

Dr. Kim Kyllesbech Larsen



Owner
TechNEconomy
Markskellet 84
Billund, 7190
Denmark

+45 5230 5202

kim.k.larsen@techneconomy.com

16 April 2023.

NTIA-2023-003. Development of a National Spectrum Strategy (NSS)

Ms. Stephanie Wiener, Acting Chief Counsel
National Telecommunications and Information Administration
1401 Constitution Avenue, N.W.
Washington, D.C. 20230

Dear Ms. Weiner:

Thank you for the opportunity to file a comment in this proceeding. I am a telecom policy professional, and I file to support the development of a sound National Spectrum Strategy that furthers all Americans' welfare. Since early 2000, with the advent of the European UMTS auctions, I have been a technology-economics advisor in spectrum strategy considerations and acquisition in the telecommunications space. Since 2008, I have supported Deutsche Telekom AG's technology strategy around T-Mobile USA and its spectrum acquisition considerations, including the C-band auctions (i.e., 105, 107 & 110). Within Deutsche Telekom Group Technology, I have led the spectrum acquisition strategy, advising on the technology, business, and techno-economical aspects of spectrum in Deutsche Telekom's European markets. Throughout my career, I have held various technology leadership roles and board positions within the Telecommunications industry. Recently, I founded TechNEconomyY with a focus on technology, strategy, and economics advisory services in the technology, media, and telecom sector. In addition, I am a board member of Tusass Greenland, the incumbent telecom operator in Greenland, and Fiberhost Poland, an open broadband fiber provider in the Polish market. I hold a Ph.D. degree in physics and a master's degree in physics & mathematics, with more than 50 peer-reviewed scientific articles over my career. I am a frequent public speaker and write extensively about techno-economics in telecommunications.

Here are the key points to consider for developing a National Spectrum Strategy (NSS).

- The NTIA National Spectrum Strategy (NSS) should focus on creating a long-term spectrum pipeline. Developing a coherent national spectrum strategy is critical to innovation, economic competition, national security, and global technology leadership.
- NTIA should aim at significant amounts of spectrum to study and clear to build a pipeline. Repurposing at least 1,500 Mega Hertz of spectrum perfected for commercial operations is a

good initial target allowing it to continue to meet consumer, business, and societal demand. It requires more than 1,500 Mega Hertz to be identified for study.

- NTIA should be aware that the mobile network quality strongly correlates with the mobile operators' spectrum available for their broadband mobile service in a global setting.
- NTIA must remember that not all spectrum is equal. As it thinks about a pipeline, it must ensure its plans are consistent with the spectrum needs of various use cases of the wireless sectors.
- The NSS is a unique opportunity for NTIA to establish a more reliable process and consistent policy for making the federal spectrum available for commercial use. NTIA should reassert its role, and that of the FCC, as the primary federal and commercial regulator of spectrum policy.

A balanced spectrum policy is the right approach. Given the current spectrum dynamics, the NSS should prioritize identifying exclusive-use licensed spectrum instead of, for example, attempting co-existence between commercial and federal use.

- Spectrum-band sharing between commercial communications networks and federal communications, or radar systems, may impact the performance of all the involved systems. Such practice compromises the level of innovation in modern commercialized communications networks (e.g., 5G or 6G) to co-exist with the older legacy systems. It also discourages the modernization of legacy federal equipment.
- Only high-power licensed spectrum can provide the performance necessary to support nationwide wireless with the scale, reliability, security, resiliency, and capabilities consumers, businesses, and public sector customers expect.
- Exclusive use of licensed spectrum provides unique benefits compared to unlicensed and shared spectrum. Unlicensed spectrum, while important, is only suitable for some types of applications, and licensed spectrum under shared access frameworks by CBRS is unsuited for serving as the foundation for nationwide mobile wireless networks.
- Allocating new spectrum bands for the exclusive use of licensed spectrum positively impacts the entire wireless ecosystem, including downstream investments by equipment companies and others who support developing and deploying wireless networks. Insufficient licensed spectrum means increasingly deteriorating customer experience and lost economic growth, jobs, and innovation.
- Other countries are ahead of the USA in developing plans for licensed spectrum allocations, targeting the full potential of the spectrum range from 300 MHz up to 7 GHz (i.e., the beachfront spectrum range), and those countries will lead the international conversation on licensed spectrum allocation. The NSS offers an opportunity to reassert U.S. leadership in these debates.
- NTIA should also consider the substantial benefits and economic value of leading the innovation in modernizing the legacy spectrally in-efficient non-commercial communications and radar systems occupying vast spectrum resources.

Exclusive-use licensed spectrum has inherent characteristics that benefit all users in the wireless ecosystem.

- Consumer demand for mobile data is at an all-time high and only continues to surge as demand grows for lightning-fast and responsive wireless products and services enabled by licensed spectrum.
- With an appropriately designed and well-sized spectrum pipeline, demand will remain sustainable as supplied spectrum capacity compared to the demand will remain or exceed today's levels.

- Networks built on licensed spectrum are the backbone of next-generation innovative applications like precision agriculture, telehealth, advanced manufacturing, smart cities, and our climate response.
- Licensed spectrum is enhancing broadband competition and bridging the digital divide by enabling 5G services like 5G Fixed Wireless Access (FWA) in areas traditionally dominated by cable and in rural areas where fiber is not cost-effective to deploy.
- NTIA should identify the midband spectrum (e.g., ~2.5GHz to ~7GHz) and, in particular, frequencies above the C-band for licensed spectrum. That would be the sweet spot for leapfrogging broadband speed and capacity necessary to power 5G and future generations of broadband communications networks.

The National Spectrum Strategy is an opportunity to improve the U.S. Government's spectrum management process.

- The NSS allows NTIA to develop a more consistent and better process for allocating spectrum and providing dispute resolution.
- The U.S. should handle mobile networks without a new top-down government-driven industrial policy to manage mobile networks. A central planning model would harm the nation, severely limiting innovation and private sector dynamism.
- Instead, we need better collaboration between government agencies with NTIA and the FCC as the U.S. Government agencies with clear authority over the nation's spectrum. The NSS also should explore mechanisms to get federal agencies (and their associated industry sectors) to surface their concerns about spectrum allocation decisions early in the process and accept NTIA's role as a mediator in any dispute.

Thank you again for conducting this proceeding. I attached relevant articles and reports I have written on this topic. Please be in touch should you have questions.

Sincerely,



Dr. Kim Kylesbech Larsen

Enclosure(s)

1. <https://www.linkedin.com/in/kimklarsen/>
2. [The best Spectrum, the best network, and smart investment strategies ... \(slideshare.net\)](https://www.slideshare.net/KimKylesbechLarsen/kim-k-larsen-spectrum-summit-2022-may-16-v20pdf)
(<https://www.slideshare.net/KimKylesbechLarsen/kim-k-larsen-spectrum-summit-2022-may-16-v20pdf>)
3. [What makes telco tick and what to expect from real 5G \(slideshare.net\)](https://www.slideshare.net/KimKylesbechLarsen/what-makes-telco-tick-and-what-to-expect-from-real-5g)
(<https://www.slideshare.net/KimKylesbechLarsen/what-makes-telco-tick-and-what-to-expect-from-real-5g>)
4. [5G Standalone Will Deliver! - But What? \(slideshare.net\)](https://www.slideshare.net/KimKylesbechLarsen/5g-standalone-will-deliver-but-what)
(<https://www.slideshare.net/KimKylesbechLarsen/5g-standalone-will-deliver-but-what>)
5. Technoeconomyblog (www.technoeconomyblog.com) includes several articles around technological and economic benefits related to mobile networks and spectrum.