REMARKS OF
COMMISSIONER GEOFFREY STARKS
AT THE AMERICAS SPECTRUM MANAGEMENT PRE-CONFERENCE DINNER
OCTOBER 10, 2022

Good evening, everybody, and thank you, Forum Global, for allowing me to set the scene for the 11th Annual Americas Spectrum Management Conference here in Washington.

Before I start, let me just say that I've taken a close look at the conference agenda. And I can assure you, there will be no shortage of issues to debate over the coming days -- licensed and unlicensed, federal and non-federal, terrestrial and satellite, terrestrial combined with satellite, 5G, 6G, and beyond. That isn't just an idle observation from the podium. It's also my way of encouraging you to enjoy the rest of your dinner. By all means, fuel up, and don't forget to stretch when you get back home—this is going to be a marathon. Rightfully so.

With all seriousness, though, I'd like to take just a few minutes to place this conference in the context of its time. So let me share with you two reasons why—in 2022—spectrum management, from where I sit, is so top of mind.

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First, in 2022, spectrum policy is economic policy. Getting it right isn't just smart telecom—it's a national economic imperative for the country.

Strictly in terms of the financials, the impact of wireless has grown enormous. The carriers will remind you that 5G is on its way to contributing more than a trillion dollars to the U.S. economy. The unlicensed community will tell you the same about technologies like Wi-Fi. That's before we count the spillover effects, like the value created when wireless helps a business grow. Yesterday it might have been through office Wi-Fi, a mobile workforce, or a wireless point-of-sale device. Tomorrow it'll be through intelligent inventory, predictive maintenance, and maybe even a digital twin of how the entire shop is run.

Even that may be underselling the impact. In the years to come, advancements in wireless could open massive new markets in areas like smart transportation and unmanned aviation, to name just a few. When paired with our capacity to crunch massive streams of data, the right spectrum could fuel new applications in AI and XR, improving healthcare delivery, lowering costs, and enhancing how we connect, play, and work.

These aren't just exciting technologies. They're also opportunities. They're drivers of growth and job creation, and magnets for capital looking to be put to work. As policymakers, we have the ability to secure these opportunities for the public. By doing so, we can build on our leadership in innovation as the world grows increasingly digital.

That leads me to the issue of our competitiveness, which isn't fully captured by last year's dollars and cents. The wireless ecosystem is large, and spectrum rules heavily influence where its resources go. That means getting spectrum policy right can determine the path of U.S. leadership in any number of markets that depend on, or contribute to, wireless connectivity. Right now, we're home to leading wireless chipmakers and developers of mobile operating systems. Our companies are at the forefront of innovation in mobile applications, and our

standards bodies have been instrumental in guiding wireless technology deployment around the world. We also continue to lead in the commercial space industry—and the emerging convergence of space-based and terrestrial mobile. By my count, no fewer than four U.S. companies have plans to launch some version of satellite-to-handset capability.

This is not the time to cede ground. If anything, it's time to double down. The momentum is in our favor. And with the CHIPS Act, we've made a renewed commitment toward maintaining America's technological edge, and perhaps even re-entering the equipment space for wireless networks. Speaking of which, we know all too well what happens when we lose share to other countries, including an adversary, in this industry—and how quickly an economic setback for a handful of companies can snowball into a national security nightmare for us all. As someone who sounded the alarm that led to rip and replace, take it from me: allowing that history to repeat itself elsewhere in telecom would be a mistake.

To sum up here, spectrum management may be a technical arena, but it's far more than just a set of engineering problems that we need to solve. It's also a vision for our digital future, for the opportunities we want to unlock through technology, and for our long-term competitiveness as the most advanced economy in the world. Across government, we need to bear that in mind as we collaborate to unlock our full wireless potential—whether it's in bands like lower 3 GHz or others that could be suitable for commercial use but have important federal incumbents. We also need to bear that in mind in commercial bands here at the FCC, as we weigh costs and benefits and balance risk and reward in our spectrum proceedings.

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Now, to be sure, we have long talked and often about the economic benefits of wireless. As I've said before, though, we also must put time, thought, and attention into the environmental benefits of wireless. That brings me to the second reason why spectrum policy is so important this year in particular: our climate.

We just experienced one of the warmest summers on record after living through one of the warmest years in history in 2021. Catastrophic storms, floods, and wildfires continue, often with disproportionate impacts that foreshadow the inequity of the climate crisis.

Yet there's good news. We have started to act—bigtime. The Inflation Reduction Act is the largest climate effort in human history, and it puts us back on track to meet our emissions targets in the United States. But to get the whole way there, every industry needs to step up. That includes us in tech and telecom.

How do we step it up? We can start by helping other sectors do more with less. For wireless, that means unleashing applications that enable businesses to reduce their energy use. The impact from wireless-enabled technologies like smart grids, smart cities, smart manufacturing, and smart agriculture could be transformative. Right now, experts estimate that the ICT sector contributes 2% to 4% of our total carbon emissions. By enabling sustainability, wireless has the potential to contribute 10%, 15%, 20% or more to our global carbon reductions. We can be a force multiplier in the fight against climate change.

Now, driving efficiency at this scale doesn't happen automatically. Policy has an important role to play. With the Bipartisan Infrastructure Law, Congress has given us a once-in-a-generation opportunity to improve our roads, bridges, railways, and grids. We should use it to

leverage connectivity and make our infrastructure state of the art. The $500 million that the IIJA puts toward smart cities is a strong start. So is the $3 billion it commits to smart grid investments.

Spectrum management is important here, too. If we want to enable efficiency, the first step is to make sure the network is there. That means continuing to make enough spectrum, and the right spectrum, available for commercial use. It also means adapting our rules to accommodate demand for wireless in new places. That's why we're exploring ways to authorize wireless systems in offshore locations—including on wind farms that produce renewable energy. It's also why we're keeping a close eye on network buildout. When you're talking about connecting infrastructure and farms, you need to be ready to deploy service where it has not previously been. We need to make sure the coverage is there, and that's an issue I've raised in our ongoing proceeding on rural spectrum transactions.

So far, we've been talking about how we can help other industries reduce <u>their</u> emissions. Let me wrap up by focusing briefly on how the telecom sector can reduce its own. As I mentioned, ICT accounts for only a small percentage of global carbon emissions. But those are today's numbers. Where will they be ten years from now? That's the question.

The reality is that, as we shift to a clean energy economy, ICT's share of total emissions could potentially <u>grow</u>. As total emissions go down, our relative emissions go up—and that's assuming the amount of our emissions stay constant. Yet if demand for devices and data push ICT emissions up, then our share of the problem will grow even higher still. People, I assure you, are going to notice. If we're smart, we'll get ahead of the problem before they do.

Where do we start? Devices and equipment are a great place, and the emissions embodied in them no doubt remain a key contributor. But this is a spectrum conference, and the way we use spectrum deserves our attention, too.

With spectrum, my mantra as a Commissioner has always been efficiency, efficiency, efficiency. But as we optimize for the efficient use of spectrum, we need to squeeze the most out of a finite resource while also building networks that draw less power. Just like we pack more bits into each hertz—to be spectrum efficient—we also need to pack more bits into each joule used for transmission—to be energy efficient. Both types of efficiency are must-haves if we want to manage spectrum in the public interest.

Thankfully, with 5G, we saw a massive improvement in per-unit energy efficiency through idling, microsleep, and other power-saving techniques. We also know that at their low power, unlicensed networks can be deployed very efficiently. But in the years to come, we're going to evolve to new standards, reach for greater throughput, experiment with higher frequencies, and shift to architectures that better distribute network and computing load. The energy use implications of those changes aren't obvious, and there's some reason to believe they might push consumption up. We need to stay engaged on these issues to identify and resolve concerns before it's too late.

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Thank you, all, for your time today. I wish you an engaging and spirited discussion over the coming days – and please, enjoy your dessert!