

Pecan Street's aim: Create path for consumers into smart grid's future

By [Laylan Copelin](#)

AMERICAN-STATESMAN STAFF

Sunday, Jan. 22, 2012

<http://bit.ly/xfW8Jg>

Pecan Street Inc., a 3-year-old public-private initiative to make Central Texas an energy technology hub, is preparing to break ground on a \$1.5 million, one-of-a-kind lab that will help researchers and companies understand how customers might interact with a "smart" electricity grid of the future.

Construction is expected to begin within a few weeks on a three-story structure near the old Mueller airport tower that will be named for Pike Powers, an Austin lawyer who spearheaded the region's economic development efforts for decades.

"The lab is a physical realization of what we wanted to do," said Tom Edgar, a University of Texas professor of chemical engineering and board member with Pecan Street Inc.

The lab joins the clean energy consortium's ongoing project of collecting power usage data, mostly using wireless technology, from 200 homes near and in the Mueller neighborhood.

Chevrolet is discounting 100 Volts to understand how a concentration of hybrid vehicles will affect an electricity grid.

The lab, however, might better define, at least in the public's mind, where Pecan Street fits into the pantheon of Austin's previous research consortiums — MCC and Sematech, which shaped this government town into a technology center recognized around the world.

Pecan Street traces its organizational DNA to those predecessors, mixing public- and private-sector support, with the University of Texas at the heart of it. But beyond that, it is a very different kind of organization.

MCC and Sematech were well-funded national responses to perceived threats to the country's leadership in computers and semiconductor manufacturing. Pecan Street is more akin to a startup, conceived in an Austin coffee shop, now with a staff of 10 and a \$1.1 million operating budget. Although the Pike Powers Commercialization Lab is paid for, Pecan Street hopes to raise another \$2 million for additional equipment and operations.

The lab will facilitate consumer research for the so-called electric internet.

Only this "internet" is where the original Internet was in the early 1990s, before Google, Facebook and Amazon became household names that changed how the world searched, socialized and shopped. Of course, the Internet also had its share of false starts and flameouts.

In electricity's case, the nation's grid is slowly being digitalized to monitor and manage power usage. It begins with smart meters and thermostats that communicate — the equivalent of dial-up technology for the Internet.

Eventually, customers will be able to buy and sell power as they need it — whether from solar panels or electric-powered cars or other sources. Smart appliances will manage their power needs more efficiently and cheaply.

"You are talking about the last great grid not digitalized," said Brewster McCracken, Pecan Street's executive director. "A whole bunch of companies we've never heard of will take advantage of that grid."

The Obama administration committed \$3.4 billion in federal stimulus money toward improving the nation's electricity grid in 2010, and industry contributions swelled that to \$8 billion, according to the White House.

Pecan Street got \$10 million in federal money, but Tom Kerber, an energy analyst with Parks Association, a national research firm focused on smart grid issues, said the Austin consortium took a unique approach.

"First, and probably most significantly, is that they are looking at the problem from the consumers' perspective, working on solutions that enhance their lifestyles," Kerber said. "Secondly, most other programs are utility-led initiatives. Pecan Street Inc. is a public-private partnership including a wide variety of companies and the University of Texas."

Edgar, the Pecan Street board member, said the research agenda for the consortium has changed during its brief existence.

"If you had asked me two years ago what I'd be working on, I would have been wrong," Edgar said.

He said he initially thought Pecan Street would be working more with federal agencies on smart grid issues from a utility's perspective. He credited McCracken with the emphasis on the private sector and consumers.

Edgar predicted that there will be new avenues of research not yet anticipated. "This project is going to morph into directions we don't expect," he said.

The fact that Pecan Street is working on the customer's side of the smart meter is fundamental to one of its tenets: figuring out how to get utilities, which now make more money as they sell more power, to instead embrace a future where customers use energy more efficiently or even generate their own on their roof, for example.

Answers on how to move utilities in that direction are probably years away. And Pecan Street officials won't necessarily come up with them. Instead, they might come from UT researchers, a startup firm at the Austin Technology Incubator or one of Pecan Street's corporate members.

As a lab, Pecan Street wants to be where the New Energy Economy is tested and verified before it goes to market. By extension, McCracken expects many of the innovators to base their companies here. But he said it's difficult to predict how quickly — or how slowly — the breakthroughs might come. Many experts have suggested it could be a decade or more.

Michael Webber, a UT engineering researcher, applauds the effort.

"Researchers rarely have access to a real-world test lab equipped with high-caliber equipment that is attached and integrated into an actual grid environment," he said. "This facility will be one of a kind."

Pecan Street already is collecting massive amounts of consumer data from its 200 volunteer households. The data are crunched using supercomputers at UT.

Edgar credited Pecan Street as a factor in UT winning a \$3 million National Science Foundation grant that supports 11 student researchers.

The lab, however, adds a wrinkle.

"With our lab's advanced testing capabilities, companies can do more than test their solutions in one home," said Scott Hinson, Pecan Street's lab director. "They will have the power to simulate any home."

Isaac Barchas, a co-creator of Pecan Street who also heads the Austin Technology Incubator, said the novel approach is appealing to companies.

"There's no other place in the world where companies can go and study how human behavior interacts with energy," Barchas said.

He likened Pecan Street to clinical trials for drug manufacturers. As an independent party, he said, Pecan Street can give its "Good Housekeeping Seal of Approval" before a product or service is introduced into the nation's households.

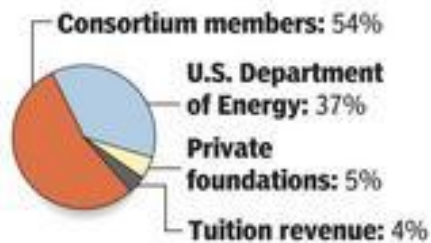
"If you are in developing an energy business," Barchas said, "it's hard to sell your product unless someone they trust says, 'It's OK.'"

Barchas said there's an advantage to including corporate giants such as Sony and Freescale with startups in the mix.

"It puts my entrepreneurs right next to companies that can take their technology global," he said. "That's gold."

Funding sources for Pecan Street Inc.

Pecan Street Inc.'s operations budget for this year is about \$1.1 million.



The 11 consortium members pay \$50,000 each per year. There are other memberships for \$15,000 to \$30,000 a year.

Source: Pecan St. Inc.

Linda Scott AMERICAN-STATESMAN

Courtesy of JB Goodwin