

**Technical Contact:**

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**TO:** Santee Electric Cooperative  
**RE:** 1. COMMENTS ON 40101 (D) Preventing Outages and Enhancing Grid Resilience  
2. Written comments on the **objectives, metrics and criteria** outlined in **Draft Program Narrative**

*NOTE: Below are Tri-County's recommended ADDITIONS to the existing draft program Narrative*

**1. Objectives and Metrics (Page 2)**

The Program objectives are to make meaningful progress in one or more of the following ways:

- g.** Improve the **safety, reliability, resiliency, and affordability** of electricity with scalable and measurable solutions
- h.** Leverage the advanced capability of **real-time data analytics, and Artificial Intelligence (AI)** as part of the **ecosystem of holistic solutions** (*Note: goal is to use both software and hardware solutions to work together as part of an ecosystem of solutions*)

**OBJECTIVE 1 (Page 3)** - Increase monitoring and control capabilities to provide visualization and enhance situational awareness leading up to, during, and after extreme weather events. Examples of projects in this objective area include **but are not limited to:**

- Installation or expansion of **real-time data analytics with Artificial Intelligence (AI) technology to combine siloed systems** such as OMS, AMI, SCADA, GIS map, Asset Management, Grid sensors, Weather data, and others, and enable descriptive (historical), predictive (future) and prescriptive (optimization) analytics
- Installation or expansion of **real-time grid monitoring sensors** in primary voltage wires that can be easily installed, relocated and data-monitored in real-time
- Installation or expansion of **real-time visualization/mapping of data analytics** (reliability and resiliency) with time series analysis by day, month, and year
- Installation or expansion of standardized **real-time interoperability or connectivity of data** to provide actionable intelligence in both operations and planning



**METRICS:**

- Improved **standardization** of real-time data interoperability and data connectivity of siloed systems (such as OMS, AMI, SCADA, DA, etc.) to increase the speed of data aggregation, monitoring, decision making, and control

**OBJECTIVE 2 (Page 3)** - Harden or adapt the electric system to increase resiliency during extreme weather events. Examples of projects that could achieve these objectives include **but are not limited to:**

- Implement **adaptive protection technology**
- Design a **self-healing network** using new sectionalizing equipment to automatically switch feeds thus reducing outage times and to aid in restoration.
- Update and/or add **downline sectionalizing equipment** that is compatible and capable to communicate through existing SCADA system. Updating existing downline sectionalizing equipment and adding downline sectionalizing equipment at major three-phase ties that is SCADA-capable would **increase resolution** downline to aid in fault location, and it would allow **remote sectionalizing** of the line to aid in restoration and decrease outage time.
- o Therefore, **significantly improve quality of service** in these **rural/underprivileged areas** which are **designated under Justice 40**. The upgrade and addition of this equipment would also lay a **foundation** for further automation to be implemented to enhance fault location and restoration times.

**METRICS:**

- Improvement of **SAIDI (outage duration), SAIFI (outage frequency) and CAIDI (outage restoration time)** by **entire system, substation, and feeder level**
- Improved sectionalizing will reduce SAIFI by reducing the total number of customer interruptions in relation to the total number of customers served.
- It costs Tri-County an average of **\$100,000.00 per mile of 1/0 single phase line**. Tri-County has an average of 6.8 meters per mile and serves one of some of the **most economically distressed** areas of the state where average **wage per job ranges \$36,000.00 or less**. This lower density means that **Tri-County's members will have to pay more** of the direct costs spent to improve their service.
- Our **density** is approximately 0.15 miles of line per consumer.
- Quantification and reduction of **COST of outages** based on SAIDI and SAIFI by system, substation, and feeder to calculate ROI (Return of Investment) on grant investment.



**OBJECTIVE 3 (Page 4)** - Enhance vegetation management programs to reduce exposure to tree-related damage to the electric system during extreme weather events or wildfires. Examples of projects in this objective area include **but are not limited to:**

- Installation or expansion of **drone technology with AI video** recognition technology
- Installation or expansion of advanced **ROW management software** that uses satellite imagery from previous and current years to provide a list of areas that need to be cut currently and, in the future, based on utility standards.
- Installation or expansion of **real-time grid monitoring sensors** in primary voltage wires that can be easily installed, relocated and data-monitored in real-time

**METRICS:**

- Improvement of SAIDI, SAIFI and CAIDI by entire system, substation, and feeder level
- Quantification and reduction of COST of outages based on SAIDI and SAIFI by system, substation, and feeder to **calculate ROI (Return of Investment)** on grant investment.
- Enhanced ROW management will improve SAIDI and SAIFI first on the feeder level, then on the substation level, and ultimately on the system level by refining the target areas that need attention and cause the most frequent and severe problems.

**OBJECTIVE 4 (Page 4)**- Develop energy storage and microgrids to provide system adaptive capacity, e.g., systems able to provide electrical energy during disruptions and, therefore, increase resilience for communities and customers. Examples of projects in this objective area include **but are not limited to:**

- Installation or expansion of real-time data analytics with Artificial Intelligence (AI) technology as part of the energy storage and microgrid **“ECOSYSTEM OF HOLISTIC SOLUTIONS”** to enable **descriptive (historical), predictive (future) and prescriptive (optimization) analytics**

**METRICS:**

- Improvement in **ACSI (American Customer Satisfaction Index)** that measures the utility customers' value of the utility service
- **Economic** impact to the community because of resilient electricity

**2. CRITERIA**

a. **Small co-ops** serve a **significant percentage of South Carolina's Justice 40 areas**. Tri-county highly recommends that the existing criteria should FOCUS not ONLY on the number of customers, but more importantly, on how many customers are most economically distressed, experience longer restoration times due to rural areas.

- We recommend adding to the existing Table of COLUMNS/FIELDS the number of power line miles, and number/percent of customers living in economically depressed area as



designated by Justice 40.

- **Primary Goal** should be to **significantly improve quality of service** in **rural and underprivileged areas** which are **designated under Justice 40**.
- **FACT to consider:** It costs Tri-County an average of **\$100,000.00 per mile of 1/0 single phase line**. Tri-County has an average of 6.8 meters per mile and serves one of some of the **most economically distressed** areas of the state where average **wage per job ranges \$36,000.00 or less**. This lower density means that **Tri-County's members will have to pay more** of the direct costs spent to improve their service.

