Exelon Response to
The National Spectrum Strategy
January 2, 2024

Introduction

Exelon commends the Secretary of Commerce, through the National Telecommunications and Information Administration (NTIA), for preparing the recently released National Spectrum Strategy (the Strategy). We agree that a strategic approach to managing this finite but vital national resource – spectrum -- is necessary to both promote private-sector innovation and further the missions of federal departments and agencies. However, a comprehensive national spectrum strategy is also essential for the continued reliable operation of our nation's critical infrastructure to serve the most essential needs of all Americans and support the continued growth and strength of all sectors of the U.S. economy. In particular, reliable and secure telecommunications systems, which are often dependent on access to appropriate spectrum without interference, are an essential element of delivering electricity reliably, securely and safely; integrating clean energy resources; and allowing for grid electrification to meet our nation's climate goals. As the clean energy transition is dependent on the grid, the grid is dependent on strong, fast, reliable and secure telecommunications. To this end, the discussion below presents the following recommendations that Exelon believes will enhance the ability of the strategy to advance the clean energy transition and help deliver a reliable and resilient grid:

- Prioritization of critical infrastructure spectrum needs,
- Protection from interference of critical infrastructure communication systems,
- Robust stakeholder engagement and the use of tested and trusted data sources and methodologies to assess spectrum use societal value and the potential impact of dynamic spectrum sharing decisions,
- Augmentation of the pipeline to include something in the 400MHz to 1GHz range, with the optimum band being 700MHZ to 1GHZ,
- Assurance of the longevity of interference-free spectrum utility allocations to facilitate greater investment certainty.

About Exelon

Exelon is committed to delivering energy safely, reliably, and affordably while adhering to the environmental and social goals of the diverse communities we serve. We recognize the critical role energy plays in national security, the economy, and the daily lives of Americans. For this reason, Exelon strives to maintain the reliability and security of our systems while driving best-in-class operations, optimizing our transmission and electric and gas delivery systems, and facilitating clean resource integration and electrification to support the energy transition. Communications systems play an increasingly important role in meeting all these goals we share with our customers, communities, and the Biden Administration.

The jurisdictions Exelon has the privilege to serve – Delaware, the District of Columbia, Illinois, Maryland, New Jersey, and Pennsylvania – are among the most progressive in driving clean energy integration and electrification. As electricity generation becomes more distributed and an increasing share of our activities are electrified, the telecommunications needs of the grid become more important and more complex. This heightened critical energy infrastructure

communications dependence will only increase as our nation's aspirations approach net-zero carbon emissions.

Access to reliable, dedicated spectrum in bands that allow for the volume of data and speed of delivery needed to support real time decision making is essential to support continued clean energy innovations, electrification, and to counter new and growing threats to our critical infrastructure. It is from this perspective – recognizing the essential role spectrum does and will play in delivering the clean energy transition and critical infrastructure reliability and resilience -- that Exelon offers the following comments.

Priority Allocation and Protection from Interference

In its work to protect our nation, the Department of Homeland Security (DHS) has designated the energy system as a 'lifeline' function. This means DHS has determined that the reliable operation of the energy system is so critical that a disruption or loss of it would directly affect the security and resilience of critical infrastructure within and across numerous sectors. Exelon fully supports the primacy the National Spectrum Strategy places on ensuring that spectrum is allotted to allow the federal agencies to fulfill their missions without interference. However, given the 'lifeline' role of energy, meeting the communications needs of the electric transmission and distribution systems should be afforded the same degree of import in spectrum allocation and protection from interference. Indeed, if continued access to appropriate and protected spectrum by the federal agencies is deemed critical to their ability to fulfill their missions, how is access to reliable electricity not considered equally mission critical? If access to spectrum that is protected from interference is essential to the reliable functioning of electric distribution and transmission systems, should not the spectrum needs of electric transmission and distribution system operators be offered the same primacy of protection as is offered to federal agencies?

Exelon believes the criticality of reliable and safe electric service to federal facilities alone justifies priority consideration for spectrum allocation and sharing decisions. When one considers the 'lifeline' role electric transmission and distribution systems play for other critical, nongovernmental sectors like healthcare and finance, the import of addressing and protecting the spectrum needs of electric system operators is clear. As a result, we respectfully ask that National Spectrum Strategy be amended to include some form of designation for priority spectrum allocation and protection from harmful interference for the communications needs of energy system operators. Ideally, this would allow for energy system operators to benefit from dedicated licensed spectrum within a specific coverage area.

The application of the same prioritization to governmental and select non-governmental service providers has precedent. In April 2019, the Cybersecurity and Infrastructure Security Agency (CISA) released the first-ever set of National Critical Functions (NCF). Under this framework, NCF are the functions of government and the private sector so vital to the United States that their disruption, corruption, or dysfunction are understood to have a debilitating effect on national security, national economic activity, national public health or safety, or any combination thereof. The use of NCF as a framework for priority spectrum allocation and protection should be considered.

Data-Driven Decision Making

Exelon applauds the emphasis the National Spectrum Strategy places on data-driven decision making. As noted in the Strategy, spectrum is both a vital and finite national resource. As a result, spectrum allocation should seek to maximize the societal value gleaned from its use. In addition, tested and trusted data sources and methodologies must underpin any discussion of dynamic spectrum sharing. This includes the analytics to determine the potential harmful interference spectrum sharing may cause and the efficacy of strategies and technologies intended to manage the challenges posed by spectrum sharing.

Collecting data and applying analytic methodologies in matters of this import is extremely complex. Exelon strongly encourages continued federal support for relevant analysis, modeling, piloting, and broad stakeholder engagement to allow for the development of data sets and methodologies that can be accepted by the diverse parties impacted by these extremely important and impactful decisions.

Exelon participates in a variety of industry organizations including the Edison Electric Institute (EEI), Electric Power Research Institute (EPRI), Utilities Technology Council (UTC), and Utility Broadband Alliance (UBBA) that have done significant study into the value of reliable electric service, the application of communications technologies to electric system operations, and the realities of spectrum access and interference resulting from spectrum sharing. Excellent research is also underway at the Department of Energy and the national labs. These resources should be leveraged as should the decades-long telecommunications integration experience of energy system operators.

Spectrum Pipeline

The Strategy selects specific bands for immediate consideration regarding reallocation and potential spectrum sharing. Though we understand why these particular bands were selected due to their immediate potential for more efficient use, the bands in the pipeline subject to first study are of very limited use to utilities. Clearly, the communications needs of these critical infrastructure operators and service providers should be a priority for future Spectrum Pipeline focus. To this end, we recommend that the Pipeline be augmented to include something in the 400MHz to 1GHz range, with the optimum band being 700MHZ to 1GHZ for utility broadband use.

For the efficacy of the Spectrum Pipeline to be optimized, it need not only be expanded to include bands of use to ‘lifeline’ sectors like electric system operators; it should also consider methods for accelerated ‘clearing’ of the Pipeline. To this end, Exelon encourages NTIA to develop guidance for an expedited process to allow existing operators using a Pipeline spectrum to vacate it if a more ‘valuable’ use for the spectrum is identified via the process put forward in the Strategy. In addition, as the electric sector is learning from the opening of the 6GHz band to unlicensed user, mitigating the resulting interference and/or moving to another band because of this new ‘sharing’ is costly. When decisions made by the federal government drive these unexpected and high costs, mechanisms must be in place to ensure that they are not unfairly borne by incumbent spectrum users or their customers.

Dynamic Spectrum Sharing
The Strategy lists among its goals the creation of opportunities for American innovators to lead the world in developing new technologies and methodologies to allow for dynamic spectrum sharing. This is a laudable goal and, as a critical infrastructure provider, Exelon applauds any effort to drive the establishment of domestic expertise and supply chains for essential technologies. However, it follows that if dynamic spectrum sharing is an area prime for new technology development, it is not likely an area with tested and trusted current applications. In fact, dynamic spectrum sharing has not been fully defined and presents the potential to introduce additional variables -- such as frequency sniffing and possible increased frequency clearing times -- which would add to the operational characteristics of the system with potential effects on latencies and overall response times in a mission critical system. Given the nascency of dynamic spectrum sharing technologies and approaches, its application should, at a minimum, include real time views of interference and the definition of requirements for interference testing and response.

Utility Communications Investments
As the discussion above indicates, Exelon and other investor-owned electric utilities are committed to making the system investments needed to improve the resilience of the grid and enable it to integrate and support the clean energy resources needed to address climate change. We are also committed to maintaining the affordability of our 'lifeline' service. To this end, we are working closely with key federal, state, and local policymakers to plan for and execute optimal system investments leveraging both federal grants and investor funds. Ultimately, however, everyday Americans pay for these investments as taxpayers when federal grants are applied and as electric customers when investments are recovered via electric rates.

In their responsibility to protect the interest of consumers, state public utility commissions seek certainty. The notion that utilities may make sizable investments in the telecommunications systems necessary for reliable grid operations based on spectrum allocations that may in the future be subject to interference rendering them potentially unreliable is disturbing. Yet, it has happened as demonstrated by recent decisions made regarding the 6GHz band. As electric utilities and the regulators charged with ensuring reliable and affordable electric service contemplate the limited and costly options available to them in response to these actions, they must be assured that any decisions made will not be subject to further erosion from harmful interference introduced by future unlicensed use of the band or dynamic spectrum sharing. This is a further argument in support of a unique prioritization for the allocation and dedication of spectrum to regulated energy system operators.

Conclusion
Again, Exelon commends NTIA and the many governmental and nongovernmental stakeholders who contributed to the development of the National Spectrum Strategy. We believe the recognition this Strategy offers of the vital but finite nature of this national resource is essential. We fully support the direction the Strategy sets forth for a more data-driven and value-based approach to spectrum allocation and management, and we applaud the creation of the Pipeline.

Given the 'lifeline' nature of the service we and other energy system operators fulfill, Exelon believes the Strategy would be even more impactful if it were expanded to allow for the

prioritization of critical infrastructure spectrum needs; the protection from interference of critical infrastructure communication systems; and for greater certainty in the continued operability of communications investments made by regulated utilities.