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**SUMMARY**

The electric industry is poised to make the transformation from a centralized, producer-controlled network to one that is less centralized and more consumer-interactive. An automated, widely distributed energy delivery network, the Smart Grid will be characterized by a two-way flow of electricity and information and will be capable of monitoring everything from power plants to customer preferences to individual appliances. It incorporates into the grid the benefits of distributed computing and communications to deliver real-time information and enable the near-instantaneous balance of supply and demand at the device level.

Integrated Communications Sites are pivotal in the deployment of any Smart Grid system as millions of residential and commercial smartmeters will need to be constantly connected and monitored at the back office utility. The LinkUPS power system is part of the foundation to house all communication equipment at collector/concentrator sites providing clean power (AC backup or Solar). TESSCO offers the expertise and experience to design collector sites and smart grid networks to ensure efficient, reliable and always-on data communications.

**TYPICAL APPLICATIONS**

- Smart Grid Collector Sites
- Distribution Automation
- Distributed Generation
- Remote Monitoring

**REAL WORLD EXAMPLES**

**Situation:** A major utility company needs to monitor reclosure readings from several sub stations.

**Problem:** These sites have no shelters for communications equipment.

**Solution:** Locating a complete LinkUPS power system on a small pipe near the reclosure enabled the utility to power and secure their communications equipment on-site with access to their RTU.

**Situation:** A utility company needed to collect Smart Meter information from residential customers but needed collector sites to handle the traffic.

**Problem:** The collector communications equipment locations have secondary AC power but the equipment needs to be sheltered and backed up for a minimum of 8 hours on utility poles.

**Solution:** Locating a LinkUPS™ solution designed for smart grid equipment as well as backhaul on either a private or public network provides 12VDC power with 8 hours of backup for the entire site—in a utility pole mounted package.

**Situation:** A rural co-op utility company operates 60,000 smart meters throughout Northern Colorado in rural areas.

**Problem:** Some of the sites have AC power available and some do not. However, all the sites need to have safe enclosure systems offering primary or back-up power.

**Solution:** By leveraging the consistent design of both Kyocera Solar Oil and gas solar systems and the new LinkUPS™ outdoor battery back up power systems, the company was able to have a single power platform for all their sites which dramatically cut service time and spare parts inventories.

**ADDITIONAL CONSIDERATIONS**

- Is AC power available at the site? If so, what is the voltage?
- Does the customer need to mount a radio and RTU in the enclosure?
- What is the max power consumption of all the site equipment?
- What voltage does the equipment require ie 12VDC, 24VDC, 48VDC.
- What will happen if AC power fails?
- How long should the equipment operate in case of utility power failure?
- Does the power system need to be Class 1 Div 2 approved?
- How will the equipment and cabinet be grounded?
- Is surveillance equipment required to prevent copper theft and vandalism?

**PRODUCTS**

- Complete solar power systems for remote monitoring
- LinkUPS™ outdoor back up power systems
- SCADA radios
- Cellular Modems
- Battery monitoring/SNMP web card
- Optional equipment shelves and backplanes
- Grounding and surge protection
- Jumpers and cable
- Lightning protection
- Antennas (Yagi/Omni)
- Tower sections
- Pipe sections
- Site security equipment
- RF and safety signage
- Test equipment
- Installation tools and supplies
- Power and backup solutions
- Lighting