

Smart grids could outsmart criminals

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Your smart phone uses broadband to connect you to the world. But when charging it, you're relying on an electrical system that was designed and built in the era of the rotary phone.

Because these systems are becoming outdated, too much electricity is slipping between our fingers, even as politicians highlight the need for "[energy security](#)". Plus, [generating power](#) to keep up with increasing demand is getting harder because communities oppose new plants in their backyard.

Hassan Farhangi leads the Intelligent Microgrid project at the British Columbia Institute of Technology (BCIT). At this week's meeting of the [American Association for the Advancement of Science](#) (AAAS) in Vancouver, he will be part of a discussion on how smart grids can help reduce waste, fight theft, increase the use of renewable energy, and save people money on their hydro bill.

"So, the power we use is generated far from where we live, which means as much as 10 percent of that electricity is lost travelling transmission lines. Once in the city, more power is wasted because the distribution system is 'over-engineered' at the highest level of possible consumption," said Farhangi.

This means that although peak demand only occurs 20 percent of the time, inflexible distribution systems must be ready for peak demand 100 percent of the time. It's like keeping your car running in the driveway 24 hours a day just so it's ready to go when you need it.

"Then there's the electricity that's stolen. BC Hydro, for example, estimates that every decrease of 10 percent in theft—much of it committed by marijuana growers—could save \$86 million."

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