



Rural Broadband Opportunity: Leveraging Utilities' New Private Wireless Communications Infrastructure

Even as the novel coronavirus underscores the importance of broadband Internet access in every American community, electric utilities and their regulators have a rare opportunity to substantially advance national rural broadband policy goals through otherwise unrelated—but complementary—efforts to deploy foundational wireless communications capabilities critical to modernizing the electric grid. In implementing new private wireless communications networks for grid control systems using licensed spectrum, utilities that serve rural areas will be deploying infrastructure such as towers, power and new fiber backhaul that could be shared or incrementally augmented to cost-effectively support the provision of wired or wireless broadband Internet service to consumers in the utility's service area.

Commenting on a project in Mississippi implementing this strategy, state Public Service Commission chairman and National Association of Regulated Utility Commissioners president Brandon Presley said, "This is a win-win-win for Entergy [the electric utility], C Spire [the Internet Service Provider] and the people of rural Mississippi. Entergy gets communication enhancements to its statewide electrical service grid, C Spire gets highly-desired fiber infrastructure and the people of our great state who live in some of the most isolated areas will get access to 21st century broadband services."¹

U.S. Rural Broadband Internet Strategy: Subsidies to Overcome Insufficient ROI

In many rural parts of the country, deploying broadband Internet service does not make economic sense. The vast distances require enormous infrastructure investment, and the number of potential subscribers is too small to support that investment and defray the costs of operations. Lacking a path to adequate return on investment, rational economic actors opt out.

Today more than ever before, broadband Internet is an essential service. As schools and businesses closed to slow the spread of the coronavirus, rural communities unable to attract broadband Internet investment were isolated, their residents without the means to telework or participate in online classes.

Congress and the federal government have adopted a subsidy strategy that has increased rural broadband Internet availability. But the subsidy cost of serving those communities and the time required to reach them has been substantial. For example, the Federal Communications Commission announced in August 2018 that its Connect America Fund Phase II auction had competitively allocated \$1.488 billion to help provide broadband to 713,176 rural homes and businesses over a period of 10 years, an average subsidy per subscriber location of \$2,086.²

Help from the Grid Modernization Imperative

Now, almost a century after utilities brought electricity to rural America, the industry could greatly accelerate rural broadband Internet deployments by stretching the value of federal subsidy dollars. On May 14, 2020, the Federal Communications Commission (FCC) re-aligned the 900 MHz band to allow its use for wireless broadband communications services. Electric utilities are looking to the 900 MHz spectrum to provide them a much-needed option for licensed, low-band spectrum on which to build new, private wireless broadband communications networks to support their modern, data-dependent command and control systems. Because fiber infrastructure is not always cost-effective to deploy, and appropriate spectrum for wireless broadband networks is in short supply, utilities have been extending or delaying new communications network construction. Now that the FCC has made this 900 MHz spectrum available, utilities—including those operating in or near rural areas—will construct the secure, private wireless networks they need to manage their operations.

Those private wireless utility networks will include new middle-mile infrastructure such as towers, cabling, power, high-capacity backhaul facilities, and other items utilities need to support communications with their grid-monitoring and -control devices over the 900 MHz spectrum. Although the utilities will likely reserve use of the licensed 900 MHz spectrum itself for their own critical data communications, the balance of the network infrastructure could be shared to help provide connectivity for other purposes—including the provision of

broadband Internet service to rural consumers over a separate, wired or wireless last-mile interface. In the absence of such sharing, the cost of deploying this infrastructure will continue to discourage private investment in broadband investment in rural areas. Says Southern Company CEO Tom Fanning, "This notion of bringing this kind of infrastructure development to underserved communities will make America better for decades to come."³

In a Virginia pilot project, for example, Dominion Energy is evaluating this approach. "Grid modernization is coming one way or the other," said Nathan Frost, Dominion's director of new technology and energy conservation. "We'll be in some of these rural communities. We'll take the broadband to a hand-off point, and a local Internet Service Provider will deploy their own cable at that point. We'll provide the highway. The ISPs will provide the local roads."⁴ Virginia statute specifies that the "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." (Va. Code § 56-585.1:9)

Describing the Mississippi project, which completed the first phase of fiber backbone deployment in late 2019, Entergy Mississippi President and CEO Haley Fisackerly said, "This project expands rural broadband access to thousands of homes and businesses in some hard-to-reach areas across Mississippi. It also has modernized our grid, which benefits all Entergy Mississippi customers as it enhances the communication systems that connect our facilities, substations, offices and radio sites."⁵

Though rural broadband Internet has long been a major national priority, the coronavirus public health crisis has brought into sharp

focus the need for broadband service in every home to support the education of our children and the health and well-being of our citizens. As the Virginia and Mississippi projects demonstrate, leveraging new utility wireless communications infrastructure offers a very promising approach to providing broadband Internet service in rural communities.

¹ C Spire press release, "Public Service Commission, Entergy Mississippi, and C Spire Team up to Tackle Rural 'Digital Divide' Challenge," Feb. 7, 2018 (https://www.cspire.com/company_info/about/news_detail.jsp?entryId=29500005).

² Press Release, "Connect America Fund Auction to Expand Broadband to Over 700,000 Rural Homes and Businesses," Federal Communications Commission (Aug. 28, 2018) (<https://docs.fcc.gov/public/attachments/DOC-353840A1.pdf>).

³ "FCC Allows Utilities Private LTE Broadband," Public Utilities Fortnightly, (<https://www.fortnightly.com/fortnightly/2020/05-0/ceo-fannings-view-landmark-fcc-order>).

⁴ "Dominion, Apco Leverage Grid Investments to Promote Rural Broadband," Bacon's Rebellion, (<https://www.baconsrebellion.com/wp/dominion-apco-leverage-grid-investments-to-promote-rural-broadband/>).

⁵ C Spire press release, "C Spire, Entergy Complete All-fiber Broadband Infrastructure Project in Rural Mississippi," Dec. 19, 2019 (<https://www.cspire.com/cms/news/wireless/33400003/C%20Spire,%20Entergy%20Complete%20All-fiber%20Broadband%20Infrastructure%20Project%20in%20Rural%20Mississippi/>).

