



Fiber Project Overview

Central Virginia Electric Cooperative

Purpose of the Fiber Optic System:

Central Virginia Electric Cooperative (CVEC) has embarked on an aggressive buildout of a system-wide fiber optic communication network that will provide badly needed high-speed communications across the electric distribution system. This new communication system will allow CVEC to improve electric operations for every CVEC member.

Having reliable communications available at every point on the system will increase the reliability of the electric system. High speed communications with substation and downline reclosers and circuit breakers will allow for data transfer that will help predict some outages from equipment failures or vegetation growth; the location of these potential faults can then be determined and corrections made before the outage occurs. When outages do occur, their location can be determined more quickly and restoration can be made more quickly and safety using remote communications.

High-speed communications will be helpful in managing and reducing power costs. The ability to monitor and control voltage regulators downline as well as in the substations will allow for optimum voltage control during peak periods to reduce CVEC costs. The ability to have high-speed communication to each meter will allow for better load monitoring and will allow interactive load control for those members who choose to reduce load in return for monthly savings.

The communications system will also facilitate better integration of distributed resources especially with the advent of battery storage and the expanded use of electric cars.

The fiber system will also be used to overcome the lack of reliable, affordable high-speed internet access in the CVEC service area. The sale of internet service will pay for the fiber optic system, which could not be paid for with the savings from the improved operations of the electric system alone.

Why CVEC does not sell Internet Service and Firefly Fiber BroadbandSM does:

Virginia state regulations do not allow electric cooperatives to sell internet service, but they do allow electric cooperatives to own a subsidiary that may engage in any business legal in Virginia. The intent of the rule is to assure that electric rates do not subsidize other business ventures.

This rule is why CVEC leases its fiber to its wholly owned subsidiary, Central Virginia Services, Inc which does business as Firefly Fiber BroadbandSM. Firefly then provides telecommunications and internet services to CVEC and to the public.

CVEC is prohibited from providing its member list or sales leads to Firefly. Joint marketing is also prohibited, which is the reason Firefly pricing and other service information are not included with monthly bills and not on the CVEC webpage or CVEC Facebook page. CVEC members who want to know more about the Firefly offerings should see its webpage at www.fireflyva.com instead of calling CVEC.

Fiber Buildout Summary:

CVEC intends to build fiber throughout its service area over a five-year period from 2019 through 2023. The project will cost about \$120 million. The project will install almost 4,000 miles of fiber and make service available to all 37,000 CVEC accounts.

The buildout is performed on a substation area basis, generally following the same line paths as the electric distribution lines. Where there are overhead lines, the fiber is placed overhead. Where the electric lines are underground, the fiber is placed underground.

The order of the substation areas built out are based on building the lowest cost to serve areas first. This method is necessary to put the project on firm economic footing as quickly as possible. A number of factors can affect the cost to serve: density, overhead versus underground construction, terrain, grants, and other factors.



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Funding and Outside Support:

CVEC is financing the fiber system with a \$66 million RUS smart grid loan. This loan will provide enough funding to cover approximately the first three years of construction for the fiber project.

CVEC also has successfully pursued a number of outside sources of support to assure success for the fiber construction, both directly for CVEC and in partnership with its subsidiary, Firefly Fiber BroadbandSM.

In the FCC Connect America Fund auction in 2018, the companies were awarded \$28.6 million to provide broadband internet access to 10,827 homes and businesses. This award is being paid out in 240 monthly checks to Firefly.

In Virginia, CVEC has been awarded two grants from the Virginia Telecommunications Initiative (VATI). One is for construction at the Midway substation area and one is for construction in portions of the Columbia and Cunningham substations service areas in southeastern Fluvanna County. The Midway grant is for \$300,000 and the Columbia grant is for \$641,000.

In addition to the VATI grants totaling \$1.6 million, CVEC has been successful in receiving two grants from the Tobacco Region Revitalization Commission (TRRC). One of these grants helped offset costs for the first substation area buildout in the Appomattox substation area and the second grant is for construction in the Pamplin substation area that touches portions of Appomattox, Buckingham and Prince Edward counties.

CVEC and Firefly also have joint agreements with the counties of Albemarle, Amherst, Appomattox, Buckingham, Cumberland, Fluvanna, Goochland, and Louisa that will provide approximately \$5 million in additional support spread over the first ten years of the project.

CVEC submitted a ReConnect Grant under the RUS program in 2019 and expects to hear a final decision on that application soon. CVEC submitted an application for a \$14 million loan and \$14 million grant in this program. The grant area would touch portions of 11 different substation areas.

CVEC intends to continue to seek funds to offset the costs of construction of its fiber network to assure the financial viability of the project for its members.