

**REQUEST FOR QUALIFICATIONS  
FOR  
IMPLEMENTING APPALACHIAN REGIONAL COMMISSION GRANT  
PW-19673-TA-19**

The Electric Power Board of Rockwood is accepting submittals from qualified professional services firms for implementation of Appalachian Regional Commission (ARC) Grant PW-19673-TA-19 titled “Rockwood Electric Utility Smart Grid Technology Plan” (Project). The scope of work for the Project is more particularly described within the body of this RFQ and in the attachments. ARC will pay a total sum not to exceed \$50,000 of actual, reasonable, and eligible project costs. Rockwood Electric will contribute a non-ARC share of \$35,000 in services or in-kind contributions. The successful firm will be responsible for demonstrating their ability to provide the analysis and develop the plan described in the Statement of Purpose of the Grant in a professional manner. **Submittals must be complete, accurate, and received by Rockwood Electric Utility at its main office by 2:00 p.m. Eastern Standard Time (EST) on November 15, 2019.**

All submittals must be clearly labeled and sealed in an envelope marked “RFQ for ARC Grant PW-19673-TA-19” on the outside. Hard copies of the submittals may be provided by mail or in person.

Interested firms should submit an electronic copy (in PDF format) and two (2) hard copies of their qualifications and other required information to:

Kendall Bear, General Manager  
Rockwood Electric Utility  
341 W. Rockwood Street  
P.O. Box 108  
Rockwood, TN 37854  
[kbear@rockwoodelectric.com](mailto:kbear@rockwoodelectric.com)  
Cell: (865) 696-6109  
Office: (865) 717-5400

Attached is information about the general scope of this project. To obtain additional information, please contact Mr. Kendall Bear at 865-354-0514 or email [kbear@rockwoodelectric.com](mailto:kbear@rockwoodelectric.com)

Rockwood Electric Utility is a governmental enterprise and is not subject to taxation. A certificate of exemption will be provided upon request.

<b><u>Planned schedule:</u></b>	Release RFQ for Professional Services Firm	October 23, 2019
	Selection of Firm	November 19, 2019
	Scope of Work Development and Contract	December 6, 2019

**Note: This Schedule is subject to change.**

## **1.0 BACKGROUND**

**Rockwood Electric Utility (REU)** is a not-for-profit, municipally owned utility dedicated to providing Electric service to residential, commercial, industrial, and public facilities. REU traces its beginnings to 1939 when the City of Rockwood purchased electric systems in Rockwood and Kingston from the Tennessee Electric Power Company (TEPCO) and agreed to serve those cities and the surrounding communities consisting of portions of Roane, Cumberland, and Morgan counties.

Operation & control of the power system is vested in the Electric Power Board as outlined in the City Charter for Rockwood.

### **Statistics**

- Nearly 14,700 electric customers; over 11,600 residential
- Revenue from power sales in excess of \$33 million
- Rockwood Electric Utility is a long-term partner of TVA
- Forty-One (41) full time employees

### **Power System**

- Four (4) substations; delivery voltages of 161 kV
- 12.47/7.2 kV, 3-phase system distribution system
- Over 800 miles of single- and three-phase primary and secondary

### **Communications System (see attached map)**

- Approximately fifty (50) miles of fiber; various counts
- Approximately 17 miles of 6-count fiber (shared) in Kingston, TN
- Approximately 8 miles of 48-count fiber in Rockwood & Kingston, TN
- Approximately 30 miles of 144-count fiber in Rockwood & Kingston, TN
- Twelve (12) miles of 144-count fiber in warehouse; future extensions
- Connectivity between central office in Rockwood, TN and branch office in Kingston is via fiber.
- S&C SpeedNet; 900 MHz radio system in Rockwood & Kingston, TN. Over 100 radios and repeaters used by REU's SCADA system to communicate with distribution line equipment.
- All fiber is mapped using Central Service Association's UtiliCom mapping software

**ALL COMMUNICATIONS SYSTEMS ARE CURRENTLY BEING USED FOR UTILITY OPERATIONS SUCH AS SCADA, BUILDING SECURITY, VIDEO SURVEILLANCE, AUTOMATED METERING INFRASTRUCTURE (AMI), ETC.**

## **2.0 GENERAL ISSUES**

A “Phase 1 Engineering Analysis of Rockwood Electric Utility’s Fiber” (i.e., existing fiber outlay) was completed by Strata\*G and their partners/companies from which they enlisted support. The findings of the study along with recommendations were presented at a high level to the Board on August 15, 2019. While the study was in process, Rockwood Electric Utility decided to submit an application for an ARC Technical Assistance Grant. The application was submitted on April 9, 2019. REU received notice that it was awarded one of the grants in the amount of \$50,000. The Grant Agreement for ARC project number PW-19673-TA has been executed.

This RFQ process is specifically being presented in a manner that allows submittals from potential respondents while assuring the project scope of work and timeline included in the ARC Grant Application are met. An “Abstract” of the Phase 1 analysis, including the Executive Summary and Goals, is included with this RFQ along with Conclusions intrinsic to REU.

## **3.0 GENERAL SCOPE OF WORK (during and after selection of qualified firm)**

- a. Correlate the findings of the Phase 1 Engineering Analysis and the ARC Technical Assistance Grant Application’s project summary and narrative. Work closely with REU staff to implement the pilot projects that were recommended and priced as part of the study. Provide purchasing, installation, and configuration support.
- b. The subject Grant provides funding for two components: 1) a technology analysis of three different network transport solutions including Fiber Gigabit Passive Optical Network (GPON), Hybrid Fiber/Wireless, and Direct Wireless. These technologies are to be evaluated based on their ability to be used in conjunction with REU’s existing fiber and other facilities; 2) develop a transition plan for REU to improve their existing fiber plant to connect additional equipment, eliminate single points of failure, increase security, and better position itself to provide future broadband services.
- c. Be a knowledgeable grant manager for ARC grants. In other words, provide all reports, financial requests, etc. required by this project in compliance with the terms and conditions of the Appalachian Regional Commission Grant Administration Manual.
- d. Assist Rockwood Electric Utility in monitoring and potentially applying for future grant opportunities (e.g., ARC POWER Project Implementation).
- e. Work closely with REU personnel to make recommendations and implement appropriate network security, redundancy, and communications enhancements to minimize internal vulnerabilities.
- f. Demonstrate the capability to work with REU personnel on-site and attend status meetings at either or both of its offices in Rockwood and Kingston, TN.

#### **4.0 REQUIRED SUBMITTALS**

Professional services firms interested in performing the scope of work described above must submit the following information.

1. Name of firm, firm contact, address, and telephone number.
2. Project Fit – Provide information about your firm’s experience in current and past projects of this size and scope and provide examples. Provide **at least three (3) references from similar projects** including project description, contact person, and phone numbers.
3. Names, qualifications, and experience of your team and key staff that will be assigned to this project.
4. Provide any other information that you feel is pertinent or that you believe should be taken into consideration by REU.

#### **5.0 SELECTION PROCESS**

1. REU will evaluate the qualifications and choose the successful respondent based on experience data, statements of qualifications, credentials, work load, and other items noted within this RFQ. REU will be the sole judge and will have complete discretion in selecting the successful firm and awarding a contract.
2. If, in its sole judgment and discretion, REU deems it to be in its best interest, REU reserves the right to reject any and all Proposals, to waive any informalities and/or irregularities, to accept any portion of the Proposal, to reject additional information from any or all Respondents.
3. REU shall not be liable for any costs Respondent incurs in preparing and submitting its Qualifications. While REU intends to execute a contract for the services listed herein, it is not bound to do so and this document will not be interpreted as an offer to enter into an agreement with any Respondent and shall not bind REU in any way.

#### **6.0 EVALUATION CRITERIA**

REU will evaluate the submittals and select the successful respondent using the following key criteria (none in any order of importance):

- Conformity with the RFQ requirements and totality of response
- Qualifications and experience of Respondent’s company and key partners/staff to be involved in the Project
- Correlation of the findings of the Phase 1 Engineering Analysis to the ARC Technical Assistance Grant Application.
- Financial stability of Respondent’s company and surety
- Strength of references
- Capabilities in the case of future awarding of construction engineering phases; if funding is made available
- Delivery and warranty factors
- Any other related factors deemed critical by REU

It is the intention of Rockwood Electric Utility to award a contract for pre-construction engineering in this project phase and to complete all reports satisfactory to ARC. Awarding of work will be after a qualifying firm is selected and a scope of work is agreed upon. The maximum value of this project phase is \$50,000 payable from the ARC grant funds. No additional funds have been approved. REU's contribution to this project is in services or in-kind contributions.

Any additional contracts or future awarding of work (e.g., construction engineering or implementation) will be contingent upon funding being available from future grants or as part of the Utility's budget process.

# ABSTRACT

## **Executive Summary**

Rockwood Electric Utility (REU) is a not for profit, municipally owned utility dedicated to providing electric service to industrial, commercial, residential, and public facilities. REU is the largest provider of electric power in Roane county as measured by number of customers (meters). Based on the most recent annual report, the Utility has nearly 650 miles of 13kV distribution lines serving over 14,650 meters within a service area of approximately 175 square miles. REU serves two city centers: Rockwood and Kingston, 2 Industrial Parks: Plateau Partnership Park and the Roane County Industrial Park, and over 2800 business customers.

Over the last twenty years REU has deployed approximately 50 miles of fiber in support of its electric operations including its Supervisory Control And Data Acquisition (SCADA) network, Local Area Network (WAN), video surveillance, and Automated Metering Infrastructure (AMI).

Rockwood Electric Utility (REU) faces a number of challenges. Decreasing revenues from electric sales, the need to renovate and replace aging infrastructure in a tight rate environment, and public demand for additional services, such as broadband, create pressure to expand under a constrained budget. At its meeting on August 24, 2018, citizens from the community asked the Electric Power Board of Rockwood to consider offering broadband services. REU's Board Chairman appointed a committee to study this opportunity and report back to the full Board.

The committee began researching this subject by contacting and/or visiting local power companies that offer broadband or were considering it. The Board engaged Corning Carrier Networks to provide a preliminary financial feasibility study at no cost to the Utility. On October 30, 2018, the results of this preliminary financial feasibility study, along with "next steps", were presented to the full Board. The study approximated the cost to build a complete fiber to the home network, making many high-level assumptions. The capital estimates and increased debt load required to implement such an approach were prohibitive in the mind of the Board.

On January 17, 2019, the Board approved funding of a Phase 1 analysis of their existing electrical system communications infrastructure. The goals of the study were to evaluate the existing fiber infrastructure and recommend appropriate system upgrades. Of particular interest were upgrades which may present opportunities to use stranded fiber infrastructure to gain additional revenue and provide enhanced services. The study was completed and presented to the full Board on August 22, 2019.

The study reviewed existing infrastructure including fiber routes, splicing, and equipment. In addition, the study evaluated existing network security and protocols. After completing the evaluation, the broadband team was asked to make high level recommendations for system upgrades that have the potential to lead to additional revenue and provide enhanced services to REU customers.

The completed analysis identified enhancements to the fiber network/backbone in order to provide geographically separate links to substations, create redundant fiber loops, and build out areas with limited capacity. The suggested enhancements improve REU's electrical infrastructure for their existing service offerings. In addition, they better position REU to provide future broadband internet service to some of their customers should the Board decide to provide that service.

During the analysis, the Utility also submitted an application to the Appalachian Regional Commission's (ARC's) POWER (Partnerships for Opportunity and Workforce and Economic Revitalization) Technical Assistance Grant for continued evaluation and detailed design of system enhancements. **(Note: A copy of the complete ARC POWER Grant application, including the project summary, narrative, scope, timeline, and budget is available in electronic format.)**

The ARC POWER Technical Assistant Grant which REU has been awarded is for assessing the characteristics of various technologies for suitability to enhance REU's Smart Grid infrastructure. This includes 1) Fiber GPON; 2) a fixed wireless pilot that allows for improved communication with select electrical equipment. The wireless pilot also has potential application as a last mile solution for connecting rural customers that are distant from the existing fiber; and 3) private fiber connected small cell drops. Experience is hoped to be gained through establishment of these pilots and to determine if they can have a significant impact on the expense of last mile connectivity for current operations and future, enhanced services. Opportunities already identified by the study include, but are not limited to:

1. Implementing a wireless solution between REU's Headquarters at 341 W. Rockwood Street and REU's 190 ft. tower on Firetower Road. Point-to-multipoint radios would be installed at the tower and at select locations where REU has existing SCADA equipment or other previously identified test locations.
2. Connecting SCADA nodes to fiber, adopting one of the GPON based technologies.
3. Installing radios in locations next to REU's existing fiber and installing subscriber modules at "user friendly" locations such as other city-owned facilities.

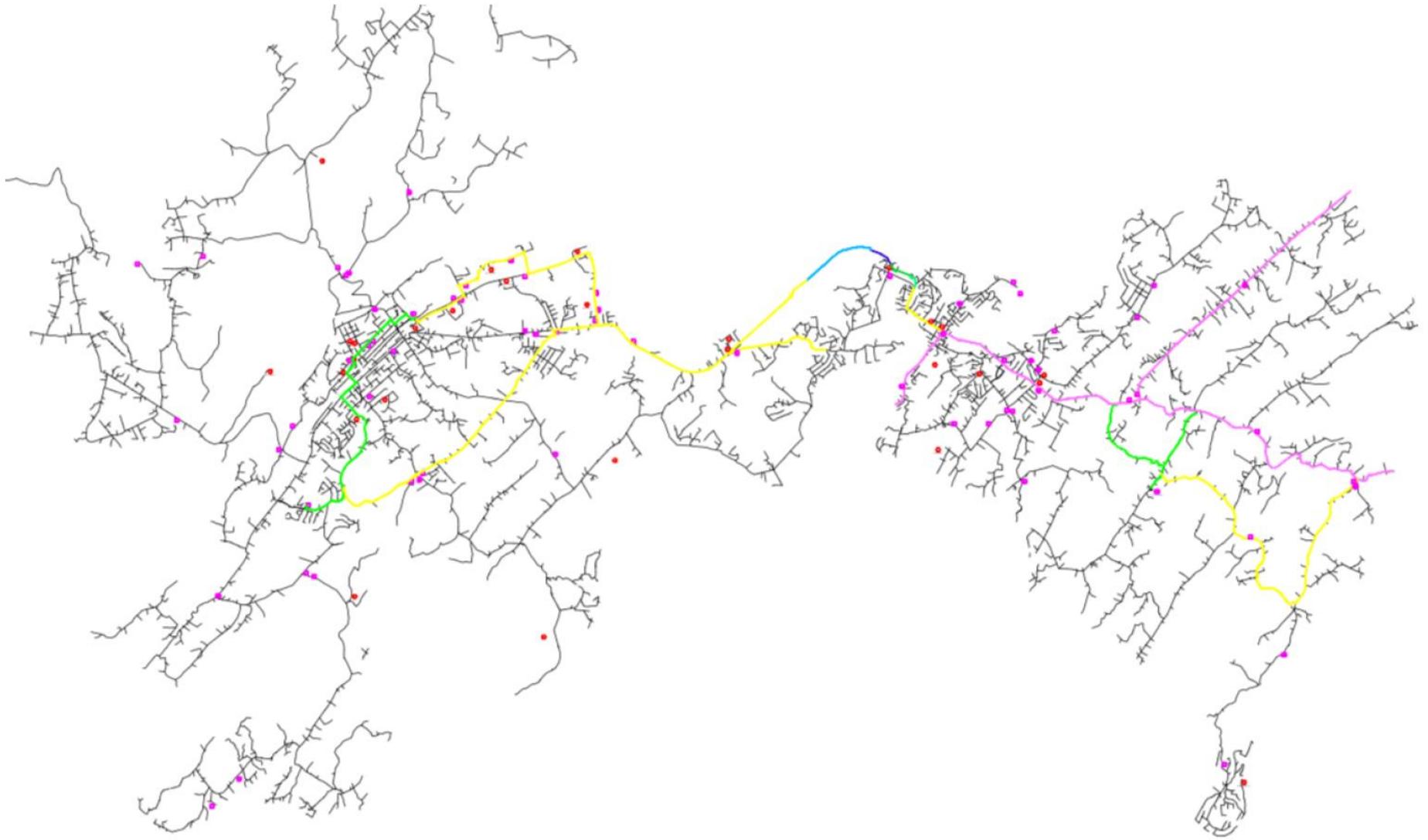
Once again, the ARC POWER Technical Assistant Grant which REU has been awarded is for \$50,000 and is for assessing the suitability of these technologies to be used in enhancing REU's smart grid infrastructure. The Grant is also for developing a transition plan as a first step towards a broadband capable electric system backbone.

# Conclusions

The “Phase 1 Engineering Analysis of REU Fiber” identified several recommended improvements to REU’s existing network and communications to improve system security and reliability. Although these recommendations are not necessarily a part of the analysis and reports to be submitted to the Appalachian Regional Commission as part of the Grant, they are intrinsic to REU’s current operations. Furthermore, REU plans on monitoring grant opportunities, such as ARC Implementation, in the future.

The technology analysis and transition plan under this technical assistance grant is designed to lead REU, with Board approval, into an effort to build the infrastructure for an enhanced Smart Grid and to form the backbone for a potential broadband service to connect qualified unserved areas in Rockwood Electric Utility’s service area.

Reports and other documentation referenced in this document which may be needed to assist in preparing a response to this RFQ are available upon request. Contact Kendall Bear at (865) 717-5422 or (865) 696-6109 or email [kbear@rockwoodelectric.com](mailto:kbear@rockwoodelectric.com).



Map of Rockwood Electric Utility Service Territory showing routes of existing fiber and distribution equipment. "Points of Interest" also shown. PDF copy available upon request.