL maintaining historical energy data
  - Logs data from energy data collectors
  - Helps visualize energy use patterns and identify cost saving opportunities as well as driving accountability
  - Utilize standard FactoryTalk functionality
  - Reports on demand or auto-run, emailable
    - Billing, consumption, demand analysis
    - Cost allocation, power quality, and trending
    - Custom reporting
  - Alarms logged in web page, emailed, texted
  - Real time power monitor viewer

Web-based tool for monitoring and acting on energy information
New stuff – FactoryTalk EnergyMetrix

- **PowerMonitor 5000**
- **FactoryTalk Live Data browsing**
- **PowerQuality Event and Capture logging**
- **Custom Excel reports**
Energy Information Architecture

FactoryTalk EnergyMetrix Server

Other Business Servers

Manager Workstations

Engineering Workstations

Wide Area Network

Local Area Network

3rd Party Power Monitors

OPC Server

Allen-Bradley PLCs & Sensors

3rd Party PLCs

Allen-Bradley Power Monitors

Water, Air, Gas, Electricity Steam,

Instrument Air, Process Air, Fuel, Nitrogen and Effluent Measurements
Hands on Lab

- Part 1 – PowerMonitor 5000 (25 minutes)
- Part 2 – FactoryTalk EnergyMetrix (35 minutes)
- If you finish the lab early, explore some of the other reports that are available within FactoryTalk EnergyMetrix
- Things to note:
  - Page 8 – step 6, log out of the USB security account before opening the 192.168.1.50 web interface
  - Page 8 – step 8, log out of the 192.168.1.50 web interface and log in to the USB Admin account on the USB web interface to disable security
  - Page 12 – change the Nominal_System_LL_Voltage to 120V before selecting Apply Changes
  - Page 13 – one knob adjusts current and the other adjusts voltage.

Ask questions, we are here to help!

12 workstations are in this Lab. Two seats per Lab station
Thank you for participating! Questions?