

ONE HUNDRED FOURTEENTH CONGRESS
Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
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MEMORANDUM

March 24, 2015

To: Subcommittee on Communications and Technology Democratic Members and Staff
Fr: Committee on Energy and Commerce Democratic Staff
Re: Subcommittee Hearing on “Next Steps for Spectrum Policy”

On Thursday, March 26, 2015, at 10:15 a.m. in room 2322 of the Rayburn House Office Building, the Subcommittee on Communications and Technology will hold a hearing titled “Next Steps for Spectrum Policy.” The Subcommittee will hear from four witnesses from the Federal Communications Commission on the agency’s efforts to expand access to spectrum.

I. BACKGROUND

Technological advances and competition in the wireless market have provided consumers with an abundance of wireless devices such as smart phones and tablets. Our increasingly data dependent world demands more spectrum. In the U.S. alone, mobile data traffic is projected to grow seven fold from 2014 to 2019.¹

The Federal Communications Commission (FCC) is responsible for the allocation and assignment of spectrum for all non-federal users, including commercial users and local public safety users. The National Telecommunications and Information Administration (NTIA) manages spectrum use by federal entities. Given that spectrum resources are finite, there has been a strong focus on identifying opportunities to make both commercial and federal systems more efficient.

¹ Cisco, *VNI Mobile Forecast Highlights 2014-2019* (accessed March 24, 2015) (online at www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country).

II. KEY SPECTRUM POLICY ISSUES

In the Middle Class Tax Relief and Job Creation Act of 2012 (the Public Safety and Spectrum Act) Congress charged the FCC with administering a number of spectrum auctions and making more spectrum available for unlicensed services.²

A. AWS-3 Auction

The Public Safety and Spectrum Act tasked the Commission with auctioning 65 megahertz of mid-band spectrum for mobile broadband use. Bipartisan oversight from the Subcommittee on Communications and Technology helped the FCC successfully complete the AWS-3 auction in January of this year, bringing in net proceeds that exceeded \$41 billion.³ Under the law, \$7 billion of the revenue generated in these auctions will go toward the construction of the nationwide interoperable public safety broadband network known as FirstNet. The auction proceeds will also result in \$20 billion in net deficit reduction. Finally, \$115 million will be used for next generation 911 implementation grants.

B. Broadcast Incentive Auction

Congress further authorized the FCC to conduct “incentive auctions” through which spectrum licensees can voluntarily relinquish spectrum usage rights in exchange for a portion of the proceeds. The Public Safety and Spectrum Act provides a specific process for an incentive auction of the broadcast television spectrum for mobile broadband services. In addition, the legislation permits the FCC to allow unlicensed services within “guard bands” between licensed frequencies in the 600 MHz band plan.

The FCC adopted an Order on May 15, 2014, laying out the rules and procedures for the broadcast incentive auction.⁴ The Commission adopted a band plan for the 600 MHz spectrum that will be part of the auction, with paired uplink and downlink bands made up of five megahertz “building blocks.” The FCC also adopted rules for how broadcasters will be “repacked” to more efficient channel assignments after the auction. Congress directed the FCC to make sure that the repacking process preserves the coverage area and population served by broadcasters.

By allowing unlicensed use within the 600 MHz guard bands, the FCC’s auction can serve as a catalyst for new waves of innovation such as super Wi-Fi with longer reach than

² P.L. 112-96.

³ Federal Communications Commission, *FCC Auctions Factsheet: Auction 97* (accessed Mar. 24, 2015) (online at http://wireless.fcc.gov/auctions/default.htm?job=auction_factsheet&id=97).

⁴ Federal Communications Commission, *In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, Report and Order (May 15, 2014) (online at www.fcc.gov/document/fcc-adopts-rules-first-ever-incentive-auction-0).

traditional Wi-Fi. The FCC estimates that under the band plan adopted, between 14 and 28 megahertz of guard band spectrum will be available for unlicensed use, depending on the amount of overall spectrum repurposed in the auction.⁵ In addition, unlicensed use of channel 37 where it is not currently in use, will yield an additional six megahertz of spectrum for unlicensed uses. The FCC also anticipates making unused spectrum after the repacking process available for shared use by white spaces devices and wireless microphones.

Last year, Chairman Wheeler announced his intention to hold the broadcast television incentive auction in early 2016. To stay on this timeframe, the FCC is expected to adopt in the next few months a Public Notice containing the detailed procedures for the auction. The Commission staff is also engaging in extensive outreach efforts across the country to encourage broadcaster participation.

C. Spectrum Aggregation Rules

The Public Safety and Spectrum Act also preserves the FCC's ability to promote competition through spectrum aggregation limits and other rules. The Public Safety and Spectrum Act allows the FCC to adopt and enforce auction "rules of general applicability, including rules concerning spectrum aggregation that promote competition." On May 15, 2014 the FCC adopted an Order effectuating its spectrum aggregation rules as part of the upcoming incentive auction and other auctions, as well as for market transactions. With respect to the incentive auction, all carriers may participate, however, the FCC will reserve up to 30 megahertz of spectrum for those providers with less than one third of low band spectrum in a market.

D. 5 GHz Spectrum

Congress directed the FCC to work with the National Telecommunications and Information Administration to explore ways to allow new unlicensed services in several parts of the 5 GHz spectrum band. The FCC acted last year to free an additional 100 megahertz in the lower part of the 5 GHz band for unlicensed services. Last month Reps. Eshoo, Latta, and Matsui introduced the Wi-Fi Innovation Act to direct the FCC to conduct tests in the 5 GHz band to determine if spectrum in that band can be shared without interfering with current users.⁶

E. 3.5 GHz Spectrum

The Commission initiated a proceeding in December 2012, to identify ways to make up to 150 megahertz of spectrum in the 3.5 GHz band for wireless broadband. The FCC proposed a tiered framework for access to the spectrum, based on recommendations from the President's Council of Advisors on Science and Technology. Rather than relying on a larger macro-cellular structure for broadband networks using this spectrum band, the proposal would authorize the use

⁵ Federal Communications Commission, *Staff Summary of Incentive Auction Report and Order* (May 15, 2014) (online at https://apps.fcc.gov/edocs_public/attachmatch/DOC-327099A1.pdf).

⁶ H.R. 821 (2015).

of small cells to facilitate sharing among several uses.

F. Spectrum Frontiers

The FCC began to explore this past October the use of high band spectrum above 24 GHz for mobile broadband. These frequencies, commonly called millimeter waves, can allow large amounts of data to be transmitted across short distances. Use of these waves could become a critical part of transmitting high-definition video around a home or business. Some analysts have predicted that this service may become the foundation of Fifth Generation (5G) wireless broadband networks.⁷

II. WITNESSES

The following witnesses have been invited to testify:

Roger Sherman

Chief, Wireless Telecommunications Bureau

John Leibovitz

Deputy Chief, Wireless Telecommunications Bureau

Gary Epstein

Chair, Incentive Auction Task Force

Julius Knapp

Chief, Office of Engineering and Technology

⁷ *Your Phone on Steroids*, The Economist (Mar. 23, 2015) (online at www.economist.com/news/science-and-technology/21646962-5g-mobile-wireless-will-be-faster-fibre-your-phone-steroids?fsrc=nlw|newe|23-03-2015|NA).