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SMARTER ENERGY, SMARTER FUTURE

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Smart Regulation and Innovation: Bob Stump, Former Commissioner, Arizona Corporation Commission, leads a thought-provoking debate and discussion on behind-the-meter markets and accommodating growth in DERs and devices

Moderator: Bob Stump, Former Commissioner, Arizona Corporation Commission

Industry Respondents:

Frank Prager, VP, Policy & Federal Affairs, Xcel Energy
Rodger Smith, Senior VP & General Manager, Oracle Utilities

Regulatory Utility Commissioners:

Asim Haque, Chairman, Public Utilities Commission of Ohio
Doug Little, Commissioner, Arizona Corporation Commission
Brien Sheahan, Chairman, Illinois Commerce Commission, and Chairman NARUC Task Force on Innovation

Stump: Technological change is roiling the electricity industry like a storm that won't quit, but many believe today's regulatory processes are too slow and inflexible to adopt policies that encourage timely technological innovation, while protecting other important values: reliability, resiliency, affordability, and sustainability. In this session, our two industry respondents and three regulatory utility commissioners will discuss the challenging intersection of regulation and innovation prompted by two questions.

Question 1: Behind-the-meter energy resources like solar PV and storage are having profound impacts on the way electric companies serve their customers and operate distribution grids. Who should be allowed to participate in these behind-the-meter markets? How do we structure them so all customers benefit?

Prager: You have to start with the grid itself. The grid is essential to enable efficient operation of distributed energy resources (DER). Any electric company that owns or operates the grid must be able to make needed grid investments. So it's important to understand that, when DER owners and third parties use grid services, they are electric company customers.

Storage - an increasingly important DER - does much more than time-shift power and energy. Storage can provide voltage support, frequency control, and ramping for the grid. It can also avoid costly distribution investments. To have a truly competitive platform that provides these grid services, electric companies should

be able to participate in these behind-the-meter markets, along with others.

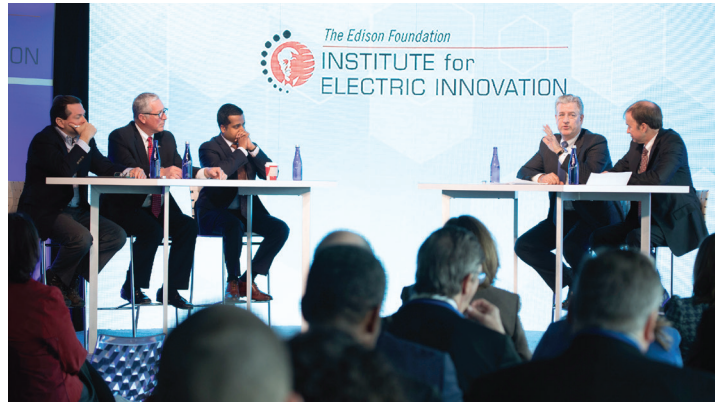
Smith: Those of us in technology see a huge potential in the electricity marketplace. But to be very frank, the rate of technology adoption in this industry is slower than most.

The right partners are important. Technology partners like Oracle and GE are necessary, because, as much as electric companies might spend on technological innovation, they can't spend nearly what large tech companies can. As innovation is key to the future of the electricity business, tech partners can help electric companies meet policy objectives and provide a secure and affordable energy future. They can also help keep it simple for the customer.

In the short term, there are a few things we can do on the regulatory side: Regulators can better define value streams for DERs like storage to incent smart grid integration. Also, regulators should encourage electric companies to invest in sophisticated cloud-based IT platforms. The power industry is well behind in that area. Technology is moving far faster than the industry is responding.

Stump: Let's open this up now to the commissioners. Chairman Haque, some exciting things are going on in Ohio. What can you tell us?

Haque: The Public Utilities Commission of Ohio has announced the launch of a grid modernization proceeding that we call PowerForward. We have been planning it for several years - intensively so this past year. What should PowerForward look like? We have spent a lot of time analyzing what other states have done and decided on a proceeding built upon two pillars. The first pillar is innovation - both technological and regulatory -to enhance customers' electricity experience. We won't advance a particular technology, or DERs, or any particular industry segment. Second, we're going to look at this holistically.



Phase 1 will engage Ohioans in envisioning the future. We'll put out a vision paper to suggest what we think will work for Ohio and how we think we can get there. For us, this will become the next frontier of the competition versus monopoly debate. We'll be interested in stakeholders' perspectives, data, facts and analysis. PowerForward should help us figure out who gets to play in the behind-the-meter markets.

Sheahan: I'll go out on a limb and say that it would be crazy to exclude electric companies from this space. You can lose a lot of advantage by excluding electric companies, which have the best visibility into the network.

Stump: As to who gets to play, some say that the solar industry should have the same certainty as electric companies with regard to recovery on their investments. Should DER providers be considered public service corporations?

Sheahan: Illinois just passed a groundbreaking law that provides support for our nuclear power plants, and also incentivizes solar and wind development. The law doesn't make wind or solar providers utilities, but it does encourage and facilitate their growth.

Little: Remember that DER is much broader than residential rooftop solar. Google and Apple, for example, have very large sustainability goals. By encouraging larger commercial and industrial (C&I) solar installations, Arizona intends to have clean energy in quantities that electric companies can manage more effectively.

Arizona has also looked at the idea of locational marginal pricing (LMP) for DER. While that might seem a bit complex, it makes sense to look at the distribution grid to see where it can best handle large DER penetrations.

Prager: It's also important to remember that there are many opportunities for customer choice that don't involve DERs, as such. For example, Xcel Energy will offer customers universal solar on a choice basis. It's called Renewable*Connect, and regulators in Colorado and Minnesota have approved it.

Audience Q: A DER can offer advantages in the form of non-wire alternatives. But why would the electric company work with a third party to develop a DER when it could build and rate base it? That raises questions about the competitiveness of the system.

Sheahan: As an Illinois regulator I'm not necessarily in the business of creating a competitive market for DERs. I'm in the business of making sure the lights stay on at the lowest cost possible. There are other ways to think about this. Suppose battery storage offers the lowest-cost solution to a problem. We may tell the electric company to bid it out - let the vendors come in. Maybe a vendor would have the best solution, perhaps in the form of a long-term lease. Why couldn't the electric company capitalize the lease? Maybe both parties could get a benefit.

Smith: My company lives in a competitive market. Nobody reserves a place for me in my marketplace. I have to fight competitors to earn that place. There's no assigned market share for Oracle or IBM. Are you sure you want to be in a competitive market?

Little: To put this in context, some are asking if we shouldn't rethink the rules for competitive regional wholesale markets, because their pricing mechanisms seem to favor and disfavor certain resources. They're apparently not sending the right signals to value things like nuclear. Perhaps FERC needs to look at competitive market structures and determine if they could better value those resources.

Haque: Whatever the issue, we must keep the customer the primary focus.

Question 2: As the role of the energy grid expands to accommodate growth in DERs and connected devices, how does the industry need to change? How do we ensure equitable pricing for all customers?

Smith: Remember the old black dial phones that hung on kitchen walls and became Touch-Tone phone? Touch-Tone phones changed the industry. Suddenly we could handle call centers differently and plug in codes to send different information. We're now starting to see that with smart meters in the power business. That technology is going to move very fast.

Customers will be in a position to dictate the services they want from electric companies. This will bring a fundamental change in how customers think of what's possible beyond the meter. Customers won't talk so much about costs in the future, just as we don't talk now about what a phone call costs. Now it's all about the services we can get on our phones.

Consider this, for example: Electric companies could soon be healthcare providers, offering technology that monitors customers' health every day, along with electricity. And imagine that electricity bills are based on the devices that customers use, as well as the amount of electricity they use. Imagine a day when utilities provide device management services and have information on every warranty and service record of each device. In such a world, partnerships will be key.

Prager: As we approach these issues, it's important to do this thoughtfully, and with a little bit of humility. That's why I like what Ohio's doing.

First, if we're going to go the direction of New York, for example, and create a distribution system operator and transactive energy markets, we need to remember that customers want low-prices and reliable power. Second, we need to start where states are today, and understand that different states begin from very different places. Third, grid modernization programs, which many companies are planning, cost money; we need to consider where that money is going and what results we expect from a modern grid. Fourth, we need to pace our level of investment. We can't start asking for huge rate increases. Finally, rate design is critical. Electric companies need a new paradigm to price services and products, assigning values and pricing appropriately.

Stump: Let's get our three commissioners involved. Brien, as chair of the NARUC Innovation Task Force, here's a question that's vexed me for some time: How do we better support grid upgrades and allow more seamless integration of new technologies without impairing reliability?

Sheahan: I think there's a heavy burden on advocates of grid modernization, once you get past reliability and O&M benefits. We've yet to see if that case can be made.

Little: We're living with essentially a 50-year-old regulatory regime that makes it much more difficult for us to do some of the things we really should be doing, in terms of technology adoption. This goes back to, "Should we be changing the regulatory rules." I don't think Bonbright anticipated any of the things we're dealing with today.

Haque: A couple of our electric companies have filed a grid modernization plan, but our game plan is to hold them in abeyance and advance our PowerForward proceeding first. We're going to have to make key decisions before we allow for cost recovery in this space.

The first decision is which activities should be competitive in the grid mod space and which should be regulated. The second thing: if you live in a competitive state and have generation affiliate issues like Ohio has, decisions are much harder. Generally speaking, in a distribution rate case, you're making sure that expenses are prudently incurred. At the end of the day, we have to determine not just what's cost-effective, but what is cost-worthy, based upon what customers want.

Stump: I'd like to open things up to the audience for questions.

Audience Q: In this time of tremendous technological change, the regulatory process can't move at the pace it does today and create value for customers. There should be a greater sense of urgency. Commissioners?

Sheahan: There is a sense of urgency. NARUC'S adoption of a resolution encouraging state commissions to consider more favorable treatment for cloud-based software was a big step. We passed that in about a year; many were shocked that it passed at all. But state regulatory processes are statutory and adversarial. I don't see a way to change that, except legislatively.

Little: I agree with Brien. Even the rulemaking process in Arizona is arduous. A year is warp speed! Fourteen to 18 months is more realistic. One thing we can do is choose what we need to do first. We're now looking at the renewable energy standard, which hasn't been reviewed for ten years. Today's renewable energy industry is a different animal completely from ten years ago.

Stump: Thank you all. This has been a fascinating discussion.



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