Before the
Department of Energy
Washington, D.C. 20585

In the Matter of	**)**
	)
ADDRESSING POLICY AND LOGISTICAL	**)**
CHALLENGES TO SMART GRID	**)**
IMPLEMENTATION	**)**
	)

COMMENTS OF THE UTILITIES TELECOM COUNCIL

The Utilities Telecom Council ("UTC") is pleased to provide the following comments in response to the Department of Energy's ("DOE") Request for Information on Addressing Policy and Logistical Challenges to Smart Grid Implementation.[1] While the RFI raises many important issues for the future development of the Smart Grid, UTC devotes its comments to one issue which Federal policy makers can play a uniquely important role: access to spectrum. UTC has filed comments on this issue in response to the DOE's RFI regarding the communication needs of utilities which are incorporated by reference as part of the comments in this proceeding,[2] and it takes this opportunity to emphasize in this proceeding that access to spectrum for utilities is a "major policy change…that would encourage appropriate deployment of [Smart Grid] technologies."[3]

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[1] *See* Department of Energy Request for Information, *Addressing Policy and Logistical Challenges to Smart Grid Implementation*, 75 FR 57,006, Sept. 17, 2010 ("RFI").

[2] *See* Comments of UTC filed July 12, 2010 and Reply Comments filed Aug. 9, 2010 in response to Department of Energy Request for Information, *Implementing the National Broadband Plan by Studying the Communications Needs of Electric Utilities to Inform Federal Smart Grid Policy*, 75 Fed. Reg. 26206 (May 11, 2010).

[3] *See* DOE RFI at 57010 (inviting comment on "current and planned deployments of advanced distribution automation equipment, architectures, and consumer-facing programs in order to illustrate marketplace trends,

I. Introduction

UTC is the international trade association for the telecommunications and information technology interests of electric, gas and water utilities, pipeline companies and other critical infrastructure industries. Its members include large investor-owned utilities that serve millions of customers across multi-state service territories to relatively smaller municipal and cooperative utilities that may serve thousands of customers in isolated towns, cities and rural areas of the country. In addition, UTC is allied with all of the major electric, gas and water utility associations, as well as other organizations representing various other critical infrastructure industries – as part of its Critical Infrastructure Communications Coalition.

II. Utilities Need Access to Suitable Spectrum to Support Smart Grid

While utilities will use various different technologies in deploying Smart Grid, most if not all utilities will use wireless communications technologies as part of their overall communications network. These wireless communications technologies require suitable spectrum. Currently, utilities lack access to suitable spectrum to support Smart Grid. Utilities need suitable spectrum for private internal communications networks that they use to support the safe, efficient, reliable and secure delivery of essential electric, water and gas services to the public at large.

A. Utilities lack access to spectrum to support increased demands from smart grid and other critical infrastructure communications needs.

As the DOE is no doubt well-aware, for decades utilities have designed, built and operated their own extensive private internal networks to support a variety of communications needs,

successes, and challenges. And they should feel free to identify any major policy changes they feel would encourage appropriate deployment of these technologies"(emphasis added).

including voice and data communications that are used to protect the grid and restore service in the aftermath of outages. As the complexity and importance of the grid has developed over time, these private internal networks have become increasingly complex and important, as well. Such applications as utility automation as well as workforce safety are increasingly dependent upon these communications networks. Finally, utilities rely on these private internal communications networks, because commercial networks often do not provide the same level of reliability and coverage to meet utility communications functional requirements.

While utilities do currently have access to some spectrum, it is largely narrowband spectrum, and is subject to congestion and interference from other radio users that share certain spectrum bands with utilities. New spectrum has only been available through spectrum auctions, generally. As a practical matter, utilities have had little success acquiring spectrum at auction, because they can't compete with commercial carriers that can spend more money and pass those costs onto their subscribers. As a legal matter, Congress has considered utilities as exempt from auction, so they shouldn't have to acquire spectrum at auction anyway. As a policy matter, utilities should have access to spectrum that is exempt from auction, because such access will promote the deployment of Smart Grid and promote the safety, security and reliability of critical infrastructure systems in general.

Access to spectrum will enable utilities to deploy Smart Grid more cost effectively and quickly. For example, utilities could use wireless communications networks instead of more expensive fiber networks to carry high capacity point-to-point communications back and forth from various different aggregation points. In addition, utilities could use wireless communications networks for wide-area mobile communications to support enhanced true two-

way communications across their service territories for such utility applications as advanced metering and emergency restoration, as well as routine voice dispatch. Therefore, without access to spectrum, some Smart Grid applications will be more expensive or technically impractical to deploy altogether.

B. Utilities need access to 30 MHz of licensed spectrum in a frequency range below 2 GHz to support smart grid and other critical infrastructure communications needs.

UTC emphasizes that utilities need access to suitable spectrum. As UTC explained more fully in its comments to the DOE in response to the RFI on utilities' communications needs, utilities need access to 30 MHz of licensed spectrum in a frequency range below 2 GHz to support Smart Grid and other critical infrastructure communications at the Tier 2 (backhaul) and Tier 3 (access) layers of the network.[4] Lower frequency ranges (i.e. below 1 GHz) are needed to support applications towards the Tier 3 layer of the network in order to provide more favorable propagation and to overcome line of sight issues (e.g. penetrating walls in homes and buildings and "rain-fade") that can affect communications performance. Finally, the spectrum should be licensed spectrum in order to protect utilities against interference and congestion from other potentially incompatible radio users.[5]

Federal policy makers have a uniquely important role to fill in promoting access to spectrum for Smart Grid and other critical infrastructure communications needs. Only Federal

[4] Comments of UTC filed July 12, 2010 and Reply Comments filed Aug. 9, 2010 in response to Department of Energy Request for Information, *Implementing the National Broadband Plan by Studying the Communications Needs of Electric Utilities to Inform Federal Smart Grid Policy*, 75 Fed. Reg. 26206 (May 11, 2010).

[5] While utilities have used unlicensed spectrum for some Smart Grid applications, such as AMI, utilities will need access to licensed spectrum in order to support mission-critical applications that affect grid reliability, because licensed spectrum provides some measure of protection against interference and congestion, which may otherwise result from using unlicensed spectrum.

policy makers can directly affect the allocation of spectrum, whether that spectrum is allocated for Federal government users or for non-government users. In that regard, access to spectrum for utilities may be made available in Federal spectrum bands that are controlled by NTIA or it may be made available in non-government spectrum bands that are controlled by the FCC. UTC supports the Department of Energy's recommendation to promote access to spectrum by promoting representation of utilities in various communications groups that control the allocation and use of spectrum.[6] Available spectrum is currently being identified by NTIA for reallocation, and UTC believes that utilities should have access to some of that spectrum.[7] Representation of utilities as part of the process for the allocation of this spectrum will help, but UTC is concerned that this spectrum will be made available for commercial broadband services entirely or that it will be made available too late for utilities that are already building out their smart grid networks. Therefore, UTC urges the DOE to pursue all options to make spectrum available for utilities on a timely basis.

One way that spectrum could be made available is to share Federal spectrum with utilities. UTC is particularly interested in sharing the 1800-1830 MHz band, which currently allocated for Federal government use. This spectrum is currently allocated in Canada for utility purposes, and sharing this spectrum in the U.S. would create a harmonized allocation across the North American grid, which would in turn create economies of scale that would reduce costs and promote the development of equipment for this band. While UTC has specifically identified this

[6] Department of Energy, "Communications Requirements of Smart Grid Technologies" at http://www.gc.energy.gov/documents/Smart_Grid_Communications_Requirements_Report_10-05-2010.pdf

[7] *See* Presidential Memorandum: Unleashing the Wireless Broadband Revolution at http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution (directing NTIA to complete a plan and timetable by October 1, 2010 to identify and make available 500 MHz of spectrum for mobile and fixed broadband over the next ten years.)

spectrum band for sharing with Federal government users, it would consider other spectrum bands that may be more appropriate for sharing in the opinion of NTIA.

III. Conclusion

In conclusion, UTC believes that the issue of access to spectrum is an important gap for Federal government policy makers to fill and an issue that must be urgently addressed. Furthermore, UTC believes that the DOE is positioned to represent the interests of the utility industry in making spectrum available for utilities. UTC appreciates the efforts that DOE has made so far to promote access to spectrum, and it looks forward to working with DOE to find ways to achieve these efforts in the near term, so that spectrum is made available on a timely basis, as utilities deploy Smart Grid systems.

Respectfully submitted,

Utilities Telecom Council

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