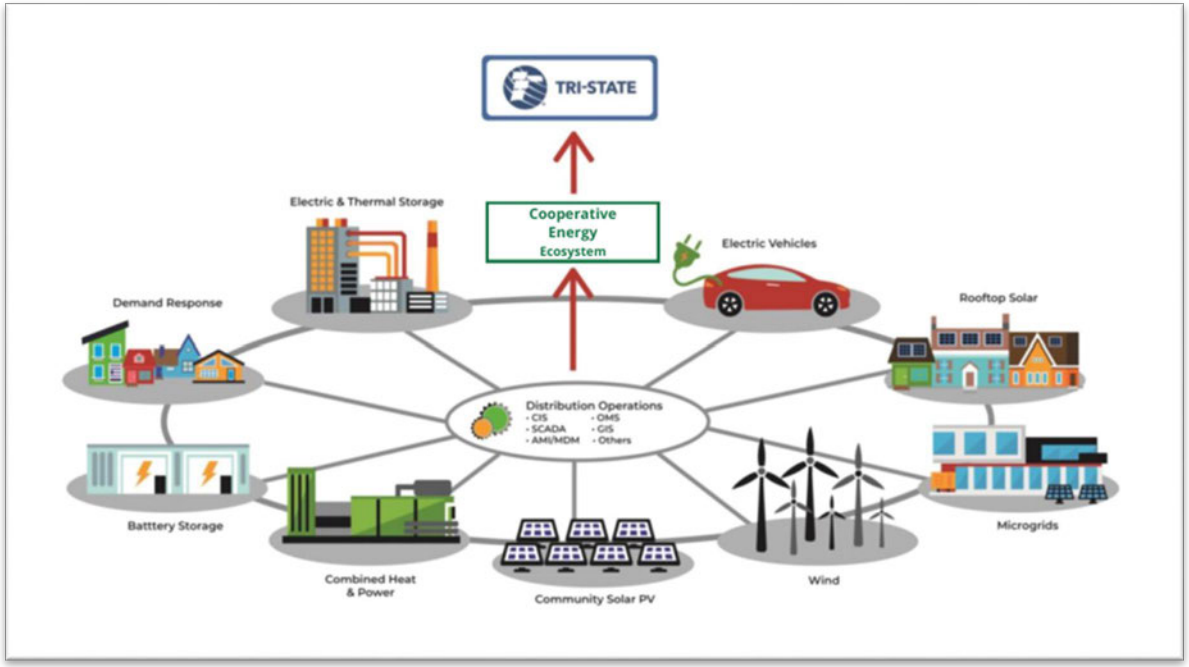
Project Title: Cooperative Energy Ecosystem
Name of Applicant: Tri-State Generation and Transmission Association, Inc
Project Managers:

b(4) | b(4) Responsible for developing energy solutions that optimize supply and demand side resources.

b(4) | b(4) Responsible for the software systems, data, interfaces and project management for the Energy Markets and Energy Resources groups.

Project Description:

Tri-State Generation and Transmission Association is proposing to implement the foundational components of the the Cooperative Energy Ecosystem (CEE) program, a smart grid initiative that optimizes energy efficiency, renewable energy consumption, and grid resilience through collaboration between 42 local distribution members, four states, and Tri-state G&T.



Goals:

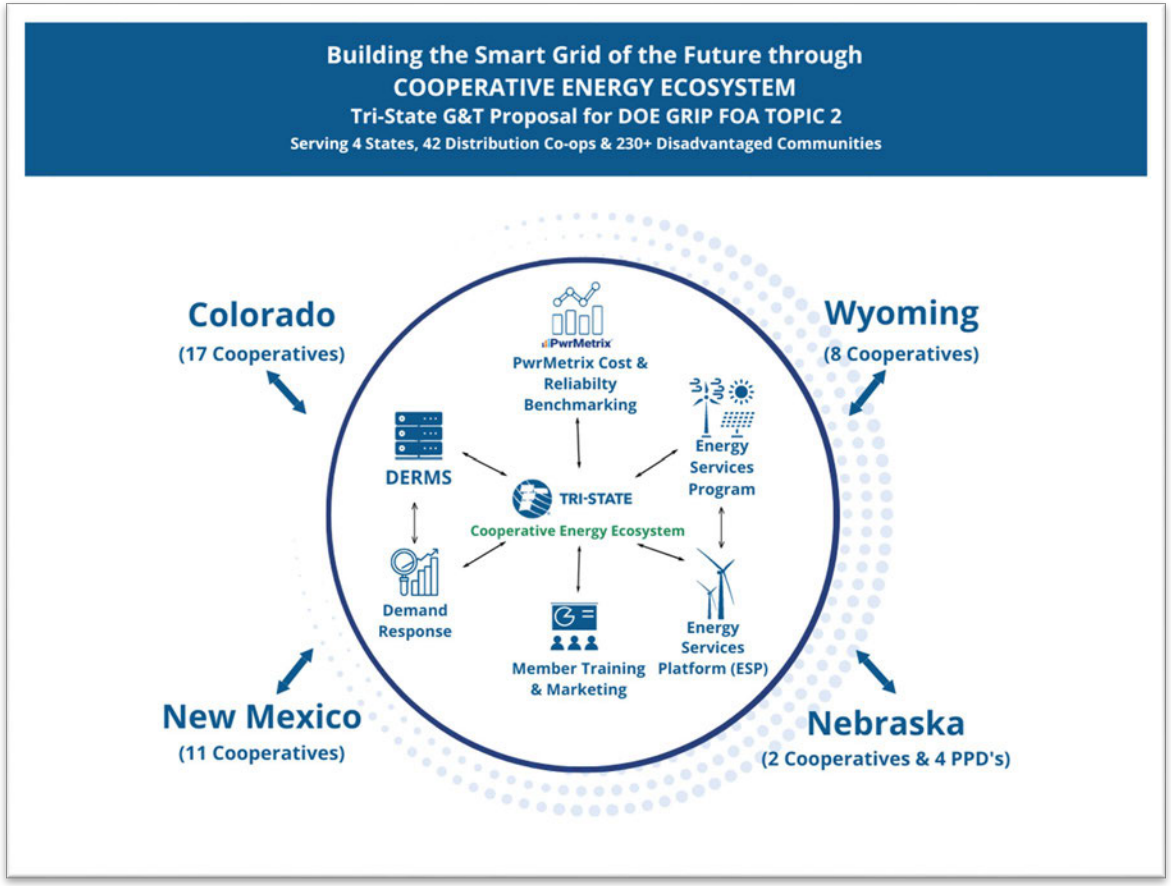
The Cooperative Energy Ecosystem (CEE) aims to improve the efficiency, capacity, flexibility, reliability, and resilience of the power grid while integrating renewable energy resources and managing controllable loads. It will serve 230+ disadvantaged communities by integrating over 200MW of controllable load with DERMS in the next five years.

Technology Summary:

Tri-State's Clean Energy Economy (CEE) will install 3 systems: 1.) Energy Solutions Platform (ESP) and the Distributed Energy Resources Management System (DERMS). ESP serves as a centralized consumer engagement portal that allows consumers to participate in various programs such as efficiency or electrification incentive applications, demand response program enrollment, and on-bill repayment participation.

2.) DERMS platform controls and aggregates distributed energy resources in four states and 42 member systems. It optimizes the grid, enhances reliability, shifts loads, and provides ancillary services. The multi-tenanted approach enables Tri-State to monitor the impact of DERs and ensures member assets are secured by cybersecurity policies.

3.) PwrMetrix AI will monitor, measure, and benchmark the reliability impact of DERMS and demand response (DR) as well as a program benefits prediction tool. It will forecast the impact of proposed programs on community benefits, such as outage reliability and resiliency improvements, to Tri-State's 42 distribution members, and use as post-project implementation on actual impact/benefits assessment.



Key Idea/Takeaway:

- Cooperative Energy Ecosystem (CEE) is a smart grid program that optimizes energy efficiency, consumption of renewable energy, and grid resilience. It seeks to serve the unique needs of 230+ disadvantaged communities by integrating over 200MW of controllable load with DERMS and ESP in the next five years, while facilitating the aggregation and integration of diverse resources.
- 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 Energy Solutions Platform (ESP) is a centralized consumer engagement portal that allows consumers to participate in energy efficiency or electrification incentive applications, demand response program enrollment, on-bill repayment participation, and trusted local contractors participating in the utility's trade-ally program.
- The Distributed Energy Resources Management System (DERMS) is a platform that aggregates and controls Distributed Energy Resources (DERs) in 4 states and 42 member systems.
- PwrMetrix AI is the monitoring and benchmarking tool will be used to measure the reliability impact of DERMS and demand response (DR) as well as a program benefits prediction tool of the CEE.

DOE Funds Requested: $27,347,979

Applicant Cost Share: $27,347,979