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Report: Tri-State, electric cooperatives can improve resource planning

Focus on efficiency and energy diversity would protect ratepayers

An analysis conducted by a leading electric utility consultant says that Tri-State Generation and Transmission has an opportunity to address imbalances in its resource mix for generating electricity for the coming decades as a result of the rejection of its proposed coal-fired power plant in Kansas.

Tri-State's resource plan, which is centered around its proposed 700-megawatt coal-fired power plant near Holcomb, Kan., and which includes only token amounts of energy efficiency and renewable resources, "does not increase either the diversity or flexibility of resources," analysts at Summit Blue Consulting concluded (**See Figure 1, below**). Considering the potential costs of carbon regulation and increasing construction costs, the analysis says, the imbalances in Tri-State's resource plan make it "highly vulnerable to changes in the cost of electricity generated by coal."

The report, "A Commitment to Serve: A Cooperative Board Member's Guide to G&T Resource Planning," was commissioned by Western Resource Advocates and is a primer for electric cooperative decision-makers on how resource plans are put together. In order to protect member-owners from the risks of bad decision-making, the report says, board members "need a working understanding of the resource planning process."

For cooperative board members, who already are a step removed from the technical aspects of planning and forecasting, that is more challenging than ever. Demand for power is on the rise in the rapidly growing West. The regulatory environment is evolving quickly with initiatives to reduce global warming pollution moving forward at the state, regional and national levels. New clean-energy technologies also are improving and becoming more cost-competitive, offering planners more supply alternatives to meet demand.

"Add to these elements the mounting evidence that energy efficiency is often the cheapest and most reliable resource available, and the challenges involved in optimizing a resource plan for the future become more complex than they have been in the past," said Dr. Daniel Violette, a principal at Summit Blue.

Summit Blue's analysis looks at three key components of the resource planning process: factors affecting the cost of the plan, in particular, electric load forecasting; the resource options available for meeting demand; and how those resources are evaluated in the context of different assumptions about the future. As part of its analysis, Summit Blue reviewed these factors with respect to Tri-State's current Integrated Resource Plan, which it filed with the Western Area Power Administration in February. The review uncovered a number of ways in which assumptions that were built into the planning process led to a financially risky plan.

For example, unlike most utilities, Tri-State bases its plan on a forecast of high growth in future electricity needs. Most utilities base their resource plans on mid-range growth estimates. Tri-State also built in an additional 15 percent reserve margin as "extra padding" to protect against unanticipated growth in demand

for electricity. "The resulting estimate increases the possibility that too much capacity is built to meet the expected demand, which increases the cost to the customers," Summit Blue concluded.

Already this year, Tri-State's growth forecasts are significantly off. Demand rose system-wide only 0.6 percent in the first seven months of 2007, while Tri-State had predicted 3.9 percent growth.

Summit Blue's analysis also found that Tri-State's approach of relying on each of its 44 member cooperatives to forecast their own energy needs may lead to overestimates of electricity growth for the system as a whole. This is because the costs of building new energy generation facilities such as coal-fired power plants are shared by each of Tri-State's member cooperatives. Spreading out those costs reduces the cost penalty an individual cooperative would pay if it overestimates future demand.

This is likely to be especially true for the large industrial sector, where Tri-State forecasts 110 percent growth in large commercial/industrial users such as manufacturing and oil and gas drilling operations, three times more growth than forecasted for residential and small commercial/industrial sectors. (**See Figures 2 and 3, below**). "Soaring growth in one sector without supporting growth in the others," the report says, "should raise a red flag" for cooperative board members since their ratepayers will end up paying the high costs of building new generation.

Circumstances have changed dramatically for Tri-State since it filed its IRP in early 2007. On Oct. 18, the Kansas Department of Health and Environment rejected the air permit for the Holcomb facility, a multi-billion dollar project that included a second 700-megawatt plant from another power provider. The good news, said John Nielsen, the energy policy director at Western Resource Advocates, is that "Tri-State now has a fantastic opportunity to rethink its approach to how it's going to provide customers with electricity."

The Summit Blue analysis recommends that Tri-State and its member cooperatives consider several options to make its resource mix stronger and more dynamic:

- Introduce more energy efficiency to help delay a decision on whether new large resources, such as a coal-fired power plant, will be needed until future global warming policies are set.
- Develop better financial and structural relationships with member cooperatives to guide development of local efficiency measures as a resource for the whole system.
- Encourage member systems to engage in local resource planning to accurately assess the size and nature of local efficiency and renewable resources.
- Utilize the abundant wind resources available in Tri-State's service territory – Colorado, New Mexico and Wyoming – to help offset the potential loss of coal-fired capacity.
- Convert existing natural gas peaking plants to combined-cycle units to increase generating capacity and operational efficiency.
- Explore technologies such as coal gasification with carbon capture and storage, large central solar, geothermal and combined heat and power.

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The full report is available online at: www.summitblue.com

Summit Blue Consulting provides professional consulting services to utilities, energy companies and regulatory bodies nationally and internationally on issues such as: demand- and supply-side planning; resource assessment; energy-efficiency programs; and load management.

Western Resource Advocates is a nonprofit conservation organization dedicated to protecting the Interior West's land, air, water and climate.

Figure E-1. Tri-State's Resource Mix, 2007 and 2012

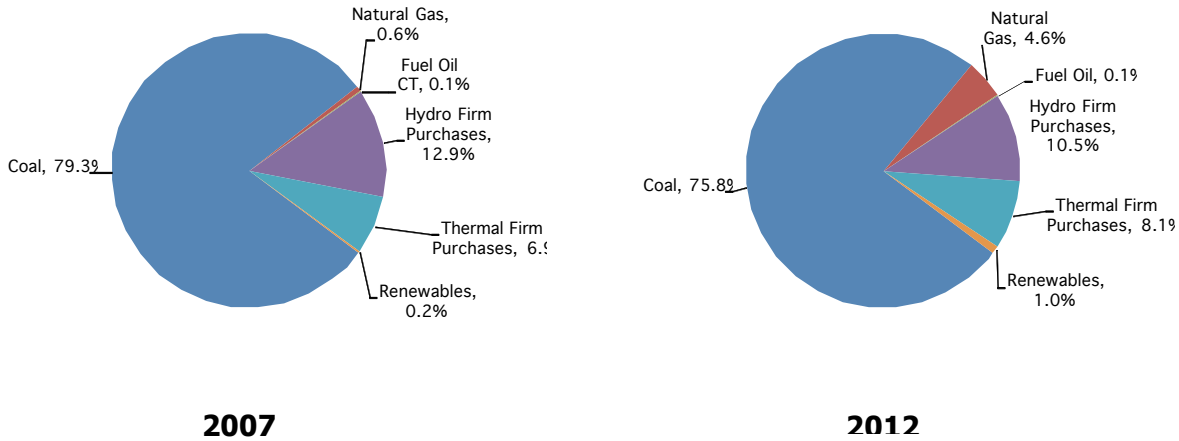

Figure 2. Overall Projected Increase in Energy Sales by Sector, 2005-2015

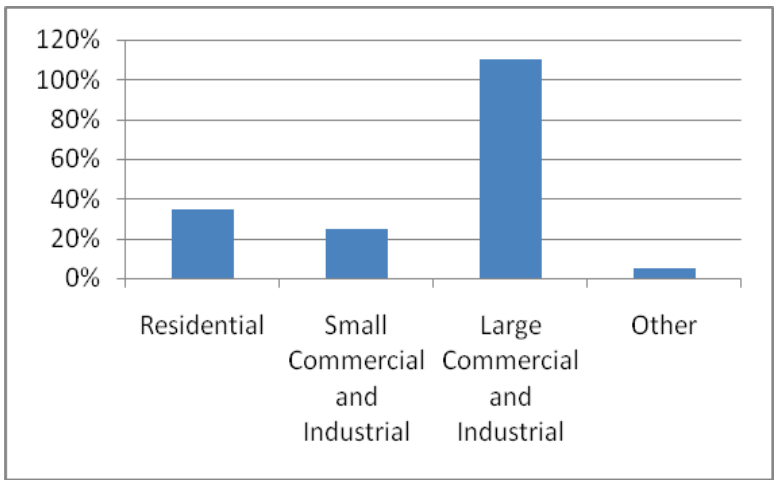
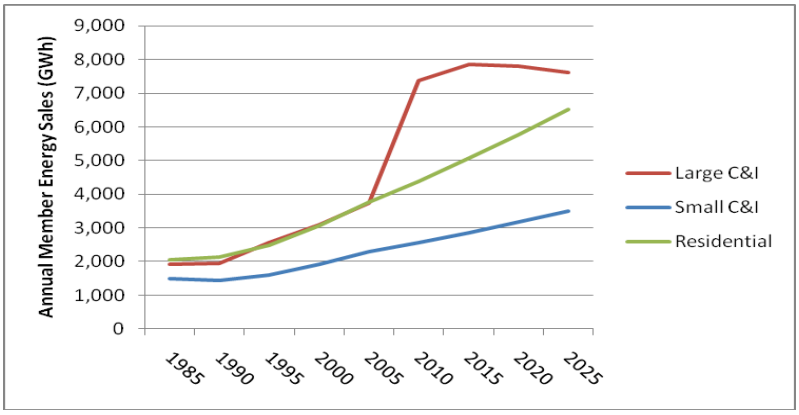
Figure 3. Tri-State's Actual Historical and Predicted Annual Energy Requirements by Sector