ICCR Investor Packet for Electric Utility Clean Energy Campaign: 2020

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Background:
According to the EPA, electricity generation produces almost 30 percent of U.S. carbon dioxide emissions (EPA), and in 2018, over 60 percent of this electricity was generated through the burning of natural gas and coal (US EIA). But by all accounts, the electric utility industry has begun a fundamental transformation, perhaps the greatest in its history. A combination of cost-competitive renewable energy sources and storage, higher distributed energy resources (DER) penetration, new regulation, and energy efficiency measures are rapidly changing the industry landscape.

1) Renewable Energy LCOE

The levelized cost of energy (LCOE) of renewable technologies has dropped precipitously and the costs are now competitive with traditional fossil fuel sources. LCOE is the revenue per kWh (kilowatt hour) generated that an energy system would require to recover its building and operating costs throughout an assumed period of operation. While this metric is not a holistic picture of energy costs, it offers a “back of the envelope” measure of the competitiveness of different generation technologies. In some scenarios, the LCOE of alternative technologies has dropped below the marginal cost of certain existing conventional technologies (Lazard). In theory, this means renewables are becoming cheaper than fossil fuel technologies. In the last year, the unsubsidized LCOE of onshore wind and utility-scale solar have seen a 7 and 13 percent decrease, respectively (Utility Dive). Many analysts predict that these costs will continue to drop, as both offer renewable power at a scale comparable to nuclear facilities while the long-term fuel costs for traditional technologies remain uncertain. Future regulatory risk leaves fuel costs uncertain. Potential regulation can impose mechanisms to reduce carbon, such as emission caps and carbon taxes, increasing costs for fossil fuel-based energy sources. Battery storage scalability and storage costs are also improving exponentially, enabling renewable energy sources to compete directly with fossil fuel alternatives by overcoming challenges like intermittency and grid integration.
2) Distributed Generation

Distributed generation refers to small-scale units of local generation connected to the grid at the distribution level (i.e. households or businesses). These resources provide electricity on-site or near the end user. Examples of these resources include rooftop photovoltaic panels, combined heat and power plants, electric vehicle chargers, and natural gas-fuelled generators. Distributed generation is the alternative to centralized, bulk generation. Centralized generation has characterized utility business models for the past 100 years. This business model is now under assault.

Distributed generation has many advantages, including resilience (power availability during a widespread outage), reliability (power quality and quantity is not compromised) and direct cost advantages depending on the location. For these reasons, distributed generation is an attractive way to decrease reliance on centralized generation. While not all utilities have embraced distributed generation, it is generally accepted by the industry that distributed generation will be an important part of the utility landscape and is a direct competitor to traditional utility business practices.

3) Regulation

The majority of States (35) have mandated renewable portfolio standards and at least 21 States have carve-outs and/or multipliers for certain technologies. This signifies that utilities operating within these States are required by law to demonstrate that a certain percentage of their sold electricity comes from renewable sources. Moreover, regional cap and trade programs (intended to reduce greenhouse gas emissions) are in place in the Northeast (RGGI: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, New Jersey, Rhode Island, and Vermont) and California, which is partnering with British Columbia, Manitoba, Ontario and Quebec. While there has been resistance to climate change-related policies at the Federal level, policies at the State and municipal level are moving forward.

4) Demand Response and Energy Efficiency:

Demand response is generally defined as shaping energy demand to meet energy supply. There are multiple demand response programs in place throughout the United States. Demand response programs are aimed at reducing peak demand in order to decrease the stress on the grid at peak times, i.e. when customers get home from work and start using more electricity. As a result, demand response is now viewed as a “generation source” since it reduces the need for supply.

Energy efficiency (EE) programs have also had a significant impact on power demand. According to the International Energy Agency, U.S. consumers have saved $45.2 billion since 2000 because of the adoption of energy efficiency programs. Energy efficiency programs have the effect of reducing electricity demand growth, which has complicated utility business planning due to a reduction in the sales volume of their core product: electricity or natural gas. Nevertheless, the environmental benefits, customer savings, and job creation coupled with
regulator and legislator support of EE programs has led to widespread adoption of these programs in almost every state.

While the electric utility industry is clearly in the midst of fundamental change, a number of utilities do not have a clear strategy to address their shifting realities. To them, the shift away from traditional, fossil fuel generation is a brave new world that contradicts their entire business model. Some are clinging to conventional approaches, because they know no other way, and current regulatory hurdles may make it hard to build and own renewable generation. However, change is on the horizon with accelerating green power consumer demand and the phase out of federal incentives. A classic example of this dilemma is the demise of coal-fired power plants in the United States: As natural gas and renewable energy have dropped in cost, many coal-fired plants are uneconomical. In fact, 558 coal-fired facilities have been closed since 2007. Many of these facilities have closed or are being converted to natural gas. [N.B., A few utilities are even leap-frogging over gas to renewables, since renewables plus battery storage is now both reliable and economical. Reliability and affordability, along with safety are the mandates for the electric power sector.] According to EIA’s Short Term Energy Outlook report, coal consumption by the power sector is on track to fall 8 percent between 2018 and 2019. Moreover, clean coal has proven to be impractical. An illustration is Southern Company’s disastrous “Clean Coal” project - Kemper - which the company abandoned at a $6 billion loss. Unable to get the technology to work, the company shifted to using gas to power the plant. Nonetheless, in the South and Midwest, a significant percentage of utilities depend on coal-fired power plants to generate their electricity.

An ICCR utilities leadership team is exploring a framework for engagement with integrated electric utilities in light of the upheaval facing the industry. The team believes that through comprehensive planning with a net-zero carbon target in mind, utilities can limit their risk and stand to benefit from the changes sweeping the industry. ICCR members are also concerned about the impacts on workers and affected communities—ratepayers, in particular, who are often asked to pay for the costs of transition)—and will incorporate “Just Transition” concerns into dialogues with companies in the sector. ICCR members are interested to discuss with affected groups and issue area experts what good policies guiding this transition in a multi-stakeholder Roundtable in December. ICCR collaborates on technical aspects of the utilities work with Ceres, a nonprofit organization advocating for sustainability leadership that includes investors and many companies—including utilities—among its membership.

ICCR members have the opportunity to engage with utilities to assess how they are adapting (or could adapt) their business model to enable increased deployment of low-carbon electricity generation as a means to reduce societal greenhouse gas emissions, make renewable energy more accessible to low-income customers, and avoid systemic portfolio risk from the climate crisis.
Resources

➢ Climate Majority Project: Net Zero by 2050
➢ Ceres Report: Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States
➢ MJ Bradley Report: Climate Strategy Assessments for the U.S. Electric Power Industry: Assessing Risks and Opportunities Associated with a 2-Degree Transition and the Physical Impacts of Climate Change

2020 Target Utilities List

For the 2020 ICCR Utilities Target list, please email Christina Herman if you are an ICCR member.