Smart Grid and Smart Meters

KPUB does not have any smart meters installed on our system. About 20% of our meters are capable of being read remotely. The remote read metering system we have has been in place for well over ten years. These meters either send their reading over the power line back to our substations or they send the reading wirelessly to a handheld unit that the meter readers carry when they take the monthly readings.

KPUB has begun the preliminary steps of evaluating different "smart grid" applications and technologies. To perform the first step of the evaluation, KPUB has engaged the Smart Grid Research Consortium (SGRC) to put together an investment analysis for smart grid applications. SGRC was originally organized as a Texas A&M research service program in 2010 and has transitioned to an independent organization. SGRC has performed investment analyses for at least 15 other utilities, including several in our region. Their work for KPUB will take advantage of their previous work and existing models.

The evaluation will include the following technologies and applications:

- **Smart Meters** record electric consumption in shorter intervals (typically an hour or less) and communicate the interval data back to the utility at least daily. Two-way communications is a key component of smart metering. Some benefits of smart metering include:
    - Automatic outage detection and restoration
    - Providing up to date, detailed usage information to customers to help them make more informed decisions to conserve energy and reduce costs
    - More efficient use of existing resources and reduction in the need for new power plants as customers reduce load and move load to off peak periods
    - Opportunity for customers to take advantage of time of use rates to further reduce energy costs
    - Reduced on-site visits by utility personnel for meter reading purposes
- **Distribution Automation** involves the installation intelligent switches, protective equipment, and monitoring devices on the utility's distribution lines to allow the system to be operated more efficiently and reliably.
- **LED Lighting and Advanced Lighting Control Systems** may result in reduced energy costs for customers and lower maintenance costs for the utility.
- **Load Control** allows the utility and customers to reduce load during periods of high demand (and high prices) across the state. This produces costs savings and grid reliability benefits. Any load control program considered would be completely voluntary. Loads such as air conditioners, water heaters and pool pumps are good candidates for load control; well designed programs result in savings to customers and do not impact customers otherwise.
- **Customer Engagement Applications** such as web, tablet, and smart phone applications to provide bill reminders, contact customer service, provide energy usage, manage payment, report outages and other technologies and programs like programmable communicating thermostats and flexible pricing programs including time of use, critical peak pricing, and pay as you go may improve customer service.

- **Meter Data Management Applications** will be required to manage the data supplied from smart meters and distribution automation equipment to help KPUB make decisions to restore outages more quickly and operate the distribution system in the most efficient way possible.