

July 3, 2018

Mr. Ajit Pai  
Federal Communications Commission  
445 12th Street SW,  
Washington, DC 20554

**RE: FEDERAL COMMUNICATIONS COMMISSION (FCC), 47 CFR Part 54, Uniendo a Puerto Rico Fund**

Dear FCC Chairman:

As President of the *Puerto Rico Manufacturers Association (PRMA)*, Puerto Rico's largest non-profit association, representing the private sector in both manufacturing and service industries, composing almost half (about 49%) of the Gross Domestic Product (GDP) of Puerto Rico's economy, I submit our observations and comments on how to best structure the second stage of the Uniendo a Puerto Rico and Connect USVI Funds in our desire to speed longer-term efforts to rebuild fixed and mobile voice and broadband networks in the territories and strengthen them against future natural disasters.

After having several meetings and brainstorming sessions with different leaders of the telecom industry in Puerto Rico we have come to understand some of the causes and pitfalls that because of hurricane María constrained the normal operations of our telecommunications services and the infrastructure vulnerabilities that led to a poor and very slow recovery of the telecommunications industry in Puerto Rico.

To our dismay, we have found that this industry was caught by surprise by not being prepared to support the impact of stronger hurricanes with forces of categories 4 and 5. Contingency plans seemed to be absent for such level of disasters, not to mention the lack of preventive and required simulation exercises for these types of catastrophes.

It should be known that the basics and fundamentals of our telecommunications infrastructure failed. Interesting enough, some of the components that failed are technology related while others were caused by mismanagement, lack of prepared human resources, ineffective processes and lack of a consolidated plan to work with other authorities such as the Electric Power Authority (PREPA), central government and federal agencies.

Among our findings we identified the following vulnerabilities:

1. The whole island's power capability shut down impacting every government agency, municipality and private sector organization.

2. Once power was gone, the battery system of the infrastructure kicked in but many batteries failed and those that responded did not last long enough.
3. Once batteries started to fail, electrical generators went online. Then we encountered other logistical challenges:
  - a. The generator batteries were being stolen.
  - b. The diesel for these plants was also being stolen.
  - c. Due to the magnitude of the crisis, there were not enough police officers to protect the generators, the batteries and the diesel.
  - d. The supply of fuel (diesel and gas) became a significant problem as the whole country was suffering a logistical nightmare for refueling generators.
  - e. The access to telecom towers was being blocked by desperate civilians in search of fuel and batteries prohibiting secure access to the telecom providers.
  - f. There was deep water inundation and floods in many sectors where generators and batteries were working shutting down operations.
  - g. Electrical materials and supplies were not available in Puerto Rico to recover the electrical grid infrastructure.
  - h. With a destroyed telecom infrastructure and a lack of effective communications came confusion, chaos and a greater constraint for logistical planning and emergency response. This postponed and delayed many recovery strategies.
  - i. Again, the central government and federal government agencies were not prepared and did not have an immediate response plan to protect and recover the telecom infrastructure in a reasonable amount of time.

After having lived this experience, from the private sector perspective, we firmly believe that the FCC should take a very close supervisory role with the local telecommunications industry not just allocating the funds to rebuild it but to make sure the contingency plans work when they are needed. We understand there are many areas that need to be reconsidered. Some more important than others.


Having said that, we will share some of the areas identified by our organization that need to be addressed. Within the recommendations we would like to highlight, we believe the FCC should consider the following strategic areas:

1. Power lines should be trenched, that is, put underground with access to all the telecom towers and associated electrical grid infrastructure, assuring 100% uptime and 100% online power availability.
2. All telecommunications infrastructure should be designed and installed with the resilience capability to sustain hurricane category 5 winds.
3. With a redesigned electrical grid should come innovation and the consideration of other emerging technologies such as renewable photovoltaic systems, solar power systems, emerging long lasting batteries, hydro and nuclear options.

4. Broadband satellite and microwaves should be considered a normal part of the telecommunications infrastructure as they can be restored quickly without much delay.
5. One of the biggest challenges faced during the emergency was the lack of materials and supplies to rebuild the electrical grid. FCC should consider creating a local industry in Puerto Rico to build these materials in Puerto Rico. This will not only permit a faster response to future events but in doing so it can also open a window of opportunity for Puerto Rico to manufacture and export these supplies to Virgin Islands and other territories in and outside the United States.
6. We should avoid monopolies in this industry and protect free competition. With this, Puerto Rico's private sector telecom industry and the government telecommunications industry should work together in a collaborative and partnership role, not against each other.
7. A comprehensive island-wide disaster recovery and contingency plan should be created and rehearsed on a periodic basis. This strategy / exercise should be supervised and audited by the FCC to assure we never go back to the dark moment we once lived.

These are just some of our comments as we observed and understood them during the emergency experience. We close by saying two things, one, it is well known that Puerto Rico suffered a severe devastation in both mobile and broadband network infrastructure. FCC should not hold back in making a very strong investment in this infrastructure as rebuilding again as it was before will only lead us to bad investments, lost opportunities and more importantly to a greater future threat to the population of the island. This next build up must be resilient, innovative and hurricane proof. Second, it's not only about the technologies. A strong investment should also be made in processes, strategic contingency planning, interagency and federal coordination and most importantly the human resources that make possible to recover, rebuild and maintain a 21<sup>st</sup> century, world class telecommunications infrastructure.

With warm regards I thank you for this opportunity,



Rodrigo Masses