

**STATEMENT OF  
CHAIRMAN AJIT PAI  
FEDERAL COMMUNICATIONS COMMISSION**

**HEARING ON OVERSIGHT OF THE FEDERAL COMMUNICATIONS COMMISSION:  
SPECTRUM AUCTIONS PROGRAM**

**BEFORE THE  
SUBCOMMITTEE ON FINANCIAL SERVICES AND GENERAL GOVERNMENT  
COMMITTEE ON APPROPRIATIONS  
U.S. SENATE**

**OCTOBER 17, 2019**

Chairman Kennedy, Ranking Member Coons, and Members of the Financial Services and General Government Subcommittee, thank you for inviting me here to discuss the Federal Communications Commission's spectrum auctions program.

Good spectrum policy is critical to securing our nation's position as the global leader in the deployment of 5G, the next generation of wireless technology. In my testimony before this Subcommittee in May, I outlined the Commission's three-pronged strategy for Facilitating America's Superiority in 5G Technology—the 5G FAST Plan. This plan calls for freeing up more spectrum for commercial use, making it easier to install wireless infrastructure, and modernizing our regulations to encourage the deployment of fiber.

The FCC favors a market-based approach in order to make more spectrum available for 5G. We have eschewed command-and-control, top-down mandates in favor of flexible use for wireless spectrum whenever feasible. The free market best determines what technology should be deployed in what band, especially as the pace of technology accelerates more rapidly and demand for spectrum continues to grow.

One important component of this market-based approach to spectrum policy is our spectrum auctions program. As you know, Congress authorized the FCC to conduct spectrum auctions in the Budget Reconciliation Act of 1993. Since then, the Commission has conducted 93 spectrum auctions. Among other things, these spectrum auctions have been critical to the explosive growth in wireless communications over the last two-and-a-half decades. For example, the AWS-1 and 700 MHz spectrum auctions conducted during the Bush Administration were critical to the United States leading the world in 4G LTE deployment.

The FCC's spectrum auction program has also been good for our nation's taxpayers. Because of our spectrum auctions, the FCC is one of the few government agencies that generates more money for the U.S. Treasury than it spends. Overall, the Commission's spectrum auction program to date has generated \$116.5 billion in revenue for the U.S. Treasury, with administrative and personnel costs constituting only 1.7% of that amount. Each year, Congress sets an auction spending cap for the FCC. For FY 2019, that cap is \$130,284,000. And for FY 2020, both the House and Senate Subcommittee bills have set the FY 2020 level at \$132,538,680. The Commission appreciates this Subcommittee's financial support for the spectrum auctions program.

With ever-increasing demand for and technological advances in spectrum use, spectrum policy is becoming more complicated. That's one reason why Congress provided the FCC in 2012 with incentive auction authority. In 2017, the FCC concluded its first incentive auction, which provided payments to broadcast television stations that chose to relinquish their spectrum. That auction ended up making available 70 megahertz of spectrum for mobile broadband use in the 600 MHz band. It also generated about \$19.3 billion in revenue. About \$10.05 billion of that money went to pay broadcasters that

relinquished their spectrum, more than \$7 billion was directed to the U.S. Treasury for deficit reduction, and more than \$2 billion is being spent to compensate broadcasters for their relocation costs as a result of the post-incentive auction spectrum repack. I am pleased to report that the repack is going well. Most broadcast television stations that need to be moved from their old frequencies have already done so. The process for compensating stations for their relocation costs has been running smoothly. And wireless carriers are already using much of the 600 MHz spectrum that they won at the auction to provide service across the country. Looking forward, we'll keep our eye on the ball and make sure that this repack is brought to a successful conclusion.

Recently, the Commission's spectrum auction program has been very active as we move aggressively to make more spectrum available for 5G services. On November 14, 2018, we began our 28 GHz auction, which concluded on January 24, 2019. It made available 850 megahertz of spectrum and raised over \$700 million for the U.S. Treasury. Overall, 33 bidders won a total of 2,965 licenses.

Then, on March 14, 2019, we started our 24 GHz auction. That auction ended on May 28, 2019 and made available 700 megahertz of spectrum for the commercial marketplace. It also raised over \$2 billion for the U.S. Treasury. Overall, 29 bidders won a total of 2,904 licenses.

Each of these auctions was successful, and combined, they pushed 1,550 megahertz of high-band spectrum into the commercial marketplace. This spectrum will be critical to supporting the advanced high-bandwidth, ultra-low latency applications that will be made possible for 5G.

But we can't and won't be complacent. Indeed, we've already scheduled two more spectrum auctions that will begin within the next nine months. On December 10, bidding will commence in what we are calling Auction 103. This auction will make available more spectrum than any auction in American history. 3,400 megahertz of spectrum in the Upper 37 GHz, 39 GHz, and 47 GHz bands will be on the auction block.

One notable feature of this auction is that we are making use of our incentive auction authority to reorganize the band. But while the broadcast incentive auction used separate forward and reverse auctions, Auction 103 will use an innovative voucher system that will allow incumbents to receive payments for relinquishing their existing licenses or apply the value of their current licenses for new licenses won at the auction. This creative solution illustrates why Congress' decision to give the FCC flexibility in structuring auctions was a wise one.

Following Auction 103, the FCC will turn to mid-band spectrum auctions. Mid-band spectrum is important for 5G deployment because these bands combine good coverage with good capacity. On June 25, 2020, the FCC will start an auction of spectrum in the 3.5 GHz band. For this band, the Commission adopted an innovative regulatory regime for commercial use known as dynamic sharing. We set up a three-tiered, hierarchical framework to coordinate shared federal and non-federal use. Incumbents, which are federal users, comprise the highest tier and receive protection from all other users, followed by Priority Access Licenses (PALs) on the second tier, and General Authorized Access (GAA) on the third tier. PALs receive protection from GAA operations and must accept interference from incumbents. GAA is licensed-by-rule and must accept interference from all other users.

Automated frequency coordinators, known as Spectrum Access Systems, will coordinate operations, and Environmental Sensing Capability operators will manage a sensor system designed to detect the presence of federal incumbent radar transmissions and communicate that information to the SASs. Just last month, we authorized five such frequency coordinators so that initial commercial deployments could commence.

Next June, we will start auctioning the PALs in the 3.5 GHz band. Seven 10-megahertz channels will be made available, for a total of 70 megahertz of spectrum. But while bidders will be paying for the right to use a 10-megahertz channel, they will not be bidding on a specific 10-megahertz channel. Rather, the specific frequencies that they will be using will change periodically as a result of the dynamic

spectrum sharing described above. A total of 22,631 PALs will be offered in this auction, which will be the most licenses ever offered in an FCC spectrum auction.

Following the 3.5 GHz band auction, the FCC plans to hold an auction in the 2.5 GHz band. With almost 200 megahertz, the 2.5 GHz band is the largest contiguous band of terrestrial, flexible use spectrum below 3 GHz in the United States. But that band is dramatically underused today—existing licenses cover only about one-half of the country, and the spectrum is barely assigned west of the Mississippi River. In July, the FCC revised the rules for the band, allowing more entities to access the spectrum and eliminating unnecessary restrictions. The Commission will soon open a Tribal priority window to give Tribes an opportunity to obtain this spectrum to provide wireless services on rural Tribal lands. Following this window, we will hold an auction to assign the remaining unused portions of the band for commercial use. We have not yet scheduled a start date for this auction, but my goal is for it to begin next year.

Finally, I would like to conclude by discussing a relatively recent change to the Commission's management of its spectrum auction program. Until late last year, the program was run by the Auctions Division of the Wireless Telecommunications Bureau. But auctions aren't limited to the wireless space. The Commission also auctions spectrum for broadcast radio and television licenses. This summer, for example, we held an auction for FM translator licenses. And the Commission now holds reverse auctions of universal service support to promote rural broadband deployment. In 2018, for example, we held the Connect America Fund Phase II reverse auction, which allocated almost \$1.5 billion to deploy broadband to over 713,000 homes and businesses in rural America. Next year, we intend to launch the Rural Digital Opportunity Fund, which will allocate over \$20 billion for rural broadband deployment using a reverse auction format. And in December of this year, the Commission will hold an auction of new toll-free numbers.

In light of the Commission's increasingly diverse auctions portfolio, it no longer made sense for the Auctions Division to remain under the purview of the Wireless Telecommunications Bureau. So when we created the new Office of Economics and Analytics, we decided to move the Auctions Division there. This was a good fit because good auction design must be based on sound economics. I am pleased to report that this transition has been smooth and, as evidenced by the Commission's busy auctions schedule, has not disrupted our important auctions work.

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Chairman Kennedy, Ranking Member Coons, and Members of the Subcommittee, thank you for this opportunity to testify. I would be pleased to answer your questions.