

# SUNDAY NEWS

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February 27, 2005, Sunday

BUSINESS, Pg. D-1

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## Coming soon, maybe, to a wall socket near you: broadband

One of these days, you might have a "third pipe" into your home.

We're talking broadband, not sewer or water; in parts of Pennsylvania, and maybe coming to Lancaster County in the not-too-distant-future, high-speed Internet access is available via the nearest wall socket.

Termed "broadband over power lines," BPL for short, the new technology permits Internet data to be transmitted over an electric utility's power lines; PPL Corp., via its subsidiary PPL Telecom, has been at the forefront of testing and deploying BPL; the company now has "hundreds" of subscribers, most of them in Emmaus, Bethlehem and other communities near the company's Allentown headquarters, said PPL spokesman John Levitsky.

The company began testing the service in 2003. "We had some early successes, but we're still trying to fine-tune the technology," Levitsky said. There are no immediate plans to roll it out here, he said.

The principle behind BPL - which also goes by the name power line communications (PLC) and power line broadband (PLB) - is simple. Electricity courses over the low-frequency portions of power lines, leaving room for data to stream over higher frequencies. Utilities have long sent basic network maintenance data across their lines at low speeds. By installing more sophisticated equipment, they can send and receive data at faster speeds.

However, BPL can interfere with certain radio frequencies, including those used by ham radio operators.

Last October, the Federal Communications Commission praised BPL as a broadband competitor that will bring prices down and spur competition; at the same time, it required providers to use devices that can switch frequencies if they cause interference and can be shut down remotely.

FCC rules also prohibit BPL from operating on certain bands that might interfere with

aircraft receivers, Coast Guard or radio astronomy stations.

While BPL is currently capable of speeds of 2 or 3mbps, Penn State engineers in January announced that they had created a computer model where BPL speeds approached a gigabit per second (gbps) - far faster than even cable modem speeds.

"If you condition those power lines properly, they're an omnipresent national treasure waiting to be tapped for broadband Internet service delivery, especially in rural areas where cable or DSL are unavailable," said Dr. Mohsen Kavehrad, the W.L. Weiss professor of electrical engineering and director of the Center for Information and Communications Technology Research, who led the investigation.

Whether the the technology will ever be an economical alternative, he said, will depend on overcoming the interference issue.

Said PPL's Levitsky, "We do have some work to do."