Before the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Washington, DC 20230

In the Matter of	)	
	)	
Implementation of the National Spectrum Strategy	)	Docket No. NTIA-2023-0003
	)	

COMMENTS OF
CONSUMER TECHNOLOGY ASSOCIATION

Consumer Technology Association (CTA)®[1] submits these comments in response to the National Telecommunications and Information Administration's (NTIA's) Notice of Opportunity for Public Input regarding implementation of the National Spectrum Strategy.[2] CTA members are developing innovative, connected consumer products and services that depend on the availability of additional bandwidth and access to a variety of additional low-, mid- and high-band spectrum subject to a variety of licensing, sharing and coexistence approaches.

The National Spectrum Strategy and corresponding Presidential Memorandum are positive steps toward maximizing the benefits from this scarce resource for innovative products and services, economic growth, public safety, health and national security.[3] The economic and societal

[1] As North America's largest technology trade association, CTA® is the tech sector. Our members are the world's leading innovators—from startups to global brands—helping support more than 18 million American jobs. CTA owns and produces CES®—the most powerful tech event in the world.

[2] *Notice of National Spectrum Strategy Implementation Plan Request for Input*, NTIA (Nov. 29, 2023), https://www.ntia.gov/federal-register-notice/2023/notice-national-spectrum-strategy-implementation-plan-request-input; *see also National Spectrum Strategy*, The White House (Nov. 13, 2023), https://www.ntia.gov/sites/default/files/publications/national_spectrum_strategy_final.pdf ("National Spectrum Strategy").

[3] *Memorandum on Modernizing United States Spectrum Policy and Establishing a National Spectrum Strategy*, The White House (Nov. 13, 2023), https://www.whitehouse.gov/briefing-room/presidential-actions/2023/11/13/memorandum-on-modernizing-united-states-spectrum-policy-and-establishing-a-national-spectrum-strategy/ ("Presidential Memorandum").

benefits of repurposing spectrum are well documented.[4] Over the past three decades, the Federal Communications Commission (FCC) conducted over 100 spectrum auctions, raising more than $233 billion for the U.S. Treasury and repurposing dozens of spectrum bands in the process.[5] As additional spectrum has become available for commercial use, the consumer technology industry has continued to innovate, developing products and services that take advantage of the additional bandwidth needed to deliver faster speeds, lower latency and fewer dead spots.

The next step is to implement the National Spectrum Strategy, and CTA commends NTIA for seeking public input on this important topic. As NTIA considers how to implement the National Spectrum Strategy, CTA urges it to ensure that there will be sufficient spectrum for commercial and consumer use, implement processes across federal agencies to lead the coordination and development of federal spectrum policy and strongly consider repurposing the lower 3 GHz band.

I. NTIA SHOULD HELP ENSURE U.S. LEADERSHIP IN ADVANCED AND EMERGING TECHNOLOGIES BY REPURPOSING SPECTRUM FOR COMMERCIAL AND CONSUMER USE

CTA appreciates that the National Spectrum Strategy and the Presidential Memorandum recognize that the federal government "must make spectrum available for innovative new uses and to meet growing demand,"[6] as "rising demand for always-connected devices and other

[4] *See, e.g.*, *Toward a National Spectrum Strategy*," The Aspen Institute at 7 (Sept. 2022), https://www.aspeninstitute.org/wp-content/uploads/2022/09/Spectrum-Report_9_13_22.pdf (observing that the economic value of Wi-Fi in the United States is predicted to be $1.6 trillion by 2024 and that Wi-Fi "contributes significantly to job creation, generating approximately 542,000 U.S. jobs in 2021 alone, with annual U.S. job creation estimated to reach 720,000 by 2025"). Wi-Fi originally used the 2.4 GHz "junk band" and has since expanded to use additional bands as the FCC has amended its rules. *See, e.g.*, FCC, *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, Report and Order, 29 FCC Rcd 4127 (2023) (revising the FCC's 5 GHz rules to, in part, accommodate new Wi-Fi standards).

[5] *Auctions Summary*, FCC, https://www.fcc.gov/auctions-summary.

[6] National Spectrum Strategy at 3.

factors ... have all led to increased competition for scarce spectrum resources."[7] The future connected world is jaw-dropping in its expanse and potential: multitudes of devices communicating with each other to improve quality of life across many metrics, with enormous promise to transform our lives and society.[8] These devices are critical to our economy: a 2022 CTA report estimates that unlicensed spectrum alone generates $95.8 billion per year in incremental sales value based on a comprehensive review of available device sales data, conducted by examining more than 75 product categories and dozens of spectrum bands.[9] As they have for years, unlicensed technologies, including devices using Wi-Fi and Bluetooth, will feature prominently across the show floor at CES 2024.[10] This will include personal devices like connected health and fitness, pet technology as well as smart appliances, lightbulbs, doorbells, TVs, phones and watches. Going forward, additional unlicensed spectrum will empower innovations such as AR/VR, drones, connected vehicles, telehealth, precision agriculture and AI.

Next-generation technologies and Internet of Things (IoT) devices are being widely adopted and becoming integral to consumers' daily lives.[11] For example, CTA's recent research found that 5G-capable phones represent almost two-thirds of all smartphones in households, and

[7] Presidential Memorandum § 1.

[8] *See* Comments of CTA, Docket No. NTIA-2023-0003, at 2 (Apr. 17, 2023) (CTA NSS Comments).

[9] *Unlicensed Spectrum and the U.S. Economy: Quantifying the Market Size and Diversity of Unlicensed Devices*, CTA (Jan. 2022), https://www.fcc.gov/ecfs/document/10207129002998/2. The study focused on device sales data as a purposeful choice as "[s]everal excellent studies look at overall economic benefit, including things like productivity gains, from specific unlicensed technologies such as Wi-Fi®. These studies often show an order of magnitude economic benefit beyond the initial device sales." *Id*. at 4.

[10] *See generally* https://www.ces.tech.

[11] Press Release, Jim Fellinger, CTA, *CTA Study: Smartphones Most-Owned Tech, 5G and Wireless Drive Adoption* (May 31, 2023), https://www.cta.tech/Resources/Newsroom/Media-Releases/2023/May/Smartphones-Most-Owned-Tech.

mobile and wireless technologies lead the categories of technology products consumers want to buy.[12]

Commercial access to a variety of spectrum is essential for the development and consumer use of innovative products and services.[13] Indeed, "[f]uture demand for spectrum-based services and technologies is expected to grow substantially across many, if not all, of our Nation's commercial sectors."[14] As more consumers use more wireless devices, bandwidth demand has skyrocketed. CTA agrees with the National Spectrum Strategy that "[n]ext-generation wireless technologies such as 5G, 6G, and Wi-Fi necessitate additional spectrum resources with the capacity for wider channels, resulting in benefits beyond increased capacity, including enhanced energy efficiency, improved reliability, and reduced latency."[15] CTA supports an all-of-the-above strategy that incorporates not only these wireless technologies but also ensures there is sufficient spectrum for other promising technologies such as satellite services and fixed wireless.

Increased demand requires NTIA to free up more spectrum for commercial use and develop a spectrum pipeline.[16] CTA commends NTIA for identifying 2786 megahertz of spectrum for near-term study for possible repurposing.[17] This is a positive step toward freeing up much-needed spectrum in the short-term and helping ensure U.S. leadership in a variety of

[12] *Id*.

[13] *See* National Spectrum Strategy at 4; Presidential Memorandum § 1 ("The United States has long advanced our global technological leadership by striking an appropriate balance between promoting private-sector innovation and furthering the missions of executive departments and agencies.").

[14] National Spectrum Strategy at 4.

[15] *Id*.

[16] *See generally* CTA NSS Comments (explaining that a spectrum pipeline for spectrum for private or non-Federal needs is required to continue U.S. leadership in advanced and emerging technologies).

[17] National Spectrum Strategy at 3.

wireless technologies. All available tools for maximizing efficient spectrum use should remain on the table going forward so that future innovation can unleash spectrum's potential.[18]

To maintain U.S. leadership in advanced technologies, NTIA also should continue to identify, study, and then help facilitate bands for repurposing spectrum beyond those bands identified in the National Spectrum Strategy.[19] As bandwidth demand increases, without a process that regularly evaluates whether spectrum is allocated best for innovation, public safety and national security, the United States may continue to face a spectrum shortage that threatens its leadership. As explained in the next section, providing estimated timing about activities to free up spectrum would help industry plan commercial development and deployment of wireless products that would use these bands.[20]

II. NTIA SHOULD LEAD ON IMPROVING THE FEDERAL GOVERNMENT'S PROCESS FOR DETERMINING FEDERAL SPECTRUM POLICY

CTA urges NTIA to use its leadership role to improve regulatory certainty for businesses by improving the process by which federal agencies reach consensus on and determine Federal spectrum policy.[21] The National Spectrum Strategy calls for a "persistent strategic spectrum planning process guided by the best available science and data"[22] and, along with the Presidential Memorandum,[23] places NTIA in the driver's seat to coordinate spectrum policy

[18] CTA NSS Comments at 4.

[19] National Spectrum Strategy at 6-7.

[20] CTA NSS Comments at 3.

[21] National Spectrum Strategy at 2 (expressly affirms NTIA's and FCC's statutory roles as the U.S. spectrum regulating agencies and NTIA as the leader for coordinating spectrum policy).

[22] *Id*. at 9.

[23] Presidential Memorandum § 5 (stating that NTIA shall "ensure that the views of the executive branch on spectrum matters are properly developed [and] documented"); *see also id*. §§ 1-2.

within the Executive Branch.[24] CTA agrees with the Presidential Memorandum that "spectrum management, usage, and allocation decisions" should be coordinated and consistent, and urges NTIA and FCC to promptly make and facilitate spectrum management decision making.[25]

NTIA must ensure that agencies work through its consensus-building processes when the opportunity is presented.[26] To prevent unnecessary delays, NTIA should lead to ensure that its government stakeholders have appropriately consulted in its consensus-building processes, in part so as to adhere to the expectation established in the Presidential Memorandum that "disputes following FCC action should be rare."[27]

CTA urges NTIA to increase transparency regarding new spectrum that could be made available for future commercial use. Developing and releasing to the public a roadmap and a timeline for identifying spectrum bands for repurposing would provide useful information for industry to guide investment decisions.[28] NTIA also should develop methods to continuously measure federal spectrum utilization.[29]

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[24] National Spectrum Strategy at 2 (recognizing that NTIA is the sole agency responsible for authorizing Federal spectrum use).

[25] Presidential Memorandum § 1 (stating the policy of the Administration is for spectrum management to be coordinated and consistent); *id.* § 5 (ordering NTIA to "ensure that the views of the executive branch on spectrum matters are properly developed [and] documented").

[26] *See* J. David Grossman, *US 5G leadership depends on ending government infighting*, Light Reading (Mar. 31, 2022), https://www.lightreading.com/regulatorypolitics/us-5g-leadership-depends-on-ending-government-infighting/a/d-id/776413 (observing that agency positions belatedly raised and interagency disputes that spill into the public arena create uncertainty that can reduce investment in emerging technologies that rely on spectrum).

[27] Presidential Memorandum § 6.

[28] CTA NSS Comments at 3.

[29] *Id.*

As NTIA coordinates positions among federal agencies on spectrum policy, NTIA should continue prioritizing communication with the FCC.[30] Doing so will provide more certainty to companies that wish to invest in products and services that rely on spectrum.

III. NTIA SHOULD PRIORITIZE STUDYING AND REPURPOSING THE LOWER 3 GHZ BAND

Of the bands that NTIA identified in the National Spectrum Strategy, CTA urges that NTIA strongly consider ways to repurpose the lower 3 GHz band (3.1-3.45 GHz) and, as the federal agency responsible for coordinating and developing federal spectrum policy, ensure that it leads the National Spectrum Strategy-related spectrum study for that band.[31]

The lower 3 GHz band is a mid-band frequency with propagation characteristics beneficial for commercial use. The band can support a large number of devices and provide reliable coverage, which makes it ideal for supporting use cases such as IoT, smart manufacturing, broadband service and precision agriculture.[32]

The lower 3 GHz band also is well-situated to take advantage of economies of scale that could lower costs for device manufacturers and consumers if allocated for commercial use. Repurposing the band for commercial use would create a large block of contiguous spectrum, which would decrease costs for device manufacturers and improve connectivity performance.[33] Consumers would benefit from the lower costs that device manufacturers would receive from the economies of scale.

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[30] *See* National Spectrum Strategy at 11 ("NTIA and the FCC will leverage the commitments in their MOU to foster improved and effective communication on matters that relate to the management of the Nation's spectrum resources."); Presidential Memorandum § 5.

[31] National Spectrum Strategy at 6.

[32] *Id*.

[33] *See id*. at 5 (noting that "the reallocation and auction of the 3450-3550 MHz band and the ongoing implementation of a sharing framework in the 3.5 GHz band as part of the Citizens Broadband Radio Service" is just above the lower 3 GHz band).

CTA urges NTIA to maintain its leadership role as coordinator of federal spectrum policy when studying any spectrum bands for repurposing, including the lower 3 GHz. The band is currently designated as federal-only,[34] but, after a Congressionally-required study,[35] the Department of Defense (DOD) has determined that sharing may be feasible under certain conditions.[36] NTIA Administrator Alan Davidson has noted that NTIA will continue to study opening the band, including potentially by relocating federal incumbents.[37] Although the National Spectrum Strategy plans for the Department of Commerce and DOD to co-lead further studies on the band,[38] that does not usurp NTIA's place as the coordinator of federal spectrum policy. Consistent with Congress's directive to examine the 3.1-3.45 GHz band,[39] NTIA should, in consultation with DOD, consider how the lower 3 GHz can be more efficient and examine how the lower 3 GHz band can be made available for sharing with non-federal users.

[34] Jill C. Gallagher, *Repurposing 3.1-3.55 GHz Spectrum: Issues for Congress*, Congressional Research Service (Mar. 16, 2023), https://crsreports.congress.gov/product/pdf/download/IF/IF12351/IF12351.pdf/.

[35] Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, § 90008(b)(1)(A), 135 Stat. 429, 1349 (2021).

[36] National Spectrum Strategy at 6.

[37] Jake Neenan, *Defense Study Says Sharing Lower 3 GHz Band Not Currently Possible: NTIA*, Broadband Breakfast (Dec. 5, 2023), https://broadbandbreakfast.com/2023/12/defense-study-says-sharing-lower-3-ghz-band-not-currently-possible-ntia/.

[38] *Id*.

[39] Infrastructure Investment and Jobs Act § 90008(b)(1)(A) (allocating funding to "improve efficiency and effectiveness of [] spectrum use" in the 3.1-3.45 GHz band to make available spectrum "for reallocation for shared Federal and non-Federal commercial licensed use").

IV. CONCLUSION

The next generation of applications and features will continue to rely on low-, mid- and high-band spectrum subject to a full complement of licensing approaches. To enable this innovation, the federal government must fully implement National Spectrum Strategy so that the federal government can identify a wide array of suitable, licensed, unlicensed and shared spectrum for commercial use, while ensuring that federal missions continue to be met.

Respectfully submitted,

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