FIELD HEARING ON RESILIENT COMMUNICATIONS NETWORKS

FEDERAL COMMUNICATIONS COMMISSION

February 21, 2020

STATEMENT OF PUERTO RICO TELEPHONE COMPANY, INC. D/B/A CLARO

Good afternoon. My name is Francisco J. Silva, and I am the general counsel of Puerto Rico Telephone Company, Inc., which does business in Puerto Rico as "Claro" and is the largest telecommunications provider in Puerto Rico and an island-wide provider of fixed and mobile voice telephony and broadband, as well as data and video services. On behalf of Claro, we appreciate your interest in Puerto Rico and your decision to visit the island and learn first-hand about the challenges and lessons learned from the natural disasters that have impacted Puerto Rico in the last three years. We are grateful for the invitation to participate in this hearing and for Commissioner Starks' special interest in ensuring that consumers in Puerto Rico have access to the same telecommunications services as their counterparts in the continental United States.

In the interest of time, my statement today will focus on three main points: (1) the efforts that Claro undertook to rebuild its network and restore service after Hurricanes Irma and Maria made landfall in September 2017; (2) the impact of the recent earthquakes, particularly the two major earthquakes that hit Puerto Rico on January 7, 2020; and (3) steps that Claro has taken and will continue to take to improve the continued availability of service before, during, and after a natural disaster strikes.

1. Post-Hurricane Restoration

Claro previously filed detailed reports with the Commission on the damage that its network suffered as a result of the impact of Hurricanes Irma and Maria and the reconstruction efforts that followed. As has been documented, while the effects of the hurricanes on telecommunications infrastructure were catastrophic, the response to that challenge by Claro and its employees was extraordinary.

Given the time limitations in this hearing, I refer the Honorable Commissioner to Claro's filing of August 3, 2018, in Docket No. 18-240, titled "Application for Authority for Emergency Discontinuance of Service on a Temporary Service," and Claro's Notice of Ex Parte Presentation of March 29, 2019, also in Docket No. 18-240, confidential versions of which were filed with the Commission. I will highlight three points for purposes of this hearing.

First, Claro restored the core components network expeditiously. Claro's fiber rings were fully restored by October 2017, a monumental task that required redirecting Claro's personnel to this

critical task. Having repaired them quickly, the challenge became maintaining them in operation: in numerous occasions Claro found itself having to repair—again—portions of its fiber rings that were subsequently damaged by third-parties conducting their own restoration efforts. As to it central offices, within a few short weeks after the hurricane, Claro's 26 main central offices were operating and capable of providing at least voice services. By December 2017, 95 percent of Claro's almost 220 remaining remote Central Offices and DSLAMs were fully operational. The main challenge to restoring these facilities and maintaining them in operation was power: after Claro's fuel reserves were depleted it was difficult—if not impossible at times—to secure fuel, and Claro experienced recurrent instances of theft of the fuel reserves it had.

Second, the mobile network was restored swiftly given the circumstances. The day after Hurricane Maria made landfall only 8 percent of Claro's approximate 1800 cell sites were operational. But even then, it was clear that the fastest way to restore basic connectivity to our users was going to be through the mobile network. The result: by October 2017, 50 percent of Claro's cell sites were operational and by January 2018 that number reached 100 percent (even when more than 25 percent of them continued to rely on power generators). In addition to the valiant effort of Claro's employees, a few critical factors contributed to this undertaking:

- Cooperation and a rapid reaction to the challenges posed by the hurricane was so swift and robust that on October 1, 2017, Claro and other mobile providers were able to open our respective networks in order to provide the most expansive coverage as possible. Also, the telecom industry was able to establish a central command facility at the Government's emergency operations center that allowed for direct, constant and continuous interaction in the recovery effort, all of which proved extremely effective. Anyone involved in this effort can attest to the outstanding effort put in by not only members of the industry but also by outside resources. In this regard, PRTC commends the work of the Telecommunications Bureau of Puerto Rico, her president Sandra Torres and her staff, who worked tirelessly in coordinating and overseeing the restoration of telecommunications service on the island after the hurricanes.

- After Hurricane Irma, Claro imported a large number of generators from other countries, and it already had deployed them by the time that Hurricane Maria hit. The Environmental Protection Agency was very effective in this process by quickly and diligently granting special waivers to use this equipment in Puerto Rico.

- The towers in Puerto Rico (including those owned by Claro) proved to be resilient. Wireless towers, for the most part, withstood the hurricanes' strongest winds, which demonstrates that the local building codes for such facilities set a high standard of resiliency. Many antennas needed repositioning, but the tower structures themselves performed well and were structurally sound in the immediate aftermath of the storms.

- As I previously indicated, the most significant challenge in restoring the mobile network was the lack of electrical power and the dependency on alternative sources of power. Which in turn created another challenge, lack of continuous and dependable access to fuel. As the incumbent carrier with an extensive landline network, Claro had significant fuel reserves across the island, and even with these reserves our inability to gain access to fuel after these initial reserves were depleted was a crippling blow to restoration efforts.

Third, Claro faced significant challenges with the copper components of its network. The damage to these facilities was severe and widespread: the day after Hurricane Maria only a few of Claro's remote units were fully operational and the widespread damages to poles contributed to pervasive damage to hundreds of miles of the copper facilities that connect users to Claro's network. Claro has made substantial progress in restoring services to its affected wireline user through the repair of copper facilities, but the damage in many areas was such that repair of the copper facilities proved unfeasible, and Claro decided instead to move forward with a plan to replace these copper facilities permanently with fiber and fixed wireless deployments.[1]

2. Impact of Recent Earthquakes

Fortunately, the recent earthquakes did not cause any damage to Claro's landline or wireless infrastructure. The most direct impact of the earthquake came from the prolonged island-wide power outage that followed immediately after the earthquakes of January 7th. Our response to the blackout confirmed that we are prepared: less than two hours after the blackout started, 57 percent of Claro's mobile stations were operating with diesel-powered generators, which allowed 96 percent of Claro's mobile customers to access their voice and data services. We are able to do this because based on our experience with Hurricane Maria, we attuned the deployment of our power generating capability and our fuel reserves to ensure that those cell sites that are better equipped to handle more data and call volume remained operational. On the wireline side, less than two hours after the blackout started all of Claro's central offices and 98 percent of its remote units were operating with diesel-powered generators.

In sum, Claro's response to the earthquake confirmed that its emergency response plans are ready and that it is now better prepared to assess damages and maintain core network elements running after a natural disaster. We also learned a very basic but valuable lesson: no matter how sound and thorough our contingency plans are, there always will be factors outside of our control that will have a direct effect on how we can execute such plans. It also served as an important reminder that discussions about resiliency and disaster-proofing of infrastructure in Puerto Rico should not be limited to a discussion of windstorms and how infrastructure and equipment resist the impact of wind and rain, but should focus instead on diverse practices and strategies that aid in ensuring availability of service in the face of diverse challenges and natural disasters.

[1] Additional information about these planned deployments can be found in Claro's filings in Docket No. 18-240.

3. Ensuring Availability of Service: Lessons Learned and Steps Taken

I will now take this opportunity to share with you some of the key measures that Claro has taken since Hurricane Maria to better safeguard against threats to our network from natural disasters and to be in a better position to restore service speedily.

First, Claro has made it a priority to strengthen the core elements of its network. We made it a priority to bury our fiber ring network—which is by far the most extensive in the island—and the work is almost done: as of today, more than 92 percent of the fiber rings is buried, and all of our fiber rings should be buried by 2026. We also have deployed new fiber transport routes to improve redundancy in case of regional network outages.

Second, Claro is connecting its cell sites to the core network with buried fiber that extends to the cell site. We recognize that restoring wireless networks is the most effective to maintain connectivity of users, emergency personnel and first responders during and after a natural disaster, and strengthening the fiber connections to cell sites is a key component of this strategy.

Third, Claro is deploying expansive fixed wireless networks using its mid-band and high-millimeter spectrum. This is something that Claro had already incorporated into its business plan prior to the hurricane but started working on immediately after the hurricanes separate and apart from any potential award of funds under the FCC's *Uniendo a Puerto Rico Fund* competitive process. In addition to providing faster broadband service to users, the widespread deployment of these fixed wireless networks is a critical resiliency measure:

- A fixed wireless service that relies on equipment in a customer's premise and a wireless connection to a cell site (which are connected by buried fiber) is more resilient during a hurricane or an earthquake than the traditional landline, copper-based network. It is also much easier to restore in the immediate aftermath of a natural disaster.

- Claro plans to deploy Voice over LTE (or VoLTE) as the voice solution in these fixed wireless networks. VoLTE will allow Claro to prioritize emergency calls over all other traffic even in instances of high congestion. VoLTE will also use less power from battery- operated consumer premise equipment during a blackout.

Fourth, Claro is in the midst of significant fiber-to-the-premises deployment to replace last-mile copper loops. This is another measure that Claro is taking today independent of the results of the assignment of funds under the *Uniendo a Puerto Rico Fund*. Claro sees a few distinct advantages of this deployment that will help to improve availability of service:

- Fiber, even when deployed aerially, is easier and less expensive to restore after a natural disaster;

- Fiber, even when deployed aerially, eliminates the pervasive problem of copper theft, which has become a significant impediment to Claro's ability to ensure the availability of service after a natural disaster.

- Claro has been deploying new poles, which are more likely to resist the effects of a natural disaster than many of the older poles that collapsed or were rendered useless after the storms.

- Claro is encasing its fiber cables in steel, which makes it less likely that they will fall due to wind effects and makes it easier to reattach if they fall.

In this context, Claro also must caution against the notion that only buried fiber—particularly in the context of last-mile facilities—is the only means to be resilient. A major earthquake is more likely to damage buried fiber conduits than aerial fiber, and identifying and repairing the damage to buried fiber could prove to be more difficult. Moreover—and critical to the Puerto Rico experience—buried fiber is particularly susceptible to damage caused by other utilities and private construction contractors. The reason for this is simple: the one-call notification process that was set up in Puerto Rico has proven to be ineffective because some utilities do not mark their underground facilities or, worse, proceed to excavate without warning other utilities, which leads to frequent cuts to Claro's underground fiber. Indeed, cuts to buried fiber were a major problem in the aftermath of Hurricane Maria both in areas that had not suffered damage and in areas were Claro had restored service, only to lose service again due to fiber cuts. As a matter of fact, Claro experienced a higher number of cuts after the hurricanes than during the hurricanes.

Finally, as we look at what can still be done to build more resilient networks, Claro would like to stress the importance of having the Puerto Rico Electric Power Authority ("PREPA"), which is a Puerto Rico government-owned utility, become a more reliable partner, which simply is not the case today. Three critical points should be made in this regard:

- First, Puerto Rico needs reliable power. The earthquake, an event that was largely focused on a portion of the island, had significant island-wide implications due to the power outage that followed—not the damage caused to the network infrastructure. We are better prepared and have extensive fuel reserves to deal with such blackout, but telecommunications networks are not designed to operate on backup power for extended periods.

- Second, the Commission should explore mechanisms that can ensure that in all instances in which a major disaster is declared under the Stafford Act, the federal government is given the authority to make access to fuel by telecommunications companies a priority.

That did not happen after Hurricane Maria, and we are not convinced that the problem has been fixed.

- Third, carriers in Puerto Rico need more reliable and efficient access to PREPA conduits and poles. PREPA has an extensive network of poles and conduits across the island, some of which are not even in use. There have also been reports that PREPA plans a major deployment of wind-resistant poles to be supported with funding from the Federal Emergency Management Agency. Resiliency and preparedness require reasonable access to these facilities, but the unfortunate reality is that there appears to be no effective oversight of PREPA to ensure that it complies with its obligations in this regard. PREPA has been treated as exempt from Commission jurisdiction on matters relating to access poles, ducts, and conduits, and the relevant local regulatory bodies have not shown a willingness or ability to enforce these obligations vis-a-vis PREPA.

- Lastly, despite the progress that Claro has made in some municipalities in getting the necessary permits to deploy fiber, it is still encountering very significant problems obtaining permits from other municipalities. In the *Uniendo a Puerto Rico Fund Order*, the Commission anticipated this might be a problem, and it specifically encouraged Puerto Rico to consider approving "one-time territory-wide permits" for Stage 2 support recipients. Unfortunately, and to the best of my knowledge, no such efforts have been initiated. This is a real shame because carriers may be discouraged from choosing to deploy fiber in certain municipalities due to red tape and, in some instances, unreasonable requests from municipal officials. Indeed, *Uniendo Fund a Puerto Rico Fund* recipients are going to have a difficult time complying with their deployment milestone obligations if they cannot obtain permits in a timely manner and underreasonable conditions, which in turn could impact the level of participation in the competitive process.

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I hope that this brief snapshot of restoration efforts and resiliency undertakings has been useful to all of you. I am happy to answer any questions and provide additional information, as needed.