

Case Study: Using Virtual Reality to Connect Face-to-Face with Members



It may sound counterintuitive to use virtual reality (VR), a video game-type technology where viewers interact with a digital environment, to foster face-to-face conversations, but that is exactly what Tri-State is doing as part of their communications campaign highlighting their renewable energy efforts.

Cooperative Profile

Tri-State is a Colorado-based Generation and Transmission cooperative (G&T) with 46 members, including 43 electric distribution cooperatives and public power districts across Colorado, New Mexico, Wyoming, and Nebraska (see Figure 1). As one of the country's largest G&Ts, Tri-State supplied 16.4 million MWh to its members in 2018. According to the G&T, by 2024, 50 percent of energy consumed within the cooperative will come from renewable resources — biomass, hydroelectric, wind, and solar.

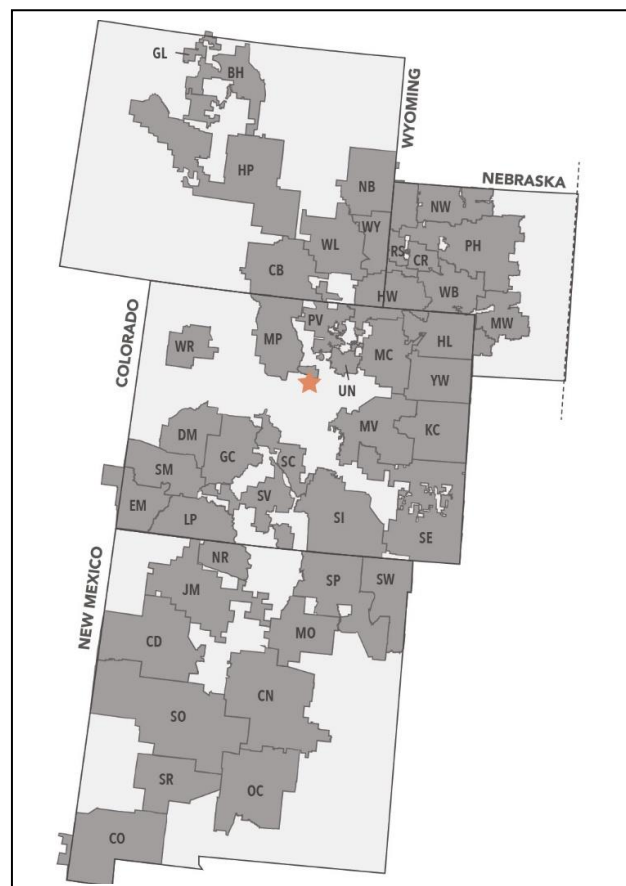


Figure 1. Tri-State Territory Map.¹
Image courtesy of Tri-State.

In addition to generating and transmitting electricity, Tri-State offers several related services to its member cooperatives – energy efficiency programs, pilot programs on new technologies, student and teacher education, and research and development projects with national partners, including the National Rural Electric Cooperative Association (NRECA) and the Electric Power Research Institute (EPRI).¹

Program Background

Tri-State’s *Generating Possibilities* campaign included television, print, digital, social media, and radio advertising to raise awareness of its renewable energy portfolio, but the G&T wanted to offer something more. Many Tri-State consumer-members were expressing a growing interest in renewable energy. Furthermore, Colorado and New Mexico, where the majority of Tri-State’s members are located, both recently passed aggressive renewable energy mandates that apply to electric cooperatives. According to Amy Rosier, Communication and Marketing Manager at Tri-State. “We wanted to offer a fun way to interact [with members], so they can learn about what we’re doing.”

The idea for a VR campaign took hold in a 2017 Communication and Marketing Department brainstorming session. Someone suggested developing virtual tours of the hydroelectric dams, wind turbines, and solar photovoltaic (PV) farms from which Tri-State receives power. The 3-D, interactive videos would give viewers the feeling of actually being in these environments. With VR, Tri-State’s members could virtually experience climbing up a 300-foot wind turbine tower (see Figure 2) and flying back down, soaring over a solar farm that would cover almost 200 football fields, and exploring the inside of a hydroelectric dam. “It really gives you perspective on how big these utility-scale projects are,” said Rosier.



Figure 2. View from top of wind turbine from Tri-State's VR video. Image courtesy of Tri-State.

The VR videos would be shown to members on specialized, portable goggles, known as headsets (see Figure 3). Interspersed with breath-taking, interactive footage would be education on renewable energy (see Figure 4). In one video, for example, before the viewer begins climbing a ladder up a wind turbine

¹ <https://www.tristategt.org/what-we-do>, <https://www.tristategt.org/education-programs>

tower, the Statue of Liberty appears next the wind turbine with a sign: “Did you know? Tri-State’s wind turbines are 300 feet tall – about as tall as the Statue of Liberty.”



Figure 3. Viewers wearing Tri-State’s VR headsets at co-op events. Images courtesy of Tri-State.



Figure 4. VR video scene from inside a simulated wind turbine nacelle. By focusing on the arrow, the viewer can move forward in the virtual space. Image courtesy of Tri-State.

How Does the VR Program at Tri-State Work?

To get started, Tri-State contacted Reality Garage², a VR start-up in nearby Boulder, Colorado. The company was “excited to work with us, that our experience was going to be focused on renewables,” said Sam Taggart, Communications and Marketing Coordinator at Tri-State. However, power plants are not Reality Garage’s area of expertise; they specialize in adventure travel videos. “It’s not South America or anything, but renewables look pretty cool,” he noted.

² <https://www.realitygarage.com/>

Tri-State's VR program team story-boarded ideas for different videos. For narration, they use a funny, down-to-earth character named Randy, who sometimes appears as live action and other times as a cartoon (see Figure 5). Reality Garage did the on-site filming, which involved drones, helmet cameras, and clusters of cameras for 360° shots. Because of existing in-house capabilities and desire to keep the tone consistent with their other outreach materials, Tri-State did all voice-overs.



Figure 5. Randy, live and cartoon. Images courtesy of Tri-State.

Before any filming could begin, Tri-State's VR project leads had to coordinate closely internally and with generation site managers for site access and safety training. All of the filmed generation assets belong to third-party developers with whom Tri-State has power purchase agreements (PPAs). For security, videos avoid sensitive information like equipment manufacturer or specific location of the generation facility.

After about a three-month development process, Tri-State was ready to take the videos on the road.

Bringing VR to Members

Starting in 2018, Tri-State staffers have been bringing the technology to Annual Meetings and other community events to educate members on Tri-State's renewable energy portfolio, wow them with the projects' sizes, and ultimately, foster conversations.

Having Tri-State staff present at every event where the VR is shown is central to the program for two reasons. The first is safety. While VR itself is harmless, many people have not experienced it before. It is easy to become disoriented or off-balance when it feels like you are flying, but actually you are standing on the ground. For this reason, Tri-State requires a staff person to assist each viewer for the duration of the video, and all viewers must sign a safety waiver. Also, according to the manufacturer's safety guidelines, children 12 and under are not allowed to use the headsets. Instead, the program provides a handheld tablet with the same footage.

The second reason for having a one-to-one staff to viewer ratio is the valuable dialog that often follows. “We’ve seen that when people get done, they stick around, they ask questions. We go through more renewable energy brochures than we ever have,” said Rosier.

By the end of 2018, more than 2,000 members had seen the videos. For 2019, Rosier and Taggart estimated they have taken the headsets to about 70 events.³ March and April, when most co-ops hold Annual Meetings, are particularly busy. And, the program continues to get requests to bring the technology to more and more events.

Because Tri-State collects a signed waiver from each viewer, the program has good data on how many people have seen their VR videos and at which events. In the future, the team may design a short, two- or three-question survey to document participant feedback and assess if VR is accomplishing program goals.

Project Cost

According to Rosier, the start-up cost was around \$12,000. Because the first video was so well-received, the program added two more. The initial low cost may have been because Tri-State worked with a relatively new VR start-up, but Rosier felt that many VR companies would be flexible to work within a wide variety of budgets.

In addition to video planning and development, another key cost is the headsets themselves. Tri-State has six (6) in rotation, but instead of buying them, they rent Oculus brand headsets from Reality Garage. Renting enables the program to easily upgrade to the latest equipment, since VR technology is changing quickly. For example, the first models they took into the field required a cell phone to be attached to the headset, meaning additional equipment was needed. Now, they use all-encompassing wireless headsets that house the application, contain speakers, connect to Wi-Fi for updates, and just need to be recharged occasionally.

Furthermore, by renting the VR headsets, the program has access to technical support whenever they need it. This proved valuable when Tri-State took a few headsets to an outdoor booth at a bicycle race. Some of the lenses were damaged by bright sunlight. The vendor simply replaced the damaged parts.

Tri-State will continue the VR program for 2020, and then determine what makes sense after that. They may explore other VR technology, including one that enables members to download VR videos to their smart phones and use inexpensive cardboard frames to hold the phone in place to mimic the headset experience.

Key Takeaways

Rosier and Taggart both feel the VR program has exceeded all expectations. “You get to a higher level of experience; it’s more personalized and more exciting. You get to share that story one-on-one,” said Taggart.

³ Tri-State is still collecting 2019 viewer data.

For other co-ops considering similar projects, they recommend getting input from areas of the organization that may not normally be involved marketing campaigns. For example, Tri-State’s marketing team collaborated with their legal and insurance teams on safety for both users and film crews, and with their contracts department on headset rental agreements.

Tri-State is also very happy with the decision to rent instead of buy the headsets. The co-op did not invest a lot of money in technology that may soon become outdated, and it retains flexibility to upgrade to new headsets or change program direction.

In summary, said Rosier, “We do a fair amount of traditional advertising. But, we still know that the one-to-one interaction and engagement is going to leave people with the greatest connection to us.”

For Additional Information:

Amy Rosier

Communications and Marketing
Manager
Tri-State G&T
arosier@tristategt.org
Ph: 303.254.3133

Sam Taggart

Communications and Marketing
Coordinator
Tri-State G&T
staggart@tristategt.org
Ph: 303.254.3899

Adaora Ifebigh

Senior Manager, R&D Engagements
Business and Technology Strategies
NRECA
Adaora.Ifebigh@nreca.coop
Ph: 703.907.5849

This case was researched and written by Laura Moorefield, Moorefield Research & Consulting:
lmoorefield@gmail.com Ph: 970.903.3044