



Case Study: Responsible Energy Plan

Overview

The following case study reviews how Tri-State Generation and Transmission Association include beneficial electrification as part of their responsible energy plan.



Cooperative Profile

Tri-State Generation and Transmission Association (Tri-State) is one of the largest G&T cooperatives in the United States, with 42 utility distribution cooperative and public power district members and three non-members served by 5,665 miles of transmission lines in Colorado, New Mexico, Nebraska and Wyoming. Tri-State's utility members deliver the electricity to more than one million consumer-members in an area covering nearly 200,000 square miles as shown in Figure 6.1. Overall system peak demand topped 3,000 megawatts (MW) in 2019.

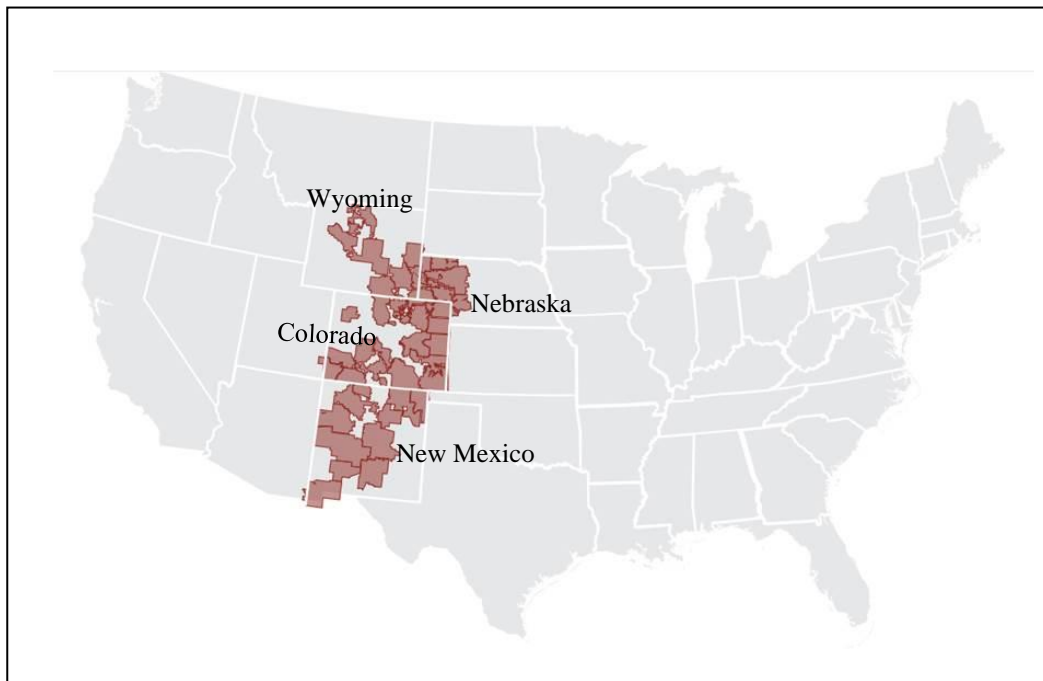


Figure 6.1: Areas served by Tri-State member cooperatives.

Map courtesy of Tri-State

Adoption of Beneficial Electrification by Tri-State

As Tri-State worked on developing its Responsible Energy Plan (REP) in 2019, it expanded its planned areas of emphasis to serve changing member needs. Tri-State had been pursuing energy efficiency programs with its member systems for many years and beneficial electrification seemed a natural extension. While each of the four states in which Tri-State members operate has different policy goals and regulatory frameworks, a strong signal was emanating from member systems. In July 2019, the G&T's member CEOs came to Tri-State with an idea—that electrification could help them realize flexible load growth opportunities such as electric vehicle (EV) charging. The benefits would include more efficient use of generating resources, reduced costs and lower emissions. And with plans to phase out coal-burning generation in Colorado and New Mexico, electrification was seen as an opportunity to deliver the benefits of cleaner power to the consumer level. In fact, the G&T expects that by 2024 more than 50 percent of energy consumed by its members will have come from renewable energy resources. According to Matt Fitzgibbon, who moved into the newly created position of Beneficial Electrification Manager in 2019, Tri-State managers ultimately asked themselves, “Who are we here to serve?” The answer? “Our mission is to create value for our member systems.” Beneficial electrification became an integral part of the 2020 REP, as shown in Figure 6.2.



Figure 6.2: Highlights of Tri-State's 2020 Responsible Energy Plan. Graphic courtesy of Tri-State.

Inclusion of beneficial electrification in Tri-State's REP in early 2020 was accompanied by a powerful statement of intent:

“Over the past year, we’ve set goals to reduce greenhouse gas emissions associated with wholesale electricity sales in Colorado by 80 percent by 2030, and to reduce wholesale rates to our members by at least 8 percent by the end of 2023. With our members, we’ve developed new options for member flexibility to support local renewable energy development and energy self-supply. And we’re just getting started. We have a vision for the future in which the benefits of an economy-wide energy transition – from cleaner air to economic opportunity to a greener grid – are shared with everyone. Our plan will continue to evolve to

make our vision a reality. We can achieve an energy transition that allows us to be responsible to our members, our communities, our employees and our environment.”¹

In October 2019, Tri-State joined the national Beneficial Electrification League (BEL), NRECA, Natural Resources Defense Council and others in establishing BEL’s first state chapter, whose mission is to advance beneficial electrification in Colorado. Additional participants include the Colorado Energy Office, the Colorado Rural Electric Association and the Southwest Energy Efficiency Project. Beneficial electrification was off and running on Tri-State’s home turf.

Beneficial Electrification Programs

EV charging incentives and support are at the heart of Tri-State’s beneficial electrification initiatives. Nearly \$2 million has been committed to extend the EV charging infrastructure throughout members’ service areas with \$45,000 allocated to each member system to promote EVs and EV solutions in rural areas. Moreover, the impact of beneficial electrification coupled with energy efficiency and demand-side management is being studied by BEL of Colorado. Member systems interested in promoting beneficial electrification can choose from Tri-State’s suite of programs and set their own rebate levels to reflect local requirements. They can draw on the following beneficial electrification programs:

- Rebates to install EV charging stations, from Level 2 to fast-charging stations. Some member systems are setting up in-home charging programs.
- EV educational programs that inform consumer-members about EV performance benefits, driving range and recharging time, among other things. Some distribution systems offer an online savings calculator and walk-through of the process of selecting, purchasing and operating an EV.
- Incentives for purchases of outdoor electric power equipment such as lawn mowers, weed eaters, and pressure washers. Electric forklifts are also covered.
- Rebates for conversion from propane and natural gas heating systems to air-source or ground-source heat pumps and for conversion to air-source water heaters.

One challenge that Tri-State and its members face is countering misperceptions in the marketplace about the effectiveness of heat pumps in a cold climate. Fitzgibbon says that consumer-members provide feedback that contractors they have approached tell them “heat pumps don’t work here.” To disprove this, Tri-State has installed five cold-climate heat pumps as a test project. Going further, the G&T is rolling out a training program for contractors in the region and plans to offer a \$250 per installation contractor incentive.

Fitzgibbon notes that promoting EVs can be fun. In one particularly popular program, Tri-State and its members hosted ride-and-drive events that allowed consumer-members to drive EV test cars and get the feel of the road, “boots-on-the-ground” experience as Fitzgibbon calls it.

Tri-State owns a pair of Tesla Model 3 EVs, a Model Y, a Chevrolet Bolt and a Chrysler Pacifica plug-in hybrid for drive-testing. Fitzgibbon says more than a thousand consumers have taken part so far.

¹ For more information, visit <https://www.tristategt.org/responsible-energy-plan>.

**Beneficial electrification in the words of Loren Howard,
CEO of Tri-State Member
San Luis Valley Rural Electric Cooperative (REC)**

“In the last year or so, the term “beneficial electrification” has become an ever-increasing, popular phrase. It seems to me that various interest groups have their own interpretation of the meaning of the phrase. So, let’s explore the various interpretations and see if there is a consensus to be found.

Starting with an easy topic – electric vehicles. Promotion and acceptance of electric vehicles seems to have an awkward start. Driving around metro areas like Denver and Colorado Springs, spotting an electric vehicle is a regular occurrence. That is not quite so true here in the San Luis Valley. Electric vehicles have the potential to significantly reduce air emissions which would seem to fit the idea of beneficial electrification. Driving through Denver on a weekday with a temperature inversion makes it easy to see the benefit of reducing automobile emissions.

There are some groups who would say that this beneficial electrification is only beneficial if the electricity to charge the vehicle comes from a renewable resource such as solar or wind. Renewable electric generation has come a long way and represents a significant fraction of electric generation of most utilities including Tri-State and REC. At least a reasonable portion of electric generation used to recharge electric vehicles is coming from renewable sources.

Another, more recent development that is being suggested as beneficial electrification by some governmental entities in particular is considering reducing, and maybe prohibiting, using natural gas or propane for domestic use in new construction. This would then push future domestic energy use to electricity. The Colorado Public Utilities Commission currently has a proceeding entitled “Investigation Into Retail Natural Gas for GHG Emissions,” Proceeding Number: 20M-0439G. This investigation will look into how domestic natural gas usage is impacting greenhouse gas emissions. Cities in California have already banned domestic use of natural gas in new construction.

Electricity is an easily distributed energy source, generated in many different ways. Will it pervasively replace fossil fuels used in our everyday lives? Will fuels such as natural gas, gasoline, diesel and propane ultimately be phased out? I think one of the key developments needed to do that will be finding an electric generation source that is of utility scale and controllable to support the uncontrollable renewable generation sources. No doubt, there are other interpretations of the term “beneficial electrification,” but a common theme in all the definitions would be replacing fossil fuels with electricity.”

For further information, visit: <https://www.slvrec.com/beneficial-electrification-loren-howard-0>

Program Delivery and Marketing

With a current-year budget of \$3.5 million for energy efficiency and beneficial electrification, Tri-State appreciates that its programs must be carefully designed and marketed to reach the level of impact anticipated in its 2020 REP and realize value for members. One of the most important aspects of this is to ensure that low- and moderate-income consumers have equal access to the opportunities. To facilitate this greater access and to ensure that the technologies being targeted are adequately represented in the marketplace, Tri-State is involving manufacturers, installers, regulators and end-use consumers directly in the discussions it has with its member systems. Meetings have even been held with large corporate customers to evaluate the possibility of converting to 100 percent electric processes. For Fitzgibbon, a key question is “How do we talk about beneficial electrification?” His recently reconstituted department recognizes that energy efficiency, demand-side management and beneficial electrification must go hand-in-hand. “This is not new to our industry,” he says. “What’s new are the expanded benefits. The generation mix is cleaner and electrification can help us create downward pressure on rates. We need to deliver these benefits to members in a carefully considered way.”

Lessons Learned

Tri-State’s experience indicates that beneficial electrification is likely to become a strategic contributor in future plans that save consumer-members money while lowering emissions and optimizing the use of available energy resources. Its Responsible Energy Plan contains a suite of tools that will make these outcomes possible, if not likely. And with its emphasis on beneficial electrification, Tri-State is reinforcing its role as trusted energy advisor to its member systems and their consumer-members.

This Case Study is part of NRECA’s report: [Case Studies in Beneficial Electrification – Electric Cooperatives Develop Programs to Build Consumer Value and Meet Climate Change Goals](#), written by Eric Cody, Cody Energy Group, codyenergygroup@gmail.com.