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## Empowering the Global Poor

### Chicago Prof Spreads Promise of New Technology

Martin Rosenberg

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COMMENTS



A street in Freetown, Sierra Leone, a country eager to develop its electric power resources.

Photo courtesy of Mohammad Shahidehpour



Mohammad Shahidehpour's day job is professor of electrical and computer engineering at Chicago's campus of the Illinois Institute of Technology.

But he spends upwards of 20 or 30 percent of his working life traveling the world, bringing the promise of modern electricity to some of the world's 1.3 billion residents who have none.

Spend a day or two talking to the richly diverse energy sector leaders and planners of Chicago, as I recently did, and it is not long before Shahidehpour's name comes up as an inspiring leader for change.

Chicago is undergoing an electric power renaissance, with the city's utility, Commonwealth Edison, its mayor, Rahm Emanuel, universities and public and private groups all working to change the energy economy within the Windy City. *The Energy Times* will showcase that story at a pioneering gathering, *Empowering Customers & Cities*, in Chicago November 4-6.

The Chicagoans are eager to share their story – and spur greater energy innovation

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nationally and globally.

That is why Shahidehpour was in Freetown, Sierra Leone in late June meeting with the country's president, Ernest Bai Koroma, his energy minister, the U.S ambassador and others.

He learned of a man who collects cell phones in his small village in the morning, hops on his bike and then pedals 10 miles to a neighboring village – that has electricity – to charge all the phones.

Impoverished villagers drink water out of rivers where they bathe and wash their clothes.

Shahidehpour told the government officials that compact solar water pumps can be used to get the villagers clean drinking water from a well.

Microgrids tied to renewable sources of energy could provide refrigeration.

“Just imagine living without refrigeration,” Shahidehpour said.



Mohammad Shahidehpour

He told the government officials about microgrids and the capabilities of newly emerging technologies.

The African nation's president is armed with fresh international assistance in the wake of the Ebola outbreak last year that sickened citizens and the regional economy. “They say, ‘Let’s do it.’ People are saying, ‘When can you start?’”

“You cannot imagine how much interest there is,” he said. “People are screaming for electricity.”

Just as much of the undeveloped world leap-frogged advanced industrial nations in embracing cellular telephony, Shahidehpour said, they will seize on new energy technologies to meet their unmet needs for power long before richer societies wedded to technologies that seem to work well enough.

Poor countries choking on smog produced by coal-fired generation, “say ‘no coal – we are done,’” Shahidehpour said.

At IIT, Shahidehpour has worked on developing one of the first functional smart microgrids in America, armed with \$13 million of support from the Department of Energy and the Galvin Center starting in 2008.

Such efforts, Shahidehpour believes, can help transform energy delivery – from downtown Chicago to villages in Sierra Leone and Eastern Europe.

Everywhere he goes, he says, “People are saying, “How do we do it?”



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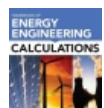
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