Enbala Blog

SPOCK OR SCOTTY: WHICH CHARACTER FITS YOUR ORGANIZATION?

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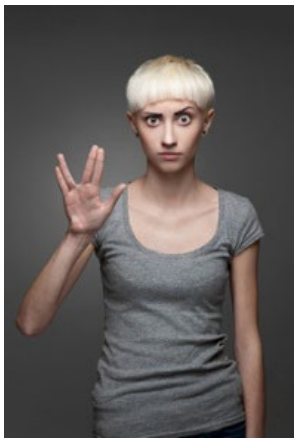
Raise your hand if you sometimes feel like Mr. Scott from the original Star Trek series, frantically trying to keep the engines roaring while the ship takes one phaser hit after another: If you did raise your hand, you're not alone. There are plenty of reasons utilities might be playing the Mr. Scott role.

One is under investment in infrastructure, which was named as the top concern by 47 percent of utility executives who answered a Utility Dive survey late in 2015. Another is what the California Independent System Operator calls the Duck Curve. It shows how behind-the-meter solar installations are creating daytime over-generation on the California grid and, because rooftop solar quits generating power about the same time people come home and start using more of it, there are steep ramps at the end of the day.

Demand response programs could help utilities deal with these issues. But, utilities that are doing simple demand response are kind of like Star Trek's Scotty. They're just getting by, handling one crisis after another, giving it all she's got, Captain. "I don't think she can take any more!"

A virtual power plant is a complex computer system that can remotely and automatically dispatch and optimize distributed energy resources and facilitate their bidding into energy markets. Unlike many demand response programs, a VPP isn't limited to the big, commercial and industrial customers a utility or energy service provider serves. It's not limited to loads, either. VPPs can aggregate, optimize and bid all kinds of DERs into energy markets. Solar, storage, combined heat and power units … you name it. They can all play the VPP game.



So can residential class customers, and a recent Rocky Mountain Institute article outlined the potential if just residential water-heater load came under VPP control. According to the Energy Information Administration, there were some 47 million U.S. homes with hot water heaters as of 2009, the latest year for which data were available. "Assuming the average storage-tank size is 40 gallons and the heater raises water temperature by 60 degrees F, Americans' water heaters represent a 270 gigawatt hour storage resource," the RMI article stated.

Along with tremendous potential, VPPs offer numerous benefits. You'll find seven of them outlined in Enbala's white paper on VPPs. The perks include customer engagement, more efficiency with less energy loss and remarkably fast ramp rates. Better yet, benefits like these come from leveraging customer energy assets, so VPPs are dramatically more affordable than brick-and-mortar generators.

For most power suppliers, completely ignoring VPPs would be a highly illogical move. So, join the Mr. Spock-style utility professionals, and have a look at this new white paper from Enbala.