Project Summary

Name of Applicant: Tri-State Generation and Transmission Association, Inc (Tri-State)
Project Managers: b(4), Mike b(4)
Project Title: Building the Smart Grid of the future through the COOPERATIVE ENERGY ECOSYSTEM
Description: Tri-State is proposing to implement the components of the Cooperative Energy Ecosystem (CEE) program, which is a smart grid program that optimizes energy efficiency, consumption of renewable energy, and grid resilience. The CEE program is a holistic approach to optimize the smart grid and ensure cooperative members and their values are enabled by collaboration between 42 local distribution members, four states, and Tri-state G&T.
Objectives: The CEE seeks to enhance the economic and operational health of electric cooperatives by improving the efficiency, capacity, flexibility, reliability, and resilience of the bulk power grid serving four states and 42 cooperatives. It will provide an Energy Services Platform (ESP) that enables utilities to build and expand collaborative programs that meet their clean energy objectives and serve the unique needs of disadvantaged communities. Its Distributed Energy Resource Management System (DERMS) will integrate clean renewable energy resources and grid-edge devices, such as wind, solar, storage, and electric vehicles, to support decarbonization and lower energy burdens for rural and disadvantaged communities. The program aims to serve the unique needs of 230+ disadvantaged communities by integrating over 200MW of controllable load with DERMS in the next five years, while facilitating the aggregation and integration of diverse resources.
Methods: The Tri-State project aims to transform the active management of distributed energy in the Southwest Power Pool ISO by deploying the CEE technology, which includes an Energy Services Platform (ESP) and a Distributed Energy Resources Management System (DERMS). The project's objectives include increasing regional support for clean energy and resilience, increasing the number of grid-edge connected devices, and supporting decarbonization through electrification. The project also aims to provide a multi-tenanted ESP where utilities can efficiently build and expand collaborative programs. The proposed DERMS platform aims to manage the capacity of roughly 5,700 miles of transmission that Tri-State owns or operates and integrate renewable energy, electrified loads, and grid-edge devices. The project also includes a demand response program, a member training and marketing program, and the PwrMetrix AI Outage Cost Reliability Benchmarking, Visualization, and Data Analytics to monitor and benchmark DERMS and DR reliability impact.
Project Impact: Tri-State's Community Benefit Plan aims to bring benefits to the local community and disadvantaged communities, including reducing power disruptions, increasing access to clean power, supporting minority businesses, and saving 114 GWH of energy annually from 2025-2040. The plan also focuses on attracting, training, and retaining a skilled labor force with strong labor standards and promoting community ownership in disadvantaged areas through in-home energy storage rebates. Tri-State's Rural Energy Savings Program provides relending programs for energy efficiency and demand response measures. The DOE funding will allow Tri-State to expand programs, reduce costs, accelerate integration of distributed energy resources, minimize fossil fuel generation, achieve clean energy transition goals, and create jobs.