

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

At a session of the Public Service  
Commission held in the City of  
Albany on January 18, 2006

COMMISSIONERS PRESENT:

William M. Flynn, Chairman  
Thomas J. Dunleavy  
Leonard A. Weiss  
Neal N. Galvin  
Patricia L. Acampora

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

ORDER INITIATING PROCEEDING AND INVITING COMMENTS

(Issued and Effective January 25, 2006)

BY THE COMMISSION:

INTRODUCTION

Technological advances have dramatically changed the telecommunications industry and markets within New York. Consumers in New York are already benefiting from the existence of a competitive marketplace which offers considerable telecommunications service choices, many of which are based upon differing technological platforms. We are currently addressing many of these significant events and their implications in Case 05-C-0616 (Competition III).<sup>1</sup> One area where rapid development and change is occurring is in the provision of broadband services to the public. Customers may already have the ability to receive broadband services through a variety of technologies. Telephone companies provide Digital Subscriber Line service

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<sup>1</sup> Case 05-C-0616, Proceeding on Motion of the Commission to Examine Issues Related to the Transition to Intermodal Competition in the Provision of Telecommunications Services, Order Initiating Proceeding and Inviting Comments (issued June 29, 2005).

(DSL) using unshielded twisted pair copper wire. Cable television companies provide cable modem service, using fiber optic and coaxial copper cables. Broadband services are available from cellular, Personal Communications Service (PCS), WiFi hotspot and satellite providers using radio technologies. These services reach approximately 95 percent of New Yorkers<sup>2</sup>. Soon, customers may have an additional option as the provision of broadband services over electric utility power lines and systems (BPL) becomes economically and commercially feasible. The provision of these services from a competing alternative technological platform could provide significant benefits to New York State residents.

There are currently two commercial BPL deployments in the United States. Cinergy provides BPL-based services in the Cincinnati, Ohio area to an estimated 50,000 customers. The City of Manassas, Virginia provides municipal BPL service to about 1,200 customers. In New York, there are two active trial deployments of this technology. Consolidated Edison has deployed BPL technology in Briarcliff Manor, New York, as well as parts of Manhattan, and Orange County. New Visions PLC, LLC has deployed BPL technology in Solvay, New York. An additional trial offering of BPL service in Penn Yan, New York by Data Ventures, Inc. was discontinued in June 2005. Finally, several states have taken actions to encourage BPL deployment: California has established a rulemaking proceeding concerning BPL and Texas has modified certain statutes that affect the deployment of BPL technology.

We noted in our June 9, 2005 Order initiating Competition III our goals of establishing a flexible regulatory framework that promotes innovation and encouraging economic investment in the state's telecommunications infrastructure<sup>3</sup>. The provision of broadband services to customers through the use of a regulated electric utility's power lines, poles, and ducts raises a number of traditional questions related to the appropriate

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<sup>2</sup> Id. at p. 7.

<sup>3</sup> Id. at pp. 5-6.

role of regulation. However, BPL raises unique issues which we have not previously considered. As a result, we wish to consider these new and unique issues and are instituting a proceeding today to investigate the potential for use of BPL technology in New York, to identify the key regulatory issues posed by BPL, and to begin to develop the appropriate regulatory response to these issues.

As we commence this proceeding, we are mindful of two of our long-standing regulatory principles. First, we presume that competition is the most efficient way of ensuring the provision of quality utility services at reasonable prices. Second, structural separation of regulated and unregulated operations by electric and gas utilities or divestiture of unregulated assets are the most effective way of preventing self-dealing issues, the exercise of market power, and other potential abuses that may arise when competitive operations are affiliated with rate-regulated utility monopolies. With these principles in mind, we establish the following tentative conclusions:

1. Economically viable BPL services will benefit New Yorkers through the provision of broadband services from a new facilities-based platform.
2. Electric utilities should not directly provide BPL services to the public. Rather, they should explore ways of granting unaffiliated BPL providers appropriate access to the electric system at market determined prices.

We are also cognizant of the potential benefits that BPL could provide electric utilities and their customers at some point in the future. More specifically, BPL may benefit New Yorkers by providing a technology which electric utilities could use to gain instantaneous access to customer and grid-specific telemetry. There are many potential applications for this information, not the least of which would be to identify and resolve distribution system issues before they become significant problems.

BPL poses a myriad of technical and regulatory challenges, some of which are traditional and some of which are unique to the technology. In general, these interrelated challenges center on four avenues of inquiry:

1. The current status of BPL technology and the implications of likely technological developments, over the next 2-3 years, on its deployment,
2. The electric and telecommunications safety and reliability issues raised by BPL's use of overhead and underground electric utility facilities (the electric utility system),
3. The most workable business model/arrangements for deploying and providing BPL-based services to the public, and
4. The appropriate regulatory framework to encourage the economic development and deployment of BPL technology.

We seek comment from all interested parties on the specific elements of these issues that are discussed as discussed in greater detail within this Notice, and we encourage parties to raise other issues that they believe are relevant to our overall inquiry.

#### STATUS AND DEVELOPMENT OF BPL TECHNOLOGY

We need to understand the technical characteristics of currently available and expected BPL systems as well as the capacity, performance, robustness, and security offered by these systems. We also need to understand the impacts the use of BPL technology may have on the operation of the power system and on the general public. Therefore, we seek comments from interested parties to assist us in understanding the technology and formulating appropriate policies for its deployment.

There appear to be a number of vendors of BPL systems, and that these systems make use of different portions of the electric system. The FCC in its rules<sup>4</sup> has identified two basic types of BPL technology – Access BPL and In-house BPL. We seek information, particularly from BPL vendors, on the types of available systems and each system's utilization of the Medium Voltage and Low Voltage networks of the electric system, as well as customer home wiring. Commenting parties should identify the capacity, performance, robustness, and security of the particular BPL system being

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<sup>4</sup> 47 C.F.R. Part 15, Subpart G.

described. The technical requirements for electric company facilities utilized by the BPL system should also be identified.

In addition, we seek information on other technologies that may be used as part of these systems, including wired technologies such as fiber-optic based systems, and wireless technologies such as WiFi and WiMax. Finally, we seek comment from BPL operators whether the technology they propose to use is developmental in nature or whether it is currently in full commercial production. This information will help us determine appropriate market structures for the offering of BPL-based services.

Because BPL is a developing technology, a complete set of guidelines or standards for its appropriate use might not exist. We seek comment on the currently applicable guidelines and standards for the use of BPL technology, as well as the development of guidelines and standards by government and standards-setting organizations. We need to understand whether BPL operators will have sufficient safeguards and guidance for the appropriate use of the available technology.

#### SAFETY AND RELIABILITY OF SERVICE

The deployment of BPL technology creates a number of unique challenges related to the safety and reliability of electric service. The most basic issues center on the interface of BPL equipment with the electric system. The parties should address how the deployment of BPL technology affects the safety and reliability of the existing electric system. What are the applicability of existing national safety codes to BPL systems and the possibility that such codes may need modification to address BPL interfaces? Finally, should BPL equipment that is attached to the electric system meet some minimum standards to assure public safety? If so, what are those standards, how might they be developed, and how would BPL equipment be tested to assure compliance with such standards?

There are also logistics considerations concerning BPL deployment related to the qualifications of those workers who will install, maintain, and improve the BPL system, the physical limits of space available on and in existing electric utility facilities, and the potential need for modifications to accommodate BPL. The parties should

consider in their comments whether installation and maintenance of BPL systems should be restricted to electric utility certified personnel and/or other qualified personnel. To the extent parties believe that other qualified personnel should be provided access to the electric utility system, they should describe the criteria and process used to assure such qualifications. Commentors should also describe the minimum physical clearance required between BPL equipment and existing electrical, telephone and cable television (CATV) equipment, the overhead pole space that is actually available for BPL service, the physical underground manhole space allocation for placing BPL equipment, and any other make ready work which may be required before BPL systems can be installed.

BPL may create interference for or be affected by interference from electrical equipment, including vacuum cleaner motors, light dimmers, electric heater thermostats or power line communications systems such as baby monitors, intercoms or private computer networks located inside or outside of a customer's premises. Commentors should address the extent of such interference and its effects, including the creation of harmonics that could impair electric utility power quality. The parties should address the extent to which a BPL provider, the utility, and the electrical equipment user should be required to mitigate such interference. Similarly, what is the obligation, if any, of any party who operates a conducted power line communications system within their premises to remedy interference with BPL services being provided to another customer on the same general electric utility circuit (e.g., within an apartment complex or an adjacent home)? Who should be ultimately responsible for any unknown problems or issues that arise on an electric utility customer's premises due the new BPL system (e.g., interference with existing customer owned systems such security or fire alarms)? What is the appropriate forum for resolution of disputes concerning interference or power quality issues arising from operation of BPL systems?

BPL's unique interface with the electric system can allow the creation of various applications beneficial to electric utilities and their customers. Some potential benefits include improved transmission and distribution service quality/reliability, improved power quality, enhanced system monitoring, and better demand side

management opportunities as a result of instantaneous access to customers' metering telemetry. The parties should identify potential applications of BPL technology that could benefit electric utilities and their customers and whether the communications capacity needed to provide such services might impact the provision of BPL-based communications service to customers. Commentors should consider how BPL technology would be used to provide benefits to the electric utility system and electric utility customers. Commentors should also describe the equipment needed, the actions necessary to install and operate such equipment and the economics of such arrangements for electric utilities and their customers.

The reliance of BPL on the electric system raises communications reliability issues. Parties are asked to consider whether the BPL system is only as reliable as the electric grid or whether there are ways that BPL systems can be operated with battery backup in the event that electric utility power is disrupted. Similarly, to what extent will BPL systems be designed to assure a degree of communications reliability through commonly used telecommunications techniques such as: route diversity, alternative carrier interconnection arrangements and back-up power systems?

#### BUSINESS MODEL: STRUCTURAL CONSIDERATIONS

Many potential business arrangements could be used to provide BPL-based services to the public. At one extreme, the regulated utility may directly invest in BPL assets, deploy the technology and provide the service to the public. At the other extreme, the regulated utility may have no BPL involvement other than receiving compensation for granting the BPL provider the right to access its poles and wires. There are many variations within this range; including approaches that would have an affiliate of the utility provide BPL services to customers, or in the alternative, participate in a market based process to determine the party which ultimately obtains access to the utility system. This range of potential business models creates a diverse spectrum of potential regulatory responses. For example, the level of regulatory oversight and resources required to assure that ratepayers are unharmed by BPL initiatives appears much greater when the

utility or an affiliate provides BPL service than it would under an approach in which the utility is paid a fee by an independent BPL provider.

We believe that the most appropriate business model to deploy BPL-based services is one in which the incumbent electric utility is not the BPL provider, but rather leases or sells access rights for its system to business entities with the expertise, experience and resources to bring BPL service to the public. Given this belief, we establish a tentative conclusion that a business structure which includes the least level of direct electric utility involvement is best suited to facilitate the timely and economic deployment of BPL technology.

We reach this tentative conclusion about business structure based on a variety of considerations. First, we have consistently preferred the structural separation and/or divestiture of unregulated utility operations from the core utility business as the most effective means of avoiding cross subsidization issues that may not only result in overcharges to ratepayers, but also foster anticompetitive practices. Second, the level of regulatory oversight and resources required under an approach where the utility or its affiliate provides BPL service is significant. The amount of time, resources and costs incurred when addressing such regulatory issues could act as impediment for the timely deployment of the technology. Such a result is not in the best interests of New York State utility consumers. Finally, while many energy utilities have made investments in competitive affiliates, it is our impression that the majority of such investments have been marginally successful at best. Therefore, it is not clear that regulated electric utilities are best suited to address the challenges associated with rolling out a new communications technology. Combined, these considerations indicate that the public interest may be best served when incumbent electric utilities are not actively involved in the provision of BPL services to existing electric utility customers. The passive approach identified in our tentative conclusion is a more realistic business approach for electric utilities given our concerns noted above.

Commentors should address the specific regulatory ramifications of its preferred business model in response to our regulatory framework inquiries, which are discussed later in this Notice. We also request that commentors identify any regulatory, legal, or practical impediments to the degree of structural separation reflected in our tentative conclusion.

#### BUSINESS MODEL: ROLES AND RELATIONSHIPS

The effective deployment of BPL technology also requires the identification and definition of the financial and operational roles and relationships between the BPL provider, the incumbent electric utility, and any other relevant market participants. These roles and relationships include:

1. The responsibility for installing, maintaining and improving the BPL system,
2. The responsibility for resolving customer service and collateral service issues/complaints,
3. The development and installation of technology to provide enhanced energy management services to the electric utility and its customers via the BPL system, and
4. The responsibility for billing and collection services.

Our tentative conclusion concerning structural separation implies no involvement by the incumbent electric utility in any of these roles and relationships. However, the new and unique nature of BPL technology and its potential challenges may require some utility involvement, at least the short run. Commentors should explain the nature and extent of expected utility involvement in this area.

There are obviously many steps required to deploy, maintain, and improve a BPL system. We seek comments identifying the party responsible for each step, the financial arrangements required to address such responsibilities, and the ratemaking/regulatory oversight issues that may occur if utility personnel and/or other resources are in any way required in any of these steps.

BPL customer service responsibilities are a significant consideration. While there are traditional customer service considerations, there also appear to be new issues caused by the potential effects of the technology on the functionality of other customer owned equipment. Moreover, there may be collateral service issues if BPL affects the functionality of equipment owned by others whose premises are in close proximity to the BPL customer and/or the BPL system. It is imperative, therefore, that the parties focus not only on identifying any significant customer service considerations for BPL, but also the general type of business and financial arrangements required to address such considerations. To the extent that utility personnel and/or resources are required, parties should identify any ratemaking/regulatory oversight issues created by such involvement.

Electric utilities and their customers could, at some point in the future, benefit from BPL technology that is used to access customer and electric system telemetry. Parties' comments should consider the business and financial relationships between the BPL provider and the incumbent electric utility necessary to preserve the ability to make such improvements when the technology becomes available. Because it is likely that utility personnel and resources will be used under this initiative, the comments should address any relevant ratemaking/regulatory oversight issues.

Billing and collection issues related directly to customers are likely to be addressed as part of the Competition III proceeding. However, parties may offer comments here if they believe that there are billing and collections specific to BPL services which the Competition III proceeding has not addressed. To the extent that parties offer comments which require the use of utility personnel and/or resources, they should identify the relevant ratemaking/regulatory oversight issues.

Finally, we note that there may be other topics related to business roles and responsibilities which parties wish to address. We encourage such comments and request that any additional comments offered address the operating, financial, and regulatory subject matter we have previously discussed.

We support the expeditious deployment of economically viable BPL technology with a minimum of regulatory oversight. We note that the greater the amount of separation between the incumbent electric utility and the BPL provider, the lesser the need for regulatory oversight and intervention. Moreover, we believe the scope of the comments on these topics is limited by our tentative business structure conclusion. However, we also recognize that some parties may support an alternative business structure. If so, their comments on business roles and relationships should not only present their basic position but also explain the extent to which these roles and relationships are linked to the alternative business structure which they support.

#### ELECTRIC UTILITY REGULATORY ISSUES

The regulatory framework applicable to BPL is ultimately dependent on the business structure used to deploy it, the characteristics of the technology itself (that is, how it interfaces with electric utility plant), and the roles and responsibilities of the market participants. We stated the tentative conclusion that electric utilities should not be directly involved in the provision of BPL services to the public, but rather seek to lease or sell access rights to their power lines to BPL providers. This tentative conclusion also narrows the complexity and scope of the regulatory framework required for electric utilities whose lines are also used to provide BPL services. Because of this, our inquiry into electric utility regulatory issues centers on the following considerations:

1. Use of existing electric utility personnel and resources to support BPL in any manner,
2. Incremental electric utility costs caused by BPL deployment, and
3. Cost of BPL access to the utility system.

The deployment and operation of BPL technology may require the use of utility personnel and/or resources. The magnitude of these requirements is unknown at this time, because it is dependent on the roles and relationships established in the business model. Nevertheless, it is in the public interest to develop a definite set of guidelines addressing the identification and appropriate treatment of such costs.

Therefore, we ask the parties to consider the types of costs that might fall into this category, the process used to identify such costs and the appropriate funding source to pay these costs. In a similar vein, we also ask the parties to consider these questions while keeping in mind the possibility that the BPL provider might use some of its personnel and/or resources to benefit the electric utility.

The deployment and operation of BPL technology may also cause the utility to incur incremental costs that it would not have experienced absent BPL. Once again, despite the fact that the level and magnitude of such costs is unknown and highly dependent on the roles and responsibilities established in the specific business model employed, it is in the public interest to develop a set of guidelines addressing the identification and appropriate treatment of incremental electric utility costs as the result of BPL deployment. We ask the parties to consider in their comments the types of incremental costs that the electric utility might incur, the process used to identify these incremental costs and the appropriate funding source for such costs.

A key element of BPL technology is its interface with the electric system's poles and wires. We believe that there may be intrinsic value to BPL providers in gaining access to and using electric utility assets and that this value is dependent on the economics of BPL technology, rather than a formulaic allocation of sunk utility costs to the BPL provider. As a result, we ask the parties to indicate those electric system components to which a BPL provider would require access. Are current tariffs and pole attachment rates reasonable charges for BPL providers? Should BPL providers pay other fees to access and use various components of the electric utility system?

Additionally, we request the parties to consider how such a fee should be developed. We are concerned that any access charge based on historic utility costs may not accurately capture the value of such access. We believe that an access fee based on the results of a competitive process is more likely to produce a reasonable result. We seek comment on how such a process might be structured. Lastly, to the extent that the electric utility receives payments for the use of or access to its assets, should such proceeds be available

for the benefit of electric customers? We encourage parties to present options for competitively pricing the use of and/or access to the electric system by the BPL provider.

While we believe that the most pressing electric utility regulatory issues are addressed in this Notice, we encourage parties to raise other pertinent issues in this category which they believe we should consider. We also note that some parties may prefer a different business model for deploying BPL services and offer it in their comments. To the extent such models require greater involvement by utilities and therefore greater use of utility resources in deploying, maintaining, and improving the BPL system, we expect those parties to describe the appropriate regulatory framework for such situations where the utility and the BPL provider are more closely related.

#### OTHER CONSIDERATIONS

The scope of the issues raised by BPL technology is quite wide. It is possible that there are important issues related to the deployment of BPL technology which are not addressed in this Notice. In order to assure as complete a record as possible, we encourage all parties to consider the scope of the issues and to identify any other matters which they believe are in need of resolution before the deployment of BPL technology goes forward.

#### CONCLUSION

Many New Yorkers are already benefiting from a robust telecommunications market which offers customers numerous choices. While broadband services are currently available from several competing technological platforms, the use of BPL technology on the electric utility system may provide the public unique benefits. At the same time, this very same characteristic also raises certain unique regulatory challenges. To more clearly understand the technology, its potential uses, and the regulatory issues it may create, we need advice and assistance from all potentially affected parties.

Parties wishing to comment in response to this Order should file written comments with the Commission Secretary no later than 45 days after the issuance of this Order.

The Commission orders:

1. A generic proceeding is initiated to address the issues discussed above, and comments from the affected industries, interested parties, and the public are sought as set forth in this Order.

2. Parties that wish to receive comments of other parties in this proceeding shall provide the Secretary their name, mailing address, telephone number and e-mail address within 30 days of this order. The Secretary will post a service list on the Commission's web site and parties filing comments shall file, within 45 days of the issuance of this order, 15 copies of their comments with Jaclyn A. Brillling, Secretary, at Three Empire State Plaza, Albany, New York 12223-1350, and shall also serve copies electronically or by mail to the parties on the service list posted on the Commission's web site. Electronic service on parties is permissible unless a party notifies the Secretary when it provides its name that such service is unacceptable and the Secretary so notes in the service list posted on the web site.

3. The Secretary is authorized to extend these deadlines.

4. This proceeding is continued.

By the Commission,

(SIGNED)

JACLYN A. BRILLING  
Secretary