



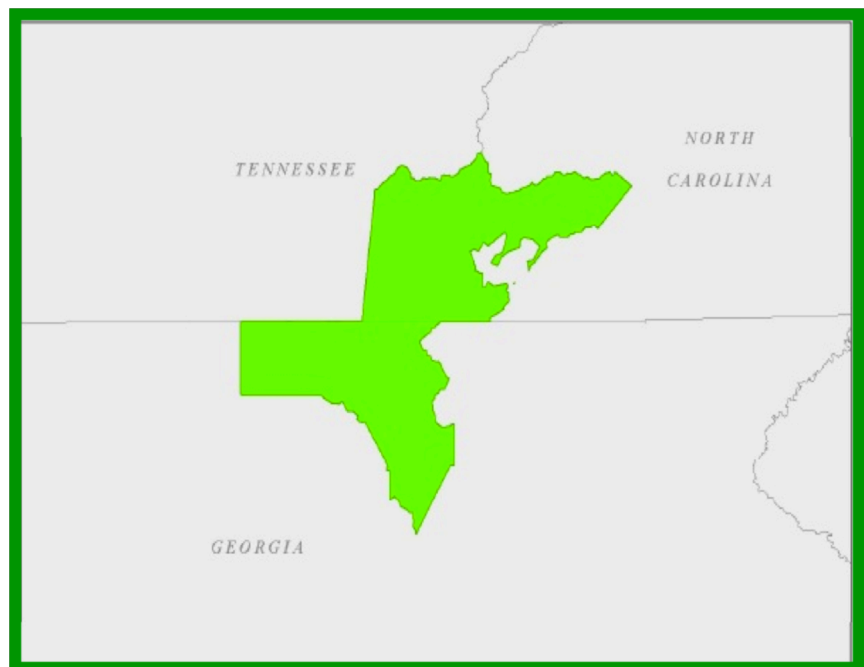
### Smarter Meters Help Customers Budget Electric Service Costs

Tri-State Electric Membership Cooperative (Tri-State) is a distribution rural electric cooperative that primarily serves more than 12,000 rural customers, many of whom have low-incomes living at or near poverty level across a multi-state region (see map). Under their smart grid project, Tri-State has replaced conventional electromechanical meters with solid-state smart meters and implemented advanced electricity service programs in order to give customers greater control over their energy use and costs.

#### New Service Programs Benefit Customers

With a total budget of \$2.4 million, funded partially with over \$1.1 million in Recovery Act funding from the U.S. Department of Energy (DOE), Tri-State has completed installation of 15,000 smart meters and supporting advanced communication infrastructure. Prior to the Federal funding, the company was able only to replace meters as they failed in the field. With the newly installed smart metering system, Tri-State is able to provide several new service options, including: 1) two-way communications which allow customers to monitor their electricity consumption and take steps to better manage their electric bills; 2) a voluntary, pre-payment program that replaces high deposit costs with affordable new service or reconnect fees; and 3) a web portal that provides daily alerts to help customers save money by making informed decisions about their electricity usage.

“Our customers manage their daily expenditures closely,” said Tri-State General Manager Stacy Chastain. “The smart grid programs we can now offer produce real cost savings and make an important difference to the families we serve.”



As a distribution-only utility, Tri-State’s power provider is the Tennessee Valley Authority (TVA). TVA introduced wholesale Time-of-Use (TOU) and seasonal demand and energy rates for their distribution

Tri-State’s service area includes parts of Fannin County, Georgia; Polk

## Case Study – Tri-State

utilities in April 2010. TOU and seasonal rates allow customers to better manage their electricity usage by providing information about rate changes at different times of day or by season. As a result of installing its smart metering infrastructure, Tri-State expects to be able to offer TOU rates to its customers in 2012.

### **Customer Empowerment**

Tri-State's new, optional pre-payment program allows customers to buy the amount of electricity they can afford and receive daily feedback on their account balance. This service option has been immediately embraced by Tri-State's customers, with an average of 30 customers signing up each month. According to Tri-State's Information Technology Director David Lewis, research indicates daily reports help residential consumers reduce their electricity consumption by an average of ten percent. "People feel empowered that they have some control over their electric bills," Lewis said. "Instead of waiting until the end of each month and dreading how high the bill might be, Tri-State's customers can track their usage daily and make lifestyle changes to reduce costs."

The Tri-State project also has helped customers detect and troubleshoot faulty appliances and equipment. For example, one customer's daily usage report indicated an unexplained and dramatic increase in electricity usage. The customer called Tri-State, who suggested the well pump might be malfunctioning. An inspection revealed a crack in the water line was spilling water back down the well, causing the pump to operate continuously. The water line was replaced, and the customer's electricity use immediately returned to previous levels. Without the daily report, the customer would only have become aware of the increase in electricity consumption upon receiving her monthly electric bill.

### **An Accelerated Timeline Means Better Service**

Federal funding for the smart meter system installation enabled Tri-State to achieve its smart meter system goals about ten years sooner than originally planned. "The DOE grant has been an unexpected Godsend for us," said Chastain. "We had planned on putting in new smart meters one at a time as each of the current aging electromechanical meters failed." The meter replacement need at the company had been escalating, as the existing meters were failing at an increasing rate. Tri-State set and kept to an ambitious installation schedule replacing all of its meters by February 2011 and immediately making them operative since the new smart meters are compatible with the communications infrastructure.

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### Reliability...and Yet More Savings

Tri-State's smart meters also have improved the company's operation and maintenance costs by providing better system information and tools to improve outage management. Before installing the new meters, Tri-State dispatched a technician each time a customer requested new service. The technician went to each new service site to manually turn on the power and inspect the existing meter. Additionally, the company also could not address a problem until an existing customer called to complain; at which point, a site visit was once again necessary.

With the new metering system, the company knows instantly when and where outages occur. The Tri-State Operations Center can initiate or terminate service or restore power remotely. As a result, Tri-



A Tri-State technician checks a newly installed next-generation smart meter.

State spends less money to provide more reliable service and ultimately passes along the savings to its customers. Tri-State has proven that utilities in rural communities can be leaders in providing cutting edge services that result in real cost savings to residential consumers.

### Learn More

The American Recovery and Reinvestment Act of 2009 provided DOE with \$4.5 billion to fund projects that modernize the Nation's electricity infrastructure. For more information visit [www.smartgrid.gov](http://www.smartgrid.gov) or [www.oe.energy.gov](http://www.oe.energy.gov). There are five recent reports available for download:

- *Smart Grid Investment Grant Progress Report, July 2012*
- *Demand Reductions from the Application of Advanced Metering Infrastructure, Time-Based Rates, and Customer Systems – Initial Results, December 2012*
- *Operations and Maintenance Savings from the Application of Advanced Metering Infrastructure – Initial Results, December 2012*
- *Reliability Improvements from the Application of Distribution Automation Technologies and Systems – Initial Results, December 2012*
- *Application of Automated Controls for Voltage and Reactive Power Management – Initial Results, December 2012*