



Advanced Spectrum Policy Course

Lecture 5: Congressional Involvement

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Advanced Spectrum Policy

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Lecture 5: Congressional Involvement

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5.1. Statutes

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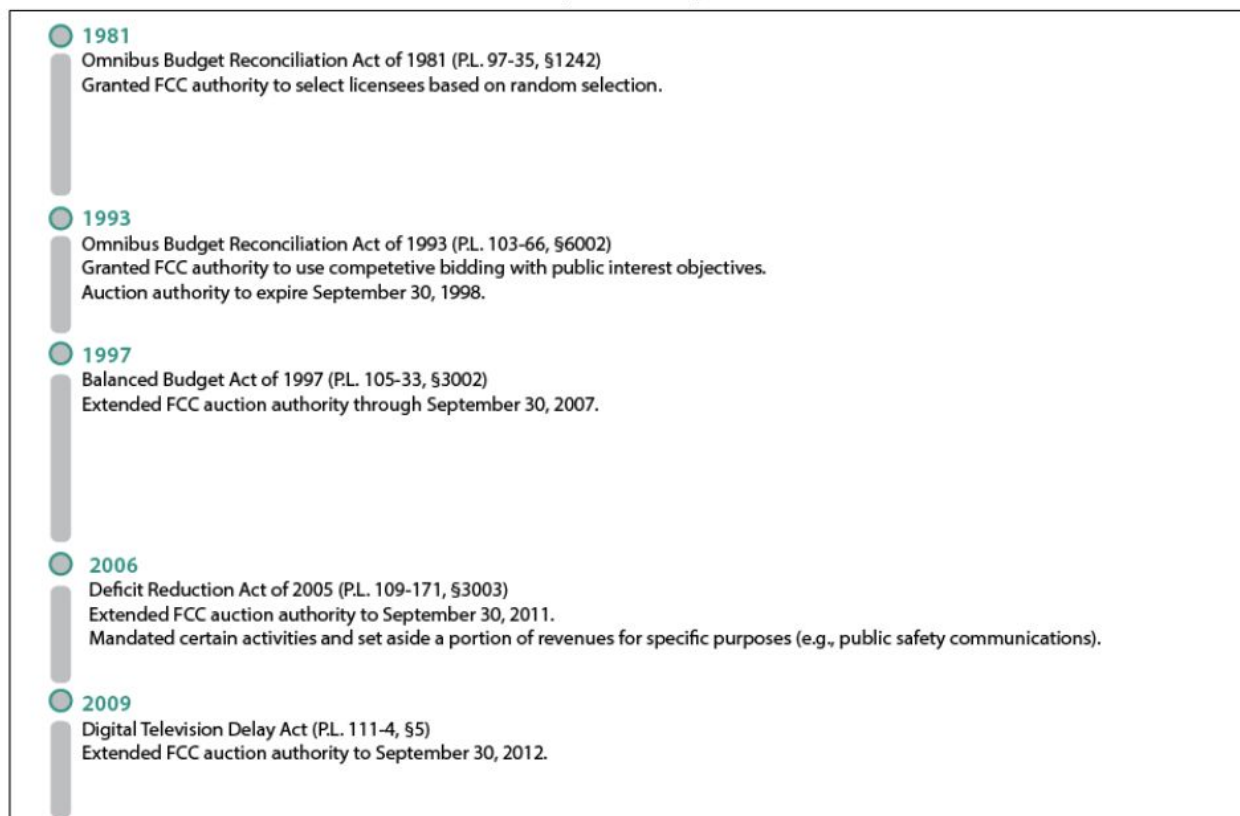
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5.1.1. Spectrum Auction Reauthorization

**Figure 1. The FCC's Spectrum Auction Authority: Timeline of Changes
(1981-2023)**



Congressional Research Service, "The Federal Communications Commission's Spectrum Auction Authority: History and Options for Reinstatement (Updated September 12, 2023)," CRS Report No. R47578, <https://sgp.fas.org/crs/misc/R47578.pdf>

5.1.1. Spectrum Auction Reauthorization

2012

Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96, Title VI)
Extended FCC auction authority through September 30, 2022.
Mandated certain auctions and set aside a portion of the revenues for specific purposes (e.g., 911, FirstNet).

2015

Bipartisan Budget Act of 2015 (P.L. 114-74, §1007)
Required FCC to auction certain spectrums and extended FCC auction authority for this spectrum through September 30, 2025.

2021

Infrastructure Investment and Jobs Act (P.L. 117-58, §90008)
Granted FCC authority to auction certain frequencies in the 3.1-3.45 GHz band no earlier than November 30, 2024.

2022

Continuing Appropriations and Ukraine Supplemental Appropriations Act, 2023 (P.L. 117-180, Division C, §101)
Extended the FCC's auction authority through December 16, 2022.
Further Continuing Appropriations and Extensions Act, 2023 (P.L. 117-229, Division B, Title I, §101)
Extended the FCC's auction authority through December 23, 2022.
Further Additional Continuing Appropriations and Extensions Act, 2023 (P.L. 117-264, Division B, Title I, §101)
Extended the FCC's auction authority through December 30, 2022.
Consolidated Appropriations Act, 2023 (P.L. 117-328, Division O, Title IX, §901)
Extended the FCC's auction authority through March 9, 2023.

2023

The FCC's auction authority lapsed on March 9, 2023.

Source: CRS.

Congressional Research Service, "The Federal Communications Commission's Spectrum Auction Authority: History and Options for Reinstatement (Updated September 12, 2023)," CRS Report No. R47578, <https://sgp.fas.org/crs/misc/R47578.pdf>

5.1.2. Commercial Spectrum Enhancement Act of 2004 (P.L. 108-494) (created the Spectrum Relocation Fund)

The Commercial Spectrum Enhancement Act of 2004 (P.L. 108-494) established the Spectrum Relocation Fund to reimburse federal agencies for costs incurred when vacating spectrum for auction. Successful commercial bidders fund these relocation costs. The auctions must recover at least 110% of NTIA-projected costs, and any unused funds return to the Treasury after eight years.

5.1.3. Spectrum Act of 2012 (P.L. 112-96) (established the Broadcast Incentive Auctions of 2016)

The Spectrum Act of 2012 (P.L. 112-96) required the establishment of 3 spectrum auctions, one of which was the Broadcast Incentive Auction which began in March 2016.

The Broadcast Television Spectrum Incentive Auction (Auction 1000), which began on March 29, 2016, and concluded on April 13, 2017. This voluntary, two-sided auction, authorized by Section 6403, involved a reverse auction (Auction 1001) that paid \$10.05 billion to 142 broadcasters for 175 TV stations to relinquish 84 MHz of spectrum, and a forward auction (Auction 1002) that raised \$19.8 billion from 50 bidders for 2,776 wireless licenses, with major winners like T-Mobile (\$8 billion) and Dish (\$6.2 billion). The auction cleared 70 MHz for licensed wireless use and 14 MHz for unlicensed purposes, but fell short of the National Broadband Plan's 120 MHz goal due to lower participation and demand. Nearly 1,000 stations were repacked into new channels by July 2020, supported by a \$1.75 billion relocation fund, though challenges like weather and zoning complicated the process.

The H Block Auction (Auction 96), held from January 22 to February 27, 2014, raised \$1.564 billion for 176 licenses in the 1915–1920 MHz and 1995–2000 MHz bands, with Dish Network acquiring all licenses.

The AWS-3 Auction (Auction 97), conducted from November 13, 2014, to January 29, 2015, generated \$41.329 billion for 1,614 licenses in the 1695–1710 MHz, 1755–1780 MHz, and 2155–2180 MHz bands, with major carriers like AT&T and Verizon driving high bids. Collectively, these auctions repurposed spectrum for 4G and 5G, funded the FirstNet public safety network, and contributed over \$60 billion to deficit reduction, though the incentive auction faced criticism for disrupting broadcast TV and high administrative costs.

5.1.4. Spectrum Pipeline Act of 2015 (P.L. 114-74)

The Spectrum Pipeline Act of 2015 (P.L. 114-74) required the release of 130 MHz of spectrum in 3 phases, with a process to begin in 2022.

The first phase required the National Telecommunications and Information Administration (NTIA) to identify 30 MHz of federal spectrum below 3 GHz, excluding the 1675–1695 MHz band used for weather forecasting, for reallocation to nonfederal or shared federal–nonfederal use, with the process starting no later than January 2022 and auctions commencing by July 2024. The spectrum had to be in contiguous bands of at least 10 MHz to ensure usability for commercial applications.

The second and third phases tasked the Federal Communications Commission (FCC) with identifying two additional 50 MHz tranches of spectrum below 6 GHz for licensed or unlicensed use, with reports due to Congress by January 1, 2022, and January 1, 2024, respectively, outlining federal operations and auction timelines.

The Act prioritized auction proceeds to fund the Spectrum Relocation Fund for research to enhance spectrum efficiency, supporting federal agencies' relocation or sharing efforts. It also amended the NTIA Organization Act to allocate \$500 million from the Spectrum Relocation Fund, with up to 10% of future deposits, for federal entities to conduct research, engineering studies, and planning to improve spectrum use, subject to approval by a Technical Panel.

5.1.5. MOBILE NOW Act of 2018 (P.L. 115-141)

In the MOBILE NOW Act of 2018 (P.L. 115-141), Congress mandated that the Secretary of Commerce, via NTIA and in collaboration with the FCC and affected federal agencies, submit a report by March 23, 2020, assessing the feasibility of sharing the 3.1–3.55 GHz spectrum segment with commercial wireless services.

A key provision mandated that the Secretary of Commerce, through the National Telecommunications and Information Administration (NTIA), in collaboration with the Federal Communications Commission (FCC) and affected federal agencies, submit a report to Congress by March 23, 2020, assessing the feasibility of sharing the 3.1–3.55 GHz spectrum band with commercial wireless services. This mid-band spectrum, prized for its balance of coverage and capacity, was largely occupied by federal users, including the Department of Defense for radar and other critical systems. The report was required to evaluate the potential for reallocation or sharing, identify technical and operational challenges, and propose strategies to protect incumbent federal operations while enabling commercial access.

The NTIA's analysis, informed by technical studies and coordination with agencies like the Department of Defense, highlighted the complexity of sharing due to high-power military systems but identified portions of the band, notably 3.45–3.55 GHz, as viable for commercial use with mitigation measures like geographic coordination zones. This effort built on prior spectrum reallocation initiatives, such as the Spectrum Pipeline Act of 2015, and supported the FCC's subsequent auctions, including Auction 110 in 2021, which raised \$22.9 billion for 100 MHz in the 3.45–3.55 GHz band. The MOBILE NOW Act's focus on the 3.1–3.55 GHz band underscored the strategic importance of mid-band spectrum for 5G expansion, though challenges like federal incumbent relocation and interference management persisted.

5.2. Congressional Budget Office (CBO) Scoring

5.2.1. Spectrum Valuation

The Congressional Budget Office (CBO) plays an important role in determining projected revenues from spectrum auction-related legislation. This “score” by the CBO is part of the budget procedure according to the Senate Pay-As-You-Go Rule (PAYGO Rule) and other budget principles.

5.2. Congressional Budget Office (CBO) Scoring



July 25, 2023

CBO Cost Estimate, H.R.
3565 Spectrum Auction
Reauthorization Act of 2023,
<https://www.cbo.gov/system/files/2023-07/hr3565.pdf>

At a Glance

H.R. 3565, Spectrum Auction Reauthorization Act of 2023

As ordered reported by the House Committee on Energy and Commerce on May 24, 2023

By Fiscal Year, Millions of Dollars	2023	2023-2028	2023-2033
Direct Spending (Outlays)	0	-8,740	-1,160
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	-8,740	-1,160
Spending Subject to Appropriation (Outlays)	0	5	not estimated
Increases <i>net direct spending</i> in any of the four consecutive 10-year periods beginning in 2034? Increases <i>on-budget deficits</i> in any of the four consecutive 10-year periods beginning in 2034?	< \$2.5 billion < \$5 billion	Statutory pay-as-you-go procedures apply?	Yes
		Mandate Effects	
		Contains intergovernmental mandate?	No
		Contains private-sector mandate?	Yes, Under Threshold

The bill would

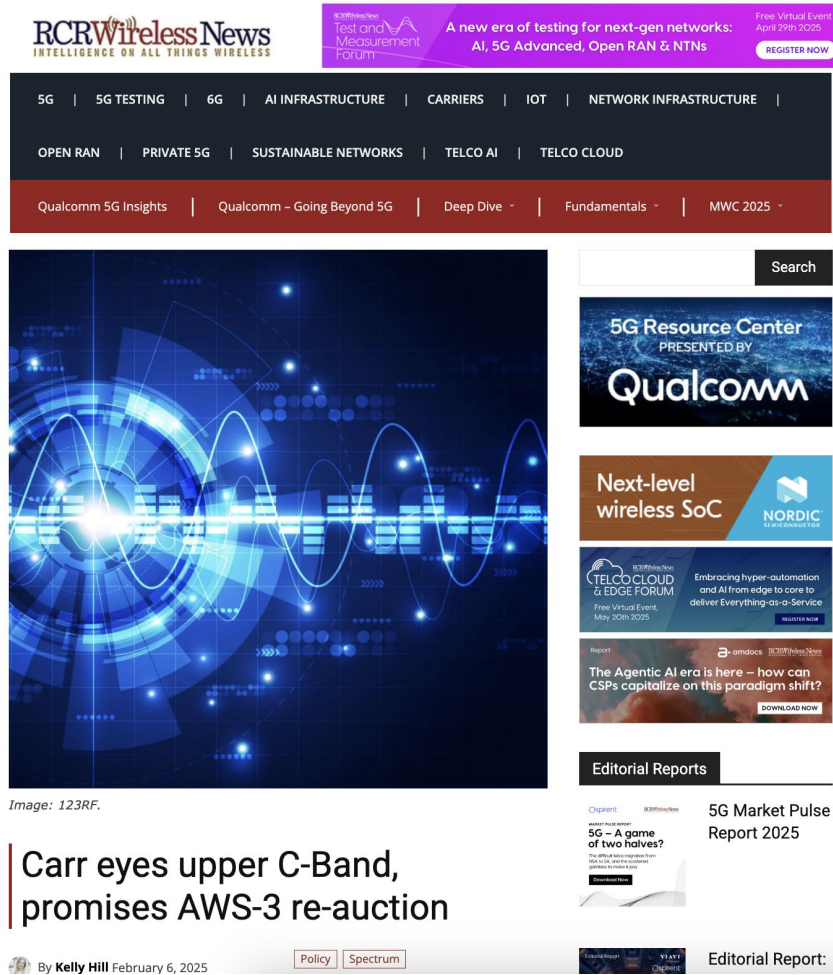
- Modify and extend the authority of the Federal Communications Commission (FCC) to auction licenses for commercial use of the electromagnetic spectrum
- Establish a Spectrum Auction Trust Fund to receive a portion of future spectrum auction proceeds
- Authorize the National Telecommunications and Information Administration (NTIA) to spend a portion of auction proceeds on advanced emergency communication services and broadband infrastructure
- Authorize the FCC and NTIA to borrow from the Treasury to support the removal and replacement of communications equipment that threatens national security and to establish a digital equity program
- Impose a private-sector mandate as defined in the Unfunded Mandates Reform Act

5.2.1. Spectrum Valuation

The factors that are used by the CBO to estimate projected spectrum auction proceeds are described:

Three key estimates of value considered by the CBO are: quantity of spectrum auctioned; market value of spectrum; and net proceeds. It also considers the historical values of earlier auctions. Spectrum license auctions that were considered in scoring the Spectrum Act were held during the period FY2001–FY2010. They yielded an average MHz–pop¹⁹ of \$0.80, within a range of \$0.55 to \$1.10. Weighing these and other factors, the CBO initially projected that spectrum licenses auctioned during the FY2013–FY2021 period would have an average market value of \$0.70 per megahertz per person.²⁰ The score was subsequently revised slightly upwards to cover the period FY2013–FY2022.

5.3. In the News



The screenshot shows the RCR Wireless News website. The header includes the RCR Wireless News logo and a banner for the "5G Resource Center" presented by Qualcomm. The main navigation bar lists categories: 5G, 5G TESTING, 6G, AI INFRASTRUCTURE, CARRIERS, IOT, NETWORK INFRASTRUCTURE, OPEN RAN, PRIVATE 5G, SUSTAINABLE NETWORKS, TELCO AI, and TELCO CLOUD. Below this, there are links to "Qualcomm 5G Insights", "Qualcomm - Going Beyond 5G", "Deep Dive", "Fundamentals", and "MWC 2025". The main content area features a large blue graphic with a signal wave and the headline "Carr eyes upper C-Band, promises AWS-3 re-auction" by Kelly Hill, dated February 6, 2025. The article is categorized under "Policy" and "Spectrum". To the right of the main content, there are several promotional banners: "5G Resource Center PRESENTED BY Qualcomm", "Next-level wireless SoC" by NORDIC, "TELCO CLOUD & EDGE FORUM" (Free Virtual Event, May 30th 2025), and "The Agentic AI era is here - how can CSPs capitalize on this paradigm shift?". Below these are "Editorial Reports" including "5G Market Pulse Report 2025" and "Editorial Report: 5G - A game of two halves?".

RCR Wireless News
INTELLIGENCE ON ALL THINGS WIRELESS

5G | 5G TESTING | 6G | AI INFRASTRUCTURE | CARRIERS | IOT | NETWORK INFRASTRUCTURE | OPEN RAN | PRIVATE 5G | SUSTAINABLE NETWORKS | TELCO AI | TELCO CLOUD

Qualcomm 5G Insights | Qualcomm - Going Beyond 5G | Deep Dive | Fundamentals | MWC 2025

Image: 123RF.

Carr eyes upper C-Band, promises AWS-3 re-auction

By Kelly Hill February 6, 2025

Policy | Spectrum

5G Resource Center
PRESENTED BY
Qualcomm

Next-level wireless SoC
NORDIC

TELCO CLOUD & EDGE FORUM
Embracing hyper-automation and AI from edge to core to deliver Everything-as-a-Service
Free Virtual Event, May 30th 2025

The Agentic AI era is here - how can CSPs capitalize on this paradigm shift?

Editorial Reports

5G Market Pulse Report 2025

Editorial Report: 5G - A game of two halves?

Kelly Hill, Carr Eyes Upper C-Band, Promises AWS-3 Re-Auction, Feb. 6, 2025, RCR Wireless, <https://www.rcrwireless.com/20250206/policy/upper-c-band-aws-3>.

5.3. In the News

BROADBANDBREAKFAST



SPECTRUM

Cruz Still Aiming For Spectrum Pipeline in Reconciliation Bill

The Defense Department has opposed the idea of auction authority with a 'pipeline' of projects for auction.



Jake Neenan

Mar 25, 2025 — 2 min read



Jake Neenan, “Cruz Still Aiming for Spectrum Pipeline in Reconciliation Bill,” Mar. 25, 2025, <https://broadbandbreakfast.com/cruz-still-aiming-for-spectrum-pipeline-in-reconciliation-bill/>

5.4. Assignment

Read the CRS Report on “Framing Spectrum Policy” and a CBO Cost Estimate of the Spectrum Auction Reauthorization Bill of 2023. After reviewing the CBO’s estimates on various spectrum bills, how important do you think the CBO’s spectrum valuation scores are to spectrum policy? The CBO estimates spectrum valuations and makes recommendations to Congress, but estimates can be wrong. Is it possible to ever precisely estimate the valuation of spectrum bands before an auction reveals market prices?

- CBO Cost Estimate, H.R. 3565 Spectrum Auction Reauthorization Act of 2023, <https://www.cbo.gov/system/files/2023-07/hr3565.pdf>
- Congressional Research Service, “Framing Spectrum Policy: Legislative Initiatives,” CRS Report No. R44433, Oct. 26, 2016, https://www.everycrsreport.com/files/20161026_R44433_8cd6b08a30aebb35670b034ae938d19df2f24da9.pdf

5.5. Learning Objectives

Explore how Congress shapes spectrum policy through key statutes, including auction authorizations and spectrum reallocation laws. Understand the role of the Congressional Budget Office in scoring and valuing spectrum assets for legislative decision-making.



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