

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
International Comparison and)	GN Docket No. 09-47
Consumer Survey Requirements in the)	
Broadband Data Improvement Act)	
)	
A National Broadband Plan for Our)	GN Docket No. 09-51
Future)	
)	
Inquiry Concerning the Deployment of)	GN Docket No. 09-137
Advanced Telecommunications)	
Capability to All Americans in a)	
Reasonable and Timely Fashion, and)	
Possible Steps to Accelerate Such)	
Deployment Pursuant to Section 706 of)	
the Telecommunications Act of 1996, as)	
Amended by the Broadband Data)	
Improvement Act.)	

**COMMENTS OF THE CRITICAL INFRASTRUCTURE COMMUNICATIONS
COALITION – NBP PUBLIC NOTICE #6**

The Critical Infrastructure Communications Coalition (CICC) is pleased to provide the following comments in response to the Commission's *NBP Public Notice #6*, released September 23, 2009 in the above referenced proceedings.¹ The CICC believes that it is important for the FCC to put broadband to work by allocating 30 MHz of spectrum to support smart grid and other next-generation critical infrastructure communications systems, which will help promote energy independence and security, environmental quality, and economic recovery. Current spectrum allocations used by

¹ *Comment Sought on Spectrum for Broadband*, NBP Public Notice #6, GN Docket Nos. 09-47, 09-51, 09-137, rel. Sept. 23, 2009 ("*NBP Public Notice #6*").

critical infrastructure industries (CII) are insufficient to meet functional requirements for smart grid applications. Utilities and other CII will need spectrum for mobile and fixed wireless broadband. The CICC urges the FCC to facilitate access to dedicated spectrum for CII in the 1800-1830 MHz band. The CICC also supports access to the 700 MHz D-Block spectrum, which could supplement – not substitute for – the 1800-1830 MHz band, particularly for mobile smart grid applications.

The public interest would be served by providing dedicated access to spectrum for smart grid, because it would provide tangible benefits for the economy, the environment, and public safety that would far exceed the speculative value of the spectrum, if it was auctioned. In addition, Congress classified CII as providers of “public safety radio services” that are auction-exempt.² To date, Congress’s intent that CII have ready access to necessary auction-exempt spectrum has not been fulfilled. Instead, CI has less spectrum since the Commission was granted its auction authority in 1997. Now is the time – before smart grid and other CII next-generation communications systems are rolled out -- to fulfill Congress’s intent and provide CII with dedicated access to 30 MHz of spectrum that is exempt from auction.

² See H.R. Conf. Rep. No. 105-217, 105th Cong., 1st Sess., at 572 (1997)(stating that the auction exemption for public safety radio services includes “private internal radio services” used by utilities, railroads, metropolitan transit systems, pipelines, private ambulances, volunteer fire departments, and not-for-profit organizations that offer emergency road services, such as the American Automobile Association (“AAA”). See *also* Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies; Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz; Petition for Rule Making of the American Mobile Telecommunications Association, *Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 99-87, RM-9332, RM-9405, RM-9705, 15 FCC Rcd 22709 (1999) (implementing the Balanced Budget Act of 1997 provisions including the auction exemptions).

I. Background and Introduction

The CICC represents industries that own, manage or operate communications systems to maintain and protect the nation's critical infrastructure. These critical infrastructure communications systems are designed, built, operated and maintained at extremely high standards, which exceed those of commercial systems for reliability, survivability, availability and coverage. CII demand this functionality because -- as the Commission itself recognized -- "[a]ny failure in their ability to communicate by radio could have severe consequences on the public welfare."³ The members of the CICC include representatives from the electric, gas, and water utility industries, as well as representatives from the nation's railroads and petroleum industries. Nearly all U.S. consumers receive at least one essential service from the member companies comprising the associations that constitute the CICC, including:

American Petroleum Institute ("API")
American Public Power Association
Association of American Railroads
Edison Electric Institute ("EEI")
National Rural Electric Cooperative Association
Utilities Telecom Council ("UTC")

Thus, the CICC serves as the collective voice for critical infrastructure communications that support the safe, efficient and reliable delivery of essential services to the public at large.

In its *NBP Public Notice #6*, the Commission inquires regarding the ability of existing spectrum to support next-generation build-outs, and it inquires regarding the

³ Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services," PR Docket No. 92-235, *Second Report and Order*, 12 FCC Rcd. 14307,14329 (1997).

specific bands that are best positioned for mobile and fixed broadband. It also inquires regarding the key issues for moving spectrum allocations towards their highest and best use in the public interest. Finally, it inquires regarding the ability of current spectrum allocations to support both fixed and mobile wireless backhaul. The *NBP Public Notice #6* lists various proposals for access to spectrum, including proposals by UTC/EEI for access to the 1800-1830 MHz band and by API for access to the 700 MHz band.⁴ As more fully described below, the CICC hereby supports those proposals and is pleased to provide its perspective on the need for access to dedicated spectrum to support smart grid and other next generation CII communications systems.

II. Ability of Current Spectrum to Support Next-Generation Build-outs

The CICC agrees with the comments of UTC that there is insufficient spectrum to support smart grid and other next-generation CII communications systems, and that an additional 30 MHz will be needed for current and future applications.⁵ Specifically, existing spectrum bands are all narrowband and subject to interference and congestion. Moreover, smart grid and other next-generation CII communications systems will impose additional demands for broadband spectrum, which currently is unavailable below 1 GHz.

Existing bands are subject to congestion and interference due to consolidation and reallocation of spectrum used by CII. First, the private radio pools in the land

⁴ *NBP Public Notice #6* at 3.

⁵ See Comments of UTC on NBP Public Notice #6 in GN Docket No. 09-47, 09-51 and 09-137 (filed Oct. 23, 2009). See also Comments of UTC on NBP Public Notice #2 (filed Oct. 2, 2009)(providing data from utilities on the availability and suitability of communications for smart grid, as well as spectrum for smart grid).

mobile bands below 512 MHz were consolidated by the FCC, which necessitated that CII share spectrum with a variety of newly classified “industrial business” users, such as taxi cabs and pizza delivery companies, whose systems could be coordinated right on top of CII systems. Then, the private microwave bands were reallocated for commercial services, which forced CII to relocate their incumbent systems.⁶ Thus, the consolidation of the private land mobile radio pools and the reallocation of private microwave spectrum contributed significantly to the current spectrum problems that CII faces today.⁷

While the scarcity of currently available spectrum poses significant difficulties for current CII systems, the advent of smart grid and other next-generation CII communications systems imposes additional demands that require broadband communications. Unlike the analog, one-way communications systems that CII have been using for decades, smart grid and other next-generation communications systems will employ digital two-way communications that would, as some envision, extend all the way to the customer. As such, these systems must go faster and farther than their existing systems. Further, communications systems will need to keep pace with the changes being made to electric utility systems and operations in order to comply with new and emerging NIST and NERC requirements for interoperability, security and

⁶ See *e.g.* Comments of the American Petroleum Institute in GN Docket No. 09-51 at 5-6 (filed June 8, 2009)(listing various frequency bands that were reallocated from private to commercial use.).

⁷ “The Utility Spectrum Crisis, A Critical Need to Enable Smart Grid,” Utilities Telecom Council, January 2009 at 26 http://www.utc.org/fileshare/files/3/Public_Policy_Issues/Spectrum_Issues/finalspectrumcrisisreport0109.pdf. (describing the need for dedicated spectrum and the allocation of the 1800-1830 MHz band).

reliability.⁸ In order to provide that functionality and to meet these standards, CII will need access to broadband. In order to provide the necessary coverage cost-effectively, CII will need access to spectrum for wireless systems.

In order to alleviate the current CII spectrum crisis and to support smart grid and other CII next-generation communications systems, the Commission should provide access to at least 30 MHz of spectrum. Specifically, the CICC supports the proposal by UTC/EEI for dedicated access to the 1800-1830 MHz band, and it supports the proposal by API for access to the 700 MHz D-Block. CICC also urges the FCC to grant expeditiously a pending petition for rulemaking to allow CII use of the 14.0-14.5 GHz band on a secondary basis.⁹

The 1800-1830 MHz band has been reserved for utility purposes in Canada; and a harmonized allocation in the United States would promote interoperability over the entire North American electric grid, as well as spur investment in and production of equipment to operate in this band. In the United States, the 1800-1800 MHz band is allocated for use by Federal Government users, and the CICC agrees that this spectrum – which is used for fixed point-to-point communications -- appears promising for sharing between CII and government operations.

The 700 MHz D-Block (758-763 MHz/768-793 MHz) is located adjacent to the 24 MHz of public safety spectrum (763-775 MHz/793-805 MHz), and is designated for commercial use. In 2008, the D-Block was auctioned along with other commercial spectrum (A/B/C Blocks) in the band, but it failed to meet the reserve bid. Now, the

⁸ NIST is the National Institute of Standards and Technology. NERC is the North American Electric Reliability Corporation.

⁹ Petition for Rulemaking to Establish Rules Governing Critical Infrastructure Industry Fixed Service Operations in the 14.0-14.5 GHz Band, RM-11429 (filed May 6, 2008).

Commission may choose to re-auction the 700 MHz D-Block band or it may decide that, having auctioned it once already, that it is not obligated to auction it for commercial purposes again.¹⁰ If the Commission re-auctions the D-Block, the Commission should provide priority access to the D-Block for CII after the spectrum is auctioned. If the Commission dispenses with re-auctioning the D-Block, it should designate the spectrum for nationwide use by CII exclusively or in partnership with public safety. This spectrum provides CI with favorable propagation characteristics, and would complement – but not substitute for access to the spectrum at 1800-1830 MHz – by providing an additional 10 MHz of spectrum that could be used for mobile as well as fixed applications.

The 14.0-14.5 GHz band is currently allocated for use by the satellite industry for earth station uplinks. This band could be shared with CII without interference to or from CII operations, because the energy from the earth station would be focused up into the atmosphere, allowing for terrestrial use of the spectrum by CII. The proposed CII operations would be used for point-to-point, point-to-multipoint and transportable fixed operations by CII users. For example, these operations could be used to provide remote monitoring and control of electric, gas and water distribution systems. The spectrum could be also be used in conjunction with smart grid systems to provide high-capacity short range communications for large data and video transmissions, such as schematics and substation video monitoring. These could also be integrated with other backhaul communications to provide “fill-in” coverage to support smart grid applications.

III. Key Issues in Moving Spectrum to its Highest and Best Use in the Public Interest.

The Commission asks a series of questions regarding how it should assign value

¹⁰ See 47 U.S.C. §337(a)(2)(directing the Commission to allocate 36 megahertz of the spectrum between 746-806 MHz for commercial use to be assigned by competitive bidding.)

to spectrum, and whether there are certain bands that are being used efficiently or inefficiently. The CICC urges the FCC to develop and adopt metrics other than efficiency to determine if spectrum is being used in the public interest. Unlike commercial systems which are designed primarily for maximum capacity, CII private internal wireless communications systems are primarily designed for reliability and survivability. The robustness of CII communications systems serves the public interest by helping to ensure the safe, reliable and efficient delivery of essential electric, gas and water services to the public at large. The CICC is concerned about any further reallocation of existing spectrum that would be justified based on solely quantitative factors, such as “efficiency,” which may be an appropriate metric for certain spectrum uses, but is a poor measure of the public interest value of private CII systems.

The Commission should also consider qualitative factors in assessing the use of spectrum. Principal among these factors should be the importance of the communications that is being carried over the spectrum. Clearly, CII communications are of paramount importance to the nation. These systems are used for emergency voice dispatch during natural disasters, and they also provide mission critical control and monitoring of electric generation, transmission and distribution systems; gas delivery systems; as well as essential delivery of water for Community Health and Fire Protection. Any interference to these systems can affect the security and safety of utility personnel, as well as the public at large. As smart grid is implemented on a wider scale, these communications systems will become even more important for managing grid efficiency, thereby reducing power consumption and in turn carbon emissions that contribute to climate change. Utilities must meet stringent federal standards for electric

reliability, and additional standards for carbon emissions may be imposed, as well. Smart grid systems must also interoperate, which depends directly on the reliability of the underlying communications systems that support smart grid systems. For all of these reasons, the Commission should consider the relative importance of communications in terms of its impact on the general welfare, when evaluating the use of the spectrum.

CONCLUSION

The CICC respectfully requests that the Commission act as requested in this filing. Specifically, the Commission should facilitate the allocation of at least 30 MHz of spectrum for critical infrastructure industries, which will advance the national policy interest in the promotion of smart grid, as well as the safety, reliability and security of the nation's critical infrastructure. In addition to the 1800-1830 MHz band, the Commission should also facilitate access to the 700 MHz and 14.0-14.5 GHz spectrum as well.

Respectfully submitted,

Critical Infrastructure Communications Coalition

ss

Brett Kilbourne
Critical Infrastructure Communications Coalition
1901 Pennsylvania Avenue, NW
Fifth Floor
Washington, DC 20006
202-872-0030

October 23, 2009