

## g(re)enius: Fran Cummings

**Now:** Peregrine Energy, Boston - Design & analysis of clean energy & smart grid programs

**Past:** Massachusetts Renewable Energy Trust, XEnergy, MA Division of Energy Resources (DOER), Harvard University

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*"I've been doing this stuff for 35 years, and suddenly everyone is taking interest...it's so COOL!"*

*-Fran Cummings*

What's even cooler is Fran Cummings himself. Noted for his humble nature and rare ability to translate technical, and rather complicated concepts into basic language for the rest of us laymen, Fran's genuine interest in both energy and the environment radiates from behind the desk physically separating us, and I can't help but smile and share in his contagious enthusiasm. "I've been doing this stuff for 35 years," remarks Fran, "and suddenly everyone is taking interest...it's so COOL!"

**Smart Grid:** Everybody hears the buzz term, but few understand beyond the enormous dollar amount of stimulus money allocated toward re-configuring U.S. energy systems. As such, I specifically asked Fran to give me a simple description of the elusive *smart grid*. Here's what I came away with: For starters, the name assumes that the grid we have right now is far from smart. Our current "dumb" grid results from a draconian mechanical system where electrons (i.e. energy) flow in one direction (from utility to consumer) without any sort of intelligence or communication on the side of the consumer; as if electricity magically grows out of the wall?! While able to handle peak usage, our existing grid wastes exorbitant amounts of energy in transmission, fails to capture and store excess energy, and precludes energy users from giving back to the grid as small producers. In lieu of any kind of "smart meter" the system also creates a one-way relationship where consumers have little control or interaction in understanding individual energy use.

The smart grid proposes adding IT instruments to grid infrastructure in order to create a give and take system – one where users and producers retain a two-way interaction, and where all connected entities communicate in order to effectively allocate energy at the most opportune time (i.e. the lowest price). Adding software and data-collection technology also brings smart meters into homes and businesses, which immediately translates data into consumer friendly information. For years consumers have been constrained by limited access, control, and understanding with regard to energy. The advent of the smart grid brings transparency to a previously opaque consumer-utility relationship.

**Electric utilities transitioning to the new energy economy:** Most complaints against larger utilities rely on the monopoly these giant companies maintain on power generation. Until recently, a lack of incentives to encourage utilities to upgrade or innovate effectively coddled an industry into complacency. As Fran so eloquently points out, thankfully State and Federal governing bodies are now forcing electrical companies to become proactive in opening up the grid to distributed power generation. Strategic legislation such as Renewable Portfolio Standards (RPF's) and net-metering policies orchestrate a framework for not only including clean energy suppliers, but forcing utilities to help renewable generators via project finance and power-purchase agreements guaranteeing certain prices per kilowatt-hour.

**The Take-Away?** It's time to get Smart!