

# **U.S. Electric Utility Creditworthiness--Why the Regulatory Framework Matters**

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## **I. Background**

The U.S. electric utility sector faces many challenges posed by federal and state environmental requirements, aging generation plants and distribution systems, transmission capacity constraints, emerging and changing technologies, increasing cyber threats, and in many regions, anemic growth in the customer base, and declining customer demand. The pressure on electric utilities to meet those challenges affects their decisions on capital expenditure which are far from insignificant. According to Edison Electric Institute (EEI), U.S. investor owned electric utilities spent \$98.1 billion in 2014 to acquire and upgrade their physical assets, with projections to exceed \$100 billion in each year, 2015 -2017.<sup>1</sup> Like their investor-owned counterparts, U.S. public power utilities face similar challenges as they seek funding for capital projects. For both U.S. investor-owned and public electric utilities, debt issued for capital expenditures is affected by credit ratings provided by three dominant, internationally recognized credit rating agencies (CRAs): Standard & Poor's (S&P), Moody's, and Fitch. Downgrades in the creditworthiness of an electric utility could result in higher borrowing costs. For example, if a hypothetical electric utility sought to borrow \$15 billion and its credit outlook was downgraded from an A rating to a BBB rating, that utility might have to pay \$195 million more for money borrowed on January 31, 2016.<sup>2</sup>

The regulatory framework is a key factor in credit ratings. Traditionally, utilities in the US have used a cost-of-service methodology to determine rates, particularly in Florida and the Southeast. It is the model CRAs used to evaluate the creditworthiness of electric utilities for most of the 20th century. However, in recent years certain segments of the electric utility industry have undergone some degree of deregulation and restructuring along with changes to technology, all of which have contributed to the emergence of new electric utility business models. These new business models have resulted in changes to the analytical methods used by CRAs.

This paper discusses how the evolving utility business models characterized by different levels and modes of regulation may prompt changes in how CRAs evaluate the creditworthiness of electric utilities and the importance of regulation for such evaluations. While these changes affect electric utilities in all regions of the nation, the focus of this paper is on Florida and the Southeast.

## **II. Credit Rating Agencies and Their Concerns**

CRAs determine an electric utility's creditworthiness based on several major considerations: an electric utility's regulatory framework, its ability to recover costs and realize returns on investments, its financial viability, the nature and diversification of operations and assets and, if it generates power, its fuel source diversity.

For all three of the major CRAs, the regulatory framework plays a critical role in its rating determinations. Moody's formula for assessing creditworthiness of a regulated electric utility assigns

25% of the total weighting to the electric utility's regulatory framework – equal to the portion of the weighting allocated to considerations related to cost recovery.<sup>3</sup> A utility's creditworthiness is a function of its capacity to recover its costs. CRAs see the relationship between the regulatory framework and cost-recovery as separate but inter-related. According to Moody's:

Broadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation. The Ability to Recover Costs and Earn Returns relates more directly to the actual decisions, including their timeliness and the rate-setting outcomes.<sup>4</sup>

S&P explains its considerations related to the regulatory framework as follows:

We base our assessment of the regulatory framework's relative credit supportiveness on our view of how regulatory stability, efficiency of tariff setting procedures, financial stability, and regulatory independence protect a utility's credit quality and its ability to recover its costs and earn a timely return.

Our view of these four pillars [regulatory stability, tariff-setting procedures and design, financial stability, regulatory independence and insulation] is the foundation of a utility's regulatory support. We then assess the utility's business strategy, in particular its regulatory strategy and its ability to manage the tariff setting process, to arrive at a final regulatory advantage assessment.<sup>5</sup>

Each CRA describes the regulatory framework differently but the unifying theme appears to be the framework's capacity to provide regulatory stability by promoting "transparency, predictability, and consistency," to quote S&P.<sup>6</sup> Features of the regulatory framework that may be impacted by those three characteristics include the stability of the regulatory body, the way rate cases are handled, and regulatory risk for the utility. Regulatory risk can increase if rate regulation is perceived as constraining a utility's flexibility to manage its cash flow. For example, Fitch expressed concerns with a bill that was proposed but not enacted during the 2015 Florida legislative session. The bill would have authorized the Florida Public Service Commission to regulate the wholesale rates of the Florida Municipal Power Agency, thus potentially constraining its ability to raise rates.<sup>7</sup>

Even with the challenges confronting the industry during the Great Recession, electric utilities seem to have been buffered, in part because of their regulated status. In its analysis of third quarter 2014 credit ratings, EEI noted that "credit outlooks remain stable to positive due to de-risking of business models through renewed focus on regulated activities and improved industry regulation."<sup>8</sup>

In November 2015, Moody's gave the regulated portion of the utilities industry a stable outlook for 2016 "underpinned by a continued expectation of a supportive regulatory environment."<sup>9</sup> According to EEI, the average credit ratings for the electric industry were stable from 2004 to 2014. In 2004 the average credit rating rose from BBB- to BBB. In 2014, the credit ratings of U.S. investor-owned electric utilities improved on average by one notch from BBB to BBB+.<sup>10</sup> Overall, there were 103 upgrades and only three credit downgrades for utilities nationwide from all three CRAs in 2014.<sup>11</sup> The major cause of the cumulative upgrades in that year was Moody's decision in November 2013 to upgrade by one notch

most of U.S. regulated utilities on the basis of improving regulatory trends, better cost recovery measures, shorter regulatory lag, and more favorable regulator-utility relationships.<sup>12</sup>

The overall direction of rating actions from the three CRAs for 2015 through September 30, 2015 is similar to the direction of all rating actions in 2013 when 75% of the actions for the year were upgrades (the portion of actions resulting in upgrades through Q3 2015 is 74% of a total of 50 ratings actions through that point of the year).<sup>13</sup> Due largely to Moody's actions, as noted above, 2014 was an anomaly because credit rating actions were more numerous than in any year since 2007 and upgrades as a portion of the actions – at over 97% -- far exceeded any year since 2002.<sup>14</sup> Even disregarding the anomalous 2014, the number of downgrades seem to have abated in the aftermath of the recession as shown in Table 1:

**Table 1**  
**Cumulative Credit Downgrades by Fitch, Moody's, and S&P, by Year and at Subsidiary Level**

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
48	43	48	26	34	51	21	39	20	3

Source: Edison Electric Institute, *Electric Utility Industry Financial Data and Trend Analysis: 2015 Q3 – Financial Updates, Credit Ratings*.

### III. Credit Ratings Overview in Context of Evolving Utility Regulatory and Business Models

Regulated markets offer greater certainty for cost recovery than deregulated markets and are therefore inherently advantaged in the CRA calculus. In contrast to regulated electric utilities, unregulated electric power companies must recover their costs without the comfort and assurance of a franchise customer base. Restructuring in electricity markets which started in the mid-1990s resulted from deregulation, but only in some regions of the country and in some aspects of generation and supply. With respect to generation, unregulated Independent Power Producers (IPPs) were authorized in some states to produce electricity. Their share of output is greatest in the Northeast and Illinois with significant output in California, Texas, and Montana and relatively little output in the Southeast.<sup>15</sup>

The credit rating outlook for the unregulated generation segment of the electric industry is typically not as positive, because unregulated generation is not price-regulated and thus is a riskier proposition. According to Moody's, for the entire unregulated electric power sector, weaker demand growth, energy conservation efforts, and a sluggish economy also have been constraining factors.<sup>16</sup> In contrast to Moody's, S&P reported a stable outlook for IPPs, attributing that outlook to IPP hedging strategies. S&P noted, however, that if natural gas prices and demand do not increase, IPP hedging strategies are not likely to keep their earnings potential stable in the long term.<sup>17</sup>

Many electric utilities are currently a mix of regulated and unregulated operations and many comprise holding companies with subsidiaries operating in more than one state. Regardless of corporate structure, electric utilities are in the midst of navigating a changing business model which has far reaching implications for the regulatory framework. As a recent report by the California Public Utilities Commission found, fixed costs have been rising more rapidly recently than has historically been the case while electricity sales have remained flat or have actually declined.<sup>18</sup> Meanwhile the cost-of-service business model (still used in states with vertically integrated utilities, as in Florida and other states in the

Southeast) has encouraged infrastructure investments. The California report included the observation that as long as the customer base grew, infrastructure expansion propelled by cost-of-service ratemaking succeeded in keeping customer and utility investor interests fairly well aligned. However, according to the report, that alignment has declined, even in states with vertically integrated utilities, and the regulatory framework will be under growing pressure to find ways to manage those diverging interests.<sup>19</sup>

The CRAs have been evaluating credit worthiness based largely on the utility model where the utility, spurred by cost-of-service ratemaking, has sought to expand its customer base. Although the restructuring movement which started in the mid-1990s largely stalled in 2002 with the implosion of Enron, technological developments in the electricity sector have prompted consideration of other utility business models.

In addition to the traditional cost-of-service, vertically integrated utility business model characteristic of Florida and the Southeast, two other utility industry models, largely conceptual at this time, are discussed in the California PUC report. In the second model, electric utilities would facilitate competition among electricity generating companies on the grid but not manage the grid or control access to it. Distributed energy resources would be integrated into the planning and operation of electric distribution systems with utilities assuming the role of integrating diverse resources but not controlling them. This model is being considered in New York and may be more compatible with restructured markets. The third model is the most limited in terms of regulation in that the electric utility essentially owns only its poles and wires and operates the distribution grid but neither sells electricity to customers nor generates electricity. Texas' electricity market is an example of the third model.

Other challenges for regulatory frameworks emerge from at least six trends in the electric utility industry. These trends may negatively affect an electric utility's prospect of being assigned a stable or positive credit rating from the three major CRAs:

1. Increase in number of mergers and acquisitions, particularly involving unregulated businesses and increased debt
2. Significant capital infrastructure plans involving new technologies
3. Increasing consumer adoption of distributed generation
4. Increasing consumer adoption of energy efficiency measures
5. Pressure to add renewable sources to the utility supply mix
6. Rising concern with cyber attacks

How, and the extent to which, the regulatory framework will be altered in the long-term in response to these trends remains to be seen. CRAs are also wrestling with the same issues as policymakers and the electric utility industry, as discussed briefly below.

#### **A. Increase in the Number of Mergers and Acquisitions**

As in other industries such as telecommunications and the airline industry, there is a trend in the electric industry to consolidate operations through mergers and acquisitions. In the electricity sector, mergers and acquisitions frequently involve holding companies and have tended to expand the parent company's

domain by adding more unregulated companies to its corporate structure. An electric utility might decide to pursue merger and acquisition prospects with the intent of realizing cost savings in the longer term, reducing risk and uncertainty and increasing synergies with its other operations.

CRAs do not appear to view mergers and acquisitions as inherently bad. However, according to Moody's utility holding companies increasingly rely on debt to finance these deals.<sup>20</sup> For example, Southern Company received a revised rating outlook of negative from stable after the holding company agreed to purchase AGL Resources, a natural gas distribution company based in Atlanta, for approximately \$8 billion in cash. AGL Capital Corporation, AGL Resources financing subsidiary, is also being acquired as part of the deal and was rated lower than three of the company's other four subsidiaries. Adding to this risk are fiscal pressures experienced by two subsidiaries, Georgia Power for its construction of the new nuclear plant (Vogtle) and Mississippi Power for its construction of a new IGCC coal plant (Kemper). The addition of the AGL plant was intended to "increase the scale, scope, and diversity of Southern's electric generating business by adding one of the largest local natural gas distribution companies (LDC) in the country, with seven LDCs serving over 4.5 million customers in 7 states."<sup>21</sup> In addition, the acquisition was intended to realize some cost savings through operational synergies with Georgia Power and reduce risk through a more diversified energy portfolio.<sup>22</sup> In this example, the negative outlook for the parent company was not passed along to the subsidiary regulated utilities.

Duke Energy and two of its subsidiaries likewise experienced a credit downgrade from Moody's due, in part, to Duke's investments in two pipelines companies, the Atlantic Coast Pipeline and the Sabal Trail Pipeline. Together these pipelines are projected to cost roughly \$2.25 billion. The debt incurred for that purpose is being treated as the parent company's financial responsibility.<sup>23</sup> The intent of that acquisition is to reduce the risk of price volatility and increase natural gas supply reliability for the company and its subsidiaries. Duke Energy would own 40% of the Atlantic Coast Pipeline in a partnership with Piedmont Natural Gas Co and purchase a 7.5% share of the Sabal Trail Pipeline which will connect to the Transco Pipeline in Alabama and carry natural gas through Alabama and Georgia to Florida. The largest customer would be Duke Energy Florida's proposed combined cycle plant in Citrus County and FP&L.<sup>24</sup> As in the case of Southern Company, the regulated utilities that are held by Duke are evaluated by the CRAs independently. In the Duke example, the financial situation of Duke Energy Progress, one of the subsidiaries, has an impact on the rating of the parent company. Specifically, Duke Energy Progress is expected to experience more financial pressure and does not plan to seek rate relief until 2017.<sup>25</sup>

## B. Significant Capital Infrastructure Plans Involving New Technologies

For vertically integrated electric utilities in the cost-of-service mold, cost overruns and schedule delays can trigger CRA down ratings. For example, Moody's downgraded Mississippi Power Company's senior unsecured rating to near junk bond status for, among other reasons, the company's inability to secure permanent rate relief to cover the costs of the Kemper IGCC plant.<sup>26</sup>

As a recent article in *Ecology Law Currents* argues,<sup>27</sup> utilities have few incentives to invest in new technologies because regulators have historically approved utility capital investments in least cost options benefiting existing customers. Deployment of smart grid technology, arguably critical to the utility facilitation model, may be impeded when regulators are reluctant to approve smart grid projects due to lack of evidence of benefits to existing customers. In addition, utility regulators have rejected

projects where the technology was determined to be too expensive and unproven. For example, the Virginia Public Utility Commission rejected a proposal for a “clean coal” project with capture and sequestration capability.<sup>28</sup> New technologies are therefore doubly risky for CRAs because they are generally commercially untested and there is also a possibility that regulators will not authorize the utility to recover its costs.

An article in the *Electricity Journal* explains the connection between rate cases and credit ratings. It also makes the point that regulatory measures already exist to mitigate risks associated with modernizing the grid: pre-approval measures which clarifies the policies and terms to be applied to a major capital project prior to construction; inclusion of construction work in progress in the rate base with a cash return; the use of asset trackers or riders; and the deployment of incentive rate of return regulation and alternative regulation. Adoption of these measures may contribute to improvements in an electric utility’s financial metrics such as the interest coverage ratio, a key indicator of creditworthiness, considered in rate cases.<sup>29</sup>

### C. Increasing Consumer Adoption of Distributed Generation

In the U.S. consumer adoption of solar PV electricity generation has increased in recent years.<sup>30</sup> This increase in take-up has not been uniform throughout the country and has been more pronounced in regions of the country with higher electricity rates along with generous state RPS and net metering policies. California leads the nation in distributed solar PV installed capacity with 40% of the nation’s total capacity, followed by New Jersey, Arizona, Massachusetts, New York, Hawaii, Colorado, Maryland, Pennsylvania and Connecticut which in sum account for another 44% of total capacity.<sup>31</sup> States in the Southeast tend to lag behind, perhaps because retail electricity rates tend to be lower on average.

The Edison Electric Institute viewed distributed generation, one form of which is solar PV, as a disruptive technology which threatens to erode electric utilities’ capacity to recover costs.<sup>32</sup> Certain developments portend increased distributed generation, specifically the recent extension of the federal investment tax credit and provisions in the Clean Power Plan which authorize states to comply with Plan requirements by substituting new renewable energy sources for reduced generation from fossil fuel-fired plants.

At least at this juncture, CRAs have not been too concerned about the effects of distributed generation on the electric utility’s creditworthiness. Moody’s expressed the following sentiments in April 2014:

With respect to DG [distributed generation], we consider the technology event risk associated with various forms of distributed generation a longer-term risk factor, which is not, at this time, materially affecting our ratings or rating outlooks. We think the electric grid is efficient and reliable, and because it constitutes a critical infrastructure asset necessary for a functioning economy, we expect a material amount of political and regulatory support to maintain grid reliability. We also note that most of the DG technologies or services currently being evaluated require a connection to the existing grid.

From a credit perspective, we think today’s DG risks are more conceptual than specific. To have a truly distributed generation electric network, a number of different technologies would need to be synchronized, spanning all three components of the

traditional, vertically integrated electric utility rate base: generation, transmission and distribution.<sup>33</sup>

Utility concerns with distributed generation have centered on the rate impact on existing customers if customers with distributed generation and net metering are compensated at the retail rate and do not pay their “fair share” of fixed costs. Moody’s overriding assumption is that the development of storage battery technology is still in its infancy. Therefore, a death spiral of utility customers exiting the grid is unlikely to occur in the foreseeable future. Under those circumstances electric utilities should have time to develop appropriate cost recovery mechanisms to respond to changing technologies and thus mitigate any potential adverse impacts on existing customer rates.<sup>34</sup>

Not all companies share Moody’s perspective on the role of regulation as a stabilizing force. In May 2014, Barclays Bank downgraded the bond market of the U.S. electric utility sector against the U.S. Corporate Bond Index, on the grounds that the regulatory compact has hampered electric utilities from responding quickly to changing technologies. Of particular concern was the movement toward greater distributed generation with solar and battery storage.<sup>35</sup>

#### **D. Increasing Consumer Adoption of Energy Efficiency Measures**

Energy efficiency programs operate differently in restructured and non-restructured states. In restructured states a systems benefits charge is reflected in the regulated distribution component of a retail customer’s electric bill. Expenditures from such a charge are typically authorized for research and development projects and energy efficiency programs. In states such as Maine, New York, and Delaware energy efficiency services are not provided directly by the electric utility. In non-restructured states, such as Florida and states in the Southeast, energy efficiency programs are typically provided by electric utilities subject to the public utility commission’s approval. The affected utilities are authorized to recover prudently incurred program-related costs from customers based on the assumption that these costs would be lower than the construction of new generation facilities. However, if the assumption proves inaccurate, the utility may be faced with potentially lower demand for supply than projected and thus incur stranded assets.

In January 2013 the Edison Electric Institute raised the concern that the electric utility industry would be exposed to significant forgone revenue with the growth of energy efficiency programs. At the time spending on energy efficiency programs was projected to increase by 300% between 2010 and 2015 within the range of \$6-\$16 billion per year.<sup>36</sup> The most recent year for which an estimate of energy efficiency spending was available at the time of writing is 2013. In that year electric utilities were estimated to have spent \$7.7 billion for energy efficiency programs, realizing a savings of 4.1% in U.S. electric consumption.<sup>37</sup>

Despite the potential for revenue losses and increased regulatory risk, utilities actually may not be adversely affected in terms of their credit ratings if they invest in energy efficiency programs. In fact, they may benefit. For example, Moody’s Investors Service upgraded Burlington Electric Department’s credit rating a notch, citing the utility’s energy efficiency program as part of its justification.<sup>38</sup> In yet another example, Moody’s assigned a stable outlook to New York State Power Authority (NYPA) for \$1 billion in revenue bonds based in part on the assumption that NYPA would manage its growing energy efficiency programs in such a manner as to limit adverse credit exposure.<sup>39</sup> In short, energy efficiency

programs may contribute to regulatory risk but they do not appear to be an automatic trigger for downgrades in electric utility creditworthiness.<sup>40</sup>

#### **E. Pressure to Add Renewables to the Utility Supply Mix**

An assortment of federal and state policies and incentives have contributed to a growth in capacity of utility-scale renewable generation assets, particularly wind and solar. In terms of added capacity, utility-scale renewable generation accounts for a much greater proportion of supply than does distributed generation.<sup>41</sup> Utility-scale renewable generation projects will likely be spurred by the extension of the federal investment tax credit, as well as implementation of the Clean Power Plan with its emphasis on renewables as one of the building blocks.

Electric utilities which have expanded their use of renewables do not automatically experience credit downgrades provided they have defensible business models that reduce exposure to regulatory risk. For example, Southern Power's strategy of investing more money in renewables resulted in a stable outlook from Moody's as the company sought to assume \$1.7 billion in debt securities. This credit assignment was based on the company's long-term contractual coverage for renewables which offsets in large part what was considered to be a modest decline in the renewal of long-term natural gas contracts.<sup>42</sup>

However, the inclusion of renewables in an electric utility company's supply portfolio can result in credit downgrades if the utility fails to contain costs. Such was the case with Gainesville Regional Utilities (GRU) in Florida which entered into a long-term contract with a merchant biomass plant, Gainesville Renewable Energy Center (GREC). Natural gas prices declined after execution of the contract to such an extent that the GREC contract proved to be uneconomical so GRU has continued to pay fixed costs to GREC while procuring power at a lower cost from other sources. The fixed costs have been passed on to ratepayers, causing GRU's retail rates to be among the highest in Florida. Because of concerns with the adverse effects of the uneconomical GREC plant, S&P downgraded GRU's credit rating from an AA to an AA- in November 2015.<sup>43</sup> This downgrade translates to an additional \$140,000 in fees.<sup>44</sup> Moreover, high electric rates have caused consumer backlash, as reflected in past city commission elections and proposed state legislation to change the nature of the utility's regulatory oversight.<sup>45</sup>

#### **F. Rising Concerns with Cyber Attacks**

Cybersecurity is an ongoing source of concern for critical infrastructure owners, including electric utilities. Both the electric utility sector and government have taken steps to defend against cyber attacks. At the federal government level, a presidential executive order was issued in February 2013 with the objective of strengthening and protecting critical infrastructure and improving public-private information sharing.<sup>46</sup> For its part, the electric utility industry has used information technology to thwart cyber attacks. For example, in testimony to a U.S. house subcommittee, the CIO of FirstEnergy<sup>47</sup> reported that the utility uses a program called Threat Intelligence Management to analyze within the company's power systems the flow of information that might anticipate or detect threats. The program also provides a platform for sharing data with government and private businesses.<sup>48</sup>

Cyber attacks are now on the radar screen of credit rating companies. Moody's Investor Services does not view cyber attacks as an explicit risk within a credit analysis, nor as a principal driver of ratings. Rather, these attacks are viewed along the lines of major storms and natural disasters which are capable

of triggering stress to the system, thereby impacting a utility's creditworthiness. Yet, even if cyber attack preparation is not an explicit factor in credit assessments, electric utilities may want to become better positioned to manage such risks. As Moody's explained, "This means the credit implications associated with cyber defense, detection, prevention, and response should start to take a higher priority within our credit assessments and analysis. From a credit perspective, we are still working towards fully understanding the scale and scope of cyber risks, in part because the risk is evolving."<sup>49</sup> Moody's assumes that if a cyber event were to occur and would result in widespread disruption, the government would intervene immediately to restore operations, thereby reducing credit risk. S&P raised similar concerns with respect to the preparation of the banking industry to respond to cyber events.<sup>50</sup>

Risks associated with cybersecurity may be increasing. For example, it was reported that in 2014 that hackers tried to access Orlando Utilities Commission's computerized operations millions of times a day, up from around 30,000 a day in prior years.<sup>51</sup> Despite these growing cyber threats, however, protections and vulnerability are not uniform across the electric industry. A recent report by the Congressional Research Service (CRS), *Cybersecurity Issues for the Bulk Power System*, notes that existing cybersecurity reliability standards are mandated for bulk electric power but only apply to distribution systems that are considered critical for the operation of an interconnected transmission network. Therefore, distribution systems not meeting those criteria are potentially more vulnerable.<sup>52</sup> The CRS report identifies other factors that contribute to electric utility vulnerability: the evolving nature of cyber threats, the interdependence of the electric grid on other, potentially less protected critical infrastructures and the deployment of new technologies such as smart grid systems.<sup>53</sup> The CRS report notes that "many utilities seem at present to view the potential for a major cybersecurity event as a low probability concern and to balance cybersecurity efforts and expenditures with the perceived risks. . . Cyber intrusions of the grid are believed to be happening, which may be seen as an indication that that more needs to be done by electric utilities to make the system secure. Whether electric utilities can make the investment financially (and recruit staff) for such a mission is also an issue."<sup>54</sup>

#### **IV. Conclusion**

The creditworthiness of U.S. electric utilities is evaluated by credit rating agencies, the three largest of which are Moody's, Standard & Poor's, and Fitch. Credit ratings matter because they can affect the utilities' borrowing costs. For each CRA, an electric utility's regulatory environment is an important component in the evaluation of an electric utility's creditworthiness. Moody's decision in November 2013 to upgrade its ratings a notch for most U.S. electric utilities reinforces that point. A favorable regulatory environment could mitigate against other risks the electric utility may face. Regulated utilities have an advantage over unregulated power companies in credit rating assessments because the latter are exposed to competitive market forces and have no guaranteed customer base. Therefore, all three CRAs evaluate them differently.

The electric utility business model has historically been based on cost-of-service and vertically integrated utilities. While this model still characterizes electric utility operations in the Southeast, including Florida, it is beginning to change elsewhere. Various trends in the industry may introduce uncertainty for long-term cost recovery, such as increasing mergers and acquisitions, investments in new technologies, growing consumer adoption of distributed generation and take-up of energy efficiency measures, more pressure for electric utilities to add renewable sources to their supply portfolios in response to government mandates, and the increasing focus on cybersecurity events. The

challenges presented by those trends can be managed and therefore may not necessarily trigger credit rating downgrades. However, CRAs consider a solid regulatory framework important for managing those challenges effectively.

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<sup>1</sup> Richard McMahon, *For Electric Utilities the Future is Here*, Edison Electric Institute, Oct. 8, 2015, at 4, at <http://www.usea.org/sites/default/files/event-/Richard%20McMahon%20-%202015%20WEC%20NA%20Regional%20Energy%20Forum.pdf>.

<sup>2</sup> The BofA Merrill Lynch US Corporate A Option-Adjusted Spread was 1.49% and the BBB option-adjusted spread was 2.79% on that date. Computation by author.

<sup>3</sup> Moody's Investors Service, *Rating Methodology: Regulated Electric and Gas Utilities*, Dec. 23, 2013.

<sup>4</sup> *Id.*, at 9.

<sup>5</sup> Standard & Poor's, Standard & Poor's Rating Services, *Criteria/Corporates/Utilities: Key Credit Factors for the Regulated Utilities Industry*, McGraw Hill Financials, Oct. 14, 2015, at 2.

<sup>6</sup> *Id.*, Para. 24, at 3.

<sup>7</sup> Matt Whittaker, *A Threat to Their Credit Ratings*, EnergyBiz, July 7, 2015, at [http://www.energybiz.com/article/15/07/threat-their-credit-ratings?quicktabs\\_6=2](http://www.energybiz.com/article/15/07/threat-their-credit-ratings?quicktabs_6=2). See also Jeannine Anderson, Fitch Issues Warning on Credit Implications of Increased PSC Oversight, *Public Power Daily*, June 8, 2015, at <http://www.publicpower.org/Media/daily/ArticleDetail.cfm?ItemNumber=44016>

<sup>8</sup> Edison Electric Institute, *Credit Ratings: Q3 2014 Financial Update Quarterly Report of the U.S. Shareholder-owned Electric Utility Industry*, at [http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/QtrlyFinancialUpdates/Documents/QFU\\_Credit/2014\\_Q3\\_Credit\\_Ratings.pdf](http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/QtrlyFinancialUpdates/Documents/QFU_Credit/2014_Q3_Credit_Ratings.pdf), 1.

<sup>9</sup> Moody's Investors Service, *Announcement: Moody's: US Unregulated Power and Utilities Industry Outlook for 2015 Changed to Negative; Regulated Utilities Outlook Remains Stable*, Nov. 6, 2015, at [https://www.moodys.com/research/Moodys-US-unregulated-power-and-utilities-industry-outlook-for-2016--PR\\_338434](https://www.moodys.com/research/Moodys-US-unregulated-power-and-utilities-industry-outlook-for-2016--PR_338434).

<sup>10</sup> Edison Electric Institute, *EEI 2014 Financial Review*, Ch. 5, at [http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/finreview/Documents/FinancialReview\\_2014\\_04\\_CapMkt.pdf](http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/finreview/Documents/FinancialReview_2014_04_CapMkt.pdf).

<sup>11</sup> *Id.*

<sup>12</sup> Moody's Investors Service, *Moody's Places Ratings of Most US Regulated Utilities on Review for Upgrade*, Nov. 8, 2013, at [https://www.moodys.com/research/Moodys-places-ratings-of-most-US-regulated-utilities-on-review--PR\\_286253](https://www.moodys.com/research/Moodys-places-ratings-of-most-US-regulated-utilities-on-review--PR_286253).

<sup>13</sup> Edison Electric Institute, *Electric Utility Industry Financial Data and Trend Analysis: 2015 Q3 – Financial Updates, Credit Ratings*, at [http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/QtrlyFinancialUpdates/Documents/QFU\\_Credit/2015\\_Q3\\_Credit\\_Ratings.xlsx](http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/QtrlyFinancialUpdates/Documents/QFU_Credit/2015_Q3_Credit_Ratings.xlsx).

<sup>14</sup> *Id.* See also Edison Electric Institute, *supra* note 10.

<sup>15</sup> Severin Borenstein and James Bushnell, *The U.S. Electricity Industry after 20 Years of Restructuring*, Energy Institute at Haas, University of California-Berkeley, WP 252R, Revised May 2015, at <https://ei.haas.berkeley.edu/research/papers/WP252.pdf>.

<sup>16</sup> Moody's Investors Service, *supra* note 9.

<sup>17</sup> Amy Poszywak, *S&P: Outlook for US Merchant Power Stable Despite Risks*, SNL, November 11, 2015

<sup>18</sup> Kristin Ralff-Douglas and Marzia Zafar, *Electric Utility Business and Regulatory Models*, California Public Utilities Commission Policy & Planning Division, June 8, 2015, at [http://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/About\\_Us/Organization/Divisions/Policy\\_and\\_Planning/PPD\\_Work/PPDElectricUtilityBusinessModels.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Divisions/Policy_and_Planning/PPD_Work/PPDElectricUtilityBusinessModels.pdf).

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<sup>19</sup> *Id.*

<sup>20</sup> Robert Walton, *Stressed by Falling Gas and Power Prices, Unregulated Utilities Get Negative Outlook from Moody's*, UTILITYDIVE, Nov. 15, 2015.

<sup>21</sup> Moody's Investors Service, *Moody's Affirms Southern Company Ratings, Changes Outlook to Negative*, Aug. 24, 2015, at [https://www.moodys.com/research/Moodys-affirms-Southern-Company-ratings-changes-outlook-to-negative--PR\\_333158](https://www.moodys.com/research/Moodys-affirms-Southern-Company-ratings-changes-outlook-to-negative--PR_333158).

<sup>22</sup> *Id.*

<sup>23</sup> Moody's Investors Service, *Moody's Changes Outlook of Duke Energy, Progress Energy and Duke Energy Progress to Negative*, June 5, 2015, at [https://www.moodys.com/research/Moodys-changes-outlook-of-Duke-Energy-Progress-Energy-and-Duke--PR\\_326978](https://www.moodys.com/research/Moodys-changes-outlook-of-Duke-Energy-Progress-Energy-and-Duke--PR_326978).

<sup>24</sup> John Downey, *Duke Energy Buys into a Florida Interstate Gas Line*, Charlotte Business Journal, May 5, 2015, at <http://www.bizjournals.com/charlotte/blog/energy/2015/05/duke-energy-buys-into-a-florida-interstate-gas.html>.

<sup>25</sup> *Id.*

<sup>26</sup> Moody's Investors Service, *Moody's Downgrades Mississippi Power to Baa3, Negative Outlook; Affirms Southern, Negative Outlook*, Nov. 5, 2015, at [https://www.moodys.com/research/Moodys-downgrades-Mississippi-Power-to-Baa3-negative-outlook-affirms-Southern--PR\\_338057](https://www.moodys.com/research/Moodys-downgrades-Mississippi-Power-to-Baa3-negative-outlook-affirms-Southern--PR_338057)

<sup>27</sup> Inara Scott. 2015. *Applying Stakeholder Theory to Utility Regulation*, Ecology Law Currents, 44(2), at 1-12.

<sup>28</sup> *Id.*

<sup>29</sup> Wayne P. Olson. 2009. At a Crossroads: *Modernizing Utility Infrastructure in a Tough Credit Environment*, The Electricity Journal, 22(7), at 6-26.

<sup>30</sup> U.S. PV installations in the residential market has steadily increased from 2010 through the third quarter of 2015, the last quarter for which data are available. See Solar Energy Industries Association, *Solar Market Insight, 2015*, Q. 3, at <http://www.seia.org/research-resources/solar-market-insight-2015-q3>.

<sup>31</sup> U.S. Energy Information Administration, *EIA Electricity Data Now Include Estimated Small-Scale Solar PV Capacity and Generation*, Dec. 2, 2015, <http://www.eia.gov/todayinenergy/detail.cfm?id=23972>.

<sup>32</sup> Peter Kind, *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*, Edison Electric Institute, Jan. 2013, at <http://www.eei.org/ourissues/finance/documents/disruptivechallenges.pdf>.

<sup>33</sup> Moody's Investors Service, *US Regulated Utilities Regulatory Framework Holds Key to Risks and Rewards Associated with Distributed Generation*, Apr. 23, 2014, at <http://utilityproject.org/wp-content/uploads/2015/04/Moodys-Report-on-DG-and-Claimed-Utility-Death-Spiral.pdf>.

<sup>34</sup> *Id.*

<sup>35</sup> Herman K. Trabish, *Barclays Downgrades Entire Electric Utility Sector*, UTILITYDIVE, May 26, 2014, at <http://www.utilitydive.com/news/barclays-downgrades-entire-us-electric-utility-sector/266936/>.

<sup>36</sup> Peter Kind, *supra* note 32, at 5.

<sup>37</sup> Steven Nadel, Neal Elliott, and Therese Langer, *Energy Efficiency in the United States: 35 Years and Counting*, Report E1502, American Council for an Energy Efficient Economy, June 2015, at 22-23.

<sup>38</sup> Burlington Electric Department, *Moody's Investors Service Improves BED's Credit Rating*, Nov. 10, 2015, at <https://www.burlingtonelectric.com/news/3684/Moody%20%99s-Investors-Service-Improves-BED%20%99s-Credit-Rating>.

<sup>39</sup> Moody's Investors Service, *Moody's Assigns Aa1 to NYPA's Planned series 2015 A Revenue Bonds: Outlook Stable*, Oct. 19, 2015, at [https://www.moodys.com/research/Moodys-assigns-Aa1-to-NYPAs-planned-Series-2015-A-revenue--PR\\_336941](https://www.moodys.com/research/Moodys-assigns-Aa1-to-NYPAs-planned-Series-2015-A-revenue--PR_336941).

<sup>40</sup> A study by ACEEE analyzed the link between utility-sponsored energy efficiency programs and corporate performance. The authors concluded that a direct link between energy efficiency increases and increased shareholder value was difficult to establish causation due to many other factors. However, they found no evidence of negative effects in shareholder value. See Dan York, Martin Kushler, Sara Hayes, Stephanie Sienkowski, and Casey Bell, *Making the Business Case for Energy Efficiency: Case Studies of Supportive Utility Regulation*, ACEEE, Report U133, December 2013, at 13.

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<sup>41</sup> Solar Energy Industries Association, *Solar Industry Data*, Table on Yearly Solar Installations, at <http://www.seia.org/research-resources/solar-industry-data>.

<sup>42</sup> Moody's Investor Service, *Moody's Affirms Southern Power Company at Baa1; Stable Outlook*, Aug. 26, 2015, at [https://www.moodys.com/research/Moodys-affirms-Southern-Power-Company-at-Baa1-stable-outlook--PR\\_332774](https://www.moodys.com/research/Moodys-affirms-Southern-Power-Company-at-Baa1-stable-outlook--PR_332774).

<sup>43</sup> S&P, *RatingsDirect: Gainesville, Florida Gainesville Regional Utilities; CP; Combined Utility*, November 19, 2015, <https://www.gru.com/Portals/0/Ratings/Gainesville%20Regl%20Util%2011-19-15.pdf>.

<sup>44</sup> Christopher Curry, Standard & Poor's Downgrades GRU Bond Rating, *The Gainesville Sun*, November 21, 2015, <http://www.gainesville.com/article/20151121/articles/151129953>.

<sup>45</sup> CS./CS./HB 1325 (Fla. 2015), at <http://www.myfloridahouse.gov/Sections/Documents/loaddoc.aspx?FileName=474387.docx&DocumentType=Amendments&BillNumber=1325&Session=2015>.

<sup>46</sup> Executive Order 13636, *Improving Critical Infrastructure Cybersecurity*, 78 Federal Register 11737, 11737-44, Feb. 19, 2013, at <https://www.dhs.gov/sites/default/files/publications/EO-13636-PPD-21-Fact-Sheet-508.pdf>.

<sup>47</sup> FirstEnergy is comprised of 10 electric utilities in the states of Ohio, Pennsylvania, West Virginia, Maryland, New Jersey, and New York. See, e.g., [https://www.firstenergycorp.com/content/fecorp/our\\_electric\\_companies\\_home.html](https://www.firstenergycorp.com/content/fecorp/our_electric_companies_home.html).

<sup>48</sup> Rep. Randy Weber Holds a Hearing on Cybersecurity for Power Systems: Hearing Before the Subcomm. on Energy of the H. Comm. on Science, Space, and Technology, 114<sup>th</sup> Cong., Oct. 26, 2015.

<sup>49</sup> Joe Weiss, *Moody's and S&P Warn Cyber Risk Can Affect Credit Ratings -- What Does This Mean to Critical Infrastructure*, Control: Promoting Excellence in Process Automation, Nov. 29, 2015, at <http://www.controlglobal.com/blogs/unfettered/moodys-and-s-and-p-warn-cyber-risks-can-affect-credit-ratings-what-does-this-mean-to-critical-infrastructure/>.

<sup>50</sup> *Id.*

<sup>51</sup> Kevin Spear, *Orlando's Electric Utility Fights Cyberwar*, Orlando Sentinel, Sept. 27, 2014, at <http://www.orlandosentinel.com/news/os-cyber-war-ouc-20140927-story.html>.

<sup>52</sup> Richard J. Campbell, *Cybersecurity Issues for the Bulk Power System*, Congressional Research Service, June 10, 2015, at 14 , at <https://www.fas.org/sgp/crs/misc/R43989.pdf>.

<sup>53</sup> *Id.*, at 31-32 and 6-7 (smart grid).

<sup>54</sup> *Id.*, at 31-32.