The high stakes of low carbon: Why electric utilities need to change the game to survive

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To reach the goals of the Paris Climate Agreement, utilities are gearing up to change. But according to Accenture research, nothing short of transformation is in order. The magnitude is staggering: In the coming 15 years, electric utilities need to reduce their carbon footprint by 50 percent.¹ Naysayers claim it's impossible. It isn't. Change won't be easy by any stretch. But industry players that adopt new digitally enabled business models will stave off emerging competitors that haven't, so far, reached scale.

The goal of the Paris UN Climate Change Conference was clear: Get nearly 200 nations to agree to the allowable average surface temperature rise on Earth as two degrees Celsius. One hundred eighty five countries submitted plans for a 2°C world. What isn't quite clear is how to achieve it. But electric utilities will play a critical role. After all, they produce 25 percent of the global carbon emissions.² Accenture’s analysis with the CDP shows that the electricity industry has contributed the largest CO₂ growth in the last decade and has the biggest responsibility to reduce emissions in the years ahead.³

With the advent of digital, industry players face a double edged sword. On one side, digital enables new ways of working that were impossible to realize even a handful of years ago. On the other side, it is lowering the threshold for new entrants into the marketplace. The digital disruption from the new players is fundamentally re-shaping the $1.36 trillion industry.⁴ What's more, regulators, the financial community and customers alike want more action on emissions reduction, driving the demand for efficiency and renewable energy. The stakes are high. It’s time for electric utilities to elevate their game and digitalize with low carbon business models, or risk becoming obsolete.
Degree of change

If electricity companies continue to operate as they do now, they will face significant challenges in balancing increasing costs and decreasing revenues. Why? Because in a 2°C world, climate change related costs for electric utilities will continue to increase exponentially over the next 15 years reaching a staggering $1 trillion per year by 2030.5 Of course, part of that cost will be to meet growing demand for electricity, new opportunities in emerging markets, and costs associated with keeping existing assets running optimally to avoid becoming irrelevant or being disintermediated. But carbon pricing, where companies are taxed or limited when it comes to emissions levels, will also play its role. Net-net, while electric utility costs are expected to rise by 64 percent between 2012 and 2030, revenues will only increase 56 percent—a gap of 8 percent.6

Although utilities have begun reducing their greenhouse gas emissions and increasing their share of renewable energy, those efforts fall drastically short of what’s needed. According to Accenture Strategy research, electric utilities need to, at a minimum, cut their carbon emissions in half by 2030, to stay within the 2°C boundary agreed upon in Paris.7 Reaching this level of change will call for nothing short of transformation.

New entry threats and opportunities

Increased competition, particularly from new entrants from other industries, as well as more innovative utilities, pose a growing threat to incumbents. According to Accenture Strategy research, 73 percent of utilities believe that by 2020 new competitors will emerge deploying and selling power or energy systems to distribution companies or end consumers.8

Companies like Solar City. A recent proposal by this major provider of solar installation services in the United States, could divert more than one billion dollars of capital from investor owned utilities in California to fund distributed energy adoption.9 Or there’s Vandebron, a new entrant in a saturated market: The Netherlands. With an innovative business model that directly connects renewable supply to customers, Vandebron’s customers can go online and choose among different renewable energy providers.10 Incumbents in The Netherlands are starting to fight back: France’s Engie recently launched a similar renewable energy proposition, as did Vattenfall with their “Powerpeers” platform.11,12
Although the competitive threats are growing, so are the opportunities. More and more multinationals have set ambitious targets to transition to 100% renewable energy use with deep energy efficiency programs in the next decades. Within the Renewable 100 initiative, over 50 large multinationals like CocaCola, Google, Unilever and Walmart have committed to voluntarily decarbonize their operations and their supply-chains. And with those plans come a widened horizon of business growth for utilities as the private sector drives the demand for alternative energy sources.

Other opportunities are evident in emerging markets including Kenya, Chile and Indonesia. Incumbent utilities like Enel and newcomers like WEnergy Global are implementing decentralized renewable energy solutions in developing countries, accelerating the electrification of rural areas.

From tweaking to transformation

To offset the rising costs and decreasing demand for fossil fuels, and to up their game when it comes to new competitors, electric utilities need to adopt new low carbon business models. By switching from selling volume to delivering energy reduction and energy services, electricity companies will be able to generate long-term value. Five new, digitally enabled and low-carbon business models, which are described in detail in the joint Accenture Strategy and CDP report “Low Carbon High Stakes: Do You Have the Power to Transform?” are:

- Energy-as-a-service provider
- Distribution optimizer
- Local low-carbon energy access provider
- Carbon capture and use operator
- Large-scale low-carbon electricity generator

These business models are not mutually exclusive. And no single option will work for all utilities. Instead, electricity companies should consider the merits of each as they make portfolio investment and improvement decisions.
Raising the stakes

Electricity companies looking to make the transition from sales volume to service excellence should address at least four key priorities to capture opportunity in a low-carbon world.

• **Embrace digital models**: There is immense opportunity for the electricity industry to unlock new value from digital initiatives. Big wins in customer value (like reduced energy costs) are expected for those that move quickly to market innovative services. Value creation for both industry and society has become a “win-win” and utilities have an important role to play in translating the tangible benefits.

Recent research by Accenture Strategy for the World Economic Forum Digital Transformation of Industries project estimates that societal benefits include three factors: value creation to customers, reduction in carbon emissions and net job creation. Digital initiatives offer immense opportunity to decarbonize the energy system, with the potential to realize an estimated 16 billion tons of net avoided CO₂ emissions. And they will create up to 3.45 million new jobs in the industry between 2016 – 2025, a 10.7 percent increase.

• **Shape the legislative landscape of tomorrow**: In the utility sector, legislation tends to be backward focused and lags significantly behind innovation. Rules are laid out to control and mitigate effects of the past. Utilities should be much more assertive when it comes to pushing the boundaries of existing regulatory frameworks, given the limited time-scale of the ambitious transition to low-carbon. That requires taking an active role and collaborating with regulators instead of just complying or waiting for legislation to be enacted. For example, helping regulators understand the risks and opportunities of technological or business model innovations to enable a smooth transition to low-carbon approaches.
• **Treat carbon like a financial asset or liability:** One of the clear trends emerging from the Paris Summit is a mechanism for the international transfer of emissions reductions. This mechanism highlights the importance of low-carbon operations as a barometer of long-term business viability. To benefit, companies need to divest carbon-intensive assets such as fossil fuel power plants, and start prioritizing investments in renewables and demand-side solutions. According to Accenture analysis of 2015 CDP carbon disclosure data, forty-five percent of the utilities disclosing their emissions use internal CO₂ prices in their decision making. The other half needs to step up and put a price on carbon for future investment decisions.

To mitigate the risks of stranded assets, leading investors are shying away from carbon intensive industries. In fact, the Norwegian Sovereign Wealth Fund, a $900 billion fund which owns 1.3 percent of globally listed companies, will sell its stake in companies that generate more than 30 percent of their outputs or revenues from coal-related activities.20 This will not only affect coal mining firms but also power generators who are heavily reliant on coal in their portfolios.

• **Collaborate to build success:** The electricity industry has, in the past, been known for being somewhat insular. Now, with the move towards low-carbon solutions, there is a need to shift to a culture that welcomes collaboration and innovation—where new sources of value are found with alliance partners and suppliers or further afield in other sectors. Take Enel as a case in point.21 Enel is a traditional Italian utility that has created an ecosystem of startups and partners to develop, test and scale new products and services. These range from smart thermostats, to heat pump solutions and solar energy propositions.

There are many ways to develop a culture of innovation. However all require a considerable change of approach within utilities. Like launching a venture capital fund to promote and sponsor start-ups focused on solving low-carbon solutions. Or identifying partners from your main suppliers and major customers. Understanding the new technological advances and R&D, and gaining deep knowledge of the transformation of industries, can yield utilities deep competitive advantage.
Betting on the future

The electricity industry is the leading contributor to global carbon emissions. As such, they need to ramp up their commitment to cutting CO₂ in order to reach the goals of the Paris Climate Agreement. It won’t be easy. But those that embrace innovative new low carbon business models will not only shore up their competitive positioning, they’ll do what’s right for their customers and the planet.

Notes

2 Ibid
3 Ibid
4 Ibid
5 Ibid
6 Ibid
7 Ibid
8 Ibid
10 https://vandebron.nl/#!/
11 https://www.engie-energie.nl/opgewekt
12 http://www.duurzaambedrijfsleven.nl/industrie/12231/energieconcern-vattenfall-neemt-dreiging-vandebron-serieux
13 www.there100.org
15 http://www.wenergyglobal.com
19 Ibid
20 Ibid
21 https://www.enel.com/en-gb
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