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Buried Lines Idea Digs Up Concerns

High Costs, Service Trouble Two Reasons to Keep Lines in Air

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In the wake of last month's ice storm that has thousands still without power, and just months after September's windstorm caused widespread outages, calls are mounting to bury power lines.

Louisville Metro Mayor Jerry Abramson asked Louisville Gas & Electric to study the costs of burying the system's lines. David Clark, general manager of Paducah Power System, suspects he knows what the answer will be for Louisville, Paducah or almost anywhere else: more than people are willing to pay.

"The price would be staggering," he said. "To put Paducah underground would cost hundreds of millions of dollars."

A 2006 study from the Edison Electric Institute, an association of private power companies, estimated the average cost of burying power lines at \$1 million per mile.

"There's some suggestion that might be on the low end," said Andrew Melnykovich, spokesman for the Kentucky Public Service Commission. "As a practical matter, once people start looking at the particulars it becomes a lot less of an attractive proposition.

"By the time people discussed the costs and get an appreciation of everything involved, their enthusiasm wanes pretty quickly."

Mark Jamison, director of the Public Utility Research Center at the University of Florida, said he and colleagues have reviewed nearly every available study on the topic over the past few years, and are developing an engineering and economic model to estimate costs for any system.

"What we've found is that in any place with an existing overhead system, there's no situation where it's economic to move it underground," he said. "With payback periods of 50 to 100

years, it just doesn't make sense unless the customers who want it are willing to pay something extra for it.”

Both Paducah Power and Jackson Purchase Energy Corp., along with most other utilities, have encouraged underground lines in new developments over the past decade or so. In new construction, it doesn't cost substantially more to place power lines along water and sewer lines.

The major cost would be trying to bury lines in areas populated with homes and businesses. And aside from the cost comes the disruption of digging up streets and sidewalks.

Paducah Power has about 750 miles of distribution lines in relatively densely populated areas, with 27 customers per mile of line, which might reduce the cost a bit, Clark said.

“But if you take a look at our financial statement, our lines are valued at about \$65 million,” he said.

Burying all the lines could cost 10 times that amount, Clark said, “So the rates would have to be way, way up higher, and people couldn't pay them.”

Recent statewide studies in North Carolina and Florida found burying all power lines would take decades and double power bills. Clark said he suspected doubling bills might not be enough.

JPEC would face even larger costs. While PPS serves urban and suburban customers, most of JPEC's customers live in sparsely populated rural areas; spokesman J. Patrick Kerr said the utility has 8.8 customers per mile of line, less than a third of PPS' density.

Terrain also would play a role in costs, he said.

“It would be a lot easier to bury a mile of line down the side of Jefferson Street than it is to bury a mile of line running down Clinton Road,” Kerr said.

Burying the distribution lines also wouldn't address one of the problems that troubled the JPEC system in the immediate aftermath of last month's storm. Kelly Nuckols, JPEC's president and CEO, and Melnykovich said transmission lines would cost substantially more to bury because they would have to be cooled underground.

Underground lines can delay repairs as well, because it's often difficult to pinpoint problems that are evident above ground.

“We can make a connection to an overhead line with no interruption in service,” Nuckols said. “Our people in the bucket trucks do that everyday. But to tap that line underground means maybe an hour or two out of service for the whole block.”

Nuckols said the utility's board has left its \$1 million to \$1.5 million tree-cutting budget intact when other items were cut, and the budget might increase in light of the recent storm.

Clark said Paducah Power trimmed trees in the right of way on a six-year cycle when he arrived in 2000; it's now down to three years.

“I would say our right of way was in the best shape ever when this ice storm hit,” Clark said. “With the severity of this storm, there was only so much you could do.”

And while falling tree limbs caused many of the outages, Nuckols noted that ice did plenty of direct damage.

“I can show you areas without a tree in a quarter mile where the pure weight of ice on the lines and poles took them down,” Nuckols said.

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