



**Department of Energy**  
Washington, DC 20585

September 3, 2019

Mr. Peter Tenhula  
Deputy Associate Administrator  
for Office of Spectrum Management  
National Telecommunications  
and Information Administration  
U.S. Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230

Dear Mr. Tenhula:

On behalf of the U.S. Department of Energy (Department or DOE), I would like to take this opportunity to share the Department's views regarding the 6GHz spectrum band and its importance to the Nation's energy and water industries. It is important to note that DOE has statutory obligations to ensure a reliable energy system; specifically, under the Presidential Policy Directive – 21, DOE is the Federal Sector Specific Agency for the energy infrastructure sector.

DOE understands that the Federal Communications Commission (FCC or Commission) is currently considering a proposal to utilize the 6GHz spectrum band for unlicensed use. We recognize the importance of expanding our Nation's WiFi capabilities, and we certainly support innovation. The commingling of licensed and unlicensed spectrum use is a novel concept and DOE applauds the FCC's efforts in this area. However, it is important to note that secure communications is a mission critical operational function for the energy and water industries and must be protected.

Moreover, the Department of Homeland Security's National Risk Management Center has responsibility for the sixteen critical infrastructure sectors and recently published our Nation's fifty-five critical functions. Evaluation of these sectors, functions, and their inter-dependencies highlights the critical role that both the energy and water sectors play in ensuring national and economic security. Energy and water systems are dependent and reliant on communications through the use of dedicated and sufficient spectrum. All the other critical infrastructure sectors, including telecommunications, are also reliant on the energy sector.

DOE has concerns regarding the use of the Automated Frequency Coordination system (AFC). As proposed by the FCC, the AFC is designed to control interference issues between unlicensed and licensed users. However, this is a concept that has been neither field-tested nor verified. A similar technology, known as Dynamic Frequency Selection (DFS), was used to prevent interference to the Terminal Doppler Weather Radar system in the 5.8GHz band. However, our understanding is that DFS had numerous issues and failed to work correctly, to the point where the National Telecommunications and Information Administration found that the DFS system did not properly address interference in that band.



DOE recognizes that the FCC is an independent agency with its own set of processes and procedures. If the Commission moves forward with changes to the 6GHz band, it is imperative that adequate testing of AFC and other safeguards be in place before changes to the 6GHz spectrum band occurs. The DOE National Laboratories have significant capability to evaluate potential interference scenarios, field test, and make recommendations to improve the use of AFC. The FCC has leveraged the capabilities of the National Labs in the past in analyzing spectrum used by emergency first responders. We would encourage that the AFC be analyzed by the National Laboratories before it is placed into use.

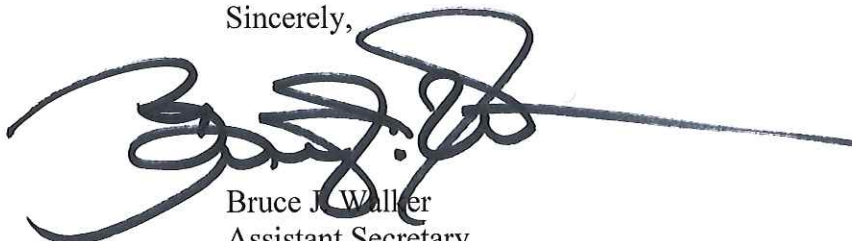
It is also important to note that America's energy and water industries do not currently have any cost effective, readily achievable alternatives to the 6GHz band if the FCC proceeds with the existing proposal and damaging signal interference is realized. DOE believes it is prudent to investigate a long-term solution for dedicated spectrum for our critical infrastructure users in the energy and water sectors. This is necessary with the anticipated significant expansion of WiFi usage and the potential for near and long term spectrum interference in the 6GHz band.

We respectfully request consideration of other spectrum bands (outside of the 6GHz) that could be utilized to increase public WiFi capabilities and not risk interference and thus the reliability to our Nation's power and water industries. Or alternatively, we request establishing dedicated spectrum for the energy and water industries, with an appropriate funding mechanism to facilitate the relocation of the energy and water industries. This solution will provide bandwidth in the 6GHz spectrum for WiFi and other 5G efforts. This would also isolate unlicensed use without risking the integrity of the spectrum used by our critical infrastructure users in the energy and water industries.

DOE's Office of Electricity, as well as the Office of Cybersecurity, Energy Security, and Emergency Response; the Office of the Chief Information Officer, and our National Labs are available for additional support in resolving this issue of national importance. If DOE and our National Labs can assist the FCC in any way or provide more information about the unique needs of America's power and water infrastructure, please do not hesitate to contact me at (202) 586-1411.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce J. Waller", with a long horizontal line extending to the right.

Bruce J. Waller  
Assistant Secretary  
Office of Electricity

cc: The Honorable Diane Rinaldo, Acting Assistant Secretary, U.S. Department of Commerce  
The Honorable Ajit Pai, Chairman, Federal Communications Commission