

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



**FILED**

04/03/20  
04:59 PM

Order Instituting Rulemaking Regarding  
Emergency Disaster Relief Program.

Rulemaking 18-03-011

**OPENING COMMENTS OF CHARTER  
COMMUNICATIONS, INC. ON THE ASSIGNED  
COMMISSIONER'S PROPOSAL**

**PUBLIC VERSION**

James W. McTarnaghan  
PERKINS COIE LLP  
505 Howard Street, Suite 1000  
San Francisco, CA 94105  
Tel: (415) 344-7000  
E-mail: [jmctarnaghan@perkinscoie.com](mailto:jmctarnaghan@perkinscoie.com)

April 3, 2020

Attorneys for  
Charter Communications, Inc.

**TABLE OF CONTENTS**

INTRODUCTION ..... 1

RESPONSES TO THE ACR’S QUESTIONS CONCERNING ITS  
RECOMMENDATIONS ..... 4

    1.    Applicability of Requirements..... 5

    2.    Alternative Definition of Providers Covered..... 15

    3.    Definition of Resiliency ..... 16

    4.    Backup Power Requirement ..... 17

PROPOSED ALTERNATIVE: FOCUS ON CONTINUITY OF SERVICE TO KEY  
WIRELESS FACILITIES AND FIRST RESPONDERS. .... 24

    b.    How should “outage” be defined? ..... 25

    c.    Should the length of the 72-hour backup power requirement be  
            shorter, longer or indefinite? Please provide an analysis to support  
            your recommendation. .... 26

    d.    What other backup power requirements or components should the  
            Commission consider? Please provide an analysis to support your  
            discussion of any additional requirements or components. .... 27

    5.    Backup Power Plans. .... 27

        a.    Clean Energy Generation..... 29

        b.    Waivers ..... 32

        c.    Critical Facility Location Information Sharing..... 33

        d.    Critical Infrastructure Resiliency, Hardening and Location  
                Information Sharing..... 33

    6.    Emergency Operations Plans ..... 40

    7.    Current Mitigation Efforts ..... 44

CONCLUSION..... 49

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding  
Emergency Disaster Relief Program.

Rulemaking 18-03-011

**OPENING COMMENTS OF CHARTER  
COMMUNICATIONS, INC. ON THE ASSIGNED  
COMMISSIONER’S PROPOSAL**

Pursuant to the Assigned Commissioner’s Ruling and Proposal issued in this proceeding dated March 6, 2020 (“ACR”), Charter Communications, Inc. (“Charter”) submits these Comments in response to the ACR’s request for comments on the Assigned Commissioner Proposals (the “Proposal”) to require communications service providers to take numerous itemized steps to increase the resiliency of their networks.<sup>1</sup>

**INTRODUCTION**

Ensuring that Californians have safe and reliable access to the 911 system during wildfires, public safety power shutoff (“PSPS”) events, and other emergencies, and that first responders have the resources and information they need to respond to those events effectively, are important objectives. Charter provides broadband and voice services for millions of Californians that those subscribers depend upon to conduct business and to stay connected, and takes seriously the important role it plays in maintaining a robust and resilient communications network that is accessible when its subscribers need it. Charter has quickly adopted and complied with the

---

<sup>1</sup> ACR at 1.

Commission's recent directives to protect Californians under emergency conditions,<sup>2</sup> including by waiving certain fee requirements, providing multilingual customer services to make sure that all customers have access to the information they need, and making available mobile phones and free WiFi for use at shelters for persons impacted by wildfires and other disasters.

To ensure that its services remain available during emergencies, Charter has designed its network to minimize points of failure, installed pervasive backup power generation and battery solutions, invested in a fleet of mobile generators that can be quickly deployed to locations where they are needed, and met several times with the California Governor's Office of Emergency Services ("OES") and joined the California Utilities Emergency Association ("CUEA") to coordinate disaster response efforts and ensure that emergency planners and first responders have access to the information they need. Charter has been able to minimize the outage impact of recent wildfire and de-energization events to its subscribers due to these efforts, and due to the fact that Charter's major service areas are predominantly in Southern California, where PSPS events during the 2019 wildfire season were generally shorter and of more limited scope than in Northern California.

It is understandable that the urgency of the recent wildfires and PSPS events has caused the Commission to focus on ways it can protect Californians impacted by those events from a loss of communications services, and the goals that the Proposal seeks to advance are undeniably important. However, Charter is concerned that the specific regulatory obligations the Commission is considering to address these issues are deeply flawed. In their present form, they would lead to significant cost and disruption without meaningfully advancing their putative objective of helping

---

<sup>2</sup> *Order Instituting Rulemaking Regarding Emergency Disaster Relief Program*, R.18-03-011, Decision Adopting an Emergency Disaster Relief Program For Communications Service Provider Customers, D.19-08-025 (Cal. Pub. Utils. Comm'n Aug. 23, 2019).

Californians retain access to emergency services during disasters and PSPS events. Moreover, the Commission does not have before it the appropriate evidentiary record necessary to fully consider the implications and practical difficulties inherent in what the Proposal contemplates, much less weigh the competing considerations to balance the feasibility and effectiveness of different alternatives. The Proposal, if adopted in its present form, would:

- shift energy-generation responsibilities from electric utilities—where such responsibility belongs—to communications providers whose networks were never designed or engineered to generate their own power for extended durations;
- apply far more broadly than is necessary to ensure adequate access to 911 for Californians during emergency and PSPS events, without considering feasible and efficient alternatives—such as focusing efforts on maintaining connectivity to wireless networks that most Californians actually use (and virtually all Californians can access) to contact emergency services and first responders;
- require, as applied to broadband cable and VoIP facilities, a vast, disruptive statewide construction effort to site and build new generators or other backup power sources in *tens of thousands* of new locations;
- require—for providers to carry out this vast statewide effort—extensive new construction in residential neighborhoods to place the tens of thousands of new generator cabinets that the Proposal would necessitate, many of which would ultimately need to be placed on private property, interfering with Californians’ use and enjoyment of their yards as well as with neighborhood aesthetics—a result almost certain to generate significant community opposition;
- introduce a series of new environmental and public safety risks that have not yet received the necessary consideration; including the risks of requiring communications service providers to operate tens of thousands of new backup power sources in fire-prone areas and thereby substantially undercutting the public safety rationale for allowing electric utilities to discontinue power distribution when fire risks are elevated;
- impose extraordinary financial costs and practical burdens on communications providers in order to finance and carry out this extraordinary construction effort, which costs are (in the long run) ultimately likely to be borne by consumers;
- yield questionable (if any) benefits to public safety, since, unlike wireless networks that can be reached using rechargeable battery-operated phones, customers cannot avail

themselves of wireline Voice over Internet Protocol (“VoIP”) and broadband Internet access services unless their homes also have access to a power source;<sup>3</sup>

- impose these power-generation and clean-energy requirements on communications service providers without any meaningful evidentiary record to support a conclusion that those obligations are even capable of being met at the scale contemplated by the Proposal using current commercially available technology;
- jeopardize both national security and competitive integrity by requiring providers to share critically sensitive network and facilities information under conditions in which it cannot adequately be secured, undermining the rigorous protection that such information receives under federal law;
- create numerous administratively burdensome new reporting obligations without a proper foundation that those obligations will assist, rather than hinder, public safety and disaster-response efforts, and without any attempt to weigh the putative benefits of these requirements against their cost; and
- impose regulatory requirements on cable broadband and VoIP facilities significantly in excess of what federal law permits, leaving those requirements vulnerable to federal preemption if challenged.

In light of these numerous drawbacks to the Proposal, Charter urges the Commission instead to consider more viable alternatives. In particular, it urges the Commission to consider the more targeted and cost-effective plan, detailed in the California Cable Television Association’s (“CCTA”) Comments, to maintain 911 connectivity through the wireless network and to ensure that first responders retain network connectivity in the event of an electric outage.

Charter discusses the ACR’s specific requests for comment and information below.

### **RESPONSES TO THE ACR’S QUESTIONS CONCERNING ITS RECOMMENDATIONS**

The ACR directs the parties to “organize and submit their comments in the same order in which the issues and questions are presented” in the ACR. In accordance with this instruction and to facilitate review, Charter’s Comments restate the questions from the ACR to which they

---

<sup>3</sup> See Declaration of Greg Mott (“Mott Decl.”), attached as Exhibit A, ¶ 5.

respond. Where Charter's response pertains to more than one subpart, it has grouped the ACR's inquiries accordingly.

1. **Applicability of Requirements:** The Proposal states that the requirements shall be applicable to all companies owning, operating, or otherwise responsible for infrastructure that provides or otherwise carries 9-1-1, voice, text messages, or data.
  - a. Is this definition of applicability reasonably tailored to ensure regulatory compliance over all communications service providers? Why or why not?
  - b. Which types of providers, if any, should be excluded from these requirements because their services are not essential to reliable access to 9-1-1 and the distribution of essential emergency information?

Charter appreciates that the increasing frequency of destructive wildfires and PSPS events requires solutions to improve Californians' access to important emergency services during an outage or other disaster. However, Charter believes that the basic framework of the Proposal for addressing these issues is misplaced. It improperly (1) shifts obligations to communications service providers that should rightly be borne by electric utilities; (2) fails to consider the magnitude of the risks, costs, and impracticalities of the requirements it contemplates for wireline communications facilities and providers; (3) fails to consider the limited (if any) public safety benefits that the requirements would realize as applied to wireline facilities; (4) fails to perform the necessary cost-benefit analysis to weigh these considerations against one another; and (5) extends public utility obligations to broadband internet access service ("BIAS") and VoIP facilities, which the Commission does not have legal authority to mandate with respect to BIAS and VoIP services.

Any Plan to Minimize Communications Disruptions Should Focus on the Role of Electric Utilities: As a preliminary matter, Charter urges the Commission to focus on the responsibilities of electric utilities to supply reliable power to critical facilities. While the Proposal recounts that "emergency calls and notifications often fail during disasters such as wildfires, floods, and

earthquakes,”<sup>4</sup> it omits that such failures—where they occur<sup>5</sup>—are often not due to the *force majeure* events themselves, or any failure or action by the communications service provider, but instead to an upstream failure (e.g., power-line-related fire) or midstream action (e.g., a Commission-authorized PSPS) by an electric utility.<sup>6</sup> In many instances, electric utilities must shut off power due to fire risks that are manageable through maintenance tasks, such as better clearing of vegetation around power lines, and shutoffs may be subject to reduction through increased efforts by the utility. It makes more sense for the CPUC to address these shortfalls directly, especially given that the network investments of electric utilities, unlike those of BIAS and VoIP providers (discussed below), are unquestionably within the Commission’s authority to regulate.<sup>7</sup> And even if some power shutoffs are unavoidable due to conditions beyond an electric utility’s control, electric utilities are responsible for supplying power to consumers, small and medium businesses, larger enterprises, and government entities, and they should share in the responsibility for installing and maintaining emergency backup capabilities for critical facilities, including communications facilities, which depend upon their power.<sup>8</sup>

---

<sup>4</sup> ACR at 2.

<sup>5</sup> Charter also shares CCTA’s concern that this claim in the Proposal is not supported by citations and does not identify the specific communications outages to which it refers or their causes, and joins CCTA’s Comments in this regard. *See* CCTA Comments at 4 n.17.

<sup>6</sup> *See, e.g., Order Instituting Rulemaking to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions*, R.18-12-005, Decision Adopting De-Energization (Public Safety Power Shut-Off) Guidelines (Phase 1 Guidelines), D.19-05-042 at 3 (Cal. Pub. Utils. Comm’n June 4, 2019) (“[F]ires attributed to power lines comprise roughly half of the most destructive fires in California history.”); *id.* at 7 (“[D]e-energization can leave communities and essential facilities without power, which brings its own risks and hardships . . .”).

<sup>7</sup> *See, e.g., In re Application of San Diego Gas & Electric Company (U 902 E) for Adoption of its Smart Grid Deployment Plan*, A.11-06-006, Decision Adopting the Smart Grid Deployment Plans of San Diego Gas & Electric Company, Pacific Gas and Electric Company and Southern California Edison Company, D.13-07-024 at 9 (Cal. Pub. Utils. Comm’n Aug. 2, 2013) (describing CPUC’s “broad [statutory] authority to oversee infrastructure investments by electric utilities”).

<sup>8</sup> *See, e.g.,* Cal. Pub. Utils. Code § 8386(c)(7) (identifying “operators of telecommunications infrastructure” as priority customers of electric utilities along with “critical first responders [and] health care facilities”).



It would be unreasonable to require all providers of communications services—particularly cable providers, whose networks were never designed to operate as parallel power grids—to assume electric utilities’ responsibilities for power generation and distribution under conditions that electric utilities themselves cannot control or believe comprise a threat to public safety. If communications service providers are required to install extended power generation solutions for emergencies, their use of those facilities, even under the best of conditions, could contribute to the very same risks that a PSPS is intended to manage in the first place. Fire and wind conditions that make operating the electricity grid dangerous for electrical utilities can also make operation of backup power sources dangerous for others, such as communications service providers and the public.<sup>9</sup>

Communications service providers, and cable operators in particular, are also not obvious entities to bear the responsibility of maintaining a parallel electrical network. While communications service providers have expertise in building out and managing complex infrastructure, the cable network was never designed to supply its own power or operate for extended periods over vast geographic areas in the absence of external, third-party power sources. Although cable networks are designed with a degree of resiliency to ensure continuity of operations during localized outage events of limited duration (described below), operating distributed power generation sources, over large areas, for extended time periods, is a task far more suited to the experience and institutional capabilities of electric utilities than of cable companies, who should not be expected to step into the shoes of electric utilities.

Inclusion of Wireline Broadband and VoIP Providers Does Not Materially Advance Public Safety Considerations: Beyond this threshold problem, there are practical reasons why the

---

<sup>9</sup> See Mott Decl. ¶ 9.

network resiliency requirements the Proposal considers would be a poor fit for facilities used to provide wireline broadband and VoIP services.<sup>10</sup> Unlike traditional copper telephone networks (in which the handsets are typically line-powered) and wireless services (which are accessed over handheld devices for which backup batteries are pervasive in the consumer market), wired broadband and VoIP services depend on the availability of power at the consumer premises for the necessary communications equipment to work. This includes both home networking equipment (such as modems and routers) and the devices needed to access the services themselves (such as computers, televisions, and cordless telephone handsets).<sup>11</sup> The public safety benefit of keeping wireline broadband and VoIP communications networks fully powered during extended power outages, therefore, is negligible or even nonexistent if consumers lack the power to connect to those networks.

The only end users who would benefit from keeping wireline broadband and VoIP networks fully powered during an extended outage are those who have access to independent power sources at their homes.<sup>12</sup> Although Charter does not have access to figures on how widespread ownership of private generators is within its service territory, the number of customers who purchase backup batteries from Charter to operate VoIP devices is extremely modest, and very few customers have expressed an interest in this option.<sup>13</sup> Although the Commission

---

<sup>10</sup> To the extent that the CPUC's use of the phrase "operating . . . infrastructure" is intended to capture Mobile Virtual Network Operators ("MVNOs"), it suffers from the same shortcomings discussed below. Under either definitional approach, non-facilities-based wireless resellers should be excluded from the Proposal's requirements. *See infra* at Part 2.a.

<sup>11</sup> *See* Mott Decl. ¶ 5.

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

<sup>13</sup> Pursuant to its obligations arising out of the Commission's 2016 approval of the transfer of control involving Charter, Time Warner Cable, and Bright House Networks, Charter has shared with Commission Staff survey data showing only very limited customer interest in backup batteries for VoIP services.

mandates customer education programs about the need for backup power for VoIP customers and Charter offers batteries to customers who want them, Charter's experience has been that few do.<sup>14</sup>

Moreover, home batteries for VoIP modems typically provide power for a much shorter duration than the network backup power requirements under consideration in the Proposal. When the FCC considered backup power for VoIP services in 2015 and developed an extensive factual record on the topic, the predominantly available model for such batteries (which many customers, to the extent they have such batteries at all, may still have in their homes) supplied power for approximately eight hours,<sup>15</sup> and newer models available in the marketplace today (and offered by Charter) operate for approximately 24 hours. Notably, the FCC also determined that eight hours (and ultimately 24 hours) was sufficient to cover “the critical hours immediately after a power outage,” and that multi-day backup requirements for VoIP-related networking equipment at the customer premises would be excessive in light of customers' abilities to access emergency services during prolonged outages via alternative means.<sup>16</sup> Thus, even if home battery backup solutions

---

<sup>14</sup> See *Order Instituting Rulemaking on the Commission's Own Motion into Reliability Standards for Telecommunications Emergency Backup Power Systems and Emergency Notification Systems Pursuant to Assembly Bill 2393*, R.07-04-015, Decision Adopting Guidelines for Customer Education Programs Regarding Backup Power Systems Pursuant To Assembly Bill 2393, D.10-01-026 (Cal. Pub. Utils. Comm'n Jan. 22, 2010). Similarly, the FCC “encourage[s] providers to inform subscribers . . . of known ways consumers can maintain connectivity during extended power outages,” including providing “information on purchasing other accessories such as solar” and “home or car chargers”—but also has made clear that providers “need not offer such accessories themselves.” *In re Ensuring Continuity of 911 Communications*, Report and Order, 30 FCC Rcd 8677, 8691 ¶ 36 (2015).

<sup>15</sup> See 30 FCC Rcd at 8688 ¶ 32 (finding, based on extensive record, that “8 hours of backup power . . . appears to be consistent with a number of VoIP deployment models already in practice” and that “the option to receive 8 hours of backup power is already an industry norm”); see also *id.* at 8678 ¶ 3 (requiring, “within three years of the effective date of the eight hour obligation, at least one option that provides a minimum of 24 hours” of backup power).

<sup>16</sup> *Id.* at 8688 ¶ 32; see also *id.* at 8691 ¶ 36 “[A] mandate to offer backup power for multi-date outages could impose unnecessary burdens on service providers and excessive costs on consumers for comparatively little public safety benefit. . . . [P]ower outages of extended duration allow well-informed consumers time to recharge their existing batteries or make other arrangements to reach emergency assistance until power is restored.”).

were widely adopted—which, based on Charter’s experience, they are not—there would be little public safety benefit to requiring wireline VoIP providers to make the expensive engineering changes necessary to provide service for prolonged outages lasting more than a few hours. Indeed, even for customers who *do* have home batteries for a VoIP modem, there would be limited upside, since many home telephones (such as cordless models) are not powered from the provider-supplied modem and require a separate power source to operate. And as to wireline *broadband* services, which typically require a router or access point in addition to a modem, Charter is not aware of any widespread customer adoption of home battery backup solutions that would enable customers to continue to utilize these services in a home with no power.

The Commission Should Focus Efforts on Maintaining the Resiliency of Wireless Networks During Outage Events: Charter also urges the Commission to focus its efforts on the more logical—and more feasible—task of ensuring that the wireless network remains accessible to Californians seeking to access emergency services during outage events.<sup>17</sup>

Facilities-based wireless providers are better positioned to speak to any specific implementation challenges or costs that they may encounter with respect to maintaining service and 911 connectivity during a power outage. However, wireless devices represent a far more obvious option than wireline broadband and VoIP-connected devices for Californians in disaster- and PSPS-impacted areas to access emergency services. Wireless device ownership and market penetration in California is near-universal, and, unlike home networking equipment and computers, portable batteries that can recharge wireless devices are pervasive in the consumer

---

<sup>17</sup> For these purposes, the appropriate parties to ensure the continuity of wireless communication are facilities-based wireless providers, as MVNOs do not control the facilities used to provide the services they resell. *See* Part 2.a *infra*. Although Charter offers wireless services in California, it does so only on an MVNO basis, and has no ability to control or power the physical facilities used by its wireless partner.

marketplace. Californians fundamentally rely on mobile phones for their communications in emergency situations; over 94% of California households have a wireless phone,<sup>18</sup> the Federal Emergency Management Agency’s (“FEMA”) Emergency Alert System delivers its alerts to mobile phones, and over 80% of California’s 911 calls are wireless.<sup>19</sup> Moreover, wireline network operators and the Commission can take measured steps to ensure that power and backhaul services remain available to wireless towers during outages. Focusing on this objective would represent a much more discrete and achievable task for the Commission than requiring cable providers to keep their entire networks powered throughout an outage. As explained in Part 4 below, the latter would require cable operators to provide power at well over 50,000 individual cable nodes throughout California, as well as hundreds of thousands of additional devices, such as amplifiers and line amplifiers distributed throughout their networks, requiring tens of thousands of unique power sources. Given that the public safety objective of ensuring continued 911 access can be achieved by focusing on key wireless towers and the wireline facilities that support them, Charter urges the Commission to focus on directing its efforts towards that end instead. Charter believes there is a better alternative to advance this objective, set forth in CCTA’s Comments, which Charter joins and briefly discusses in Part 4 *infra*.

The Commission Lacks Legal Authority to Extend the Proposal Requirements to Cable Operators’ Facilities Supporting Broadband and VoIP Services: There would also be significant legal hurdles, under both federal and state law, with extending the Proposal’s requirements to

---

<sup>18</sup> See National Center for Health Statistics, *National Health Interview Survey Early Release Program* (Dec. 2019), [https://www.cdc.gov/nchs/data/nhis/earlyrelease/Wireless\\_state\\_201912-508.pdf](https://www.cdc.gov/nchs/data/nhis/earlyrelease/Wireless_state_201912-508.pdf) (“Landline-only” and “No telephone service” collectively constituted 5.8% of California households in 2018).

<sup>19</sup> See *Official State of California E9-1-1 Statistics* (Jan. 31, 2019), <https://www.caloes.ca.gov/PublicSafetyCommunicationsSite/Documents/2018OfficialCallTotalswithNGandText.pdf>.

wireline broadband and VoIP facilities supplied by cable providers. These defects would leave the Proposal vulnerable to legal challenge in its present form.

*First*, requirements of the sort contemplated by the Proposal—relating to network design and engineering, service continuity, and reporting—embody a quintessential public utility regulation regime. These are the types of obligations that regulators typically apply to gas, electric, and traditional telephone companies. Extending requirements of this sort to broadband and VoIP facilities providers is precisely what state regulators may *not* do under longstanding federal law, as it conflicts with the federal policy of exempting information services, such as interconnected VoIP and broadband services, from such public utility regulation.<sup>20</sup> The D.C. Circuit recently confirmed that state regulation of broadband is subject to conflict preemption to the extent it undermines the Commission’s approach to broadband.<sup>21</sup> Moreover, the Eighth Circuit Court of Appeals has held that *any* state regulation of information services, and interconnected VoIP service in particular, is preempted by the Communications Act.<sup>22</sup> Under either approach, the extension of the Proposal to broadband and VoIP facilities is vulnerable to preemption. In the *Restoring Internet Freedom Order*, the FCC rejected public-utility regulation of broadband services, finding that light-touch regulation would spur investment and innovation in networks.<sup>23</sup> The Proposal

---

<sup>20</sup> See *Charter Advanced Servs. (MN), LLC v. Lange*, 903 F.3d 715 (8th Cir. 2018) (classifying VoIP service as an information service), *cert. denied*, 140 S. Ct. 6 (2019); *In re Restoring Internet Freedom*, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd 311 (2018) (“*RIF Order*”), *pet. granted in part and denied in part by Mozilla Corp. v. FCC*, 940 F.3d 1 (D.C. Cir. 2019) (classifying broadband as an information service).

<sup>21</sup> See *Mozilla Corp. v. FCC*, 940 F.3d 1, 75-76 (D.C. Cir. 2019); *accord California v. FCC*, 39 F.3d 919, 922 (9th Cir. 1994).

<sup>22</sup> See *Lange*, 903 F.3d at 719 (“[A]ny state regulation of an information service conflicts with the federal policy of nonregulation.” (quotation marks omitted)).

<sup>23</sup> *RIF Order*, 33 FCC Rcd at 312 ¶ 1 (reversing heavy-handed utility-style regulation of broadband services, which stifles innovation and deters investment, and returning to light-touch framework for such services).

undermines this approach by taking a heavy-handed and prescriptive approach to the network architecture decisions of providers of information services.

*Second*, extension of these requirements to cable operators would violate Section 253 of the Communications Act. As the FCC recently clarified, Section 253(a) preempts state and local requirements that materially inhibit entry or fair competition in telecommunications markets.<sup>24</sup> Unlike line-powered traditional copper telephone networks powered from a central office or fiber networks powered from a central hub, the hybrid fiber-coaxial (“HFC”) architecture used by many cable operators, including Charter, requires external power at numerous points throughout the network in order to power the nodes that convert optical signals to electrical transmissions, and vice versa, as explained in Part 4 below, and to enable signals to travel over the coaxial portions of the network. Requiring cable providers to maintain 72-hour power backup at every node location throughout their networks would require uniquely expensive and disruptive network changes that fall disproportionately on cable operators and frustrating their access to the marketplace on balanced terms. The disproportionate impact of these costs renders the Proposal non-competitively neutral, and vulnerable to preemption under Section 253.

*Third*, as a matter of California state law, before extending the backup power requirements to wireline broadband and VoIP providers, the Commission would first be required to make a determination that the benefit of doing so would exceed its costs. The Proposal cannot meet this

---

<sup>24</sup> *In re Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, Notice of Proposed Rulemaking and Notice of Inquiry, 32 FCC Rcd 3330, 3362 ¶ 90 & n.174 (2017) (quoting *In re California Payphone Association Petition for Preemption of Ordinance No. 576 NS of the City of Huntington Park, Cal. Pursuant To Section 253(D) of the Communications Act of 1934*, Memorandum Opinion and Order, 12 FCC Rcd 14191, 14206 ¶ 31 (1997)). These protections attach to cable operators, who use the same facilities to provide “commingled” wholesale telecommunications services and retail information services like VoIP and broadband. See *In re Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Declaratory Ruling and Third Report and Order, 33 FCC Rcd 9088, 9103 ¶ 36 (2018).

standard, and the Commission has not yet developed a record that would allow it to conduct this inquiry. Setting aside the federal limitations on its authority over facilities-based cable VoIP providers, any state-law authority the Commission has to subject such providers to backup power requirements derives from Section 2892.1 of the Public Utilities Code, which directs it to “identify the need for telecommunications service systems not on the customer’s premises to have backup electricity . . . to function . . . during an electrical outage.”<sup>25</sup> In that statute, the Legislature specifically directed the Commission (1) to “consider current best practices and technical feasibility for establishing battery backup requirements” and (2) not to implement any standard “unless it determines that the benefits of the standards exceed the costs.”<sup>26</sup> Thus, the Commission’s obligations in this specific proceeding go beyond even its general duty to “assess the consequences of its decisions, including economic effects, and assess and mitigate the impacts . . . as part of each . . . rulemaking.”<sup>27</sup>

*Finally*, also as a matter of state law, the Proposal exceeds the Commission’s authority with respect to cable operators who provide broadband service. Under Article XII of the California Constitution, the CPUC’s authority extends only to “public utilities,”<sup>28</sup> which Section 216 of the

---

<sup>25</sup> Cal. Pub. Utils. Code § 2892.1(b).

<sup>26</sup> *Id.* § 2892.1(c)-(d).

<sup>27</sup> *Id.* § 321.1(a). The Commission also has implicitly acknowledged that conducting a cost-benefit analysis is more important in the context of de-energization decisions and power outages. Indeed, it has previously required electrical utilities that intend to shut off power as part of a fire prevention plan to “demonstrate with a cost-benefit analysis . . . that the benefits of shutting off power in terms of net reduction in fires outweigh the substantial costs, burdens, and risks that shutting off power would impose on customers and communities.” *Order Instituting Rulemaking to Revise and Clarify Commission Regulations Relating to the Safety of Electric Utility and Communications Infrastructure Provider Facilities*, R.08-11-005, Decision Adopting Regulations to Reduce Fire Hazards Associated with Overhead Power Lines and Communication Facilities, D.12-01-032 at 170 (Cal. Pub. Utils. Comm’n Jan. 18, 2012). The Commission should hold the obligations it imposes on communications providers arising out of PSPS events to the same standard.

<sup>28</sup> Cal. Const. art. XII, § 6.



Public Utilities Code defines to include (among others) telephone corporations, but not broadband providers.<sup>29</sup> Thus, while the Commission could arguably adopt some of these requirements for facilities owned and operated by certain telephone companies who are also public utilities, it lacks authority to extend the Proposal generally to other communications service providers.

2. **Alternatively, D.19-08-025 defined communications service providers into the following categories: (1) facilities-based and non-facilities-based landline providers include 9-1-1/E9-1-1 providers, LifeLine providers, providers of Voice Over Internet Protocol [VoIP], Carriers of Last Resort [COLRs], and other landline providers that do not fall into the aforementioned groups; (2) wireless providers include those that provide access to E9-1-1 and/or LifeLine services; (2A) facilities-based wireless providers; and (2B) non-facilities-based wireless providers, include resellers and mobile virtual network operators [MVNOs].**

- a. **For purposes of Phase II, should the Commission apply the definition from D.19-08-025, instead of the proposed definition in the Proposal?**

The Commission should not use the D.19-08-025 definition in imposing any network resiliency requirements in this proceeding. In addition to the practical and legal flaws discussed in Part 1 with respect to the application of the requirements to broadband and VoIP providers, the D.19-08-025 definition would extend requirements to providers who do not themselves own or operate the facilities subject to the Proposal's requirements. In particular, wireless resellers, MVNOs, and other providers who resell or utilize capacity on third-party networks do not, as a general matter, have the legal right or practical capability to dictate or influence the engineering decisions of their partners or vendors. There is accordingly no benefit to extending these requirements to resellers and MVNOs.<sup>30</sup> Holding them responsible for the backup power and

---

<sup>29</sup> Cal. Pub. Utils. Code § 216(a)(1) (defining “[p]ublic utility”). The fact that § 710—a prior provision of the Public Utilities Code which divested the CPUC of jurisdiction over IP-enabled services—has sunset does not somehow invest the Commission with jurisdiction over such services absent some affirmative grant of authority from the Constitution or legislature.

<sup>30</sup> Charter does not read the Proposal's reference to “facilities-based wireless providers” to include WiFi services that are used by cable MVNOs in conjunction with resold wireless service. However, any interpretation of the requirements as applying to cable operator WiFi networks would also suffer from significant defects. The vast majority of Charter's WiFi access points are located in subscribers' homes,

network resiliency capabilities of their partners or vendors would also unfairly subject them to potential penalties under circumstances in which they have no practical ability to monitor or enforce compliance.

**3. Definition of Resiliency: The Proposal defines resiliency as the ability to recover from or adjust easily to adversity or change and is achieved by Providers through utilizing a variety of strategies. The proposal lists an array of strategies and provides definitions for each one.**

- a. Please provide comments on the definition of resiliency in the context of communications service resiliency strategies and their definitions.**
- b. Please comment on any recommendations or modifications that should be considered to the proposed resiliency definition and the resiliency strategies. Please provide a complete discussion for any proposed recommendations or modifications.**

Charter concurs that communications service providers must plan for maintaining and promptly restoring service in the event of both anticipated and unanticipated interruptions of reasonable duration. Charter has devoted significant effort to developing its own Emergency Operations Plan, and Charter's approach to network resiliency includes many of the strategies set forth in the Proposal to maintain continuity of operations.

Which particular steps *should* be taken in the pursuit of resiliency, however, cannot be decided solely by reference to how "resiliency" is defined; it also requires considering, among other things, efficacy; environmental impact; consumer and provider burden; reasonably available alternatives; geographical, technological, and logistical limitations; and an analysis of risk. For purposes of the immediate proceeding, it is unclear to what end the ACR is seeking comment on the proposed resiliency definition. Insofar as Charter can ascertain, the Proposal does not key any

---

and Charter has no ability to access those access points to maintain their access to backup power sources. And with respect to cable operators' public WiFi access points, which depend upon outside power sources, providing backup generation at countless points distributed throughout a cable provider's network is impractical, for the same reasons discussed in Part 4.a below.

specific proposed regulatory obligations or rules off the *resiliency* definition, but rather off the more specific proposed backup power requirement addressed in Part 4 below. Because it is unclear what relationship such considerations may have to any definition of resiliency the Commission ultimately adopts, or what role that definition would play in determining downstream regulatory obligations, the context necessary to meaningfully comment on this point is lacking. Without knowing the relationship between the definition at issue and the measures contemplated by the Commission, Charter cannot meaningfully respond to this aspect of the Proposal.<sup>31</sup>

4. **Backup Power Requirement**: The Proposal recommends that all Providers have on-site emergency backup power to support all essential communications equipment including but not limited to, switching centers, central offices, wire centers, head ends, network nodes, field cabinets, remote terminals, and cellular sites (or their functional equivalents) necessary to maintain service for a minimum of 72 hours immediately following a power outage. Service must be sufficient to maintain access for all customers to 9-1-1 service, to receive emergency notifications, and to access web browsing for emergency notices.

- a. **Please provide comments on the proposed backup power requirement.**

As a preliminary matter, Charter repeats its objection—stated in Part 1 above—that any extension of the proposed backup power requirements to BIAS and VoIP facilities would exceed the scope of the Commission’s authority under both state and federal law. Even setting aside questions of the Commission’s authority to extend these requirements to the IP networks of cable providers, there are significant practical limitations.

The HFC networks used by most cable operators today—including Charter—were never intended, designed, or built to operate as independent, secondary power grids. Although they can withstand electrical outages of limited scope and duration, they have always been designed to be dependent upon external power at numerous locations throughout the network, and the engineering

---

<sup>31</sup> Charter expects that any contemplated rule or requirement reliant on the Commission’s definition of resiliency would undergo appropriate notice and comment procedures before adoption.

changes that would enable them to remain fully powered for 72 hours during a commercial power outage would be highly disruptive. To the extent the Commission considers extending backup power requirements to cable networks at all—which, for reasons already explained, it should not—it should focus on the more practical and realistic objective of securing connectivity to critical facilities, such as cell towers and emergency responders.

A brief discussion of how HFC networks distribute service is helpful to understanding the unique challenges that a 72-hour backup requirement would create for cable operators. The flow of service for a particular region starts at that region’s “head-end.”<sup>32</sup> Fiber-optic cable from the head-end carries signals to different distribution “hubs.”<sup>33</sup> From each hub, the signals flow out (again, over fiber-optic cable) to “nodes,” which operate roughly at the level of a neighborhood.<sup>34</sup> Once the node receives light signals from fiber cable, those signals are converted to a radio frequency electrical signals, which then flow out through coaxial cable to subscribers, providing service.<sup>35</sup> Each facility in this step—head-end, hub, and node—requires an external power source in order to perform its function.<sup>36</sup> Additional power sources are also needed elsewhere in the network, such as for amplifiers and line extenders needed to enable signals to travel extended distances over the coaxial cable.<sup>37</sup> The upstream head-end and hub facilities are relatively discrete in number, and tend to be larger facilities located in secure areas.<sup>38</sup> Nodes in this HFC architecture, however, are pervasive, and are distributed at a multitude of locations throughout the network and

---

<sup>32</sup> Mott Decl. ¶ 3.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* ¶ 4.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.* ¶ 5.

usually serving approximately 250-500 homes; they are usually located on streets within the public right of way, often on utility poles, including in residential neighborhoods and (using both private and public easements) on private property.<sup>39</sup> Across the major HFC-based cable operators in California alone, there are roughly fifty *thousand* nodes, and hundreds of thousands of additional devices, each requiring electrical input to perform its task. Charter alone utilizes over twenty-eight thousand unique power sources today to keep these devices in its California network operational.<sup>40</sup>

Due to the sheer number of locations in an HFC cable network that draw upon external sources, cable operators would face unique challenges in trying to maintain backup power at all points in their networks over extended periods. HFC head-ends and hubs are discrete, secure facilities that can be powered by fixed generators to maintain their operations in the event of a power loss, and Charter already has backup generators installed at its head-end and hub facilities that can operate for extended periods of time so long as they can be safely refueled.<sup>41</sup> Charter has also engineered its network to provide backup power at the node level, with the overwhelming majority of its nodes having battery backup lasting several hours at an average load, providing coverage during shorter outages until power is restored or a mobile generator can be deployed to the site, typically using batteries inside cabinets, which may be located on utility poles or at the street level.<sup>42</sup> Charter monitors its backup battery facilities in order to enable deployment of backup generators (where doing so is safe) when the batteries run low.<sup>43</sup>

---

<sup>39</sup> *Id.* ¶ 6.

<sup>40</sup> *Id.* ¶ 4.

<sup>41</sup> *Id.* ¶ 5.

<sup>42</sup> *Id.* ¶ 6.

<sup>43</sup> *Id.*

At the outset, Charter is not aware of any commercially available, viable product today that would allow it to meet the 72-hour backup requirement at the node level using battery power, at least not by any method that would be reasonably achievable given siting and engineering limitations. Charter alone (between nodes and other network elements, such as amplifiers) relies upon nearly *twenty-eight thousand* power sources in California to power its nodes and other equipment in the field, all of which would require additional backup power under the Proposal.<sup>44</sup> Although Charter is aware of commercially available options for battery cabinets that can house a greater number of batteries (thus increasing the size and weight of the cabinet, and likely requiring most if not all existing pole-sited cabinets to be replaced and relocated to street-level), Charter is not aware of any battery-based solution that can reach 72 hours of power at the node level, or any time period even close to that amount.<sup>45</sup> Even the wholesale replacement (and in many cases re-siting) of every battery cabinet in Charter’s network (with larger and heavier cabinets capable of holding twelve batteries for each node) would only be able to extend backup power to approximately 24 hours—and although that could be extended to approximately 40 hours by doubling the number of power supplies, that would require tens of thousands of new cabinets and hundreds of thousands of new batteries.<sup>46</sup> Although the sheer scope of such a vast project makes it difficult to estimate with precision, Charter’s preliminary analysis indicates that this is not a realistic option—it would take over a decade to complete, at a cost of approximately [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL]<sup>47</sup> (not accounting for inflation over

---

<sup>44</sup> *Id.* ¶ 4.

<sup>45</sup> *Id.* ¶ 9.

<sup>46</sup> *Id.*

<sup>47</sup> Under the Commission’s COVID-19 Temporary Filing and Service Protocol in effect as of the date of this filing, confidential information in these Comments and attachments thereto cannot be filed with the Commission (with an accompanying confidentiality motion) until May 2, 2020. Charter recognizes, however, that the effect of this protocol may be to deprive the decisionmakers in this proceeding for the

the implementation period), and require over fifty thousand new or upgraded locations.<sup>48</sup> And even this estimate does not account for the likelihood that permitting authorities would become bottlenecks for any such effort: in other jurisdictions where Charter has undertaken large network construction and upgrade projects, it has seen that a large influx of applications can overwhelm the capacity of permitting authorities, and utilities who own or control relevant facilities to which access is needed, to process the applications in a timely manner. The number of applications on the scale that would be required to implement any battery-based solution to the Proposal's backup power requirements would very likely run into the same delays in California.

Even setting aside the cost and time requirements of such an undertaking: although replacing and relocating a node-level battery cabinet may seem a small change in isolation, moving tens of thousands of pole cabinets curbside would require a significant amount of construction, much of it in residential neighborhoods.<sup>49</sup> In addition to the permitting challenges this would create, these additions would impinge on many Californians' daily lives, creating noise, pollution, and eyesores, and requiring intrusion onto private property, such as residential yards, as well as public sidewalks.<sup>50</sup> Placing such a large number of additional chemical batteries in fire-prone areas would also raise its own safety and environmental issues, including generating additional hazardous waste due to the frequency with which batteries need to be replaced, that make battery-based solutions an unattractive option.<sup>51</sup> And as set forth above, even if all of these obstacles were

---

next several weeks of important information that cannot be shared in the parties' redacted public filings. If a procedure is made available by which this information can be shared confidentially in advance of May 2, 2020, Charter would be happy to do so at such earlier date.

<sup>48</sup> Mott Decl. ¶ 9.c.

<sup>49</sup> *See id.* ¶ 6.

<sup>50</sup> *Id.* ¶ 9.a.

<sup>51</sup> *Id.* ¶ 9.b.

overcome (and significant financial costs incurred), most homes lack their own backup power sources, such as generators, and would not in any event be able during an outage to use the routers, computers, and cordless phones necessary to access services provided over HFC cable networks.

Alternatives to battery backup solutions (whether pursued in conjunction with battery backup, or in isolation) face challenges as well. Installing tens of thousands of new *fixed* generators at every cable node in California would also be a monumental undertaking. Because fixed generators require fuel, adding them could introduce its own set of risks—ranging from accidental or intentional ignition to simple theft—while still falling far short of the 72-hour requirement envisioned by the Proposal.<sup>52</sup>

Generators using propane tanks as fuel sources are one option that can be used in areas where natural gas distribution (discussed below) is unavailable. However, the propane-based generators of which Charter is aware would not meet the proposed 72 hours of backup power without refueling—meaning that they would require personnel manually to service those generators in areas that may have limited access during a disaster event.<sup>53</sup> And placing tens of thousands of new propane tanks in the field would introduce risks of its own in wildfire-prone areas where backup power is most likely to be called upon—for example, the risk that an otherwise ordinary traffic accident involving a car or construction vehicle becomes, due to the presence of flammable fuel, the catalyst for a serious fire.

The only tested and commercially-available option of which Charter is aware that could meet a 72-hour requirement today, and do so without refueling, would be to use fixed natural gas-powered generators, which (unlike generators that require propane fuel tanks) can receive

---

<sup>52</sup> See *id.* ¶ 10.

<sup>53</sup> See *id.*



continuous fuel from a gas utility's distribution system.<sup>54</sup> Although Charter is aware that other cable operators have used fixed natural gas generators in their networks, any disaster prompting the need for backup power could also interrupt the gas supply (whether directly, through damage, or indirectly, through shutoffs necessitated as safety measures), thereby limiting the usefulness of this solution; in addition, natural gas is only an option within a gas utility's distribution network, and those networks do not extend into all areas of the state.<sup>55</sup>

Installation of fixed generators everywhere that Charter's network requires power in the field would be prohibitively expensive and time-consuming—even more so than battery-based solutions. Although (again) the sheer scope of such a massive project makes it difficult to quantify with precision, Charter's preliminary analysis indicates that adopting natural gas solutions across its California footprint would affect over twenty-eight thousand locations and take even longer than the battery-based options discussed above. Doing so would cost approximately [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] (not accounting for inflation over the implementation period), in part due to the skilled labor required to install gas lines—which could become scarce, increasing cost and time estimates, if all providers were required to undertake similar projects at the same time.<sup>56</sup> And even more so than battery-based options, the installation of a statewide network of tens of thousands of new gas generators would likely overwhelm the capacity of gas distribution utilities and local permitting authorities to process applications and perform necessary work to effectuate the connections, such as tying the generators into the distribution system by running new gas lines.

---

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

The challenges presented by these options highlight a central concern that Charter has with this proceeding: that the Proposal is contemplating the imposition of a dramatic expansion of communications providers' obligations, and a massive state-wide construction project that would impose enormous financial costs and require many years of disruptive construction and installation work, without an adequate evidentiary foundation to consider whether the proposed requirements are feasible or even safe, much less balance the economic and pragmatic challenges of the proposed requirement against its putative public safety benefits as required under Section 2892.1 of the Public Utilities Code.

**PROPOSED ALTERNATIVE: FOCUS ON CONTINUITY OF SERVICE TO KEY WIRELESS FACILITIES AND FIRST RESPONDERS.**

Given the impracticality, limited public safety benefits, and absence of an evidentiary record to support the proposed 72-hour backup power requirement for the *entire* wireline broadband network, Charter believes that the Commission's efforts would be better focused on more targeted measures to ensure that the most critical communications services remain operative during a PSPS event or natural disaster. Moreover, these targeted measures could focus on Tier 2 and Tier 3 areas, where wildfires and PSPS events are most likely to occur. To that end, Charter joins CCTA in proposing that the Commission focus on efforts to (1) maintain the operation of the wireless cellular network; and (2) maintain service to critical first responder locations, subject to the specific conditions set forth in CCTA's Opening Comments.<sup>57</sup>

---

<sup>57</sup> See Opening Comments of the California Cable & Telecommunications Association on the Assigned Commissioner's Proposal, at 12-16 R.18-03-011 (Apr. 3, 2020) ("CCTA Comments"). Charter's joining the CCTA proposal remains subject to, and is without waiving, Charter's stated objections in Part 1 of these Comments as to the Commission's legal authority to impose on broadband cable networks the mandatory network-resiliency requirements contemplated by the Proposal.

**b. How should “outage” be defined?**

Charter’s existing backup power facilities can engage promptly in the event commercial power becomes unavailable or is insufficient to meet the required draw.<sup>58</sup> Charter head-ends and hubs primarily rely on generators, but possess battery backups that can provide immediate power to cover the transition during which a generator is warming up, avoiding temporary losses of connectivity during power outages.<sup>59</sup> Charter’s nodes use backup battery power sources, but, when monitoring indicates that node batteries are running low, Charter has [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] portable generators distributed in various locations around the State that it can deploy (where safe to do so) to ensure continued operation.

For the specific purposes of the Proposal, the definition of an “outage” appears relevant only to determining when a provider’s obligation to provide backup power to its own facilities is triggered. Since Charter’s backup power capabilities are designed to engage automatically when power is lost, the practical significance of that definition seems limited.<sup>60</sup> As noted in Part 4 above, however, battery backup sources that power equipment in the field are designed only to bridge power losses of a few hours—for longer, anticipated power shutoffs, communications service providers benefit significantly from having sufficient advance notice of planned PSPS events from electric utilities so that they can activate mitigation measures, such as deploying portable generators in an orderly fashion. Charter joins CCTA in urging that electric utilities provide 48-72 hours’ advance notice and provide Geographic Information System (“GIS”) information

---

<sup>58</sup> See Mott Decl. ¶ 5.

<sup>59</sup> *Id.*

<sup>60</sup> Charter does not read the Proposal as calling for comment on the definition of an “outage” for other purposes, such as reporting requirements, but reserves its right to object to any use of a definition adopted in this proceeding as a predicate for other regulatory obligations without adequate notice and opportunity to comment.

regarding the area impacted by a PSPS, consistent with the standards in D.19-05-042, issued June 4, 2019 in R.18-12-005 and further notification guidelines applicable to public safety partners established in that proceeding.

**c. Should the length of the 72-hour backup power requirement be shorter, longer or indefinite? Please provide an analysis to support your recommendation.**

For the reasons stated in Part 1 above, the public safety benefits of extending a 72-hour backup power requirement to wireline broadband and VoIP providers are highly questionable because the devices and home networking equipment needed to access these services are themselves dependent upon the availability of power. In addition, as stated in Part 4.a above, Charter is not aware of any means by which HFC networks can meet a 72-hour requirement at the node level using battery-based solutions without exceeding the limitations of the field equipment, such as cabinet size and pole weight capacity.<sup>61</sup> And the construction and installation of tens of thousands of new fixed generators would involve very significant costs and disruption to neighborhoods throughout the state for only limited (if any) public safety benefit, not to mention the additional fire and other risks that this approach could introduce.<sup>62</sup> For those reasons, Charter does not believe that a network-wide 72-hour requirement is sensible or beneficial. Indeed, it is not clear how the Proposal arrived at this number or on what the 72-hour figure is based.

To the extent that the Commission considers the more targeted approach proposed by CCTA—of ensuring that critical wireless and emergency responder facilities in Tier 2 and Tier 3 areas maintain connectivity during a PSPS or other outage event—Charter believes that a 72-hour duration for such requirement is achievable within the framework (and subject to the specific conditions) set forth in the CCTA proposal. Charter has equipped its head-ends, hubs, fiber

---

<sup>61</sup> Mott Decl. ¶ 9.

<sup>62</sup> *Id.* ¶ 10.

circuits, and cellular backhaul facilities with fixed generators capable of providing power indefinitely, so long as fuel is available and the generator can safely be resupplied, and thus may be able to go above and beyond this duration in extraordinary circumstances when needed.<sup>63</sup> However, the length of the commitment must also be balanced against the fact that providing safe and reliable power is ultimately the responsibility of the electric utility, and should not be transferred to communications service providers for longer than reasonably necessary.

**d. What other backup power requirements or components should the Commission consider? Please provide an analysis to support your discussion of any additional requirements or components.**

Charter believes that the Commission should focus on maintaining connectivity to key wireless facilities and first responders, and should focus on Tier 2 and Tier 3 areas, where the wildfire risk is the highest and where PSPS events are most likely to occur, as described in the CCTA Proposal.

**5. Backup Power Plans: The Proposal recommends that Providers file a Backup Power Plan with the Commission six months from the effective date of an adopted Commission decision with an array of requirements that illustrate the Provider's preparedness to ensure 9-1-1 access, ability to receive emergency notifications, and access web browsing for 100 percent of customers in the event of a commercial power outage. Please provide comments and analysis on this compliance requirement.**

Insofar as the Proposal is contemplating that providers develop and submit a backup power plan to the Commission setting forth the steps they intend to take to comply with any resulting requirements, six months may be a reasonable timeframe for providers to develop such plans. However, the feasibility of that timeline will turn upon the specifics of what the requirements ultimately are. If the Commission truly intends to require cable operators to develop alternative plans to supply electricity to tens of thousands of devices that rely upon commercial power today,

---

<sup>63</sup> *Id.* ¶¶ 5-6.

the steps needed to prepare for this contingency—such as walking out and inventorying all network elements that will require supplemental power sources, designing additional facilities, and ascertaining how the necessary equipment can be procured and installation vendors retained at such a vast scale—may prove a tall order. A construction effort on this scale, for many providers, would be unprecedented. If the Commission adopts more limited or flexible requirements, however, the contemplated schedule may prove more realistic.

Charter notes that it does not read the Proposal as contemplating that providers have taken all steps necessary to comply with the backup power requirement within a six-month timeframe. Depending upon which rules are ultimately adopted by the Commission, the amount of time needed for providers reasonably to comply with the requirements will vary. As explained above, Charter would need to engage in wholesale replacement of existing battery cabinets to expand its node-level backup capabilities even modestly, and longer backup requirements would require a massive, state-wide construction effort of siting new fixed generators and going through extended permitting processes, lasting many years. Either approach may also require providers to take additional steps to secure these facilities against theft or vandalism. The time needed for providers to bring themselves into compliance will likely vary significantly by operator and network technology. Accordingly, Charter urges the Commission to provide for flexibility in the implementation timeline for any backup power plans submitted in accordance with this proposed requirement, focusing first on implementation in Tier 2 and 3 fire zones where the risks of de-energization are highest.

- a. **Clean Energy Generation:** The Proposal directs Providers to utilize clean energy backup power options (e.g., solar, etc.) as reasonable before using diesel generators to meet the backup power requirement, among other provisions. Please provide comments and analysis on this issue, and specifically address the following:
- i. How should “clean energy backup” be defined?
  - ii. Provide specific information on barriers to procuring specific types of clean energy backup power (e.g., cost, permitting, etc.).

Many providers, including Charter, have already invested in backup power solutions to maintain continuity of operations for critical network facilities. As set forth elsewhere in these Comments, Charter does not believe that the Commission should impose new backup power requirements on wireline VoIP and cable broadband providers in this proceeding. However, to the extent that it considers such requirements, it should recognize that any additional power generation facilities mandated by such an approach would—by design—rarely ever be activated. Because any backup generators would be operational only in the rare situations in which a disaster or PSPS causes a loss of commercial power, the impact on carbon emissions and air quality from the operation of these facilities will be minimal irrespective of the fuel source used.<sup>64</sup> By extension, backup power facilities for communications networks do not represent a meaningful opportunity for the Commission to realize environmental benefits, and mandating the use of clean energy sources (however defined) in this context risks imposing significant additional costs on providers (and ultimately on consumers) without corresponding improvement to air quality or carbon emissions. The Commission has not yet conducted the cost-benefit analysis necessary to properly assess these variables. To the extent the Commission adopts clean energy requirements despite

---

<sup>64</sup> Environmental concerns are undoubtedly involved in the construction and maintenance of backup power facilities, however—and as set forth in Part 4 above, the number of batteries that would be required to meet even a portion of the duration of the proposed requirement could involve the creation of significant and undesirable new chemical waste using the battery technologies available in the marketplace today.

these objections, however, to minimize waste and disruption they should be limited, as feasible, to new network construction and should not retroactively force providers to abandon investments already made in mature technologies, such as gasoline- or diesel-powered generators (whether fixed or mobile) and chemical batteries, that are already functioning and in service today.

As to new facilities constructed to supplement the aforementioned backups and comply with any new backup power requirement, the Proposal does not appear to account for the limited record regarding the feasibility and commercial availability of alternatives to diesel- and gas-powered generators. Charter is unaware of any commercially available clean energy solution capable of powering its HFC facilities at either the hub, head-end, or node level today.<sup>65</sup> Significantly more evidence is needed before the Commission considers any mandates with respect to these technologies—and its consideration of evidence regarding the feasibility of such proposals, to date, has fallen short of what would be needed before considering requirements of this magnitude. The Commission’s recent March 4, 2020 *en banc* panel, for instance, did not include provider representation and did not subject the “clean energy” solutions advocated at that hearing to critical analysis as to market availability, feasibility, public safety considerations, or cost. As the CCTA noted in its March 13 Comments on the Commission’s March 4 *en banc*, many clean energy generation options are still in planning or developmental stages, and present obstacles the Commission has yet to comprehensively consider. Before the Commission takes the step of mandating that communications service providers engage in significant changes to their existing facilities, it must first develop an evidentiary record identifying which power sources, if any, actually exist in the market today that would meet those requirements, as well as balance the potential benefits of those power sources (if any) against their costs and safety risks.

---

<sup>65</sup> See Mott Decl. ¶ 11.



To illustrate the difficulties that can beset even a relatively established clean energy solution: Based upon analysis conducted by Charter in conjunction with its power supply vendor, the solar installation that would be required to power even a single HFC node would require 16 panels—which would be wholly impractical for nodes located in residential or other dense areas, and likely to face siting challenges even elsewhere.<sup>66</sup> Such panels would be roughly the size of a billboard—an obstacle/eyesore that would be unwelcome in many residential areas.<sup>67</sup> And to power a *head-end*, the solar panels necessary would cover eight football fields. In addition, such panels would require protective infrastructure, *e.g.*, fencing, barbed wire, and security personnel, wherever they are located. Solar panels may also be especially susceptible to shortfalls in fire conditions due to the risk that smoke-filled skies would impede generation.

As for fixed generators, natural gas and propane are mature technologies with wide commercial application, but introduce their own risks, particularly in fire-prone areas, as discussed above. Although Charter is aware that there are additional options in development, such as generators based on fuel cells powered by hydrogen or methanol tanks, Charter is not aware of any commercially available product using these technologies that is ready for deployment in the field today. And even once such technologies become ready for implementation, they would raise a novel set of risks that would need to be more fully explored prior to any adoption mandate, as well as balanced against cost considerations. For instance, hydrogen and methadone fuel tanks may introduce explosion risks that may make those fuel sources unsuited for deployment in residential and/or fire-prone areas or along roadsides where traffic accidents may occur. And all fixed generators, irrespective of their fuel sources, would impose disruptions on residential

---

<sup>66</sup> *Id.* ¶ 11.a.

<sup>67</sup> *Id.*

neighborhoods, raising permitting and safety issues of their own, particularly in areas with high risks of earthquake or fire.<sup>68</sup>

**b. Waivers: The Proposal directs Providers to submit waivers if they qualify for any of the exemptions enumerated in the Proposal. Please provide comments and analysis on this issue.**

The Proposal expressly recognizes that, given the degree to which network architecture and its surroundings can vary, there may be no “one size fits all” approach to resiliency. The Proposal’s contemplated waiver procedure, however, lacks the language necessary to implement that approach. Specifically, the current language authorizing waivers only “because of significant risk to safety of life or health; or specific existing . . . law” does not appear to encompass situations in which a provider may not face a *legal* impediment to installing a backup generator or other power source, but may not as a *practical* matter be able to do so, such as due to space or engineering limitations. The current language also does not appear to contemplate situations in which the costs of installing a backup generator or other power source would be disproportionate relative to the function served by the network equipment in question, including the number and type of customers served, whether the location served by the equipment is reasonably likely to face extended outage conditions, and whether customers in the area have alternative means to reach emergency services (*e.g.*, the strength of wireless coverage in the area). Charter urges the Commission to expand the waiver process for noncompliant facilities to include, as available grounds for waiver, (1) situations in which engineering, space, or similar limitations prevent compliance; and (2) situations in which the cost of the necessary facilities would be disproportionate to any public safety benefit realized. Charter also urges the Commission to consider waivers for areas where the risk of a wildfire or PSPS is negligible.

---

<sup>68</sup> *See id.* ¶ 10.

- c. **Critical Facility Location Information Sharing:** The Proposal directs Providers to share critical facility location information to emergency responders to enhance the ability to defend vital facilities against wildfire damage and ensure facility redundancy. Please provide comments and analysis on this issue.
- d. **Critical Infrastructure Resiliency, Hardening and Location Information Sharing:** The Proposal directs Providers to annually submit geographic information system (GIS) information with the specific location of network facilities and backhaul routes to the Commission. The Proposal directs Commission staff to analyze and process this information, so it is accessible to state and local emergency responders, subject to confidentiality requirements. Please provide comments and analysis on these proposed directives.

Charter recognizes that coordination and information-sharing between network operators and emergency managers is valuable, and that there may be specific situations—such as a response to an emergent wildfire in which first responders must prioritize the deployment of resources—in which the locations of specific critical communications facilities may be valuable to emergency response personnel. Through coordination with the OES, Charter is committed to providing any targeted information necessary to aid first responders and state emergency managers where the circumstances require.

Targeted, situation-specific information-sharing through the auspices of OES represents an approach that assists emergency planners, and state and local disaster-relief efforts, while balancing network operators’ interest in the confidentiality of critical infrastructure information. Conversely, Charter is concerned that the wholesale approach in the Proposal fails to give sufficient weight to the critical nature of the confidentiality interests implicated, and fails to appreciate what “substantive protections equivalent to federal confidentiality statutes and rules” would actually entail.<sup>69</sup>

---

<sup>69</sup> ACR at 5.

The competitive and national security concerns implicated by full GIS system maps of broadband providers' networks and facilities (“critical infrastructure information”) are significant. Information regarding the location of hubs and head-ends can be used by bad actors—such as vandals, saboteurs, or terrorists—to target attacks that disrupt the availability of communications services.<sup>70</sup> Charter has itself had direct experience with this risk to its operations, such as in New York City in 2017, when persons with operational familiarity with Charter’s network design engaged in a coordinated campaign of targeted cable cuts and sabotage to key facilities, causing repeated outages to significant numbers of customers.<sup>71</sup> Limiting the number of persons with access to critical infrastructure information is a critical component of any strategy for securing those networks against intentional harm.<sup>72</sup>

Due to the security risks inherent in critical infrastructure information, Charter exercises significant care with its distribution, even internally. These protections include limiting it to persons with a “need to know”; releasing it only when necessary and only insofar as necessary; storing it on secured systems requiring password-protected access; taking steps to protect those systems against intrusion by unauthorized persons; and restricting physical access to data centers where it is stored, among others.<sup>73</sup>

---

<sup>70</sup> See Declaration of Joseph R. Viens (“Viens Decl.”), attached as Exhibit B, ¶¶ 4-5; Declaration of Mary Haynes (“Haynes Decl.”), attached as Exhibit C, ¶ 4.

<sup>71</sup> See, e.g., Aliza Chasan, *Vandal cuts Spectrum cable causing massive internet, TV outage in Brooklyn and Queens*, PIX 11, Nov. 23, 2017, available at <https://pix11.com/2017/11/23/vandal-cuts-spectrum-cable-causing-massive-internet-tv-outage-in-brooklyn-and-queens/> (noting widespread outages in Brooklyn and Queens); Checkey Beckford, *60K Spectrum Customers Lose Internet in Queens After Vandals Cut Fiber Optic Cable: Officials*, NBC New York, June 26, 2017, available at <https://www.nbcnewyork.com/news/local/nyc-60000-spectrum-customers-queens-lose-cable-internet-after-vandals-cut-cord/188799/> (noting loss of service to 60,000 customers in Queens).

<sup>72</sup> Viens Decl. ¶¶ 4-5; Haynes Decl. ¶ 4.

<sup>73</sup> Haynes Decl. ¶ 3.

Federal agencies with which Charter coordinates and shares network-related information have acknowledged these critical risks as well. Although the FCC is the primary regulator of interstate broadband services, it does not require providers to submit mapping data, such as precise GIS data, regarding plant locations. Even as to information stored in the FCC’s Network Outage Reporting System (“NORS”) and Disaster Information Reporting System (“DIRS”), which stop short of identifying the specific locations of critical facilities and fiber routes, the FCC has recognized the serious competitive and national security concerns that could be implicated by unauthorized disclosure, including that terrorists or hostile state actors could use such information to target critical network architecture.<sup>74</sup> The FCC therefore treats all such information as presumptively confidential.<sup>75</sup> While the FCC is currently considering a proposal to share NORS and DIRS information with state regulators and emergency managers, it is—critically—not proposing that such information be provided wholesale, but rather that it be made available to select persons on a password-protected, read-only basis to protect against unauthorized redistribution.<sup>76</sup>

Indeed, the pendency of the current FCC proceeding with respect to the sharing of NORS and DIRS reports with state regulators, which the FCC initiated, at least in part, in response to the Commission’s own petition, provides a further reason for the Commission to abstain from the

---

<sup>74</sup> See, e.g., *In re Amendments to Part 4 of the Commission’s Rules Concerning Disruptions to Communications*, Second Further Notice of Proposed Rulemaking, PS Docket No. 15-80, FCC 20-20, at Appendix C n.2 (rel. Mar. 2, 2020) (“The Commission has noted that the outage reports ‘will contain sensitive data’ and that this data ‘could be used by hostile parties to attack those networks, which are part of the Nation’s critical information infrastructure.’ Further, the Commission stated that the ‘national defense and public safety goals’ sought with outage reporting would be ‘seriously undermined if [the Commission] were to permit these reports to fall into the hands of terrorists who seek to cripple the nation’s communications infrastructure.’” (citations omitted)).

<sup>75</sup> *Id.* at 2 ¶ 1 (“Given the sensitive nature of this data to both national security and commercial competitiveness, the outage data is presumed to be confidential.”).

<sup>76</sup> *Id.* ¶ 34.

proposed requirements currently set forth in the Proposal.<sup>77</sup> As part of its review, the FCC is considering safeguards for sharing NORS and DIRS information, including limiting access to those agencies with a “need to know,”<sup>78</sup> as well as the mechanisms to enforce those safeguards against persons who disclose the information without proper authorization.<sup>79</sup> In light of the overlap between such information and the information sought by the Proposal, the Commission should not circumvent the FCC’s process for evaluating the correct balance of security, competitive integrity, and efficiency, as any disclosure requirements imposed by the Commission would risk undermining the FCC’s efforts to achieve that balance.

Stringent confidentiality protections for critical infrastructure information are also observed by the Department of Homeland Security (“DHS”), including FEMA, with whom Charter regularly shares certain important network information enabling DHS to, for example, anticipate service restoration in disaster zones—but even to assist FEMA’s disaster-recovery efforts, DHS does not require the submission of comprehensive GIS information regarding communications facility locations.<sup>80</sup> DHS also assists companies in conducting vulnerability assessments for critical facilities, not unlike the more limited assessments that the Proposal envisions the Communications Division conducting in California.<sup>81</sup> Critically, however, information that network providers and other companies share with DHS is subject to substantial

---

<sup>77</sup> See PS Docket No. 15-80.

<sup>78</sup> *Id.* ¶ 23 (seeking comment on which “objective criteria that would be sufficient or necessary for a state or federal agency to establish that it satisfies the “need to know” standard and which “supporting materials” a “state or federal agency” should have to provide “to support its assertion that it has a ‘need to know’ as a condition of access to the NORS and DIRS data”); ¶¶ 37-44.

<sup>79</sup> *Id.* ¶ 38 (“We also note that individuals or agencies that make inappropriate disclosures of NORS and DIRS information may be subject to disciplinary action and/or liability under federal, Tribal and/or state laws that protect data, containing, *e.g.*, trade secrets or other commercially sensitive information.”).

<sup>80</sup> Viens Decl. ¶¶ 6-7.

<sup>81</sup> *Id.* ¶ 9.

confidentiality protections at the federal level: pursuant to the Critical Infrastructure Information Act of 2002,<sup>82</sup> unauthorized disclosure of such information by a federal employee is a *criminal* offense.<sup>83</sup>

Charter is concerned that the requirements envisioned by the Proposal, despite alluding to “substantive protections equivalent to federal confidentiality statutes and rules,”<sup>84</sup> fall significantly short of providing a level of security or protection commensurate with federal requirements, either as observed by DHS or under consideration by the FCC. For one, the requirement that providers annually submit GIS information to the Communications Division that is then shared with “state and local emergency responders” would result in a proliferation of copies of critical infrastructure information housed on diverse computer systems throughout the state whose security the Commission cannot guarantee.<sup>85</sup> Even with the best of intentions, the greater the number of copies of such information circulating, the higher the risk of a security failure (such as through a data breach) in which unauthorized persons obtain access, particularly if widely disseminated among municipal government entities whose computer systems may not be resistant to intrusion.<sup>86</sup> And critical infrastructure could make a tempting target for hostile actors, such as nation states, if stored by persons or entities who lack the resources and knowledge to protect against unauthorized access.<sup>87</sup>

---

<sup>82</sup> 6 U.S.C. §§ 671-674.

<sup>83</sup> *Id.* § 673(f); 6 C.F.R. § 29.9.

<sup>84</sup> ACR at 5.

<sup>85</sup> *See* Haynes Decl. ¶ 4.

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

In addition, given the sheer number of local entities in California, the Proposal’s suggestion that GIS information identifying the locations of critical network facilities will be shared with “local emergency responders” implies distribution to a number of persons so large that their compliance becomes impossible to meaningfully track.<sup>88</sup> It is also not clear what enforcement mechanism, if any, the Commission would have to ensure compliance with any confidentiality requirements attached to such information if misused by a recipient. This problem is only exacerbated by the risk that nongovernmental entities will seek such information via data requests submitted to the various government custodians, potentially resulting in even wider dissemination to additional persons who may not have the means adequately to secure it.<sup>89</sup>

Given the extreme sensitivity of critical facility location information and the protections it receives at the federal level, Charter believes that coordination and information through OES—through which providers can share targeted facility-related information with state and local first responders with a need to know about specific facilities implicated in specific emergency or other event—represents a more balanced and prudent approach than the wholesale requirement set forth in the Proposal. Given the degree of detailed reporting OES has indicated (in its ongoing rulemaking) it will seek from providers, OES will have highly targeted information about outages and their impacts, and can work directly with providers and local first authorities during a disaster to determine when critical facilities are at risk. At minimum, however, should the Commission compel providers to disclose the specific GIS coordinates of critical facilities as currently

---

<sup>88</sup> *Id.*

<sup>89</sup> For example, Charter recently received a follow-on data request from The Utility Reform Network (“TURN”) seeking highly confidential data Charter provided to the Commission and the Public Advocates Office (“PAO”), which includes NORS and DIRS reports. Although Charter is objecting to this specific data request, it highlights the challenges that all providers would face in maintaining the security of critical infrastructure information if released to additional custodians as contemplated by the Proposal.



proposed, it must put in place confidentiality procedures that are commensurate with the sensitivity of the information at issue. These should include, at minimum, the following:

- Rather than proliferating copies of GIS information regarding their communications facilities—which will be difficult to meaningfully secure—providers should have the option of hosting it at a secure, password-protected online location that does not permit downloading of local copies;<sup>90</sup>
- Access to such secure online location should be available only through strong passwords over secure connections, with all use traceable to user accounts assigned and restricted to specific officials who are either subject to statutory requirements to maintain its confidentiality or have executed signed commitments not to further divulge the information to persons not authorized to access it;<sup>91</sup>
- Such access should be granted only on a need-to-know basis (*e.g.* with respect to facilities impacted by or implicated in the response to a local event);<sup>92</sup> and
- Unauthorized access or disclosure of the information should be subject to criminal enforcement, and the Commission should consider its authority to adopt confidentiality procedures whose violation can be prosecuted criminally.<sup>93</sup>

Finally, the Proposal also appears to contemplate that Commission staff will conduct vulnerability assessments of the network information provided in order to identify opportunities to harden networks or construct additional facilities. Charter has no objection to the Communications Division working voluntarily with providers to identify opportunities for improvement and increased resiliency; however, it reserves its rights with respect to any efforts by the Commission to mandate the implementation of any suggested improvements identified by the division Staff in this manner.

---

<sup>90</sup> Haynes Decl. ¶¶ 3-5.

<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> *See, e.g.*, Cal. Pub. Utils. Code § 2110 (allowing for misdemeanor charges against, *inter alia*, individuals who fail to comply with “any order, decision, rule, direction, demand, or requirement of the Commission”).

- 6. Emergency Operations Plans: The Proposal directs Providers to file emergency operations plans with the Commission, discussing how their operations are prepared to respond to emergencies. Please provide comments and analysis on this issue.**
- a. Additionally, the Proposal itemizes required content that the Providers must submit to the Commission. Please provide comments and analysis on this issue.**
  - b. Should the proposed rule for Emergency Operations Plans include any other information that the Proposal does not address? Please explain why any additional information is legitimate and necessary for adoption.**

Charter is committed to cooperating with OES to ensure that it has any information and resources needed to respond promptly and effectively to events impacting its service area. To that end, Charter has met with OES on several occasions, both individually, through CCTA and with other cable operators, and through CUEA, and is committed to supporting the State Operations Center (“SOC”) as needed. Charter is also actively participating in the current rulemaking to implement the requirements of Senate Bill (“SB”) 670.

Ensuring that providers are prepared to address contingencies and that state and local first responders receive prompt and relevant information is a laudable goal, but Charter is concerned that the specific requirements set forth in the Proposal regarding emergency operations planning would result in increased administrative burdens on network providers without materially advancing public safety objectives, particularly in light of the topics already addressed by the Legislature in SB 670 and being considered by OES itself in its ongoing rulemaking to implement the bill. To that end, Charter urges the Commission to limit or forgo the Proposal’s requirements with respect to this topic as set forth below.

Submission of Emergency Operations Plan: While it is important that network operators engage in thorough emergency planning, the benefit of requiring providers to submit and regularly update copies of their emergency operations plans to the Communications Division goes beyond what is needed. Neither the ACR nor the Proposal sets forth any rationale for how public safety

would benefit from this requirement, how the Communications Division would use the plans submitted, or what such regular submissions are meant to achieve. The proposed requirement to update submissions to the Communications Division every time a provider makes “substantive changes” to its emergency operations plan could also result in significant administrative burden; Charter dynamically implements lessons learned into its operational planning. Because emergency operations plans are also often inward-facing documents used to guide internal responsibilities and workflows, they also may contain extensive confidential information, including personally identifying information of company personnel, that would be of no public safety benefit to the Communications Division or to OES but could be disruptive to providers if inadvertently publicized.

To the extent the Commission adopts any requirements regarding emergency operations plan submission, Charter recommends that it limit submission requirements to once a year, and permit communications providers to redact personal information, internal contact information, and non-pertinent information (*e.g.*, relating to emergency response planning for operations out-of-state).

Emergency Contact Information: The Proposal’s requirement that communications providers designate emergency contacts to act as 24-hour liaisons to the SOC and share those points of contact with “local emergency response organizations” is also well-intentioned, but represents a one-size-fits-all solution that may not always align with the most efficient and effective framework for coordinating emergency response efforts or assisting OES. It has been Charter’s experience that optimal emergency coordination solutions can vary significantly according to the scope, nature, and location of the disaster. Charter is committed to working with OES to provide the level of communication and coordination that OES needs, and has already

offered (and will continue to offer) to provide an in-person liaison at OES’s request—such proximity can be particularly valuable in coordinating re-energization—but such arrangements are not required or even helpful in all circumstances. Additionally, Charter is not aware of any evidence in the record in this proceeding to suggest that there has been any failure or breakdown in providers’ voluntary coordination efforts with OES that would require the Commission to step in and impose uniform requirements on communications service providers at this time.

Emergency Preparedness Exercises: Charter trains key personnel to implement its emergency response plan and believes that such training is a prudent part of any organization’s preparedness efforts, particularly where emergency procedures are used infrequently. Because Charter’s California operations have recent and frequent real-world experience implementing those procedures,<sup>94</sup> Charter’s emergency response plan has also been ingrained through repeated use, enabling Charter to consistently prepare for, mitigate, respond to, and recover from natural disasters or other emergencies affecting its network. Charter has no objection to the Proposal’s direction that providers take steps to train their personnel in emergency preparedness, but appreciates the Proposal’s flexibility in recognizing that a provider that has “implemented its emergency procedures in response to an actual event within the last 12 months” can also satisfy this requirement through real-world experience.<sup>95</sup>

Public Communication Plans and Communication with State and Local Emergency Responders: As set forth above, Charter is committed to working with OES—both directly, through industry associations such as CCTA, and through CUEA, according to OES’s needs—to provide information needed during a disaster or PSPS. This may include targeted requests for

---

<sup>94</sup> Charter’s activation of its emergency procedures is an independent process and can be invoked even in advance of any formal declaration of disaster from the Office of the Governor.

<sup>95</sup> Proposal at 7.

information regarding localized outages and restoration efforts where pertinent to state or local response and recovery efforts.

The OES is currently engaged in a rulemaking proceeding governing outage data reporting that grapples with precisely the nature and form in which outage information will be most useful to emergency responders in the state. The existence of a parallel docket in which these precise issues are under active consideration by the agency that will primarily be using the reporting data calls into question the necessity and propriety of the Commission's creating its own parallel and potentially differing requirements. The ACR does not set forth a basis for the proposed requirements that providers also make public outage maps and anticipated restoration timelines available, or the Proposal's call for a new reporting infrastructure that would require providers to provide recurring updates regarding the status of each network facility and access to providers' internal network-monitoring tools. In many emergencies or PSPS events, state and local emergency response personnel will have no need for such information, or will not benefit materially from having it supplied in the precise format contemplated by the Proposal. Moreover, the proposed reporting requirements would represent a significant increase in the administrative burden for providers who would be required to divert operations personnel from critical tasks during emergency events to create and manage such reports. Not only is the Proposal's attempt to formalize these requirements unduly burdensome, it is also offered without any indication that it is necessary. For example, Charter timely provided the Commission daily with reports (including NORS data) during the Saddleridge, Tick, and Maria fires in October and November 2019, and is not aware that the Commission has identified any failures or shortcomings in that flexible and pragmatic approach. There is no reason that information needed by emergency responders cannot be supplied as needed, in response to targeted queries, when circumstances require it.

In addition, the information implicated by the proposed reporting requirements is directly addressed by the FCC's current proposal to determine the circumstances and terms under which information in its NORS and DIRS systems will be made available to state government entities. As discussed above, the FCC is actively considering how best to balance considerations of public safety, confidentiality, security, and competitive integrity in that proceeding. The Commission should abstain from imposing any reporting or information-sharing mandates in this proceeding that would conflict with and undermine the FCC's resolution of those issues.

**7. Current Mitigation Efforts: in response to this ruling, all respondent communications service providers shall provide a discussion of what current mitigation efforts they are undertaking to ensure continuity of service in preparation and in advance of the upcoming 2020 wildfire and grid outage season. This should include, but is not limited to, the following topics:**

Charter has made, and will continue to make, significant investments designed to fortify its network's resiliency in the face of ongoing disaster risks. The vast majority of Charter's infrastructure, including all of its hubs and head-ends, has backup power that can support operations during power outages of reasonable length. Charter's head-ends and hubs are designed with redundant routing to ensure that damage to a single feed (such as in the case of a fire or a car crash) does not impact delivery of services. They are also equipped with fuel-powered generator backup power; with refueling, the generators at the head-ends and hubs can run continuously even without commercial power.<sup>96</sup> Upon receiving timely notice of a PSPS event, Charter takes actions to top off fuel at the generators.<sup>97</sup> The fuel tanks on the generators have a "low fuel" alarm, are monitored 24/7 by Charter's network operations center, and are regularly refueled, so long as refueling does not itself create a safety risk and fuel is available.<sup>98</sup> Nodes are equipped with battery

---

<sup>96</sup> Mott Decl. ¶ 5.

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

backup systems (discussed above), and because Charter can quickly deploy the portable generators situated throughout its network, those battery backups—which are themselves monitored, and supplemented with portable generators where doing so is safe and necessary—enable the rapid mitigation of commercial power outages, provided the outages are of reasonable scope and duration.<sup>99</sup>

Charter has also taken affirmative steps to implement redundancies at key sites, such as hospitals and police and fire stations, by deploying generators to continue service to such sites (though, as noted previously, such generators do not currently provide 72 hours of backup power). Charter also offers the ability for such sites to purchase enterprise services, which are delivered via fiber-optic cable directly from hubs or head-ends (which have fuel-powered generators) and do not depend upon the availability of a power source at the node level, making it a more resilient option during power outages.<sup>100</sup> In addition, Charter has developed a detailed Emergency Action Plan, and executes that plan as soon as it becomes aware of an emergency event, well in advance of a formal declaration of a state of emergency. In addition, as set forth above, Charter is committed to providing the level of communication and information OES needs. To that end, Charter has (a) conducted multiple meetings with OES to discuss how Charter can offer better communication, information sharing, and in-person presence where necessary, both individually and in coordination with other cable operators and (b) recently joined the CUEA to better facilitate coordination with OES in those instances where OES decides to coordinate through CUEA.

With regard to inspection and repairs, Charter adheres to all General Order (“GO”) 95 inspection, repair, and other rules, as well as GO 128 regarding underground communications

---

<sup>99</sup> *Id.* ¶ 6.

<sup>100</sup> *See id.* ¶ 5.

facilities. Charter field maintenance and fulfillment personnel are trained to detect and report infrastructure risks. Additionally, Charter has a dedicated team of technicians that performs inspections on its overhead and underground facilities in order to detect infrastructure problems, including, consistent with GO 95, conducting patrols for risks in its entire plant and detailed annual inspections of 20 percent of the plant in high fire areas to ensure that all plant in high fire areas undergoes detailed inspections on a rolling five-year period. Charter also monitors its equipment to help identify issues before they become problematic and takes measures to prevent operational issues in emergent situations.

Charter addresses the ACR's specific inquiries below.

**a. Number of additional generators acquired (both fixed and mobile);**

Charter's head-end and hub facilities are all equipped with on-site generators, and the company has an extensive fleet of mobile generators, distributed throughout its operations in the state, that can be used to maintain power at the node level for outages persisting beyond the period that its backup battery sources are in operation.<sup>101</sup> As explained above, Charter has [BEGIN CONFIDENTIAL] [REDACTED] [END CONFIDENTIAL] portable generators available for use in California. It has been Charter's experience that its current mobile generator fleet already provides necessary coverage for anticipated power outages in its service areas.

**b. Number of additional temporary facilities acquired (e.g., COWs, COLTs, etc.);**

This question does not appear to be pertinent to Charter's operations in California, as temporary facilities are not typically involved in the provision of wireline broadband and VoIP services, and its wireless offerings are provided purely on an MVNO basis. However, Charter has

---

<sup>101</sup> See, e.g., Letter from Deborah Picciolo, Senior Vice President of Operations, Charter, to Marybel Batjer, President, CPUC, R.18-03-011 (Nov. 18, 2019), Att. 12.2 (identifying number and distribution of gas-powered generators that Charter keeps available for node usage in California.).



provided temporary services in areas affected by wildfires during the 2019 fire season by offering WiFi access free of charge in shelters, and deploying mobile phones to such shelters.

**c. Additional network redundancy built into network (e.g., logical and physical);**

Charter's network is already engineered so that hubs and head-ends have both logical and physical redundancy, minimizing the possibility of service outages even when natural disasters or other events impact the operation of its plant. In California, all of Charter's hubs and head-ends have diverse logical routing and virtually all have diverse physical routing, excluding only a handful of systems serving very small numbers of customers, and Charter continues to ensure the redundancy of those systems through periodic upgrades, maintenance, and repairs where necessary.

**d. Provide details on plans in the near, intermediate and long term to further harden facilities;**

As set forth in Part 7.f., Charter is exploring options with vendors and professional associations that may allow it to move to fixed generators to support its node facilities in the future for longer than the chemical battery solution, but is not aware of any tested, commercially available technology that achieves the Proposal's 72-hour backup goal in a cost-effective or feasible manner, as the fixed generator options available in the marketplace today (as described in Part 4 above) are not a realistic option due to various cost, safety, and licensing/permitting concerns.

**e. Identify barriers to building resiliency into your networks;**

These challenges are set forth in Parts 4 and 5.a. above. Among others:

- The capacity of the backup battery cabinets used at the node level in Charter's network is limited, and using currently available battery technologies, expanding the duration of backup battery power would require replacement and re-siting of tens of thousands of Charter cabinets for only a modest increase in backup time;
- Solar power options commercially available today would require excessively large arrays impractical for the specific power needs of an HFC network (whether at the node level or the hub/head-end level); and

- Construction of new fixed generators at each node would be prohibitively expensive, face siting and permitting challenges and require timely cooperation from utilities whose resources may be constrained, and could introduce new safety risks in fire- and earthquake-prone areas.

**f. Identify any other investments or cooperative agreements that will be made to build in more backup generation or minimize the need for backup generation; and**

Charter is working with both its supplier of battery backup power and industry leaders (through the Society of Cable Telecommunications Engineers) to identify and explore more energy-efficient equipment as well as environmentally friendly solutions to meet future backup power needs and expand the resiliency of its network.

**g. Identify if communications service outages as a result of future public safety power shutoff events are expected. Identify specific locations and reasons where network outages are expected.**

Charter has made, and will continue to make, significant investments designed to fortify its network's resiliency in the face of both ongoing disaster risks and potential public safety power shutoff scenarios. Assuming the electric utility provides 48-72 hours' notice and GIS information necessary to identify the facilities,<sup>102</sup> the geographic scope of the area affected is reasonable, and Charter can safely access the affected area to site and refuel portable generators, Charter anticipates that it can prevent deliberate de-energization of the electric network in its service area from resulting in communications network outages to cellular macrosites and to customers served by its fiber enterprise circuits, can ensure continued service to first responder sites served by its HFC plant (assuming safe access is available), and can mitigate the impact on other customers served

---

<sup>102</sup> Compliance by electric utilities with the Commission's notice requirements has not been consistent. As CCTA has pointed out to the Commission, electric utilities have either provided insufficient notice, or provided notice in formats that are difficult for communications service providers to effectively use, on numerous occasions. *See, e.g.*, Letter from Jerome F. Candelaria, CCTA, to Leslie Lee Palmer, Director, Safety and Enforcement Division, R.18-03-011 (Nov. 19, 2019). Communications service providers' ability to respond to power outages requires all parties to do their part to enable proper coordination.

by its HFC plant. However, if the Commission authorizes electric utilities to de-energize their networks in Charter's service areas over larger areas for longer periods of time, it becomes more challenging for Charter to mitigate the effect on customers served by its HFC plant, and it cannot guarantee that such customers will not see interruption of service in those circumstances.

### **CONCLUSION**

In light of the numerous drawbacks to the Proposal discussed herein, Charter urges the Commission to forgo its proposed requirements, and focus instead on efficient and effective means to maintain the accessibility of the 911 system over wireless connections, connectivity for first responders, and availability of backhaul services to wireless towers during an electrical outage in Tier 2 and Tier 3 areas, as set forth in the CCTA proposal.

Dated: April 3, 2020

Respectfully submitted,

By: /s/ James W. McTarnaghan

James W. McTarnaghan  
PERKINS COIE LLP  
505 Howard Street, Suite 1000  
San Francisco, CA 94105  
Tel: (415) 344-7000  
E-mail: [jmctarnaghan@perkinscoie.com](mailto:jmctarnaghan@perkinscoie.com)