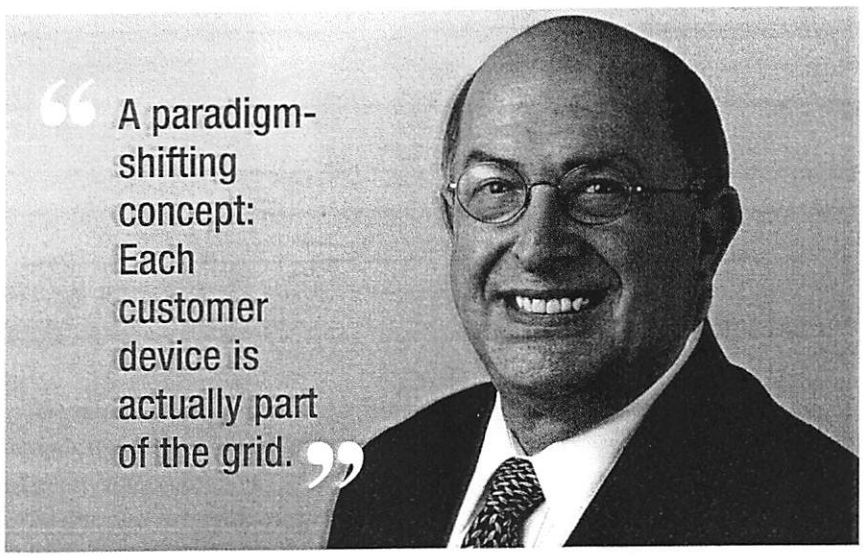
New York Takes the Lead

No proposal is as radical – or as well thought out – as REV.

By James N. Broder



In 1907, the New York Public Service Commission (NYPSC) – the first such state regulatory body in the nation – was formed to regulate the new business of electric utilities. In exchange for the right to hold a monopoly in a service territory, the utility's price would be regulated and the utility would agree to serve all customers in that territory.

For the next century, the regulated utility monopoly remained the dominant business structure. As the system gradually evolved, the typical utility had a large service territory within a state that was comprised of four fully integrated components – generation, transmission, distribution, and customers. It was not until the mid-1970s that this structure began to crumble when central station generation plants first came under non-utility ownership.

Today, more than a hundred years after the NYPSC was created, the remaining exclusive utility component, electrical distribution, is being challenged by the most revolutionary idea of all: an animated customer base that does not just pay the bill, but also contributes to a system that customers previously had simply paid for.

Much like the fall of the Bell system, the process of replacing a monopoly structure, while sometimes disorderly and fraught with uncertainty, has unleashed the power of markets. Led by Congress and federal agencies (the Department of Energy, Federal Energy Regulatory Commission, and Environmental Protection Agency), we now have regional grid system operators, wholesale power markets, and a significant merchant-owned generation sector. It's impossible to move backwards.

For the way forward, look again to New York. The Empire State now has put forth the most radical proposal of all: reforming the distribution system and animating the role of customers as part of the grid, rather than just viewing consumers of electricity as passive participants who simply flip the switch.

The Proposal

The state where public utility regulation at the state level first began now is in the midst of a revolutionary process known as "Reforming the Energy Vision," or REV for short. *(See, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Adopting Regulatory Policy Framework and Implantation Plan, NYPSC Case No. 14-M-0101, order issued Feb. 26, 2015 [2015 WL 862119].)*

The NYPSC order adopts a REV policy framework for a reformed retail electric industry – in fulfillment of its promise to bring such a plan forward in the first quarter of this year. The plan is revolutionary, but also built on core realities of dealing with electricity as a commodity and embracing emerging and familiar technology changes, such as "smart grids" that exist but have not yet been incorporated and incentivized as a core part of the grid.

Electricity, the plan observes, is a real-time product produced and consumed almost simultaneously. Supply and usage must be in continuous balance across the entire system. Therefore, the plan states, the power grid is best thought of as a single machine. This straightforward and widely accepted concept then moves to the plan's first paradigm-shifting concept:

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Viewing the electric grid as a single machine means that each customer premises and every power consuming device is actually a part of the grid. Today, the customer side of the grid is an enormous and largely untapped resource to improve the value of the system.

It was not long ago when a customer was thought of and treated only as a passive receiver of electricity whose only role was to flip the switch and pay for power received. Those days are long gone. Customers will soon be able to decide not to turn the switch, and at certain times of the day, be paid for it.

REV conceptualizes customers' roles as (a) an active market participant and (b) as a resource owner that creates value and drives efficiency, as the NYPSC explains in its order:

"The REV will establish markets so that customers and third parties can be active participants to achieve dynamic load management on a system-wide scale, resulting in a more efficient and secure electric system including better utilization of bulk generation and transmission resources.

"As a result of this *market animation*, distributed energy resources (DER) will become integral tools in the planning, management and operation of the electric system. The system values of distributed resources will be monetized in a market, placing DER on a competitive par with centralized options. Consumers, by exercising choices within an improved electrical pricing structure and vibrant market, will create new value opportunities and at the same time drive efficiencies and help to create a more cost effective and secure integrated grid."

Under the REV, today's distribution utilities will become Distributed System Platform Providers (DSP) to insure that the functions needed to enable such DER markets are integrally bound to the functions needed to assure reliability. The DSPs as a group will provide a statewide platform to provide uniform access to customers and DER providers. The DSP will also serve as the interface between the aggregated and animated customer base and the NY ISO.

Finally, the REV proposes to reform the commission's rate-making practices, conceding at the outset that under current practice, utilities have little or no incentive to enable markets and third parties in creating value for customers. Utility earnings should depend more on creating value for customers and achieving policy objectives.

Utilities can embrace REV to thwart the death spiral, or they can fight it – and die trying.

In one sense, peak load growth is the villain. Under our present structure, utilities must build to meet peak, just like we build super highways to meet peak rush hour demand. Despite robust demand reduction programs, peak loads in New York are growing five times faster than base sales, forcing more and more investment in iron in the ground to assure that this peak load can be met. Making such investments is how distribution utilities get paid; they do not get paid for using such deployed capital investment efficiently.

By contrast, REV posits that Distributed Energy Resources (DERs) will supply a key part of the solution, but that in order to encourage the growth of that asset class, a radical change in markets and rate-making will be required. Utilities will act as Distributed System Platform Providers (DSP) and will be incentivized by performance as measured by the goal of the REV.

REV acknowledges that under today's regulatory model DERs compete with the standard methods of supplying and delivering power. The challenge is to reform the regulatory and business model for traditional utilities and their investors in a way that promotes the encouragement of this competition, rather than opposition.

The Task Ahead

As a single-state ISO, New York holds all the levers of state and regional grid policy and thus may have a better chance at implementation of radical change, such as the REV, than a multi-state RTO. At the same time, however, the sheer breadth of change and paradigm shifts speaks of a herculean undertaking.

The structural changes that are proposed in REV can only succeed by developing a consensus among stakeholders and regulators with strong leadership at the highest level. The chair of the commission, Audrey Zibelman, comes equipped with a body of experience that has allowed the PSC and its staff to focus on the truly revolutionary nature of this inquiry. She has served as the general counsel of the New Hampshire Public Utilities Commission, the executive vice president and chief operating officer of PJM, and a founder and CEO of Viridity Energy, a company focused on empowering utility customers to maximize their return on investments made in the grid. The burden of implementation will fall heavily on her shoulders.

The more complex the task, the more ways that exist to scuttle the effort, and REV is nothing if not complex. Do the regulatory and stakeholder communities have the willingness to absorb the REV and come to grips with its implications as a hundred year old way of doing business is turned on its head? The utility industry – buffeted by change at all levels for the last 40 years and the virtual destruction of its monopoly power – may see REV as a way to escape the death spiral of

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Smart Gas Investment

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opportunity. If the infrastructure is in place to support maximum use of energy efficiency, demand response, storage and renewable energy then making the case for smaller amounts of gas generation becomes far easier.

The implications of Clean First policies for optimizing the gas fleet should be clear: Policies should reward flexible, clean gas generation over less flexible, less clean gas, coal, and oil generation. The result will be a more efficient combination of resources and, because the resource mix is complementary, savings on investment in generation.[11]

Improved Permitting. Transmission, distribution, and generation investments impose environmental impacts that need to be recognized, but some of these facilities are necessary to achieve carbon reduction goals. Policies are needed to ensure that new projects are appropriately vetted and that approved projects are permitted quickly.

California's Renewable Energy Transmission Initiative – a collaborative process with environmental groups, land and wildlife advocates, utilities, electric system planners, and state, federal, and tribal officials – has been effective in getting transmission built to access the vast renewable resources in the Tehachapi region. Similar processes in the Western Interconnection (Western Renewable Energy Zone and Environmental Data Task Force) have established vetting processes to clarify where transmission line development is less damaging.

In Europe, the Renewable Grid Initiative – a collaboration between transmission system owners and leading environmental organizations – promotes acceptance of new infrastructure investments crucial to low-cost decarbonization. Effective permitting also can support the construction of well-placed gas facilities with the right operating capabilities. For example, the 692-MW Footprint Power Project in Salem, Mass., approved in September 2014, displaces generation by dirtier fossil plants and includes environmental mitigation measures that support a cleaner Salem Harbor.

All these policies – centered at the state, regional, and federal level – can support collaboration toward beneficial transmission, distribution, and generation. They continue to be necessary to ensure a "smart gas" strategy that discourages investments in unnecessary fossil generation.

Smart gas investment means recognizing the long-term costs and risks of the investment portfolio. A smart gas portfolio is a risk-aware portfolio, supported by risk-aware policies – investing in the intelligent grid and implementing policies that make system needs transparent, promote resource inclusivity, procure and dispatch clean resources first, and support effective permitting of beneficial resources. ◘

11. IEA, 2014.

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aging infrastructure, flat sales and downward rate pressure; or the utility industries may go to the barricades and once again fight for the status quo, this time to the death.

I am struck by an image that I came across recently.

A Masai warrior, in traditional robes, holds a spear in one hand and a cell phone (to his ear) in the other. He stands erect – one leg in the past, the other in the future.

Unburdened by copper wire infrastructure, the third-world telecom system jumped to a cellular world as its first step. Our electrical system, however, is burdened with the reality of an existing infrastructure and regulatory model of another era.

We must deal with that reality. And that, in the end, may be the biggest hurdle of all. Alas, we cannot begin at the beginning. ◘

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