HERZOG
LAW FIRM

March 13, 2006

HAND DELIVERED

Hon. Jaclyn A. Brilling
Secretary
New York State Public
Service Commission
Three Empire State Plaza
Albany, New York 12223

Re: Case 06-M-0043 – Deployment of Broadband Over Power Line Technologies

Dear Secretary Brilling:

Enclosed please find fifteen copies of the Comments of CURRENT Communications Group, LLC submitted in response to the "Order Initiating Proceeding and Inviting Comments" issued January 25, 2006.

A copy of these comments is being served electronically on the individuals appearing on the service list established by the Commission.

Sincerely,

Keith J. Roland

KJR:tlm
Enclosures
cc: Active Parties on the Service List
(via e-mail)

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 06-M-0043 - Proceeding on Motion of the Commission to Examine Issues Related to the Deployment of Broadband over Power Line Technologies

COMMENTS OF CURRENT COMMUNICATIONS GROUP, LLC

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Dated: Albany, New York
March 13, 2006

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CASE 06-M-0043 - Proceeding on Motion of the Commission to Examine Issues Related to the Deployment of Broadband over Power Line Technologies

COMMENTS OF
CURRENT COMMUNICATIONS GROUP, LLC

I. Preliminary Statement

CURRENT Communications Group, LLC ("CURRENT") is pleased to submit the following Comments in response to the Commission's Order Initiating Proceeding and Inviting Comments, issued on January 25, 2006. As described below, the Commission has correctly recognized that the new technology of Broadband over Power Line ("BPL") is a reality today, and that its rapid deployment will bring significant benefits to New York State residents in the form of both new competitive options for high technology communications services, as well as more efficient, reliable, and secure operation of electric distribution systems.

To achieve these goals, the Commission should encourage the rapid deployment of BPL by refraining from the imposition of an unnecessary and burdensome regulatory regime, and should instead allow free market forces and the emerging technology to drive the BPL industry's response to the demands of

consumers in the marketplace. This includes avoiding unnecessary restrictions on the business structures that might be used to fund and implement BPL and allowing the marketplace to absorb both the risks and rewards associated with the new technology.

No need exists to develop a new regulatory regime to apply to BPL. The Commission's existing rules and requirements governing maintenance, safety, and reliability of the electric delivery system; its rules governing interactions between utilities and users of utility facilities (such as those governing pole attachments); and its rules governing affiliated transactions, are already well known and adequate to assure that the development of BPL will be consistent with the public interest and the needs of New York consumers and utility suppliers.

BPL has been proven to be a safe and reliable method of meeting the needs of consumers for technologically advanced communications services. Commercial deployment is not only possible, but is today a reality. All of the benefits of BPL, including those that flow from the robust competition encouraged by this Commission, can be enjoyed by the residents of New York State in the right regulatory and business climate – an atmosphere that will flow from implementing the sound regulatory policies described below.

II. About CURRENT Communications Group

CURRENT, based in Germantown, Maryland, and with its primary places of business in that city and in Rochester, New York, is the nation's leading Broadband over Powerline multiple systems operator. Through its two subsidiaries -- CURRENT Communications and CURRENT Technologies -- the company develops, builds, and provides innovative, proprietary BPL technology and services for delivering broadband services and enhanced utility applications, both domestically and internationally. CURRENT offers high-speed broadband services over existing electric power lines and in-home electric wiring. CURRENT offers a fully integrated, end-to-end solution, including developing and providing state-of-the-art BPL equipment, as well as best-in-class business solutions and service capabilities to operate and manage a BPL deployment and broadband business.[1]

CURRENT also offers a number of services that enable electric utilities to provide more efficient, reliable, and secure electric services to their customers, including BPL-enabled real-time monitoring and management of the electric distribution network, automated meter reading, and Direct Load Control demand side management.

In 2004, CURRENT launched the first commercial BPL deployment in the United States, via a joint venture with an unregulated affiliate of Cinergy

[1] More information about CURRENT is available at http://www.currentgroup.com.

Corp., the parent company of electric distribution utilities serving approximately 1.5 million electric customers in Ohio, Indiana, and Kentucky. That BPL deployment now passes more than 50,000 homes in the greater Cincinnati area, and provides residential and small business broadband Internet access at speeds of up to 3 Mbps, as well as commercial voice services using Voice over Internet Protocol, or VoIP.

In December 2005, CURRENT entered into an agreement with TXU Electric Delivery, the nation's sixth largest electric transmission and distribution company, to transform that company's power distribution network into the nation's first broadband-enabled Smart Grid. CURRENT will design, build, and operate the BPL network covering the majority of the TXU Electric Delivery service area, including approximately two million homes and businesses in the Dallas-Fort Worth Metroplex and other Texas communities. This modernized grid will enable TXU Electric Delivery to increase network reliability; prevent, detect, and restore customer outages more effectively; and implement automated meter reading, network, and substation monitoring, and other services. CURRENT will use the same BPL network to provide homes and businesses with high-performance broadband services, including voice, video, and high-speed Internet access delivered over existing electrical lines. Consumers will be able to obtain these services simply by plugging into any electrical outlet in their home or business.

III. The Two Aspects of BPL

As described by the Federal Communications Commission ("FCC"), there are two aspects of BPL: "Access BPL" and "In-House BPL."

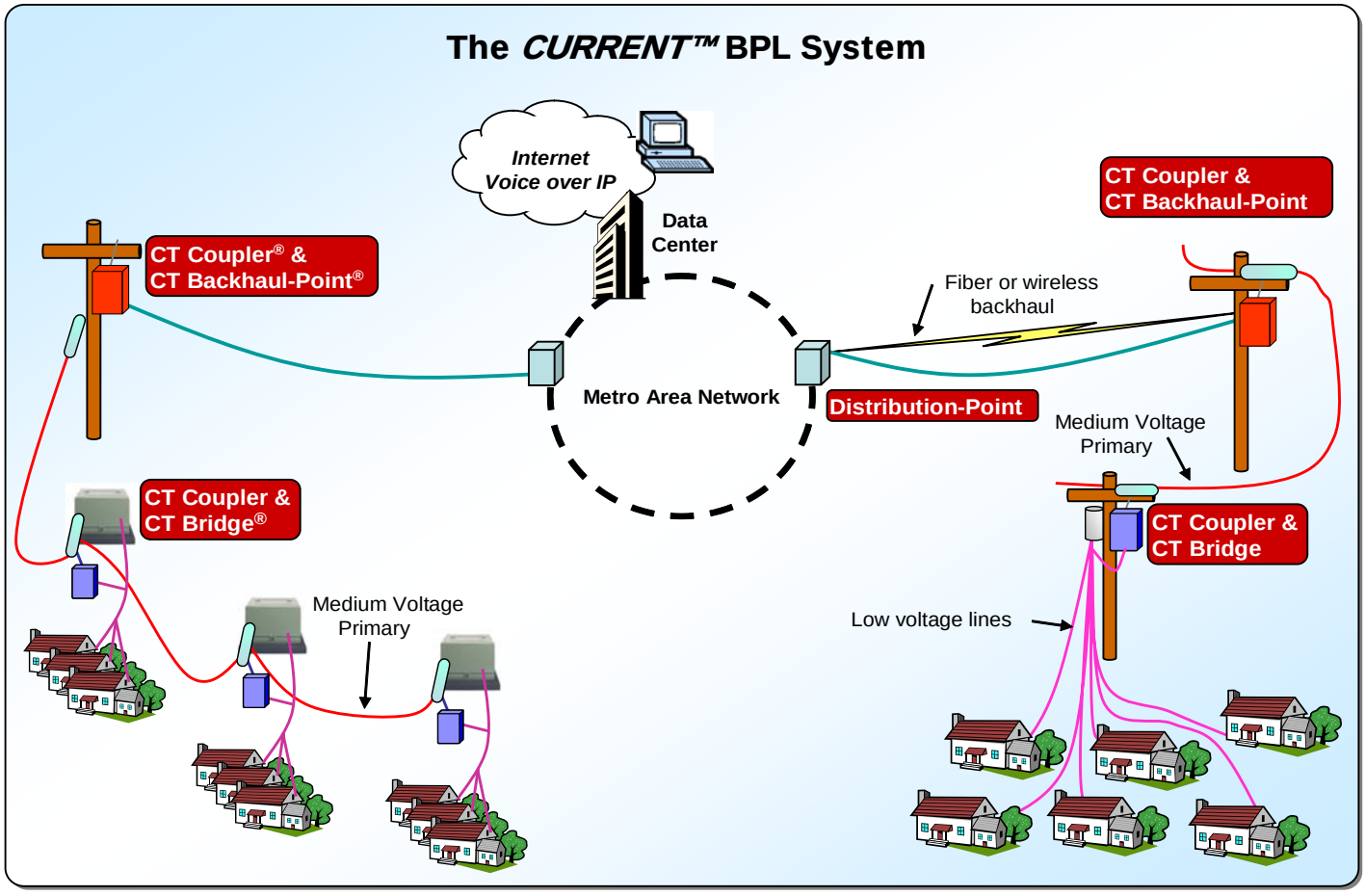
Access BPL systems deliver high-speed Internet access and other broadband services to homes and businesses. In addition, electric utility companies can use Access BPL systems to monitor, and thereby more effectively manage, their electric power distribution operations. Because Access BPL capability can be made available in conjunction with the delivery of electric power, it can provide an effective means for "last-mile" delivery of broadband services, and can offer a competitive alternative to digital subscriber line ("DSL"), cable modem services, and other high-speed Internet access technologies. See: Carrier Current Systems, including Broadband over Power Line Systems, FCC ET Docket Nos. 03-104 and 04-37, Report and Order, October 28, 2004 ("*BPL Report and Order*") at ¶¶4-5.

In-House BPL systems use the electrical outlets available within a building to transfer information between computers, and between other home electronic devices, eliminating the need to install new wires between devices, hence facilitating the implementation of home networks.

IV. How Broadband Over Power Lines Works

BPL consists of several proprietary technologies, each of which uses electric distribution lines to transmit data to reach the "last mile" into homes and

businesses. These last mile facilities are then connected to more traditional fiber and high-capacity wireless facilities to provide the backbone of the network. The diagram below shows BPL network architecture, using CURRENT's approach, as an example.



From a customer's perspective, he or she simply plugs in his or her computer to a small, inexpensive powerline modem. Virtually any wall socket in the home can be used to make this connection.[2]

From the home or office back to the network hub, signals from the powerline modem travel over the home's low voltage wiring (alongside electrical current at a different frequency) along the electric service lateral to an electric network's step-down transformer.[3] One of several different types of technologies will be employed in order to bypass this transformer, which must be done to transfer data signals from the electric network's low voltage to medium voltage lines (and vice versa), because the transformer blocks most of the radio frequency ("RF") signals used by BPL. In CURRENT's case, two proprietary devices are installed near the transformer: a "coupler," which safely injects and extracts data signals on and off the medium voltage distribution lines for connection to the low voltage lines, and a "bridge" device, which serves as a gateway or network router between the BPL network and the end user premises.

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[2] The technology has been described generally in a number of popular sources. *See, e.g.*, Ken Belson, *Power Companies Enter the High-Speed Internet Market*, N.Y. Times, October 17, 2005; James Fallows, *Is Broadband out of a Wall Socket the Next Big Thing?*, N.Y. Times, July 11, 2004; Ken Brown, *The Web's New Outlet: Utilities Plan to Send Internet Service Over Electric Lines, Challenging Cable Modems and DSL*, Wall Street Journal, March 4, 2004; Jim Suhr, *Broadband Over Power Lines?*, Associated Press, Feb. 9, 2003, available at http://www.wired.com/news/technology/0,1282,57605,00.html; *In re of Carrier Current Systems, Including Broadband over Power Line Systems*, Notice of Proposed Rule Making, 19 F.C.C.R. 3335, ¶ 4 (FCC 2004) ("NPRM"); *In re Inquiry re: Carrier Current Systems, Including Broadband from Power Line Systems, Notice of Inquiry*, 18 F.C.C.R. 8498 ¶¶ 13-14 (2003) ("NOI").

[3] The step-down transformer is used by the utility to convert power from medium voltage distribution lines (which carry between 1,000 and 40,000 volts) into low voltage (120 volts) for home use. In the United States, each step-down transformer serves roughly six to eight homes on average.

In CURRENT's BPL networks, the coupler and bridge serve to "bypass" the transformer, isolating the electricity on the medium and low voltage segments and keeping the integrity of the electric distribution network intact while forming a separate broadband communications path along such wires.

The data signals then travel over the medium voltage line until reaching the point at which the BPL network operator links the electric distribution network to a fiber and/or wireless backbone network.[4] At this point, CURRENT installs another coupler to retrieve the data signals from the medium voltage lines, and a "backhaul point" that transfers those signals to fiber optic cables or wireless facilities to deliver the signals to the Internet hub and other networks.

Signals traveling to the customer premises travel the reverse path, with the backhaul point taking the data signals from a fiber or wireless feed and injecting them onto the medium voltage line (through a coupler) to travel along the power lines toward the bridges and the customer's premises. [5]

BPL equipment is unobtrusive and quick and easy to install. It is installed high in the air on a utility pole, or entirely inside an underground or surface transformer enclosure. No street cuts, new poles, or electric wires are

[4] These data signals will generally operate on an unlicensed basis in the 2-80 MHz spectrum pursuant to FCC rules. BPL Report and Order at para. 23.

[5] The use of fiber and wireless facilities beyond the backhaul point underscores that the power lines are just one component of the network that BPL operators use to reach end users. And, while dependent on use of the power lines, BPL networks that provide broadband service are not dependent on other parts of a utility's infrastructure.

necessary. Further, BPL equipment is deployed using existing tried and true utility methods, techniques, and tools, consistent with both national and local utility safety codes and other applicable standards (including those developed by the electric utility itself).

Typical pole and underground installations of CURRENT BPL equipment are shown below.

CT Coupler® Installed On Overhead Lines

CURRENT® BPL installation At An
Underground Transformer

V. Deployment of BPL Benefits Utilities and Consumers

BPL deployments will create a "win-win" scenario for both utilities and consumers by improving broadband options and electricity services for consumers, while also aiding utilities in the operation of their distribution networks. This is possible because the deployment of a BPL system not only overlays a communications network along the electric distribution network, it also creates thousands of network monitoring and data collection points along that network that can be used for electric network enhancement separate and apart from retail broadband services.

A. BPL has already proven effective and is a mature technology

The advantages of BPL described below are not theoretical. As has been widely noted, dozens of BPL trials have already been conducted around the country, to overwhelmingly favorable reviews.[6] As described above, actual commercial deployment has also begun. In the Spring of 2004, CURRENT was the first company in the country to launch BPL on a commercial basis.

CURRENT's broadband offerings start at 1 Mbps (symmetrical speeds) for $26.95 per month and currently extend up to 3 Mbps. More than half of CURRENT's broadband customers have converted from cable modem or DSL broadband service. This fact alone demonstrates that BPL represents a real competitive alternative to cable modem and DSL service. Further, to date, more than 40 percent of CURRENT's customers have switched from dial-up Internet access, which shows that BPL is already expanding broadband penetration. CURRENT now offers commercial VoIP service over its BPL network in Ohio.

CURRENT has also advanced the development and commercialization of enhanced utility applications. CURRENT is working with more than a dozen utilities around the country, including Hawaiian Electric Company, Southern California Edison, and the Los Angeles Department of Water and Power, and with manufacturers of electric, gas, and water meters, to develop

[6] James Fallows, *Is Broadband out of a Wall Socket the Next Big Thing?*, N.Y. Times, July 11, 2004; NOI, Separate Statement of Chairman Powell; NOI, Separate Statement of Commissioner Martin; *Major Electric Utilities Expect to Invest in BPL*, Comm Daily, Oct. 13, 2004 (statement of FERC Chairman Wood).

many of the applications discussed in Section (C) below. As discussed therein, CURRENT has developed, *inter alia*, network monitoring of voltage and other performance criteria of electric distribution networks through BPL network components; BPL-enabled automated meter reading ("AMR"); and BPL-enabled Direct Load Control ("DLC") devices for demand side management of end user customer appliances such as air conditioners, water heaters, and other appliances which draw heavy loads.

In short, BPL has come of age, and this Commission should seek to facilitate BPL deployment by utilities that want to benefit from the technology.

B. Deployment of BPL Will Enhance Facilities-Based Broadband Competition

As the Commission noted in initiating the Competition III Proceeding, many New Yorkers have access to broadband options today, including DSL, Hi-Cap circuits such as dedicated T-1 service, wireless carriers, and cable modem service.[7] It is also clear, however, that not all New Yorkers have access to, or use, broadband services.

This disparity of access to, and use of, broadband is typically referred to as the "Digital Divide." While authors of studies debate the exact causes of the Digital Divide, the upshot is that there are millions of New York broadband "have-nots," in both urban and rural areas, who lack access to cable

[7] Case 05-C-0616, "Competition III" Proceeding, "Order Initiating Proceeding and Inviting Comments," June 29, 2005 ("Comp III Order"), at pp. 5-8.

modem or DSL broadband service. Both of those technologies serve only limited areas. Today's DSL technology restricts service to a far smaller area around the local switching office than conventional voice service can reach. This technological limitation leaves out many potential subscribers, even in urban and close-in suburban areas.

Economic and historical factors effectively place a similar limitation on cable modem service. An old-fashioned, one-way, video cable system requires a major upgrade to carry two-way broadband, an expense that makes economic sense only in certain areas. Moreover, cable systems were designed primarily to bring services to residential areas. Accordingly, cable systems typically do not offer video programming, let alone broadband services, in business districts within the communities they serve.

BPL can provide broadband service where DSL and cable modem service is not available. In particular, "[b]ecause power lines reach virtually every home, school, and business in the United States, Access BPL technology could play an important role in providing high-speed Internet and broadband services to rural and remote areas of the country."[8] By providing access in these otherwise unserved areas, BPL will become a critical component in bridging the Digital Divide.

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[8] *In re of Carrier Current Systems, Including Broadband over Power Line Systems and Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband Over Power Line Systems*, Notice of Proposed Rule Making, ET Docket No. 03-104 and 04-37, 19 F.C.C.R. 3335, ¶ 30 (FCC 2004) ("NPRM").

In areas already served by DSL and/or cable modem service, BPL will provide an additional broadband alternative and, thereby, increase competition. An investment group recently explained to NARUC that the entry of a third broadband competitor would create a "very disruptive competitive alchemy benefiting consumers."[9] In Manassas, Virginia, telephone and cable modem service rates dropped 55 percent after BPL was rolled out.[10] CURRENT has witnessed similar competitor reactions to its broadband deployment in the Cincinnati metropolitan area.

BPL will also offer broadband competition in terms of speed and features. BPL is already capable of providing broadband speeds as fast or faster than those provided by DSL and cable modems, and does so at virtually every outlet in the customer premise.[11] Further, unlike most other broadband technologies, BPL speeds are symmetrical. Customers enjoy the same speeds whether they are downloading or uploading information. And BPL offers the possibility of far faster speeds in the near future. Where CURRENT's systems today can achieve as much as 5 Mbps, and CURRENT generally offers up to 3 Mbps to each end user in its commercial service, the next-generation BPL

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[9] Precursor (Scott Cleland), *The Alchemy of Broadband Over Power Lines* (Presentation to NARUC BPL Taskforce, Oct. 24, 2004).

[10] *BPL "Most Important Third Way" To Cover Last Mile, Powell Says*, TR Daily, Oct. 12, 2004. See also EPRI, *Broadband Over Powerline 2004: Technology and Prospects* at 2 (Nov. 2004).

[11] *See:* Id. at 12, 15.

implementation being deployed later this year will provide speeds of up to 10-20 Mbps, again at every outlet in a home or business.

The existence of a third broadband pipe is also critical to the future of competition in voice communication services. Voice competition will be increasingly dependent on VoIP offerings, as local and long distance services relying on access to the incumbent local exchange carriers' ("ILECs") networks, through leasing of unbundled network elements, is phased out. But at present, VoIP providers depend on connection through no more than two existing broadband pipes. Adding BPL as the third broadband pipe will result in another option, and will not only spur development of VoIP services, but will also result in more consumer options, in terms of speeds, features, performance, and rate structures.[12]

Moreover, VoIP via BPL has an important advantage over DSL and cable modem service as a competitor to ILEC telephony services. In order to receive VoIP service, a customer living in CURRENT's BPL footprint need not own a computer or subscribe to Internet access service. To receive *CURRENT Voice*® service, an end user simply plugs a power line modem (roughly the size of a typical cell phone charger) into an electric outlet and connects the modem to a telephone adapter that can be used with any standard touch-tone telephone.

[12] A recent article in the New York Times noted the absence of competitive alternatives for Broadband access could lead to consumers having to pay for various types of internet access, and access to information providers, which are now free. *See* Ken Belson, The High-Speed Money Line, "Consumers May Pay Once for Internet Access and Again for Using It," New York Times, March 6, 2006, p. C-1.

CURRENT Voice service can also be configured to provide service through the existing phone jacks in a home or business, again with no need for a PC or an Internet service subscription.

C. BPL Can Enhance Electric Distribution Network Performance

Electric distribution utilities can use BPL to improve their distribution networks in a variety of ways. For example, BPL will provide for more efficient and reliable distribution networks by enabling electric utilities to obtain information in real time from designated points along their distribution networks (*e.g.*, substations, capacitor banks, switches, transformers, and voltage regulators) and to transmit the information to their back-office systems, thus providing an "intelligent" power distribution network.[13] The benefits of such an intelligent network can be enormous.

The Electric Power Research Institute ("EPRI") estimates that a smart electricity system could increase productivity by 0.7 percent per year, leading to a $3 trillion increase in GDP by 2025. As one investor report explains, "distribution utilities may find that a BPL-enabled grid offers compelling savings in operation, maintenance, and construction cost."[14] A second report adds that "BPL offers utilities upside ROI [return on investment] over time in incremental

[13] NOI at ¶ 28; Comments of Consolidated Edison Company of New York, Inc., *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at 3 (FCC filed May 3, 2004).

[14] Bernstein Research Call, *Broadband Over Power Lines Part 2* at 4.

revenue streams, operational savings, efficiencies, and productivity from turning 'dumb' electrical networks into 'smart' digital networks."[15]

Utilities are exploring BPL for these very reasons, and the Commission should create a regulatory climate that encourages utilities to develop and deploy in wide scale the BPL applications they desire.[16] Indeed, the largest

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[15] Precursor (S. Cleland, J. Freeman, R. Baca), *Why Broadband Over Power Line is at 'Viability Tipping Point" as Third Wire Into Home* (Oct. 11, 2004).

[16] Comments of Hawaiian Electric Co., Inc., *In re Inquiry Regarding Carrier Current Systems Including Broadband over Power Line Systems*, ET Docket No. 03-104, at 2 (FCC filed June 25, 2003) (concluding after evaluating BPL since 2000 that "BPL provides a potential communications infrastructure that promises to be lower cost than other alternatives for serving our customers" for enhanced utility-management, as well as promoting facilities-based broadband service market); Comments of Cinergy Corp., *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at 2 (FCC filed May 3, 2004) ("Cinergy anticipates that BPL will enable a variety of Enhanced Power Distribution ('EPDS') applications, including automated outage detection and restoration confirmation, remote monitoring and operation of switches and transformers, more efficient demand-side management programs, and power quality monitoring to detect faulty components *before* they fail."); Comments of Consolidated Edison Co of New York, Inc., ET No. 04-37, at 3 (filed May 3, 2004) ("Access BPL has tremendous potential to provide intelligent networking capabilities in urban areas as well that can improve reliability while reducing customer costs and provide real time monitoring systems to create a more secure electric infrastructure."); Comments of Southern LINC, Southern Telecom, Inc., and Southern Company Services, Inc., *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at 3-6 (FCC filed May 3, 2004) ("Access BPL offers a unique communications tool that could be used by utilities to help support functions such as" power quality monitoring, automated meter reading, automatic connect and disconnect, and system security); Comments of the City of Manassas, Virginia, ET No. 04-37, at 1 (filed May 3, 2004) ("BPL has the added benefit of improving the quality and reliability of electric power delivery and service by enhancing existing outage notification systems and assisting in automated metering, line monitoring, and load control."); Comments of Progress Energy, Inc., ET Docket 04-37, at 1 (filed May 3, 2004) (noting that its affiliates are "particularly interested in [BPL] technology for internal benefits, such as automated meter reading, outage detection and system monitoring"); Reply Comments of Florida Power & Light Company, ET Docket No. 03-104, at 1 (filed August 19, 2003) (Florida Power & Light "underscore[s] the significant interest expressed by the other commenters in the development of BPL to enhance utility service, reduce costs to utility consumers, and improve security of utility infrastructure.").

benefits of BPL may very well stem from these applications that enable utilities to create a "Smart Grid," some of which are described below.

1. Advanced prediction and effective diagnosis of outages

BPL enables utilities to both better predict and more effectively respond to outages. Based on a survey of seven hundred businesses, Primen reported that "Power outages rank as today's foremost energy-management concern among business and organizations."[17] EPRI has determined that "the current costs of poor reliability to the U.S. economy have grown to at least *$100 billion per year* . . . Power disturbance costs are passed on to all types of consumers in the costs of goods and services."[18] Thus, EPRI estimates that "[o]ver 90% of the minutes lost for consumers are attributable to distribution events."[19] Many of these costs stem from outages that begin in the distribution system in which BPL will be placed.

BPL can help reduce the frequency of localized distribution network outages. For instance, BPL will allow "power quality monitoring," enabling the utility to use real-time data to monitor overall system performance, and to detect

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[17] Primen: Automated Outage Notification Tops Customers' Wish List (press release), November 5, 2003, available at http://www.primen.com/about/pr_notifcation.asp.

[18] EPRI, *Electricity Technology Roadmap: 2003 Summary and Synthesis* at 1-6. *See also id*. at 4-7, 4-8, 4-9. EPRI estimates that "failure to take action will result in further degradation of reliability, leading to an increase in costs, perhaps by as much as an additional $200 billion per year over a ten-year period," *Id.* at 4-9, with losses potentially reaching $300 billion per year by 2015. *Id*. at 4-13. Many of these losses are caused by impacts on businesses. For example, "a nearly imperceptible one-second sag in voltage in one of the microprocessors running a paint gun in an auto plant could destroy the finish on one or more cars, and disrupt part of the assembly process." *Id.* at 4-6.

[19] *Id.*, at D-6.

performance irregularities in transformers and other equipment that might otherwise lead to localized service disruptions or impairments if not repaired. As noted by the Hawaiian Electric Company, Inc., which is currently deploying BPL with CURRENT, BPL systems "will have the capability of detecting signal patterns that occur prior to breakdown of electrical grid elements, such as faulty conductors, low voltage transformers, capacitors, fuse devices, etc."[20] Because they will be able to detect specific problems before they develop, utilities will be able to prevent outages as well as reduce regularly scheduled maintenance, and instead target their maintenance efforts at equipment with actual problems. This may also enable utilities to spend less money on construction, as they may not have to build as much redundancy into the grid.[21]

In addition to power quality monitoring to detect potential problems before they occur, BPL will enable utilities more rapidly to detect outages when they do occur. Through its 24x7 real-time monitoring of its BPL systems, CURRENT already provides utilities real-time outage and restoration detection notification in its BPL deployments, enabling utilities to reduce the response times to such outages. This is in contrast to the prevailing system where utilities are not generally aware that an individual residence or business has lost power until an

[20] Comments of Hawaiian Electric Company, Inc., *In re Carrier Current Systems, Including Broadband Over Power Line Systems*, ET No. 03-104, at 2 (FCC filed June 25, 2003).

[21] Bernstein Research Call, *Broadband Over Power Lines Part 2: Electric Utilities Weigh BPL Roll Out to Achieve Smart Distribution Grids*, at 3 (Oct 5, 2004)

occupant calls to report an outage.[22] BPL can also decrease the substantial cost of monitoring for outages by allowing utilities to deploy their resources more efficiently and effectively, in particular by notifying the utility exactly when and to what extent outages have been restored.[23]

Finally, BPL can significantly reduce the magnitude of outages. BPL will allow an electric system dispatcher to take action to isolate failures before they cascade into a larger blackout.[24] As the National Telecommunications and Information Administration ("NTIA") explains, "BPL deployment should yield additional motivation and resources for maintaining the electric power distribution system, predicting and preventing faults, and achieving more rapid repairs in an affordable manner. . . . [W]idespread deployment of BPL may actually induce substantial reliability improvements."[25]

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[22] Reply Comments of Duke Energy Corporation, *In re Carrier Current Systems, Including Broadband Over Power Line Systems*, ET No. 04-37, at 3 (FCC filed June 22, 2004); Bernstein Research Call, *Broadband Over Power Lines Part 2* (Utilities generally do not become aware of small outages until informed by a customer and then must dispatch a truck to determine visually the extent of the problem).

[23] Although outages are generally reported by customers, utilities must monitor and forecast indicators of potential failures and maintain substantial equipment sufficient to respond to geographically dispersed failures. More effective diagnosis of power failures will enable utilities to more efficiently allocate these resources and reduce costs. Comments of National Telecommunications and Information Administration, *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at 6 (FCC filed June 4, 2004).

[24] Comments of Southern LINC, et al., Inc., *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at 3-4 (FCC filed May 3, 2004).

[25] Comments of National Telecommunications and Information Administration, *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at v (FCC filed June 4, 2004).

2. Management of energy consumption

In addition to enabling utilities to better prevent, detect, and restore outages, BPL also can enable utilities to better manage levels and patterns of energy consumption. For example, BPL can enable utilities to create a "demand response program" by facilitating use of BPL-enabled DLC devices.

Demand Side Management ("DSM") programs have long been encouraged by this Commission and others. One of the beneficial aspects of DSM, as this Commission has found, is to maintain utility involvement in end user energy efficiency in order to:

- reduce average customer bills by helping individual consumers minimize their electricity costs;
- improve the state's economic competitiveness;
- reduce the environmental impacts of energy use; and
- lay the groundwork to ensure that cost-effective energy efficiency technologies and services compete effectively in an unregulated market.

See, Case 94-E-0648, Petition of Central Hudson Gas & Electric Corporation for Approval of its 1995 Demand Side Management Plan and HIECA Business Plan (filed in Cases 27230 and 28223), Order Concerning Demand Side Management Plans, June 26, 1995, at p. 3.

Such demand response programs "allow grid managers to leverage existing grid assets by reducing peak loads and thus improve the ability of a

constrained grid to serve more customers reliably."[26] This could further aid utilities in avoiding outages. One expert has projected that demand response programs could save $10-15 billion annually while eliminating the need for 200 additional power plants over the next decade.[27] Another report has estimated such demand response programs could save $35 per customer per year.[28]

CURRENT has already developed and deployed BPL-enabled DLC devices that, for example, enable the utility to manage customers' air conditioning units or water heaters. The utility can then implement programs under which they offer customers the option of lowering their bills in return for permitting the utility to adjust customers' designated appliances remotely when necessary – if, for example, an outage appears likely, or to otherwise manage electricity demand more efficiently.[29] These DLC-switched devices are managed directly through the BPL network at the direction of the utility (as opposed to the BPL network operator). One utility has found that by enrolling residential customers in such a program, it was able to reduce average energy consumption among residential customers by 41 percent during critical hours.[30]

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[26] *Hearings Before the Senate Comm. on Energy and Natural Resources*, 106th Cong. at 10 (July 24, 2002) (testimony of Pat Wood, III, Chairman, Federal Energy Regulatory Commission), available at http://www.ferc.gov/press-room/ct-archives/2002/07-24-02-wood.pdf.

[27] Fred Bayles, *Savings Seen in Hour of Energy Use Time-of-Day Pricing Reduces Electricity Costs by Leveling Out Demand Surges*, USA Today, July 16, 2001, at A3 (citing Dilip Wagle, McKinsey & Co.).

[28] Bernstein Research Reports, *Broadband Over Power Lines Part II* at 5.

[29] Ken Silverstein (Director, Energy Industry Analysis), *Utility Automation Brings Early Rewards*, PowerMarketers Industry Publications, April 1, 2004.

[30] Bernstein Research Reports, *Broadband Over Power Lines Part 2* at 5.

BPL deployment can facilitate more efficient energy consumption and reduce costs in other ways as well. For example, BPL can enable utilities to remotely connect new customers and disconnect former customers by transmitting signals to BPL-enabled meters. This would eliminate dispatches for the purpose of physically connecting and disconnecting customers; would eliminate scheduled calls with customers (*e.g.*, when meters are inside the premises); and would avoid inactive consumption charges when tenants change.[31]

All of the above benefits will, of course, benefit consumers as well. In addition, by making the electric distribution network more efficient, and enabling significant new opportunities for energy conservation, BPL deployments will promote energy efficiency, reduce demand for electricity, and in turn, limit air pollution and carbon emissions.

3. Automated meter reading

BPL also offers the advantage of AMR, which enables the utility to read individual meters remotely on a real-time basis.[32] At present, utilities not using AMR technology obtain meter readings through physical inspection by meter readers and self-reporting by customers, each of which has various

[31] Comments of Southern LINC, Southern Telecom, Inc., and Southern Company Services, Inc., *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at 5 (FCC filed May 3, 2004).

[32] *See generally* Comments of Cinergy Corp., *In re Carrier Current Systems, Including Broadband Over Power Line Systems*, ET No. 03-104, at 4 (FCC filed July 7, 2003); Comments of Southern LINC, Southern Telecom, Inc., and Southern Company Services, Inc., *In re Carrier Current Systems, Including Broadband Over Power Line Systems,* ET No. 04-37, at 5 (FCC filed May 3, 2004).

disadvantages in terms of expense, fraud, and risk of error. These disadvantages are exacerbated when meters are in areas that are dangerous or difficult to access, such as inside the premises of customers.

In contrast, utilities can use a BPL system to transmit data from "smart meters" equipped to report real-time data to the utilities' network operations centers. This can result in substantial cost savings and improved data collection, including data for both billing and trending analyses. One report has estimated that AMR will save between $15 to $20 per customer per year.[33]

CURRENT, working in conjunction with major meter manufacturers, has already developed BPL-enabled "smart meters" and is working with utilities to deploy them on a system-wide basis, including approximately two million meters in its Texas BPL deployment.

Because BPL-enabled meters permit utilities to know exactly how much electricity is being used at different times of the day, utilities can create time-of-day or real time pricing structures. Utilities can, for example, charge higher rates during peak periods when electricity is more expensive to produce, and lower rates at other times.[34] This variable pricing will lower costs both to cost-conscious consumers who alter their energy consumption patterns in response

[33] Bernstein Research Reports, *Broadband Over Power Lines Part 2* at 4.

[34] Comments of Southern LINC, Inc., et al., *In re Carrier Current Systems, Including Broadband Over Power Line Systems*, ET No. 04-37, at 5 (FCC filed May 3, 2004).

to price, and to utilities that save money when peak usage is reduced.[35] The 2005 Energy Act specifically encourages the adoption of time-based pricing and "smart metering," and directs states to consider such regimes.[36]

BPL is not the only technology that can be used for AMR. Some utilities are pursuing AMR technologies that are not associated with BPL. At least until recently, the costs associated with automated meter reading based on some non-BPL technologies may "have prevented it from becoming widespread."[37] The primary AMR technology that had been deployed to date couples smart meters with wireless technology that transmits meter readings to a meter reader who is driving by.[38] Not only does this technology still require meter readers (and vehicles), but it does not permit real-time reading of meters throughout the day, with the attendant benefits of demand management, time-of-day pricing, and variable pricing discussed above. Nor does it allow for outage detection at the customer premises level.

Because BPL provides many benefits beyond simply enabling easier once-monthly meter reading, the cost-benefit calculus is very different for BPL

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[35] See *Hearings Before the Senate Comm. on Energy and Natural Resources*, 106th Cong. at 10-11 (July 24, 2002) (testimony of Pat Wood, III, Chairman, Federal Energy Regulatory Commission), available at http://www.ferc.gov/press-room/ct-archives/2002/07-24-02-wood.pdf.

[36] Domenici-Barton Energy Policy Act of 2005 (enacted August 8, 2005) §1252.

[37] Ken Silverstein (Director, Energy Industry Analysis), *Utility Automation Brings Early Rewards*, PowerMarketers Industry Publications, April 1, 2004.

[38] BPL can also integrate AMR technology that has already been deployed so that meter readings can be transmitted via the wireless meters directly to the BPL equipment, without the need for a meter reader to drive by. BPL can also integrate electric meter AMR with that for other utility services, such as gas and water meters, and in fact, these products are in development today

than for certain other AMR technologies.[39] BPL-enabled AMR is less expensive for utilities to deploy than other AMR solutions when deployed in connection with a commercial broadband offering, and utilities should be permitted to make their own determinations as to which AMR technologies – and other technologies to enhance the provision of electric distribution service – best suit their specific circumstances.

4. Security-related applications.

BPL can also enable new security and monitoring capabilities. For example, CURRENT has successfully demonstrated its *CURRENTCam*^{TM} real-time video monitoring capability at a number of utilities. *CURRENTCam* permits utilities to monitor far-flung assets such as substations and other critical infrastructure, both to prevent intrusion or damage and for control functions such as reading dials or checking the positions of equipment.[40] The potential homeland security benefits of this and other applications are significant. In addition, BPL can enable improved detection of the theft of electric service, benefiting both utilities and ratepayers.

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[39] Ken Silverstein (Director, Energy Industry Analysis), *Utility Automation Brings Early Rewards*, PowerMarketers Industry Publications, April 1, 2004.

[40] *See, e.g.*, Comments of Consolidated Edison Co of New York, Inc., ET No. 04-37, at 3 (FCC filed May 3, 2004) ("Access BPL has tremendous potential to provide intelligent networking capabilities in urban areas as well that can improve reliability while reducing customer costs and provide real time monitoring systems to create a more secure electric infrastructure.").

VI. Safety and Reliability of Electric Systems Hosting BPL

Deployment of BPL raises no novel issues of safety or reliability of the electric distribution network or of electrical service. To the contrary, as demonstrated above, BPL deployment positively benefits electric utilities and their customers by providing services that enable "a variety of more sophisticated power distribution applications," including automated outage detection and restoration confirmation; remote monitoring and operation of switches and transformers; more efficient demand-side management programs; and power quality monitoring to detect faulty components before they fail.[41] As noted by NTIA, "widespread deployment of Access BPL will make it possible to speed detection and diagnosis of electrical system failures".[42]

Deploying BPL may also improve electric distribution networks in other ways. Designing a BPL network typically involves completion of a detailed survey of the existing electric distribution network and mapping the locations of transformers, capacitor banks and other equipment. Existing utility Geographic Information Systems ("GIS") are typically used as the foundation for such surveys, but in most cases, GIS data are incomplete or include inaccuracies, such as indicating that a home is served by the incorrect transformer or that a transformer is located on the incorrect pole. When CURRENT deploys a BPL system, it can feed information from its detailed site survey back to the utility to

[41] BPL Report and Order, para. 15.

[42] NTIA Comments, Dockets 04-37 and 03-104, cited in BPL Report and Order, at para. 15.

improve GIS data, which can have substantial benefits to the utility. Further, during installation of BPL equipment, crews may discover and report to the utility – or simply repair on the spot – minor defects such as cracked insulators, loose connections, or improper grounding that can impact power quality and reliability of electric service.

CURRENT's BPL equipment is deployed in the "power space" on utility poles or in underground transformer housings only by either existing utility line crews, or contractors who have been approved and certified by the utility as eligible to perform work on the utility's distribution network.[43] All of CURRENT's BPL equipment installations comply with applicable national codes and standards, including the National Electric Code ("NEC") and the National Electric Safety Code ("NESC"), as well as each utility's own requirements and procedures. Electric utilities are zealous in preserving the safety and reliability of their networks, and CURRENT's experience has been that they uniformly insist on rigorous compliance with safety standards, with which CURRENT complies in all respects. Because of this compliance, there have been no accidents or injuries caused by or related to the installation or operation of CURRENT's BPL equipment.

[43] Use of certified outside contractors to work on utility distribution plant is common, and (1) assures only properly trained and qualified personnel – as judged by the utility itself – are used, and (2) allows more efficient use of existing utility employees.

VII. Regulatory Issues Raised by the Commission

A. Use of Utility Personnel to Deploy BPL

Determining which personnel may work on BPL facilities should be left to the discretion of the electric utilities themselves. In CURRENT's experience, some utilities have determined that due to their contractual obligations or other reasons, their own employees are the only personnel who are permitted to perform work on utility facilities. More typically, a utility may determine that it does not have sufficient available crews to use its own employees to install and maintain BPL equipment, particularly during an initial BPL build out, when a relatively large number of crews may be needed. For maximum efficiency, CURRENT believes both utility employees and approved contractors should be authorized. For example, in CURRENT's Cincinnati deployment, the majority of line work is performed by contractors approved by The Cincinnati Gas and Electric Company ("CG&E"), the local electric utility. However, it may be most efficient for utility line persons to perform BPL-related work in certain circumstances, such as during an emergency replacement of a pole after an existing pole is damaged in an auto accident.

B. Attachments

Attachment of cables and associated equipment to utility poles, or placement in or adjacent to utility underground facilities, is of course not new.[44] Required clearances, spacing, and related issues for cable TV, telecommunications, and other attachments have already been comprehensively addressed by the Commission; those existing rules require compliance with all provisions of the NESC and existing utility practices and procedures (all of which must comply with the NESC and the NEC). In CURRENT's extensive experience, installation of BPL equipment does not engender any issues that cannot be resolved by reference to, and application of, existing codes, rules, and utility practices. All that is necessary is for the Commission to specify that BPL attachments will be handled on a non-discriminatory basis and in the same manner as other attachments.

C. RF Interference

CURRENT's BPL technology does not create any RF interference - or generate any RF emissions that negatively affect the reliability or operation of the electrical grid or licensed radio users. In fact, CURRENT has never been the subject of an interference complaint at the FCC. The American Radio Relay

[44] *See*: Proceeding on Motion of the Commission Concerning Certain Pole Attachment Issues, Case 03-M-0432, "Order Adopting Policy Statement on Pole Attachments," August 6, 2004.

League, or ARRL, the national industry association for amateur radio operators, has on several occasions told the FCC, or otherwise published statements, confirming that CURRENT's BPL systems do not cause harmful interference.

While CURRENT understands the Commission's interest in and concern about interference issues, it is important to note that the FCC has plenary jurisdiction over questions regarding RF interference; which RF devices (or devices which emit RF) may operate and how they may operate; and use of the radio spectrum in general. See: 47 USC §301 and 47 CFR Part 15. Accordingly, it is unnecessary, and arguably inappropriate, for this Commission to address such matters in this proceeding.

As the Commission is aware, in October of 2004, the FCC completed a two-year review of Broadband over Power Line technology and concluded that BPL could and should continue to be deployed in the U.S. The FCC found that "properly designed and operated" BPL systems pose "little interference hazard" and "will be able to operate successfully on an unlicensed, non-harmful interference basis." Particularly relevant to this Commission's inquiry, the FCC rejected the contentions that properly designed BPL systems are likely to interfere with amateur radio systems, public safety systems, broadcast, or any other licensed radio systems.[45]

[45] *See*: generally, BPL Report and Order, October 28, 2004, op. cit.

In fact, CURRENT's widespread BPL deployments bear out the FCC's conclusions. The ARRL acknowledged to the FCC in July of 2004 that in the CURRENT BPL system deployed in Potomac, Maryland, there is "no BPL noise" in the amateur radio bands.[46] The following year, ARRL again acknowledged to the FCC that CURRENT's BPL system "has not caused interference to Amateur Radio."[47]

D. Reliability of BPL Broadband Service

All communications technologies have potential vulnerabilities to service interruption, whether caused by isolated incidents (such as cars hitting utility poles), or by catastrophic events such as storms or national defense emergencies. One important aspect of BPL is that it can create an additional, facilities-based communications medium, thus providing greater redundancy in the event of another medium's failure or capacity constraints in an emergency situation. BPL presents no unique reliability issues as compared with other consumer and small business broadband communications solutions that are now in the marketplace.

CURRENT's BPL technology can be deployed with battery backup (for use in the event of power failure), although CURRENT has not yet deployed such a configuration commercially. In designing a BPL network, CURRENT can

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[46] Reply Comments of ARRL, the National Association for Amateur Radio, Exhibit E at 5 (FCC Docket No. 04-37, filed June 22, 2004) (emphasis added).

[47] Reply of ARRL to Opposition of CURRENT Technologies, LLC to Petition for Reconsideration at 7 n.9 (FCC Docket No. 04-37, filed April 1, 2005) (emphasis added).

(and does) plan for diverse routing and other mechanisms intended to make the network more robust. At present, however, consumer and small business broadband services of all types are typically sold without strong guarantees as to availability, outages, or other service parameters. The marketplace simply has not demanded such guarantees – and regulators, correctly, have not sought to impose them on BPL providers' competitors, such as cable modem service and DSL. To the extent the market demands it, and as technologies and solutions develop and become more economical, broadband communications providers will respond to those market forces. It is not necessary for the Commission to attempt to mandate reliability standards or measures, and it would be particularly inappropriate to attempt to do so for one technology, such as BPL, in isolation.[48]

E. BPL Business Model and Structural Consideration

Both this Commission and the FCC have recognized the significant benefits that could be brought to New York residents by full and rapid deployment of BPL. The Commission, therefore, should seek to establish the regulatory environment that will best encourage growth of this industry, while at all times being consistent with safety and reliability of the electric distribution network, and other requirements of public policy. CURRENT respectfully submits that the most efficacious approach to ensure accelerated deployment of BPL is to allow the

[48] With respect to utility applications designed to enable utilities to develop a Smart Grid, the BPL operator and the utility will negotiate applicable service level standards consistent with the utility's operational needs and obligations.

marketplace to determine the appropriate structure for BPL in New York, with no artificial regulatory constraints limiting the choices available to utilities, or prospective investors and operators.

While the Commission appears initially inclined to preclude the incumbent electric utility from being the BPL provider, such an artificial restriction is not necessary to protect the public interest, and indeed may be counterproductive to the deployment of BPL in New York.

Deployment of BPL will require significant amounts of capital and technical resources; excluding an electric utility's participation in ownership or operation of BPL on its system may significantly hinder, or actually preclude, BPL development. In some cases, an independent entity may be the BPL provider in a "landlord-tenant" model. In other cases, the appropriate structure may be a joint venture or some other economic arrangement between an independent entity and either the electric utility or a utility affiliate. So long as the interests of electric ratepayers are protected – a goal easily met – the marketplace should be left free to chose the appropriate structure for BPL. As Ohio law and the recently enacted BPL-related provisions of the Texas Utility Code (§43.051) hold, one such appropriate structure is provision of BPL by electric utility affiliates.

As the Commission has noted, reluctance to allow utilities or their affiliates to enter competitive markets is due primarily to concerns over potential cross-subsidization, anti-competitive conduct, or financial risk to the utility (with

an ensuing impact on ratepayers). However, there are sufficient mechanisms already in place to obviate these concerns.

While the Commission expresses concern over the possibility of devoting regulatory resources to review the nature of any BPL arrangement involving the utility or its affiliate, the likelihood of that happening is significantly reduced by the particular nature of BPL. The Commission's concern may well flow from its prior experience with the disputes between Con Ed and Telergy.[49] But in contrast to that situation, where Con Ed and Telergy were direct competitors, and in which Con Ed was forced to grant Telergy access to its conduits, BPL will be deployed only where the electric utility affirmatively desires deployment of BPL over its facilities. Thus, the likelihood of disputes coming before the Commission between BPL providers and hosting electric utilities over access, pricing, or the provisioning of services or facilities is far less likely than in circumstances in which an owner is compelled to make its facilities available to third parties on regulated terms.

One of the primary benefits of BPL is the availability of Smart Grid services to the electric utility, with direct benefits to the security, reliability, and efficiency of the electric distribution system. Electric utilities are the consumers of such services which, in most cases, must be tailored to the particular needs and technical requirements of the utility itself. To give just a few examples: The

[49] *See:* Case 00-C-0134, Complaint of Telergy Metro LLC Against Consolidated Edison Company of New York, Inc.

utility's highly proprietary information must inevitably be shared with a BPL provider in order for that BPL provider even to design its network. Interfaces must be designed to feed AMR or outage detection information into a utility's existing systems. And the utility will be required to share other sensitive information with the BPL provider in order to ensure that the BPL network extends to the necessary existing and planned utility equipment. Smart Grid services require a level of cooperation and coordination between the electric utility and the BPL provider that will not be present in a legal regime of compulsory access to the electric distribution grid.

For the same reason, it would not be appropriate for the right to be an electric utility's BPL provider to be auctioned off to the highest bidder. As described above, the relationship between a BPL provider and the hosting electric utility is completely different from the relationship between a utility and the telecommunications carrier or cable TV company which merely attaches its facilities to utility poles, or places fiber in underground conduit. BPL providers and their electric utility hosts must work together to coordinate physical attachments to the electric utility's energized plant; to coordinate design between the electric grid and BPL system; and to design and integrate the utility's use of Smart Grid services. Such cooperation will be possible only if the electric utility is able to select, and work closely with, its BPL partner; it will not occur if the electric utility is forced to use a BPL vendor imposed on it through a bidding process, where the relationship may well be adversarial.

Moreover, a competitive bidding process would likely preclude use of particularized business models which best suit the needs of two willing business partners and their customers. Artificially constraining the market structure of a BPL project to a format set forth in bidding documents would be inefficient, counter-productive, and far less likely to lead to willing electric utility participation –willing participation that is crucial to a successful BPL deployment that can bring the full benefits of this promising new technology to New York.

The second possible concern, cross-subsidization of BPL operations by electric utility customers, can also be avoided by compliance with, and enforcement of, the Commission's existing affiliate transaction rules.[50] Such rules serve as adequate safeguards to assure all appropriate compensation will be paid to the electric utility for the benefit of its ratepayers. CURRENT's Cincinnati deployment provides strong support for this conclusion. The Public Utilities Commission of Ohio ("PUCO") has not required CG&E to follow any unique affiliate transaction requirements relating to BPL, but has relied on its standard rules. In the recently completed CG&E rate case, the PUCO's Staff examined the allocation of costs between CG&E and CCB Ohio, LLC, the entity deploying BPL on CG&E's lines (a 50/50 joint venture between CURRENT and an unregulated CG&E affiliate). The PUCO Staff concluded there was no evidence of cross-

[50] The Commission has full authority over affiliated transactions under §110 of the Public Service Law and, to the extent required, has full authority to adjust electric rates in accordance with its affiliated transaction policies under §§ 65 and 66 of the Public Service Law.

subsidization associated with the BPL deployment, and that the utility was following the appropriate accounting procedures.[51]

In prior circumstances where the Commission has perceived a potential for cross subsidization, particularly in the telecom arena, it has not banned regulated utility participation in the competitive market, but has instead permitted the utility to actively participate subject, however, to strict compliance with affiliated transaction rules and other non-discriminatory procedures.[52] Heretofore, the Commission has encouraged the development of competition by opening the door to all entities desiring to offer services, including monopoly providers. No reason exists why that approach should not be continued for deployment of BPL.

F. Compensation Arrangements

For purposes of the instant proceeding, transactions between utilities and BPL providers can be considered in five broad areas:

1. Pole attachments, conduit, and other rates defined by regulation;

[51] *See*: Staff's Report of Investigation, In the Matter of Application of The Cincinnati Gas & Electric Company for an Increase in Electric Distribution Rates, Case Nos. 05-0059-EL-AIR and 05-0060-EL-AAM, September 9, 2005, at pp. 86-87.

[52] See Case 94-C-0095, Proceeding on Motion of the Commission Related to the Continuing Provision of Universal Service and to Develop a Regulatory Framework for the Transition to Competition in the Local Exchange Market, "Competition II" Proceeding, "Opinion and Order Adopting Regulatory Framework", May 22, 1996.

2. Use of utility employees and facilities for which no rate has been defined by regulation;

3. Access to distribution lines;

4. Repairs or improvement to electric plant to meet electric safety and operational requirements; and

5. Investment of utility funds and allocation of risk and reward.

Each of these areas requires distinct treatment.

1. Pole Attachments, Conduit, and Other Rates Defined by Regulation

Whenever a tariffed rate, or a rate determined by regulation, exists for a utility good or service, then a BPL provider should pay that rate. For example, in Cincinnati CURRENT pays a tariffed rate for the electricity it obtains from CG&E to power its BPL devices. Similarly, BPL providers should be treated the same as other users of utility poles, conduits, or ducts, on an equal and non-discriminatory basis. Whatever rates are tariffed by the utility for these items should apply to, and be paid by, the BPL provider.[53]

[53] The Commission has established a single pole attachment rate for cable TV and telecommunications companies. *See*: Case 01-E-0026, New York State Gas and Electric Filing to Revise Annual Rental Charge for Cable Television Pole Attachments, Order Granting in Part Petitions for Rehearing and/or Clarification, July 16, 2002, at p. 5. BPL Internet access service is used in the same manner, and for the same purpose, as cable modem Internet access service and DSL Internet service, and should therefore be subject to the same common rate for pole attachments.

2. Use of Utility Employees and Facilities for which no Rate has been Defined by Regulation

Electric utilities should be compensated at their fully allocated costs whenever utility employees perform services which solely benefit BPL, or when BPL companies use facilities that cause the utility to incur an incremental cost, but which are not tariffed or subject to rates defined by regulation (such as by storing BPL equipment in a utility-owned warehouse). For example, if utility employees install BPL equipment, such work should be billed to the BPL provider at an hourly rate based on the utility's fully allocated costs. The same principles would apply in the case of other line crew work, such as when a utility crew repairs a fallen pole, but is also able to efficiently reattach BPL equipment while the crew is on site.[54]

A critical factor, however, is that charges for work by utility employees should be imposed on BPL only when the work is done specifically to benefit BPL. Thus, for example, during the course of BPL installation work, a utility employee may discover faulty electric distribution equipment such as a broken insulator or loose connection, which must be remedied for utility reliability or safety purposes regardless of any plan for a BPL attachment. In that situation, the cost associated with such repair or correction work – the purpose of which is to

[54] Such a process not only generates revenue for the electric utility, but avoids a separate dispatch of a BPL crew (at a likely higher cost), and returns customers to service much more quickly.

comply with electric system requirements – should be borne by the electric utility. Utility ratepayers benefit nonetheless, both because a needed repair is made and because the cost of the "truck roll" necessary to make it is partially borne by the BPL provider. Conversely, where the sole purpose of any work is to benefit the BPL system, the BPL operator would be responsible for, and pay the utility at, fully allocated cost.

3. **Access To Distribution Lines**

Economic efficiency, and parity with other broadband Internet access providers, precludes imposition of any "access fee" for use of the electric utility's wires to carry BPL.

As a matter of economic principle, charges should be based on true economic, or incremental, costs. Critically, in the case of BPL, there is no incremental cost to the utility associated with the BPL operator's transmission of data signals over the electric wires. Retail electric customers are already paying 100 percent of the cost of those wires, which is proper because the need for electric customer connectivity is what causes the electric utility to incur the cost of the wires, and this need will persist whether or not BPL is deployed.[55] CURRENT does not pay "access fees" for use of electric distribution wires in its Ohio

[55] A BPL operator does not cause any degradation in the useful life or functionality of the power lines, transformers or other electric distribution network facilities.

deployment and will not be doing so in its upcoming deployment in Texas, and no reason exists to require payment of such fees in New York.

In the analogous situation involving payments for use of the high frequency portion of the local loop ("HFPL") to provide DSL services, ILECs – including Verizon – determined that cost to the telephone company for a third party's use of the HFPL was zero. Accordingly, this Commission approved a zero charge for use of the HFPL when Verizon (then Bell Atlantic) line sharing rates were established, and CLECs were required to pay nothing for the use of the HFPL of Verizon's local loops.[56] The overwhelming majority of the other states reached the same conclusion. [57]

Consistent with the Commission's goal of nondiscriminatory treatment of broadband providers, it should reject BPL wireline access fees. No service in a competitive market can effectively compete while being charged for non-existent "costs," while competitors do not face such charges. As in the case

[56] *See*: Case 98-C-1357, Loop Resale Proceeding, Opinion and Order Concerning Line Sharing Rates, May 26, 2000, at p. 9.

[57] Virtually every other state has also found the appropriate charge for use of the HFPL is $0. *See, e.g., Investigation concerning Illinois Bell Telephone Company's compliance with Section 271 of the Telecommunications Act of 1996*, Docket No. 01-0662, 2003 Ill. PUC LEXIS 188, at *197 (February 6, 2003); *In re Qwest Corporation*, Docket No. RPU-01-6, 2002 Iowa PUC LEXIS 113, at *20 (March 25, 2002); *In the Matter of the Application of Qwest Corporation for Commission Determination of Prices for Wholesale Facilities and Services*, Docket No. 00-049-105, 2002 Utah PUC LEXIS 89, at *22 (June 6, 2002); *Proceedings on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements*, Case 98-C-1357, 2000 N.Y. PUC LEXIS 539 (May 26, 2000). Open Access to Bottleneck Services, California Draft Decision 03-01-077, 2003 Cal PUC Lexis 80, at 44-58 (January 30, 2003).

of the HFPL, wire access charges would simply be inefficient and unwarranted, and would distort the competitive market.[58]

Rejection of wireline access fees does not mean electric utility ratepayers will not be fully compensated for the use of electric utility assets. BPL providers will pay pole attachment and conduit fees to the same extent other users of utility property compensate the utility. Through fees for the use of utility line crews or for the use of other assets, in each case to the extent used, the BPL operator will further compensate the utility for the costs the utility incurs.[59] And, in fact, because charges will be based on fully allocated costs, it is more than likely electric utilities will receive revenues above and beyond their incremental costs in these areas.

4. Repairs or Improvement to Electric Plant to Meet Electric Safety and Operational Requirements

As discussed earlier, it is not uncommon, when inspections or installations are performed in connection with BPL deployment, for the utility or BPL operator to discover safety violations or other deficiencies in the utility's

[58] Similarly, CURRENT also urges the Commission to reject the imposition of fees for attachment of BPL equipment inside underground transformer housings. Such attachments impose no additional costs on utilities or ratepayers and, in contrast to assets such as pole attachment conduit space, neither the utility nor any other party can make any economic use of such space.

[59] Utilities also stand to realize new sources of revenue through the use of underutilized utility assets such as utility-owned dark fiber. *See* Comments of San Diego Gas & Electric Company, p.22 filed November 3, 2005 in California PUC Rulemaking 05-09-006, *Order Instituting Rulemaking Concerning Broadband Over Power Line Deployment By Electric Utilities In California*.

existing plant (such as a cracked insulator or improperly secured wiring). In such situations, the utility is required to remedy those conditions as an integral part of providing safe and reliable electric service, regardless of whether BPL (or anything else) is attached to utility facilities. The attachment of BPL facilities cannot be deemed the "but for" cause of such repairs; indeed, just the opposite is true. The repairs are required whether or not BPL is being considered, and in those circumstances, the costs of repair or required remediation, which directly benefit the electric system, should not be charged to BPL.[60]

5. Investment of Utility Funds and Allocation of Risk and Reward

As discussed earlier, the public interest does not require that electric utilities or their affiliates be precluded from owning, operating, or investing in BPL systems.[61] Each electric utility should be free to determine the BPL business model best suited for its system, customers, and shareholders.

Where a utility does choose to invest in BPL, it should be placed in the same position as any other investor: If shareholders assume the risk of an investment, they should also be able to reap any rewards. To determine otherwise

[60] It can be the BPL provider's personnel or contractors who detect, and correct, deficiencies in the electric distribution system. In such circumstances, a utility and a BPL provider should be able to agree to terms upon which the BPL provider's personnel will make repairs to the electric distribution network. Electric ratepayers would benefit significantly by having such problems fixed immediately, without having to wait for the utility to dispatch its own repair crew at greater expense.

[61] The Texas statute, for example, specifically permits affiliates of electric utilities to own, construct, maintain, and operate a BPL system (Texas Utilities Code, §§ 43.051 and 43.052).

could prove a great disincentive for electric utilities participating in, or even permitting, deployment of BPL on their systems. It would also distort market signals and potentially deprive the BPL industry of critical sources of investment funding necessary to bring the benefits of BPL to the residents of New York.

Because the regulatory regime developed by this Commission should affirmatively promote BPL deployment – and remove any artificial barrier to its development – electric utilities should be permitted to participate as owners or operators of BPL, allowing them to be investors if it is consistent with their view of marketplace risks and rewards.

VIII. Other Regulatory Requirements And Considerations

3. Mandatory access to non-electric utility poles and conduits

Although in the majority of cases, BPL equipment likely will be attached to the facilities of the hosting electric utility, with payment at non-discriminatory, standard pole attachment or conduit occupancy rates, BPL providers will virtually always also be dependent on making attachments to utility poles belonging to other entities, particularly those of incumbent local exchange carriers.[62] Since those attachments to ILEC poles are absolutely essential to deployment of BPL, BPL providers must be assured of the right of attachment and use.

[62] An example would be attachment of the BPL provider's fiber optic or wireless "backhaul" equipment.

Section 119-a of the Public Service Law grants jurisdiction to this Commission over "attachments to utility poles and the use of utility ducts, trenches, and conduits." All attachments are covered by this provision, not just attachments by cable TV or telecommunications companies.

This Commission has previously held that utilities have a duty to accommodate attachments by non-utilities on a non-discriminatory basis.[63] The rationale for this policy – and its advancement of the public interest – are as applicable today as in 1979. Accordingly, the Commission should make clear that the pole attachments and conduit use required by BPL providers is to be granted by owners of utility poles and conduits on the same basis as they are made available to cable TV and telecommunications companies. This includes the ability to be covered by the pole or conduit owner's existing franchises, easements, and authorizations to the extent such existing easements have been interpreted to allow placement of facilities of any entity other than the pole or conduit owner. *See, e.g.*, Capital Cablevision v. Hoffman, 82 M 2d 986 (1975) *aff'd* 52 AD2d 313 (1976). BPL facilities must be subject to the same treatment.

[63] See Case 27294 – Attachment of ITT Terryphone Facilities to Rochester Telephone Corporation Poles – "Order Determining Regulatory Policy For Attachment of Private Use Facilities to Utility Poles", August 8, 1979.

BPL can be deployed in New York only if BPL providers have the right to attach to all utility poles (specifically including ILEC poles) and use all utility ducts and conduits, (again, including ILEC ducts and conduits) on the same terms as the cable TV and telecommunications firms against which BPL will directly compete. This result can and must be achieved regardless of the final regulatory classifications determined for BPL.

2. Regulation of BPL Providers and Service

In considering the regulatory regime that it will apply to BPL, the Commission should be guided by a simple principle: A service provided via BPL should be regulated no more onerously than an equivalent service provided via a other technologies. Broadband over power line is a technology that, like coaxial cable, twisted-pair copper wire, and fiber optic cables, can be used to deliver a variety of services. Internet access service provided via BPL, for example, requires no unique regulatory intervention as compared to Internet access provided via cable modem, DSL or other media. As the FCC concluded in determining that DSL Internet access should be classified in the same manner as cable modem service: "what matters is the finished product made available through a service rather than the facilities used to provide it."[64] Similarly, nothing about VoIP or other services delivered via BPL calls for more onerous regulation than do similar

[64] *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities*¸ Report and Order and Notice of Proposed Rulemaking, CC Docket No. 02-33, 2005 WL 2347773, September 23, 2005 at ¶16.

services delivered via other technologies. Indeed, if there is a pertinent difference in services provided via BPL, it is the fact that broadband over power line is a nascent technology that (unlike its primary competitors) does not have a large base of existing customers over which to spread the fixed costs of regulatory compliance.

IX. Conclusion

This Commission has long pursued a policy of putting into place "the framework for a robust, dynamic competitive telecommunications market in New York".[65] The Public Policy of this state includes a "strong preference for competitive markets as the most effective approach to ensure the provision of reasonably priced and reliably provided telecommunications services," and "during the transition to competitive markets, the degree of regulation needs to be flexible. Where competition is robust, regulatory restraint is the best approach…"[66]

BPL technology has come of age, and, if allowed to be deployed in New York under those pro-competitive policies, will result in state-of-the-art technology being used to enhance the extent, quality, and pricing of broadband Internet access services available to millions of New Yorkers. At the same time, deployment of BPL will enable the offering of Smart Grid services to electric

[65] Case 94-C-0095, Competition II, "Opinion and Order Adopting Regulatory Framework," May 22, 1996 ("Regulatory Framework Order") at p. 1.
[66] Case 05-C-0616, Competition III, Initiating Order, at p. 2.

utilities, with the attendant benefits of more efficient and reliable electric distribution networks.

Under the correct regulatory structure BPL will flourish. To achieve that result, this Commission should affirmatively encourage BPL deployment in accordance with the approach presented herein.

Respectfully submitted,

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