



## 6 GHz Critical Infrastructure Licenses Must Be Protected from Interference

Threats to the safety, reliability, and security of critical infrastructure industries like electric, water, and gas utilities are increasing. The communications networks that underpin these essential services must be protected. Unfortunately, the Federal Communications Commission (FCC)'s proposal to open the 6 GHz band to unlicensed spectrum sharing does just the opposite. Hundreds of critical-infrastructure industries (CII), including the electric, gas, water, and petroleum industries, use their 6-GHz licensed systems for mission-critical functions. Protecting these licensed systems from interference is vital to our country's economic and national security.

**The Ask:** Please consider joining your colleagues in sending letters to the FCC urging them to protect CII incumbents in the 6 GHz band. The FCC has proposed an unproven mechanism called an Automated Frequency Coordination (AFC) system to do so, but this system has yet to be tested to demonstrate that it will work. The Department of Energy has [urged](#) the Commission to test the AFC and even offered the use of the national labs. A [bipartisan group of 12 Senators](#), along with [Senators Lisa Murkowski](#) (R-AK) and [John Kennedy](#) (R-LA) and 13 bipartisan members of the [California House delegation](#) have already sent letters urging the Commission protect CII systems and prove that the FCC's proposed mitigation measures will actually protect utility networks from harm. Such letters are an important step to avert harmful impacts to our nation's critical electric, gas and water utilities.

**Current State:** In October 2018, the FCC [proposed](#) to open the 6 GHz band to unlicensed spectrum sharing. Currently the band is restricted to licensed use only, which is appropriate for the mission-critical communications operated by energy and water utilities that must be highly reliable and interference free.

Companies such as Google, Qualcomm, HP, Amazon, and Cisco have requested that the FCC allow unlicensed spectrum sharing in the band to develop mobile, Internet-of-Things applications. These companies admit that interference would be caused by this action and propose this untested AFC system to protect critical-infrastructure incumbent licensees from interference.<sup>1</sup>

This is an unacceptable risk. Utility communications networks cannot accept the threat of any interference. Interference will delay or degrade the integrity of communications, leading to operational consequences for utility systems that must operate in milliseconds. Interference could cause disruption to the delivery of electric power, water, and oil and natural gas. Importantly, interference could also impact the safety of personnel performing routine maintenance or power restoration after a storm.

**Implications of the Proposal:** Unless interference mitigation is assured, utilities and other CII will have to explore moving to other spectrum bands. Unfortunately, many critical infrastructure companies do not have options to move out of the 6 GHz band. Even if alternative bands exist, relocating will be cost prohibitive and take years to accomplish. For example, one electric company estimates the migration to another band would cost over \$200 million, costs which would be borne by customers. Another estimates it would take 10 years to accomplish such a move – during which interference could occur with adverse impacts to the public.

Unlike the situation for CII, there are other bands available to proponents of unlicensed spectrum sharing. And if the FCC does proceed with its proposal to allow unlicensed spectrum sharing in the 6 GHz band, it should require testing to ensure that the AFC will mitigate all interference that causes operational impacts to critical-infrastructure communications.

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<sup>1</sup> Broadcom Inc. ex-parte filing, March 29, 2019