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STATE CORPORATION COMMISSION  
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Case No. PUR-2019-00145

Sponsor: ("APCo")

Exhibit No. 2

Witness: NONE

Bailiff: JABARI T. ROBINSON

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COMMONWEALTH OF VIRGINIA  
STATE CORPORATION COMMISSION

PETITION OF

APPALACHIAN POWER COMPANY

CASE NO. PUR-2019-00145

For approval of a broadband capacity pilot program pursuant to § 56-585.1:9 of the Code of Virginia

**PETITION**

Pursuant to § 56-585.1:9 of the Code of Virginia (Pilot Statute) and Rule 80 A of the Rules of Practice and Procedure of the State Corporation Commission (Commission),<sup>1</sup> Appalachian Power Company (Appalachian or Company) petitions the Commission for approval of a pilot program to provide broadband capacity to a nongovernmental Internet service provider (ISP) in areas of Grayson County, Virginia that are unserved by broadband (Grayson Broadband Pilot or Pilot). In support of this Petition, Appalachian states as follows:

**I. Introduction**

Appalachian is a Virginia public service corporation serving approximately 530,000 customers in Virginia and maintaining an office at 1051 East Cary Street, Suite 1100, Richmond, Virginia 23219. Appalachian is an investor-owned incumbent electric utility as defined in the Virginia Electric Utility Regulation Act.<sup>2</sup> The names and addresses of the Company's legal counsel are listed at the conclusion of this Petition.

In support of its Petition, Appalachian is presenting direct testimony from the following witnesses:

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<sup>1</sup> 5 VAC 5-20-80 A.

<sup>2</sup> See Va. Code § 56-576.

- **Jennifer B. Sebastian**, Regulatory Consultant Staff VA/TN, Appalachian. Ms. Sebastian provides an overview of the Petition, discusses the estimated costs and Appalachian's proposed accounting for the Grayson Broadband Pilot, and explains the Company's request that the Commission provide reasonable assurance of future cost recovery.
- **Thomas J. Johnson**, Director of Distribution Engineering, Appalachian. Mr. Johnson describes the electric distribution grid improvement projects that Appalachian has planned for Grayson County and explains why communications systems are integral to those grid technologies. Mr. Johnson also explains how a fiber optic network could provide the communications platform for grid investments in Grayson County.
- **Kenneth L. Perdew, Jr.**, Director of Rural Broadband, American Electric Power Service Corporation. Mr. Perdew explains how the Grayson Broadband Pilot will facilitate Appalachian's planned grid improvement projects in Grayson County. He describes the types of communications equipment the Company considered for the Pilot, explains why the Company chose fiber optic equipment, and provides the estimated costs of the different types of equipment.
- **William L. Shepley**, Administrator, Grayson County, Virginia. Mr. Shepley provides an overview of Grayson County, discusses the current state of broadband access in the County, and describes the broadband development challenges facing the County and its efforts to expand broadband access. He also discusses anticipated benefits of the proposed Pilot to the County's residents and businesses.
- **Michael D. Clemons**, President and Chief Technology Officer, GigaBeam Networks, LLC. Mr. Clemons provides an overview of GigaBeam, the nongovernmental Internet service provider to which Appalachian will provide broadband capacity under the Pilot, and discusses how the Pilot will help facilitate GigaBeam's goal of providing reliable, high-speed Internet connectivity to the unserved areas of Grayson County.
- **Sandra L. Terry**, President, Rural Broadband Consulting, LLC. Ms. Terry describes federal agencies' efforts to compile accurate, reliable national broadband mapping data. In addition, Ms. Terry explains how Appalachian determined which areas of Grayson County are "unserved by broadband," as that term is defined in § 56-585.1:9 of the Code of Virginia.
- **Brad N. Hall**, Vice President – External Affairs, Appalachian. Mr. Hall discusses the importance of broadband access in modern society and the benefits it brings to local communities. He explains why Grayson County is an appropriate location for the Pilot and describes anticipated benefits of the Pilot, including Appalachian's analysis of the expected economic impacts.

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## II. Legal Authority

In 2019, the General Assembly enacted legislation allowing investor-owned electric utilities to petition for approval to provide broadband Internet capacity in unserved areas of the Commonwealth.<sup>3</sup> The Pilot Statute, codified as Virginia Code § 56-585.1:9, states in part that:

... [E]ach Phase I Utility ... may submit one or more petitions to provide or make available broadband capacity to nongovernmental Internet service providers in areas of the Commonwealth unserved by broadband.<sup>4</sup>

The statute defines “unserved by broadband” to mean “a designated area in which less than 10 percent of residential and commercial units are capable of receiving broadband service.”<sup>5</sup> The term “broadband,” in turn, means “Internet access at speeds greater than 10 [megabits per second (Mbps)] download speed and one Mbps upload speed.”<sup>6</sup> The General Assembly included a public-policy declaration in the statute, stating that a utility’s provision of broadband capacity to nongovernmental ISPs in unserved areas is “in the public interest.”<sup>7</sup>

Subdivision C of the Pilot Statute describes specific actions that a utility may take to provide broadband capacity:

Notwithstanding the provisions of § 13.1-620 or the articles of incorporation of an investor-owned utility, an investor-owned utility may, either directly or through an affiliate or subsidiary, pursuant to a pilot program that the Commissioner approves pursuant to this section, (i) own, manage, or control any broadband capacity equipment and electronics, including any plant, works, system, lines, facilities, or properties, or any part or parts thereof, together with all appurtenances thereto, used or useful in connection with the

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<sup>3</sup> 2019 Va. Acts ch. 619 (House Bill 2691).

<sup>4</sup> Va. Code § 56-585.1:9 A.

<sup>5</sup> *Id.* § 56-585.1:9 F. The Department of Housing and Community Development may by guideline increase this percentage from time to time. *Id.*

<sup>6</sup> *Id.* The Virginia Department of Housing and Community Development may by guideline modify these speeds from time to time. *Id.*

<sup>7</sup> *Id.* § 56-585.1:9 A.

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provision and extension of such broadband services; (ii) lease infeasible rights of use in such broadband capacity equipment and electronics to nongovernmental Internet service providers in areas of the Commonwealth unserved by broadband pursuant to this section; and (iii) provide access points that are outside the utility's energized zone to allow connection between the utility's broadband capacity system and the nongovernmental Internet service provider's system.<sup>8</sup>

In other words, under a Commission-approved pilot program, a utility may own broadband capacity, lease it to a nongovernmental ISP, and provide access points outside the utility's energized zone to allow the ISP's system to connect to that of the utility. The capacity that the utility provides to the nongovernmental ISP is commonly referred to in the broadband industry as "middle-mile" capacity, or the infrastructure that connects a larger, core network (and the greater Internet) to a provider's local network. The nongovernmental ISP can use that capacity to provide "last-mile" connectivity, or the infrastructure that links the ISP's network to end-use customers.

Under the Pilot Statute, any petitions to provide broadband capacity that a utility submits "shall not exceed \$60 million in costs annually."<sup>9</sup> In addition, the statute provides that "[t]he incremental costs of providing broadband capacity pursuant to any such pilot program, net of revenue generated therefrom, shall be eligible for recovery from customers as an electric grid transformation project pursuant to clause (vi) of subdivision A 6 of § 56-585.1 filed on or after July 1, 2020."<sup>10</sup> A pilot program approved by the Commission shall continue for a period of three years, unless the Commission extends the program or makes it permanent.<sup>11</sup> When a pilot

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<sup>8</sup> *Id.* § 56-585.1:9 C.

<sup>9</sup> *Id.* § 56-585.1:9 A.

<sup>10</sup> *Id.* § 56-585.1:9 B.

<sup>11</sup> *Id.* § 56-585.1:9 I.

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program terminates, the utility shall continue providing broadband capacity pursuant to leases existing as of the date of the termination.<sup>12</sup>

### III. The Grayson Broadband Pilot

With this Petition, Appalachian seeks approval of the Grayson Broadband Pilot, under which it will provide broadband capacity to GigaBeam Networks, LLC (GigaBeam) in unserved areas of Grayson County, Virginia. To provide the capacity, Appalachian will install 96-strand fiber optic communications cable on its existing utility poles in the County. Appalachian will use a portion of the capacity to meet its own distribution system needs, including as the supporting communications backbone for intelligent grid technologies. The Company will lease another portion to GigaBeam, which will use the fiber infrastructure to deliver high-speed Internet access to thousands of unserved residences and business in Grayson County. Appalachian will use the lease revenues it receives from GigaBeam to offset the costs of the Pilot.

The Pilot will benefit Appalachian and its customers, because the Company will use the fiber infrastructure to improve the quality and reliability of electric service in Grayson County. As Company witness Johnson explains, the fiber infrastructure installed under the Pilot will provide the necessary communications platform for grid improvements in the County, including the installation of advanced metering infrastructure (AMI) and, eventually, distribution automation and circuit reconfiguration (DACR) technology. AMI enables automated, two-way communications between a customer's AMI or "smart" meter and the utility company, a functionality that opens up numerous potential benefits. In 2017, Appalachian began a multi-year program to install AMI meters throughout its Virginia service territory, including

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<sup>12</sup> *Id.*

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approximately 11,000 meters in Grayson County. DACR technology uses automated communications to pinpoint and quickly correct faults along a circuit, resulting in fewer sustained outages and shorter restoration times. Company witness Johnson describes the many benefits of AMI and DACR in more detail in his testimony.

To function effectively, AMI and DACR rely upon a strong communications network backbone. To date, Appalachian's AMI and DACR installations have been located primarily in more densely populated areas, where cellular wireless service is typically more reliable and thus capable of providing the necessary communications backbone. But in areas such as Grayson County, with its sparse population and rugged, mountainous terrain, cellular wireless coverage is far less reliable and often non-existent. As Company witness Perdeu explains, fiber optic networks are by contrast far more reliable. Fiber networks also offer significantly higher speeds, greater bandwidth capacity, and stronger cybersecurity protections, among other benefits. The fiber infrastructure that Appalachian installs under the proposed Pilot will therefore provide a more reliable and secure platform for the Company's AMI and DACR systems, to the benefit of the Company and its customers.

In addition to these benefits, the Grayson Broadband Pilot will help accomplish the General Assembly's goal of expanding broadband Internet service to unserved areas of the Commonwealth. Access to affordable and reliable high-speed Internet service has become a necessity of modern life, and yet millions of people in rural communities across the United States still do not have it. In Grayson County, as Company witness Shepley explains, the lack of broadband access impacts the County's residents in wide-ranging important ways, from education and public safety to healthcare and economic development. The proposed Pilot will

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help resolve these issues. The Pilot also will produce economic development benefits, as discussed by Company witness Hall.

As Company witness Clemons indicates, GigaBeam is well-qualified to serve as the nongovernmental ISP under the proposed Pilot. For approximately fifteen years, GigaBeam has been constructing and operating broadband networks to expand access to underserved rural communities in southwest Virginia, West Virginia, and Kentucky. It currently is working on projects that will bring broadband connectivity to at least 2,000 customers, and this year GigaBeam received several honors from BroadbandNow's Service Provider Awards Program, which recognizes operational excellence among ISPs across the country.

Appalachian has developed two alternative plans for deploying fiber optic broadband infrastructure under the Grayson Broadband Pilot, which Company witness Perdew describes in his testimony. Scenario 1 would involve the installation of approximately 238 miles of 96-strand fiber optic cable, a design that would support the full deployment of AMI meters and, in future years, the deployment of DACR technology. Scenario 2 would involve the installation of approximately 146 miles of 96-strand fiber optic cable, almost forty percent less than Scenario 1. Although Scenario 2 would allow the deployment of DACR at locations identified for DACR installations using a fiber optic communications platform, it would not support the full deployment of AMI meters using that type of communications system.

As Mr. Perdew and Mr. Clemons explain, Scenario 1 also offers other advantages over Scenario 2, due to its more extensive buildout of fiber optic infrastructure. For example, under Scenario 1, a greater percentage of the unserved areas would receive access to fiber-to-the-home service, which is faster and more reliable than fixed wireless service. As a result, Scenario 1 would provide higher quality service to a greater number of customers in the County. Moreover,



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for those customers with fixed wireless access, the wireless service provided under Scenario 1 will be better than the wireless service provided under Scenario 2. In addition, Scenario 1 would accelerate the time needed to deploy broadband capacity throughout the unserved areas, because it would require the construction of fewer vertical assets. Finally, Scenario 1 will increase the longevity of the network installed under the Pilot, as it will require fewer wireless technology upgrades over the life of the network. Mr. Perdew and Mr. Clemons explain these advantages in greater detail in their testimonies.

**IV. Cost Recovery**

The estimated costs of the Grayson Broadband Pilot differ under each of the two scenarios. As Mr. Perdew discusses, the estimated cost of Scenario 1 is a capital investment of approximately \$17.5 million, plus annual operation and maintenance (O&M) expenses of approximately \$481,000, while the estimated cost of Scenario 2 is a capital investment of approximately \$11.2 million, plus annual O&M expenses of approximately \$306,000. In both cases, the estimated capital investment includes the construction of a 96-strand fiber optic cable and all of the necessary hardware, right-of-way work, easements, pole replacements, a telecommunications building to house the ISP electronics, engineering, and installation.

As explained below, Appalachian intends to seek to recover the costs of the Grayson Broadband Pilot in future rate adjustment clause (RAC) filings submitted on or after July 1, 2020. For purposes of this filing, the Company has developed estimates of the average revenue requirement over the first five years of the Pilot following the completion of construction. As Company witness Sebastian explains, the estimated annual revenue requirement is approximately \$2.43 million for Scenario 1 and approximately \$1.55 million for Scenario 2. For a residential customer using 1,000 kWh per month, the bill impact of the Scenario 1 revenue requirement is

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an increase of approximately \$0.22 per month, or about \$2.64 per year, and the impact of the Scenario 2 revenue requirement is approximately \$0.14 per month, or about \$1.68 per year.

The Pilot Statute states that “[t]he incremental costs of providing broadband capacity pursuant to any such pilot program, net of revenue generated therefrom, shall be eligible for recovery from customers as an electric grid transformation project pursuant to clause (vi) of subdivision A 6 of § 56-585.1 filed on or after July 1, 2020.”<sup>13</sup> As explained by Company witness Perdeu, in addition to providing broadband capacity to unserved areas, the fiber infrastructure that Appalachian installs under the proposed Pilot will provide the communications system platform to support, and will be an integral part of, electric distribution system improvements that the Company undertakes in Grayson County. As a result, all of the costs of the fiber infrastructure installed as part of the proposed Pilot (net of the lease revenues received from GigaBeam) are eligible for recovery through a RAC under § 56-585.1 A 6. Consistent with the Pilot Statute, Appalachian will not seek approval of such a RAC until on or after July 1, 2020.

Because the Pilot Statute prevents a utility from seeking approval of such a RAC until on or after July 1, 2020, Appalachian respectfully requests that the Commission provide reasonable assurance in this proceeding that the Company will be entitled to recover the costs of the proposed Pilot through future RAC rates. In particular, Appalachian seeks explicit rulings from the Commission authorizing the Company to defer the costs of the Pilot as they are incurred and to recover the associated revenue requirement in RAC proceedings that the Company will file on or after July 1, 2020.

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<sup>13</sup> *Id.* § 56-585.1:9 B.

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The Pilot Statute also states that a pilot program shall continue for three years following the date on which the Commission approves the utility's first petition to provide broadband capacity; unless the Commission extends the program or makes it permanent. As discussed by Company witness Sebastian, given the length of time needed to install broadband capacity and AMI meters in Grayson County, and recognizing that Appalachian proposes to recover the costs of the Grayson Broadband Pilot over the expected thirty-year life of the fiber optic infrastructure, the Company requests that the Commission approve the Pilot for an initial term of six years to begin on the date the Commission approves this Petition. In addition, Appalachian understands that it will be entitled to earn a return on and of its investment over the expected thirty-year life of the fiber optic infrastructure, and the Company explicitly requests that the Commission confirm this understanding.

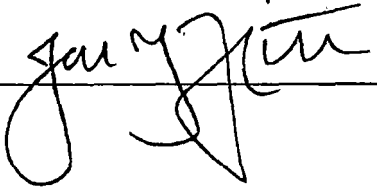
**V. Conclusion**

Pursuant to § 56-585.1:9 of the Code of Virginia, Appalachian respectfully requests that the Commission approve the Grayson Broadband Pilot. In addition, Appalachian respectfully requests that the Commission provide reasonable assurance that the Company will be able to recover the costs of the Pilot through future RAC rates, in accordance with the statute.

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Respectfully submitted,

APPALACHIAN POWER COMPANY

By:  \_\_\_\_\_

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Dated: September 6, 2019