

## The Next Chapter in the Chronicles of Non

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In our electricity sector, we all know how the story of "non" has gone over the past few decades. A variety of pressures, including policy changes and changing market economics, have led to non-generation thinking. I am not referring to age groups. I mean that slowly but surely, policymakers and utilities began to turn to the idea that there is an option to address electricity demand other than building power plants.

The rise of energy efficiency to reduce demand and lower emissions was from my standpoint the very first application of out of the box thinking in our sector. In prior decades, the electricity business was pretty straightforward. Demand increased so everyone put new "iron in the ground" in the form of generating plants. When energy efficiency came on the scene, it became another option that could be considered as an alternative to generation facilities. One of the ways that played out was via a formal regulatory process called Integrated Resource Planning (IRP), in which different ways of meeting resource needs were considered according to criteria such as cost-effectiveness and customer benefit.

It does feel like if you go state-by-state these days there are fewer IRP processes going on at commissions, but I don't think that means the principles embodied in it have gone away. Instead they have become business-as-usual in the business models of utilities, whether they have been dragged into that by regulators or realized it could make sense on its own.

Turning to the distribution system, that space is on the verge of massive, fundamental changes in the way it is being planned and operated. The rise of plug-and-play Distribution Resource Platforms (DRP) and Distribution Energy Resource Management Systems (DERMS) will allow all sorts of resource optimization at more local levels in the future. But it also will create a lot of little boxes all over the place where one type of iron - T&D - may still be seen as the automatic answer to the question of what to do.

But there is another solution - a non-wires solution.

This term, let alone its actual practice, has not caught on very fast over the years, even though some people in some corners of the electricity sector have started to use it. It essentially refers to the idea that before you build another transmission line, or even a couple of feeder lines, think about whether there is another way to meet demand without that new wire.

One example is what National Grid has done in a part of its service territory in Rhode Island that juts out into the Narragansett Bay. There were reliability issues and other problems that called for new feeder lines. But instead of quickly taking that route, National Grid looked at whether it could construct a non-wires solution. It in fact did just that, primarily by taking a "SWAT team" approach in local communities using demand side programs and by involving the community.

In New York City, Con Edison needed a new substation, or at least that is what it thought. But it ran the numbers and found that it could make a \$200 million investment in distributed resources and avoid \$1.2 billion in traditional network upgrades.

And in California, San Diego Gas & Electric faced a need to improve reliability and meet increased demand in the desert community of Borrego Springs. Borrego Springs is at the far

end of the SDG&E system and was served over the years by one transmission line over a mountain. It was sometimes fondly referred to as an old "extension cord."

Replacing that extension cord would be costly, so SDG&E, which seems to be thinking out of the box in a lot of different ways these days, decided there was a better way. It created a utility-owned microgrid in Borrego Springs - a serious, modern version of a microgrid that included EE, DR, time-based pricing, storage, solar, etc.

So if IRP was the way that non-generation solutions made inroads, why not have a little more talk, a few more proceedings, and maybe even a little bit more policy that is focused on Integrated Distribution Planning (IDP)?

Now while that makes sense just on the face of it, there are issues and questions attached. First, wires planning is not operating in a vacuum these days, not with the explosion in DER and (as already noted) the rise of DERMS, so there are a lot of things that must be considered to determine what is truly best. Second, just as the old way of supply planning involved building a lot of MW to help ensure reliability, traditional distribution planning has typically involved a little bit of over-build for the same reason. In some places policy exists that reinforces that approach.

But old approaches just won't cut it anymore - including when it comes to the wires. Even though the wires will remain regulated, new technologies and options are going to create a lot of non-wires solutions. Those who regulate the wires and those who operate them will each need some new box-cutters.

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