Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matters of	)	
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International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act	)	GN Docket No. 09-47
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Inquiry Concerning the Deployment of 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	)	GN Docket No. 09-137

COMMENTS-NBP PUBLIC NOTICE #2
OF QWEST COMMUNICATIONS INTERNATIONAL INC.

In these comments, Qwest Communications International Inc. (Qwest) responds to the NBP Public Notice #2, issued by the Commission in the above-referenced proceedings on September 4, 2009 (Second Public Notice).[1]

I. INTRODUCTION AND SUMMARY

In the Second Public Notice, the Commission seeks comment on numerous issues relating to the general question of how advanced infrastructure and services can help achieve efficient implementation of Smart Grid technology.[2] Smart Grid technology is, indeed, an exciting and promising new technology that, among other things, helps promote energy efficiency and independence. The Commission should therefore, in meeting its charge under the

[1] Public Notice, DA 09-2017, Comment Sought on the Implementation of Smart Grid Technology, NBP Public Notice #2, rel. Sept. 4, 2009.

[2] *Id.* at 1.

American Recovery and Reinvestment Act of 2009 (Recovery Act),[3] adopt policies that will help enable broadband services that best support Smart Grid technology. Qwest was a key participant in a recent Smart Grid project in Boulder, Colorado. As a result, Qwest is uniquely qualified to comment on the suitability/availability of communications networks to support Smart Grid technology and the other issues presented in the Second Public Notice.

As discussed more fully below, Smart Grid technology, like all current and future broadband and Internet applications, will benefit from ubiquitous deployment of broadband and from deployment everywhere of the most robust broadband service possible. Qwest has advocated that the Commission, in developing its National Broadband Plan (NBP), take a general approach that focuses first on accomplishing build-out of the best possible broadband product for unserved areas -- *i.e.*, one that strikes the best balance of economic and technological feasibility -- and then turn to promoting broadband adoption and maximizing the robustness of broadband networks in areas where broadband is already deployed. This general approach will also help maximize the contribution of broadband services to Smart Grid technology.

Additionally, the Commission, in adopting any policies in the NBP specific to Smart Grid, should maximize the utilization of existing broadband networks. As the Boulder Smart Grid project demonstrated, existing networks are well suited to support current and future Smart Grid technology applications. It is also far more cost effective to utilize those networks than to spend precious stimulus money or other government resources to overbuild those networks for the purpose of supporting Smart Grid technology.

The Commission should also proceed with caution on any proposed new spectrum policy solely for the purpose of supporting Smart Grid technology.

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[3] American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009).

Finally, the Commission should ensure that it promotes home area networks (HANs) that are not just available to utilities, but are available to other providers of new home-based technologies and applications.

II. DISCUSSION

A. Smart Grid Technology Has Great Promise

Smart Grid technology is an exciting and promising new technology that helps promote energy efficiency and independence. This technology is worthy of the Commission's particular attention in meeting its charge, under the Recovery Act, to provide "a plan for use of broadband infrastructure and services in advancing . . . energy independence and efficiency."[4]

Smart Grid technology is a broad term that encompasses a broad variety of technology applications. Current applications essentially fall into two categories. First, Smart Grid technology enables advanced metering and related home automation functionality. This category includes basic remote meter reading that replaces costly manual field meter reading and replaces it with a two-way smart metering capability. Whereas field meter reading only provides one-way information exchange through usage volume updates from the home, smart metering allows two-way communication between the utility and consumers. This two-way communication capability enables, by way of example, real time pricing applications that permit a consumer to receive power rate information and adopt usage strategies to reduce utility costs. It also provides the customer with the opportunity to use that information to automate their homes.[5] Second, Smart Grid technology enables a variety of utility network management functionalities that drive cost savings and promote energy efficiency. This may include enhanced functionality for utility

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[4] *Id.* at 516.

[5] *See, generally,* Federal Energy Regulatory Commission -- Assessment of Demand Response & Advanced Metering, Staff Report, Dec. 2008 (discussing industry progress in development and deployment of advanced metering and demand response).

Supervisory Control and Data Acquisition (SCADA) systems,[6] automated load control functionality, automated power distribution functionality, and enhanced outage detection and remedial action capability. Significantly, this second component also enables better integration of utility networks with renewable energy sources such as wind and solar.

Of course, in addition to these existing categories of Smart Grid technology applications and services, Smart Grid technology brings the potential for innumerable as-yet-unimagined new services and devices that lie just around the corner.

B. Lessons From The Boulder, Colorado SmartGridCity™ Project

During 2008 and 2009, Qwest participated in Xcel Energy's SmartGridCity™ project in Boulder, Colorado to test the capabilities of using Qwest DSL for backhaul in the Smart Grid infrastructure.[7] The broader project encompassed both components of Smart Grid technology described above.[8] Among other things, it used smart meters attached to homes and smart sensors and smart insertion deployed throughout the power grid to enable: rapid diagnosis and corrections applications, distributed generation technologies (such as wind turbines, solar panels, and plug-in hybrid electric vehicles), automated smart substations, in-home energy control devices and automated home energy use.[9] Qwest partnered in the project with Xcel Energy and Current Group, LLC -- a private company whose investors include Google, Inc. that delivers

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[6] SCADA refers generally to the automated central data communications and control systems deployed as part of the core operations of utility companies.

[7] *See* Qwest June 19, 2009 Press Release (Qwest Press Release).

[8] *See* SmartGridCity™: Developing the Smart Grid of the Future, Craig Eicher, Area Manager, Boulder Region, Community & Local Government Affairs, Xcel Energy: *http://www.cml.org/pdf_files/thurs_grid_eicher.ppt.*

[9] *Id.*

smart energy solutions and broadband over power line (BPL) technology.[10] The basic communications architecture utilized in the project was as follows: a new fiber backhaul network (provided by Current) connecting backhaul distribution points for 50 to 100 houses to Xcel. The backhaul distribution points were connected to homes using a BPL solution over medium voltage power lines. However, Qwest also provided an alternative DSL backhaul network functionality in order to test the capabilities of that functionality as at least a part of the communications network bridge between the last mile access and fiber located elsewhere in the network.[11] In the end, Qwest's participation in the project demonstrated that DSL is well suited to support Smart Grid applications and, among other things, provided positive performance in terms of speed, reliability and scalability.[12] The trial thus demonstrated that DSL could be used to eliminate the expense of extending fiber to each distribution point, thereby reducing the overall cost of the communications network needed to support Smart Grid.[13] Qwest is actively looking at opportunities to use the existing DSL infrastructure in other Smart Grid deployments.[14]

C. Qwest's Proposed Approach To The NBP, Overall, Will Also Maximize The Contribution Of Broadband To Smart Grid

Qwest's proposed general approach to the Commission regarding the development of the NBP, overall, is also the best response to the Commission's questions regarding the suitability and availability of existing communications networks for Smart Grid technology. Smart Grid technology, like all current and future broadband and Internet applications, will benefit from

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[10] *See* Qwest Press Release.

[11] *See id.*

[12] *See id.*

[13] *See id.*

[14] *See id.*

ubiquitous deployment of broadband and from deployment everywhere of the most robust broadband service possible. Qwest has advocated that the Commission, in developing its NBP, focus first on accomplishing build-out of the best possible product for unserved areas -- *i.e.*, one that strikes the best balance of economic and technological feasibility -- and then turn to promoting broadband adoption and maximizing the robustness of broadband networks in areas where broadband is already deployed.[15] Qwest has also, in prior comments, detailed an approach to broadband threshold and performance indicator definitions and other key concepts that will help accomplish the unserved deployment goal that must be central to any NBP.[16] Those comments also outlined the state of the record in this proceeding regarding the relative benefits of wireline fiber-to-the-node (FTTN) architecture versus other potential broadband models for purposes of qualifying for any broadband deployment funding initiatives for unserved areas. Qwest will not restate that advocacy in detail here. It suffices to say that the same general approach outlined in those proposals will also help maximize the contribution of broadband services to Smart Grid technology.

D. Any Smart Grid Policies In The NBP Should Maximize The Utilization Of Existing Networks

Section 1 of the Second Public Notice raises a number of specific issues around the subject of "Suitability of Communications Technologies." In that section, the Commission seeks, among other things, to understand which communications networks and technologies are suitable for various Smart Grid applications, to identify the specific network requirements of Smart Grid applications (*e.g.*, latency, bandwidth, reliability, coverage, others), and to identify the communications technologies and networks that meet those requirements. Section 2, in turn,

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[15] *See* Comments-NBP Public Notice #1 of Qwest Communications International Inc. at 6-9.

[16] *See id., generally.*

raises a number of specific issues around the subject of "Availability of Communications Networks." In that section, the Commission seeks information regarding what areas are currently unserved by communications networks adequate to support Smart Grid, access statistics, how broadband availability impacts the cost of deploying Smart Grid applications in a particular geographical area, and the like. Again, as discussed above, these questions raise many of the same questions of suitability and availability raised in this proceeding for broadband capability, generally. Thus, the answers in the context of Smart Grid technology are likely to be the same as well. But, to the extent the Commission incorporates policies in the NBP specific to Smart Grid, one thing is critical -- it must maximize the utilization of existing networks.

To begin with, existing broadband networks are well suited to support current and future Smart Grid technology applications. The network requirements of existing Smart Grid applications vary. Basic advance metering functionality requires only low amounts of bandwidth, and is tolerant of high latency. On the other hand, some remedial action capabilities require high bandwidth and reliability is critical. Similarly, automated power distribution functionalities often require low latency and reliability. And, security is paramount in all Smart Grid applications. These are all performance levels that existing networks, including existing DSL architecture, easily provide. And, as the demands of Smart Grid applications evolve, these networks will also evolve and provide the communications network support needed.

It is also far more cost effective to utilize existing networks. Since existing networks are more than adequate, it clearly makes little sense to spend precious stimulus money or other government resources to overbuild them for the purpose of supporting Smart Grid technology. Existing communications network providers also already possess the expertise cultivated by decades of experience with communications to provide the robust broadband experience Smart

Grid demands. The Commission, in its NBP, should leverage that expertise rather than relying upon new start-up operators or municipal-run communications networks.

E. The Commission Should Proceed With Caution On Any Spectrum Policies Specific To Smart Grid

Section 3 of the Second Public Notice raises a number of specific issues relating to the subject of how wireless spectrum is or could be used for Smart Grid spectrum and, among other things, asks whether additional spectrum is required for Smart Grid applications. In light of the evidence that existing networks are more than adequate to support Smart Grid technologies and will continue to be in the future, the Commission should proceed with caution on any spectrum policies specific to Smart Grid. And, it should not pursue new spectrum for the purpose of Smart Grid deployment unless and until it determines that is the best option available.

F. Home Area Networks Should Support A Diversity Of Applications And Providers

Finally, with respect to Section 5 of the Second Public Notice and the subject of HANs, the Commission should strive to ensure that HANs are developed in such a way that they support a diversity of applications and a diversity of providers, including, in particular, third party (non-utility) providers. HANs can potentially support a variety of yet-to-be developed applications.

Respectfully submitted,

QWEST COMMUNICATIONS
INTERNATIONAL INC.

By: /s/ Timothy M. Boucher

Craig J. Brown
Timothy M. Boucher
Suite 950
607 14th Street, N.W.
Washington, DC 20005
(303) 383-6608
Craig.Brown@qwest.com
Timothy.Boucher@qwest.com

Its Attorneys

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CERTIFICATE OF SERVICE

I, Richard Grozier, do hereby certify that I have caused the foregoing **COMMENTS-NBP PUBLIC NOTICE #2 OF QWEST COMMUNICATIONS INTERNATIONAL INC.** to be: 1) filed with the FCC via its Electronic Comment Filing System in GN Docket Nos. 09-47, 09-51 and 09-137; and 2) served via e-mail on the FCC's duplicating contractor, Best Copy and Printing, Inc. at fcc@bcpiweb.com.

/s/Richard Grozier

October 2, 2009