



2019 power and utilities industry outlook

My Take: Scott Smith



Power sector transformation continues as regulatory initiatives strive to keep pace

As the US power and utilities industry continues on the path to transformation, the traditional utility regulatory structure is taking time to catch up. But some more flexible regulatory initiatives are emerging that may bring new opportunities to utilities in 2019 and beyond.

In my 2018 Outlook, I highlighted that the power business was well into a period of transformation and profound change driven by technological and competitive forces, as well as changing customer expectations. As these forces accelerate, electric power companies are tapping new technologies to serve increasingly sophisticated customers conditioned by other industries to expect the high-tech digital experiences that have become the “new normal.” New technologies are also expanding opportunities to improve operational efficiencies and prompting experiments with new business models. But regulatory structures are taking time to catch up. Change has begun, but it will need to spread faster for regulated utilities to meet evolving customer expectations. If they aren’t positioned to capture value from the shift toward distributed energy resources such as rooftop solar, battery storage, electric vehicles, and smart thermostats and appliances, they risk losing revenue. As we move into 2019, I want to take stock of how far and fast the industry is changing and what we should be looking out for in the new year.

But first, let’s take a brief look at the fundamentals. Continuing the post-recession trend, US electricity consumption is still characterized by relatively slow growth, although data through the third quarter of 2018 saw an acceleration over the previous year, largely due to an unusually hot summer.¹ If confirmed by market data through year-end, this would be welcome news for an industry that has grown accustomed to low load growth and therefore a need to focus primarily on asset utilization and reliability to sustain margins. On

the generation side, the three dominant trends also seem to be a continuation of recent years—that is, displacement of coal-fired generation, steady growth in natural gas, and rapid growth in wind and solar generation. The drivers for this trend are a powerful combination of economics, customer preference, and an increasingly central role for carbon footprint reduction along the electricity value chain.

Other significant events in 2018 remain partially unresolved, such as whether additional mechanisms at the federal or state level might be established to support generation assets under economic stress—for example, some of the coal-fired and nuclear fleet. And severe weather events continue to drive utilities to improve their response and recovery capabilities and regulators to accommodate mitigation options. For example, in response to the California wildfires, regulators have worked with utilities on a new operating and regulatory model that enables utilities to curtail power when winds exceed specified speeds in order to reduce the risk of equipment potentially contributing to wildfires.²

So, with forces of change accelerating in a business that has experienced stability and continuity for many years, what can we expect in 2019?

Electricity customers are accustomed to a “new normal” and demanding to be heard

Power companies are listening, and many are beginning to respond to what customers are saying with innovations that give them more control over energy usage.

Every year, when Deloitte undertakes its annual [Resources Study](#),³ a survey of residential and business electricity customers’ attitudes and preferences, we have found a growing appetite and expectation for more involvement and control over electricity purchasing and use, as well as a desire to interact with their providers in new ways. This is partly generational—younger users have become very comfortable with apps, social media, and always-on connectivity. And it’s also partly a spin-off from the increasing ubiquity of e-commerce in all spheres, for products, services, and entertainment. These developments are coming from all directions, not just the big-tech giants that are household names. And it all adds up to a “new normal” in customer experience. We’re seeing evidence of this new normal in electricity customer preferences—the desire for choice, in rate plans, in sources of delivered electricity and in options to tap into behind-the-meter or localized sources of generation, or to integrate electricity with other home services. Commercial and industrial customers are looking to combine more cost and utilization control with opportunities to self-generate and while setting themselves and their suppliers ambitious targets to reduce emissions from their energy use.

Utilities are listening, and many are beginning to respond to what customers are saying by developing apps to give customers more control over energy usage; to manage energy use from their smartphones (heating/cooling, lighting, window blinds); to shop online for rooftop solar installations; to view monthly bills and monitor energy use in real time; to receive alerts if bills are higher than normal; or to receive outage alerts with estimates of restoration time, crew arrival time, and more. Such outage and restoration communications are particularly critical in areas prone to severe storms.

For electric utilities, although this may look very different from their traditional arm’s-length relationship with customers, it is their way of adapting to the “new normal” set by companies in other industries. We expect to see such initiatives proliferate in the near future and begin to be adopted by a greater diversity of utilities, not just the large ones. Customer retention is no longer just a question of reliability and cost; it is now a question of providing options, being connected, and allowing customers more control over their energy use.



Technology is expanding opportunities to improve operations

While customer-interface technologies may be the most visible aspect of technological enhancement of the utility business, they are far from the only aspect. The technology landscape for utilities, from generation right through to the customer, has probably never been richer. We could point to sources of generation, with the cost performance and scalability of wind and solar continuing to improve year over year at a rapid pace; to grid operations, where smart-grid technologies provide real-time information into all aspects of grid status (not just electron flows), and where batteries are now able to provide multiple services such as load shifting, frequency regulation, and localized reserves; to distributed or localized sources of energy for which utilities can partner with customers or communities to install and operate power systems customized for specific needs. And then we could add to all that the overall opportunities of digitalization and integration of operational systems, back-office systems, and supply chain management. When we look at all this, it seems clear that utilities should move technological awareness and strategic thinking from being a niche activity to the core of planning and strategy.

In this way, the utility industry is in an interesting transition from being a recipient of technology, from suppliers such as the equipment manufacturers or the engineering companies, to needing to be more in the driver's seat of technology design and development. We are seeing an increasing number of utilities take an active role, for example, in incubating new technologies and startups through venture capital initiatives and participation in industry consortiums. Only by being deeply involved in research, innovation, and testing can utilities discover what may lead to new pockets of value and what may turn out to be a dead end.



Pockets of business model experimentation are emerging

A third area of substantial ongoing change that we should watch is in business models and market structures. Following our first two trends, the intersection of customer empowerment and enrichment of technological choice is opening the way for new business models for incumbent utilities, but also market structures in which new, nontraditional players can enter the market. For example, with the rise of behind-the-meter generation, community energy projects, and new options for households such as rooftop solar coupled with battery storage, utilities have a tremendous opportunity to develop new profitable businesses around offering services related to these developments—from installation, maintenance, and reliability services to tracking and load balancing with on-grid resources.

Conversely, this space may be open to other players. In markets open to retail competition, different types of retailers are emerging that are cost-effectively segmenting the market, targeting new customers, and offering new services through advanced analytics, mobile apps, and social media. This combination of opportunity and increased competition is very different from the traditional utility business model. While we do not expect the old profit model of achieving a regulated rate of return on assets to disappear, we see the

emergence and rapid growth of alternatives driven by an increasingly competitive market. In this environment, the most successful utilities may be those that can recognize and grow profitability of segmented products and services.

These new business model opportunities can give material new revenue growth potential relative to the traditional utility model—and that realization could be a powerful accelerator of change. As the industry moves in this direction, utilities are looking to regulators to ensure that they and their customers are not unfairly paying for legacy costs the utilities were required to incur.

Will regulatory change come fast enough for utilities to meet evolving customer expectations?

While the traditional cost-of-service regulatory structure may not encourage innovation, some more flexible regulatory initiatives are emerging that may bring new opportunities.

In many, if not most, economic sectors, changes in markets, customer needs, and technology can challenge the ability of regulators to keep up. For utilities, this is a much more fundamental issue than in most other sectors because incumbent regulatory structures, mainly at the state level, govern so much of what a utility can do. The traditional utility regulatory model of cost recovery and allowed rate of return on investments will likely need to evolve and adapt to recognize and incentivize new technology options such as utility involvement in energy storage, two-way power flows, cloud-based solutions, behind-the-meter customer solutions, and innovative technologies throughout the business. Innovation in pricing structures and utility remuneration can enable wider deployment of innovative customer service technologies.

Traditional cost-of-service regulatory structure often does not encourage innovation nor incentivize the investments necessary to satisfy customers' evolving needs.

Fortunately, some more flexible regulatory initiatives are emerging—and we will be watching closely to see how far these types of moves may expand—bringing new opportunity to utilities.



More flexible regulatory initiatives are emerging



Support for advanced metering infrastructure as a way to improve the value-added two-way flow of information between utilities and customers and better facilitate demand response, renewable integration, and other programs that serve customers and improve grid operations.



Approval of utility investment in electric vehicle (EV) charging infrastructure—with EVs an emerging new source of electricity demand, some states are approving or considering approving rate recovery for this type of utility investment.⁷



Storage mandates, such as those in California and Oregon, and storage targets in a growing number of states, provide load balancing options to utilities, support for distributed power to customers, and more flexibility for both utility operations and customer needs.⁴



Regulators in California and Hawaii, as well as market operators like CAISO, are allowing small-scale distributed energy operators to aggregate their resources to sell surplus power back into wholesale markets. This should increase the attractiveness of distributed energy to consumers while providing additional grid balancing options to utilities.⁸



Time-of-use rates for customers are currently offered by about half of US investor-owned utilities (IOUs), and IOUs serve about two-thirds of the population.⁵ These types of rates, which offer price signals to the consumer to defer consumption to off-peak hours, can be made even more impactful where customers have battery storage to physically facilitate load shifting.



In what could be a significant step toward modernizing the traditional ratemaking model, 13 states are moving ahead with some form of performance-based ratemaking.⁹



New initiatives are underway in Hawaii and Nevada to redefine the role of utilities and introduce retail competition.⁶



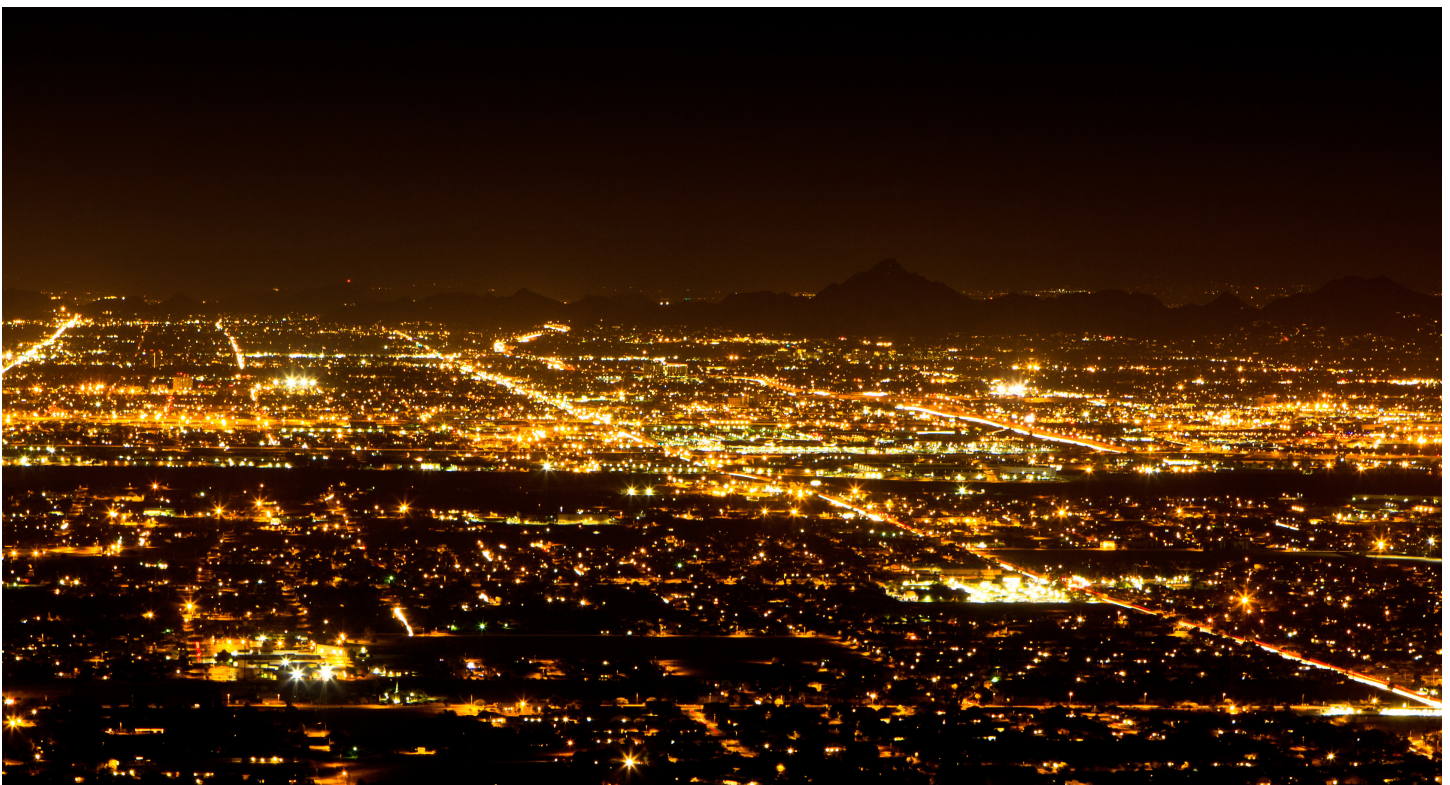
At least one utility is exploring offering subscription-based electricity services. For customers used to e-commerce platforms, this would similarly allow them to pay a fixed monthly subscription price and choose between varying levels of utility-provided products and services—such as renewable-generated electricity, EV chargers, and smart thermostats. For utilities, this could help them preserve revenue while promoting innovative services.¹⁰

All of these examples point to evolution in regulatory structures. Will they adapt fast enough to keep pace with new market drivers? Or will utilities have to slow the pace of their technology and business model evolution as they await regulatory change? Watch this space in the coming year and beyond.

And continuity coexists with change

While these forces of change are moving forward, let us not forget that electric power companies have to continue their core business of delivering reliable and affordable power. To meet this need, capital expenditures in the power and utilities sector continue to rise, with an estimated increase in 2018 of 14 percent, to reach an all-time high of \$133.8 billion for the 50 electric and gas utilities S&P Global tracks annually.¹¹ Further increases are expected in 2019, covering multiple needs in generation, transmission, and distribution—grid modernization, building in resilience to weather events and cyberthreats, and deploying new technologies such as digital capabilities or storage are all examples of this. How power companies balance investment in ongoing operations versus planning for more transformational change will be fascinating to watch.

By definition, the future is uncertain, so we know there will be surprises along the way. The electric power business has proved increasingly resilient to some kinds of surprises, like hurricanes or snowstorms. Other kinds of surprises, from technology and new competition to customer expectations, may require more deep-seated cultural change. 2019 promises to be an interesting year.



Let's talk



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Endnotes

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