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Telecommunications Law Update

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Broadband Over Power Lines: Plugging in the Third Wire to the Home

On October 28, the Federal Communications Commission issued new rules for Access Broadband over Power Line (BPL) service and equipment, removing a major hurdle to deployment of broadband service by electric utilities. BPL uses existing electrical delivery wires, so it has the potential to reach virtually every home and business in the United States. Although deployment will take time, BPL is the "newest, new thing" because it could become a viable "third wire" into the home, offering robust, ubiquitous competition to existing broadband services. In addition, BPL may become the best broadband option for expensive-to-serve rural markets where other broadband infrastructure has not been widely deployed to date. At the same time, BPL may help electric utilities improve the operation of their electricity networks and reduce wasted electricity consumption.

The basic technology behind BPL is rather old, having been used to varying degrees for over fifty years. However, it could not support commercial service before recent developments in modulation techniques and microchip technology. BPL uses the electromagnetic frequencies inherent in the distribution of electricity to transmit signals. Although specialized equipment is required to filter out interference, the basic principle is similar to other wired communications.

The prospect of using electrical wires to distribute broadband communications has created controversy concerning potential interference with wireless services. Power lines generate low levels of radiofrequency emissions during normal operation. These emissions generally are within FCC limits, although there are occasional interference issues between utilities and wireless operators. However, many amateur radio and public safety wireless users fear that adding broadband transmissions to power lines will greatly increase interference and substantially disrupt licensed radio signals. Their basic concern is that power lines will act as powerful antennas radiating the emissions from the broadband signals far and wide.

Earlier this year, the FCC opened a proceeding on these interference issues to determine whether to allow BPL to go forward and, if so, how to do so without compromising radio services. Amateur radio and public safety users and associations representing their interests filed over

6,000 comments with the FCC opposing BPL. While supporting the deployment of BPL, the National Telecommunications and Information Administration (NTIA), Federal Emergency Management Agency (FEMA), and the National Academy of Sciences all advocated caution as well. Not surprisingly, electric utilities and BPL equipment vendors overwhelmingly supported deployment of BPL services and devices. They argued that interference concerns have been exaggerated, pointing to the absence of complaints arising out of several field trials, the largest of which are in Manassas, Virginia and Cincinnati, Ohio. The electric utilities also uniformly argued that the FCC should minimize regulatory intervention to foster BPL deployment.

In its October 28 order, the FCC adopted rules designed to facilitate BPL deployment while addressing interference concerns. Although there are only a handful of BPL trials going on today, the basic rules the FCC established in this order should clear the way for this new service to begin expanding into a serious broadband alternative. The highlights of the FCC's decisions are as follows:

1. BPL devices must be capable of "notching"—avoiding emissions on a specific frequency in a particular area—and remote adjustment or shut down of any unit;

2. To protect aeronautical communications, BPL systems must not generate emissions in certain "excluded frequency bands;" emission in certain geographic "exclusion zones" likewise is prohibited to protect Coast Guard and radio astronomy stations;

3. BPL operators must consult with public safety officials in order to implement the BPL system in such a manner that it does not cause harmful interference in those frequencies used by public safety agencies in areas served by the BPL system;

4. A publicly-available notification database of the locations of BPL lines will be established to "facilitate an organized approach" to identifying and remedying harmful interference;

5. Equipment for BPL systems is subject to FCC certification—which requires manufacturers to submit test results to the Commission—rather than verification, which requires only that equipment manufacturers keep copies of emissions test results; and

6. Improved measurement procedures must be followed to certify BPL equipment complies with FCC emissions limits.

The new rules generally have the support of utilities and BPL providers. The Chairman of the Powerline Communications Association stated that the FCC "did a marvelous job" in balancing the needs of the industry and the concerns of the various interested parties. Even industry parties that opposed FCC regulation generally accepted the Commission's certification requirements for BPL equipment, the database requirement, and establishment of enhanced interference mitigation techniques. However, given the passion with which public safety and amateur radio groups oppose BPL, there is a real risk that the FCC's decision will be appealed.

This proceeding is only the first of BPL proceedings likely to come. The FCC addressed only interference issues; because the technology is nascent, the FCC declined, in this order, to address other legal and regulatory issues posed by BPL, choosing instead to "allow the marketplace to develop the full potential of this technology." Commissioner Copps dissented in part from the FCC's decision, expressing his concern about the failure to consider other legal issues, such as whether electric ratepayers will be asked to pay more for their electricity to subsidize the deployment of BPL. This issue is likely to attract more attention as BPL deployment gains

momentum. In their joint press release following the FCC's October 14 meeting, Federal Energy Regulatory Commission Chairman Pat Wood and FCC Chairman Michael Powell called on electric utilities to avoid improper cross-subsidization. But the issue is complicated: regulators from Michigan and New Jersey (who, like most state regulators, have responsibility for both electric utilities and local telecommunications providers) indicated recently that they "would be open to splitting the costs of BPL deployment" between electric utility ratepayers and BPL customers since adding intelligent networking capabilities to the power grid will benefit electricity customers.

Other regulatory issues likewise remain unresolved. The FCC did not address the regulatory classification of BPL—telecommunications service or information service, for example—an issue that may turn on the resolution of the *Brand* X case pending before the Supreme Court. Related issues concerning BPL, such as the extent to which providers will have universal service, disabilities access, CALEA, and other regulatory obligations, also must be resolved in future proceedings. Thus, the FCC's decision is just the first step of many. As BPL expands, federal and state regulators will be forced to address these issues and BPL's existing broadband competitors will be watching carefully. One of the most interesting aspects of BPL might turn out to be how the "third wire" affects the regulatory playing field for all broadband players. The FCC's decision brings the answer to that question a step closer.

If you would like more information, please contact any of the following lawyers:

Lynn R. Charytan +1 (202) 663-6455
lynn.charytan@wilmerhale.com

Jeffrey S. Lanning* +1 (202) 663-6477
jeffrey.lanning@wilmerhale.com

Daniel Zibel** +1 (202) 663-6053
daniel.zibel@wilmerhale.com

* *Admitted to practice only in the State of New York.*
Supervision by members of the firm who are members of the D.C. Bar.

** *Not yet admitted to practice in any jurisdiction.*
Supervision by members of the firm who are members of the D.C. Bar.