**MicroGrid Monitoring and Control**

**PRODUCT OVERVIEW**
ELM Energy’s FieldSight MicroGrid solution uses best in class hardware in combination with sophisticated backend architecture and communication interfaces to enable the operator to efficiently monitor and control their various MicroGrid assets from a single portal.

**KEY FEATURES**

- **Generation Optimization and Balancing**
  - Automatically maximize the use of renewables in generation profile
  - Optimize operation of traditional fossil based generation
  - Reduce total operating costs and Green House Gas Emissions

- **Increased Power Reliability**
  - Maintain a consistent power source no matter the status of “grid” power
  - Easily create “Islanded” MicroGrid’s when required
  - Manage power demand to match available power supply reducing grid instability

- **FieldSight Energy Insight**
  - The FieldSight portal gives MicroGrid operators the ability to make educated decisions and validate and track activities
  - Regardless of equipment type, monitor and control all MicroGrid assets in a single portal

**APPLICATIONS**

- **Off the Grid MicroGrid Installations**
  - Create consistent “islanded” power when utility power isn’t available
  - Maximize the production of available renewables
  - Increase power reliability through complete MicroGrid monitoring and control

- **Grid-Tied MicroGrid Installations**
  - Maintain a consistent power source no matter the status of utility power
  - Use On-Site Generation when utility power is most expensive
  - Maximize the return on investment from On-Site Generation

- **Distributed Generation**
  - Create a revenue source from your Generation assets by selling back to the Utility
  - Autonomous dispatch of generation assets when economics justify operation
**MONITORING/CONTROL OVERVIEW**

- Based off of proven National Instruments cRio Platform
- Secure Linux based Real Time Industrial PC
- ModBus/CAN Bus/SCADA Communication
- Color Touchscreen
- Ethernet / 3G / Wifi / Satellite communication
- Up to 128 Independent digital Analog Inputs / Outputs

**FIELDSIGHT MICROGRID TECHNOLOGY**

**Hardware**
- Secure Linux based Real Time Industrial PC
- 667MHz to 1.33 GHz Dual Processors
- Onboard FPGA up to 85,000 logic cells, 40MHz Base Clock
- -40 C to 70 C operation (without any required additional cooling)

**Asset Connectivity**
- ModBus (485 / TCP)
- CanBus
- Other Existing SCADA systems
- Analog
- Digital
- SOAP / REST Web Services
- Dry Contacts
- ODBC (Databases)

**Communication**
- 3g/4g cellular
- Satellite
- Industrial WiFi
- LandLine / Ethernet
- Serial

**User Interface**
- Cabinet Mounted Touch Screen
- Web Portal
- Mobile Portal
- API to existing solutions/database

**MicroGrid Control**
- Remote Start and Stop
- Automated Intelligent onboard Control (FPGA driven)
- Automated onboard Diagnostics

**SECURE WEB BASED PORTAL**

- 24/7 Access
- Real Time Run Status
- Alarm Notifications
- Historical Reporting
- Diagnostic Information
- Service History

**HARDWARE**
FIELDSIGHT ASSET DISPATCH/CONTROL MATRIX

FIELDSIGHT WEB PORTAL

FIELDSIGHT WEB PORTAL

- Web and Mobile Friendly
- Create custom alarms - Voice, SMS, or Email
- Virtual Dashboards (Installed or hosted)
- Integration to existing databases – SQL, PI, Local, XLS outputs
- Ethernet / 3G / Wifi / Satellite communication

For more information contact:
Chase Sanders, ELM Energy, LLC. • http://info.fieldsight.com • Csanders@elmllc.com • 214-326-7259