

Full Spectrum: Utilities Need Licensed Spectrum for Smart Grid

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The debate over whether to use licensed or unlicensed wireless spectrum for mobile services has largely been limited to phone companies and wireless geeks (like me, in a former life). Licensed spectrum includes airwaves owned and regulated, like a cell phone firm, while unlicensed spectrum, like Wi-Fi, can be used by anyone as long as they abide by certain rules. But now that wireless tools are starting to be used to smarten up the power grid, utilities and policymakers are jumping into the ring. Stewart Kantor, the CEO and founder of [Full Spectrum](#), a two-year-old startup that builds WiMAX-based wireless networking gear for utilities to better manage the power grid, told me this afternoon that he firmly believes that when it comes to security, reliability and robustness, utilities should be using licensed spectrum only for smart grid deployments.

He's built his company around the notion, and Full Spectrum uses licensed, ultra-high frequency and very high frequency spectrum to add intelligence deep into the power grid. We're not talking at the residential meter level, but where power is distributed from generation to substation. Kantor says that as utilities roll out more and more smart grid services — like real-time energy monitoring and control — utilities will need more bandwidth, more reliability and more security than unlicensed spectrum can provide. As the "mission critical" smart grid services become more advanced, unlicensed wireless services will become "more problematic," said Kantor.

Naturally the more high-end networks mean a higher cost to utilities. Kantor says the company's radios, which can transmit in a 20-mile radius, cost around \$2,500 a pop. And in addition to buying the hardware, Full Spectrum works with spectrum owners to sell the utility the spectrum license — it's a package deal. Kantor knows some might balk at the price of the solution, compared to companies like Silver Spring Networks, which uses unlicensed spectrum (900 MHz), and cell phone carriers, which can rent space on their wireless networks. But Kantor says that utilities will ultimately want to own their own wireless smart grid solution and it should be licensed.

Full Spectrum was founded in 2006 and plans to launch a commercial product in the third quarter of this year. Kantor says that the startup is doing trials with four utilities starting in June. It's likely the utilities will find the service useful — but will they want it for the price?