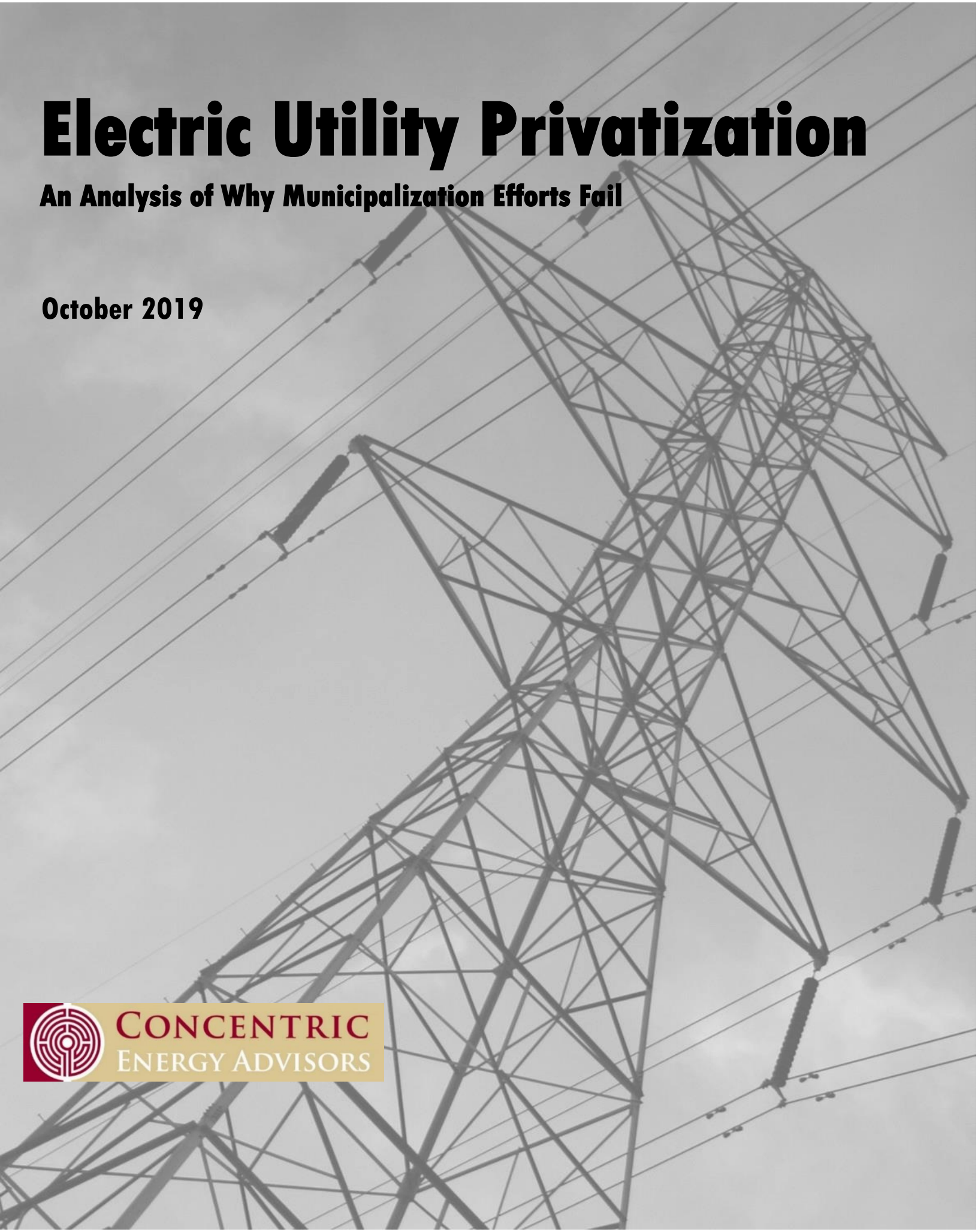
Electric Utility Privatization

An Analysis of Why Municipalization Efforts Fail

October 2019



CONCENTRIC ENERGY ADVISORS

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Key Terms

Municipal Electric Utility ("MEU")

A local government public utility operating on a non-profit basis. Municipal electric utilities are managed by local elected officials or city employees and can be operated by the municipality or a third party. Rates are set by the city council or local utility board. These utilities often purchase power through contracts or at market prices, with larger municipal electric utilities operating their own generation plants.

Investor-Owned Utility ("IOU")

A privately-owned electric utility, with rates set by the state public utility commission. An IOU generates power from its own generation fleet and/or purchases power from others.

Electric Cooperative ("Cooperative")

A non-profit private electric utility owned by the customers served. Electric distribution cooperatives provide electricity to member customers, while generation and transmission cooperatives provide power to distribution cooperatives through their own generation plants or power purchases.

Municipalization

Municipalization, in the context of an electric utility, is the transfer of electric utility assets, either through settlement or condemnation, from an IOU to ownership under local municipal authority.

Privatization

Privatization, in the context of an electric utility, is the opposite of municipalization, wherein the municipal electric utility transfers ownership of the electric utility assets to an IOU.

Regulation

Electric utility regulation establishes and monitors the rules set for electric utilities by government or local agencies. These agencies set rules regarding rates charged to customers, service terms, reliability standards, provisions for energy efficiency and low-income assistance. IOUs are regulated by state-level public utility commissions ("PUCs"), while MEUs are regulated at the city level either by a city council or a local electric utility regulatory body. Cooperatives are self-regulated, typically by a board of directors chosen by and consisting of its members.

Summary Takeaways

Introduction and Purpose

There are numerous factors that drive communities to explore municipalization (*e.g.*, local control of the electric system; support/accelerate green energy initiatives; dissatisfaction with existing IOU; lower rates; local economic stimulus). While some of these potential goals may be achieved, the possible future benefits of municipalization must be evaluated carefully. There have been several recent instances where municipalization has not met the expected goals of the community, and also instances in which municipal utility assets have been privatized. This white paper highlights many common issues that any community contemplating municipalization should consider.

- The majority of the MEUs were established decades ago, often for the purpose of electrifying a new region, and were expanded over time. These legacy MEUs can have lower overall cost structures, than what is achieved through the acquisition of an established IOU electric distribution system through condemnation.
- Municipalization over the past couple of decades has been a challenge – since 2000, over 60 communities have considered or are currently considering municipalization, and just 9 have municipalized, with 2 of those communities subsequently selling the electric utility back to the IOU.
- Differences in the underlying cost structure between IOUs and newly formed MEUs can affect the rates and available services to be provided by a MEU. For example, IOUs are often able to leverage economies of scale in operations to provide cost savings, address grid modernization efforts and cybersecurity threats, and have the ability to diversify risk across a broad customer base. Recent newly formed MEUs generally have not been able to achieve the scale or diversification that is achieved through IOU ownership to accomplish these efforts at a similar cost as the IOUs. In practice, MEUs are often unable to capitalize on economies of scale or to operate and manage the MEU at a similar cost structure, including the costs associated with storms and other one-time events, that can result in unanticipated rate increases borne entirely by the community.
- The lengthy process of municipalization can result in escalating acquisition and transaction costs, with the length of some efforts exceeding a decade. In addition, the actual costs of municipalization often exceed initial estimates, as acquisition costs for the system are refined throughout the municipalization process.
- The operation of a newly formed municipal electric utility faces significant challenges and incremental risks that can result in higher costs for customers.
- While one of the goals of municipalization is often local economic development, commercial and industrial customers' focus on reliability from IOU service may stymie the city's efforts to control the electric utility.
- As a result of these challenges, there have been many recent examples of MEUs opting to sell their electric assets back to IOUs, which then incorporate the community into the IOU service territory.
- The goals that drive municipalization can often be accomplished through more certain and less costly efforts than condemning the utility assets and forming a MEU.

Utility Characteristics

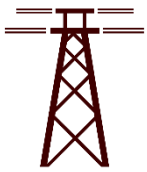
There are several differences between MEUs and IOUs that any community considering municipalization should be aware of:

50x Average Size of an IOU versus MEU

The average size of MEUs, which often serve a small, local community, is much smaller than that of the average IOU, at a factor of over 50 times by customer count. The average MEU in 2017 had approximately 9,200 customers as compared to approximately 500,000 customers for IOUs. As a result, large IOUs have the opportunity to benefit from economies of scale in power purchases and other utility expenditures.[1]

Risk, Liability, and Oversight

Operational and financial risks of MEUs are borne exclusively by municipal customers, whereas this risk is shared between IOU shareholders and IOU customers. In addition, IOUs are regulated by a state PUC, led by commissioners experienced in energy issues and dedicated to regulating electricity rates, protecting customers, and ensuring that IOUs provide safe and reliable service that is consistent with industry standards. In contrast, in most cases the oversight of the MEU is at the city level, with rules and regulations set at the discretion of either the city council or a city-level electric utility governing body. Often city government lacks the expertise needed to expertly manage an electric utility. In cases where there is less oversight and experience in managing a complex electric utility system, the MEU model may result in increased risk, compared to IOUs, both in terms of cost and providing safe and reliable service. At the federal level, while the Federal Energy Regulatory Commission ("FERC") regulates certain services provided by IOUs, MEUs are specifically exempt from general FERC regulation, which removes another layer of expert oversight and protection.[2]



Grid Modernization and Security Concerns

The electric industry is currently undergoing a transformation, driven by technological advances and customer demands to enhance grid reliability and resiliency, and to implement grid automation to allow for more granular control of resources, customer awareness and involvement in energy markets, and interconnection of renewable energy with grid resources. Due to the significant capital investment required for upgraded information and other systems that are necessary to support these advancements, the economics of these programs are greatly improved when deployed to serve larger customer bases. IOUs around the country are focused on grid modernization efforts, particularly addressing sophisticated cybersecurity threats aimed at large-scale critical infrastructure. Grid modernization efforts require significant funds and a long-term commitment to technological and process improvements that a newly formed MEU may not be equipped to address, particularly after recently acquiring an electric distribution system.

Perceived Benefits of Municipalization

The impetus for considering municipalization varies by community but often centers around four key issues.

Local Control

A municipality may desire local control of the provision of electricity, including the ability to select who supplies their power and/or operate the distribution system, the ability to establish oversight at the community level, and provide financial support to the local government. In addition, the community may see municipalization as a way to provide local employment and economic opportunities for residents.

Green Energy Supply

A municipality may have the goal of obtaining a greener electricity supply than what is offered by the IOU or achieving greener supplies on a more accelerated basis than is planned by the IOU. While many states have renewable portfolio standards that provide state-level requirements on integrating renewable resources into the generation mix that IOUs must follow, some municipalities have renewable energy goals that go beyond these standards.

Dissatisfaction with Existing Utility

Electric customers in a community may be dissatisfied with the existing utility supplier due to a variety of reasons, including price or perceived service/reliability issues. Proponents of municipalization may view it as the only solution to adequately address these perceived problems.

Potential for Lower Rates through Municipal Utility Ownership

Communities may perceive that electricity prices will be lower with municipal ownership due to financing advantages or the potential to bypass costs incurred by the existing utility to provide service, including the return to the shareholders of the IOU.

Forming a MEU can be challenging, even when it is projected that there is a compelling economic and/or public benefits case to be made. A municipality is making a long-term decision to finance and acquire assets from the existing utility provider; assuming the obligations of providing safe, reliable, and affordable electric service for multiple classes of customers; and forming an organization and governance structure to manage and operate the utility. The municipality is not only committing to acquire existing utility assets, but to maintain those facilities according to national standards and to continue to make investments that support the services that residential and business customers expect.

Based on a review of the largest MEUs, the average age is approximately 85 years old,[3] and nearly all of the 2,200 MEUs and 900 cooperatives and in the U.S. were formed in the early 1900s. Many of these utilities were established to electrify new areas. Very rarely were these systems established through an acquisition of IOU electric assets. Conditions under which public power was established nearly 100 years ago no longer exist today. These systems were built slowly and expanded as the need for electric power increased, and in many instances, were able to take advantage of federally-subsidized power sources. Today, many communities have large electric distribution systems in place and electric demand has moderated or is declining. To create a new public power authority – at today's market prices – requires large amounts of capital to be raised and expended all at once.

Based on the utility municipalization efforts of various communities in the past two decades, the vast majority have ultimately not proceeded to acquire and manage the local utility system. Municipalization has been a challenge – since 2000, over 60 communities have or are currently considering municipalization, and just 9 have municipalized, with 2 communities subsequently returning to the IOU. Municipalizations fail to proceed for a variety of reasons, including lack of support from the voters in the community, rejection of proposals by a state regulatory commission, or the costs and time necessary to complete the effort greatly exceed original estimates.

Feasibility studies performed on behalf of municipalities frequently underestimate both the time and cost of completing municipalization efforts that do not have the cooperation of the existing utility service provider. The municipalization process often takes many years and considerable expense to navigate. Common issues that are faced in the process are identified below.

Acquisition Cost Escalation

The costs to acquire the electric assets for a MEU can be significant and includes not only the costs to acquire the physical electric assets (*e.g.*, utility poles; wires; fleet vehicles) subject to the municipalization, but also costs related to the transaction (summarized at the right). In certain jurisdictions, the cost for a community to acquire the assets of an IOU can also include the need for the municipality to reimburse the utility for the value of the going concern in addition to the value of the assets.

The acquisition of an IOU's electric assets for the purposes of establishing a MEU is generally completed through a condemnation proceeding. Fair market value (*i.e.*, an estimated market value reflecting a willing buyer and seller), not net book value (*i.e.*, the original cost of the electric assets minus accumulated depreciation) of the assets to be acquired, has historically been the standard for the acquisition of utility property through condemnation. However, the total final value of the acquisition costs to be incurred by a community is highly uncertain, since many components are usually decided by a court, and other costs (*e.g.*, transaction costs; startup costs) can escalate from initial estimates based on the complexity of the process. The increase in costs can have a significant effect on the perceived benefits of municipalization by serving to offset many of the forecasted rates reductions for customers.

Acquisition Costs

Physical Assets: The costs to acquire the IOU electric assets in service in the community at the fair market value.

Stranded Costs: Costs incurred by the IOU to serve the community that are no longer needed as a result of the municipalization (e.g., previously procured power to supply the departing municipal customers).

Separation and Reintegration: Costs to separate the MEU system from the IOU system and ensure that the IOU can provide the same level of safe and reliable service to its remaining customers that was delivered prior to the municipalization.

Startup Costs: One-time costs to begin operation as a municipal utility, either through the municipality (e.g., hiring employees, setting up a new office, setting up a new billing system) or contracting of a third party to operate the MEU.

Transaction Costs: The costs to execute a financial transaction to acquire an IOU's utility assets, including underwriting and debt issuance costs, as well as legal, engineering and consulting costs.

Going Concern: The additional value above the value of the assets that takes into consideration the lost value of the IOU's business that is not otherwise recovered in the transaction.

Service Quality and Reliability

MEUs must adhere to the same state and federal reliability standards to maintain service quality and safety, which involves significant expense. IOUs are typically much larger with more sophisticated operations and access to resources to ensure reliable service. The costs associated with maintaining and restoring reliability associated with storms and other catastrophic one-time events is particularly a concern when such costs are borne by a single community as opposed to being spread over larger, more diverse service territories, as is the case with IOUs. In addition, municipalization efforts can face opposition from commercial and industrial customers focused on reliability concerns. For example, several entities expressed concern over municipalization efforts in the City of Boulder, Colorado, with IBM, which has a campus in the area, asking the Colorado PUC to dismiss the city's municipalization application.[4]

Ongoing Operating Cost Escalation

Ongoing costs to operate and maintain a MEU include power supply costs, operations and maintenance costs, debt service associated with the purchase of the electric system and subsequent required capital improvements, and the costs of energy efficiency and other programs to be offered by the MEU. On average, MEUs are typically smaller than an IOU, and as a result, MEUs may not be able to capitalize on the economies of scale like larger IOUs to lower their operating costs, and therefore rates for customers, and overcome the annual cost resulting from acquiring the system. Furthermore, newly formed MEUs may not have the depth of management capabilities to operate and oversee the utility operations as efficiently as the established IOU. In addition, larger IOUs have greater diversity in how/when customers consume electricity throughout the day and year that can result in less variable or "peaky" electric demand, which reduces grid operation costs. In contrast, with fewer customers and less diverse electric loads, the electric demand of a MEU can be more variable throughout the day and year and thus result in higher grid operation costs. Furthermore, having greater diversity in the supply of power can also manage risk and keep costs down; this can be done much more effectively by larger IOUs than by smaller MEUs. Lastly, increases in fixed operating costs that are not a function of the number of customers served or the amount of power sold can have a more material effect on the rates of a MEU relative to an IOU, since IOUs can spread the recovery of such cost increases across larger customer bases. As noted previously, these additional costs directly lead to increased rates for customers, thereby offsetting many of the anticipated rate reductions from the feasibility study.

Environmental Issues

Thirty states have adopted renewable portfolio standards, while another eight states have adopted renewable energy goals. IOUs are obligated to follow state renewable energy targets, while MEUs are generally not subject to the state renewable requirements. Given their relative scale, stability, and access to capital, IOUs may provide for the quickest and most efficient way to reduce greenhouse gas emissions and increase renewable energy generation. Beyond renewable portfolio standards, IOUs are also building and procuring renewable energy due to customer demands and economics. IOUs have long track records of financial stability, which can help them provide renewables at low cost and at significant scale, unlike a much smaller, newly established MEU. For example, various parties, including renewable developers and environmental groups, have emphasized the importance of large credit-worthy utilities in California in order for the state to meet its aggressive climate goals.[5]

Lengthy Process

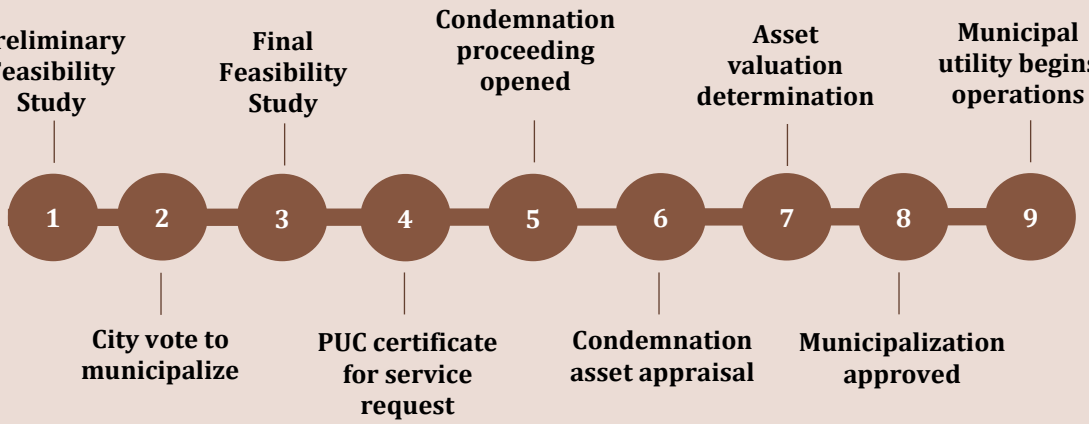
An extended process to municipalize can increase uncertainty and cause acquisition costs to escalate significantly. Municipalization can take years, and in certain cases has taken over a decade. Protracted processes inflate legal and other costs related to the transaction. The initial step of municipalization often involves the community commissioning a feasibility study to assess the technical, legal, and economic potential of municipalization, including a comparison of future costs and rates between a newly created MEU versus the existing IOU. These preliminary studies, which can have multiple phases, often exceed $100,000. The municipality then typically puts the decision as to whether to municipalize before the voters in a regular or special election, though the process, and thus timeline, varies by jurisdiction.[6]

If the voters support the decision to proceed with acquiring the IOU assets, the process typically involves significant discussions and negotiations between a municipality and the IOU, in an attempt to find a mutually agreeable solution and establish just compensation. In cases where the parties cannot agree on the value of the electric assets (which is often the case), the stranded costs, or the reintegration costs, a legal proceeding results wherein the municipality seeks to condemn the IOU's assets that it is seeking to own and operate. In addition to the court determination on condemnation, the process can require a state PUC's approval. Both the condemnation process and PUC approval process involve additional time, uncertainty and expense to be incurred by the municipality, including legal, consulting and engineering fees.

Assuming the legality of the acquisition and just compensation are resolved and condemnation of the IOU's assets proceeds, the community prepares to assume responsibility for management and operation of the utility. This process can take a year or more to establish the necessary contracts, properly staff the new municipal utility, establish a governance process for the new utility, and prepare for day-to-day operations and planning.

The timeline below shows key steps throughout a typical municipalization process.

Municipalization Process Through Condemnation

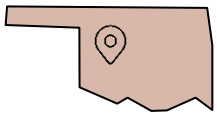


Recent Privatization Cases

As a result of the challenges associated with operating and maintaining a MEU, there have been several cases of privatizing MEU assets (*i.e.*, the sale of municipal assets to IOUs) since 2000. The table below summarizes the MEUs that have recently sold their assets to IOUs.

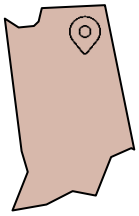
Recent Electric Utility Privatization Activity

Utility	Municipality	Municipalization Year	Privatization Year
American Electric Power Company, Inc.	Elk City, OK	2004	2010
Indiana Michigan Power Company	City of Fort Wayne, IN	Pre-2000	2011
Central Vermont Public Service Corp.	Readsboro, VT	Pre-2000	2011
Pacific Gas & Electric Company	Hercules, CA	2002	2014
Rocky Mountain Power	Eagle Mountain City, UT	Pre-2000	2015
Florida Power & Light Co.	Vero Beach, FL	Pre-2000	2018



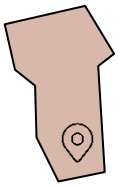
Elk City, OK

Fuel rate increases in Elk City spurred a municipalization effort that began in 2002. The initial effort failed a vote in December 2002, but a small portion of the community was later municipalized in 2004, taking ownership of the assets that served eight customers from Public Service Company of Oklahoma ("PSO"). However, the city's efforts to stabilize electricity prices under municipal ownership proved difficult, and Elk City issued a request for proposals in May 2009 for the sale of its municipal electric system. Elk City chose PSO's proposal in July 2009 and the sale was completed in February 2010 with PSO acquiring a total of 69 customers through the privatization.[7]



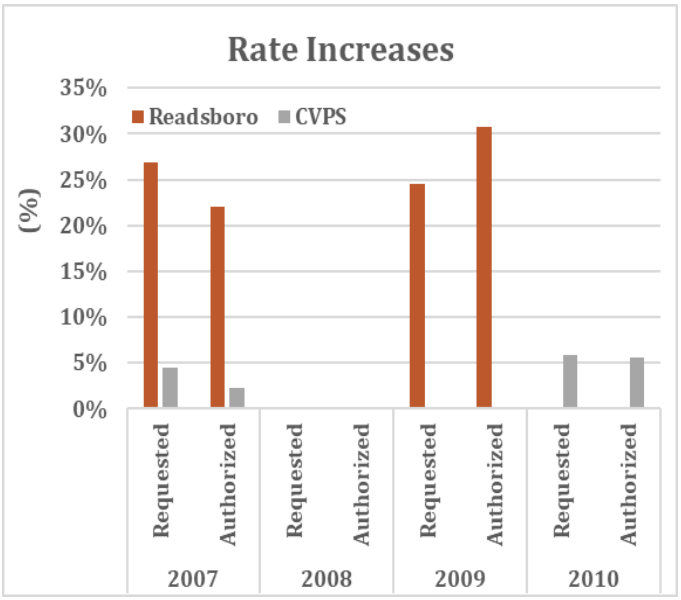
City of Fort Wayne, IN

Since the 1970s, Indiana Michigan Power Company ("IMPC") had leased the electric distribution assets in the City of Fort Wayne. In 2010, the parties were considering renewal of the lease or full ownership by either the city or IMPC. After months of negotiations, the city and IMPC signed an agreement for the IOU to take control of the electric system, citing an end to expensive litigation as a key benefit of the agreement. IMPC agreed to pay the city $5 million upfront and $34.2 million spread over multiple years, and the transfer was completed in 2011. A significant driver for the sale was that the city would gain access to the City Light Trust Fund, established over 35 years earlier with an approximate value of $36 million, as well as an overfunded pension obligation of $700,000. In addition, IMPC paid $39 million over 15 years to the city for its electric distribution assets. This privatization example highlights the often conflicting priorities faced by cities with MEUs. In the end, the city determined funds were best spent elsewhere than on continuing service through its MEU.[8]



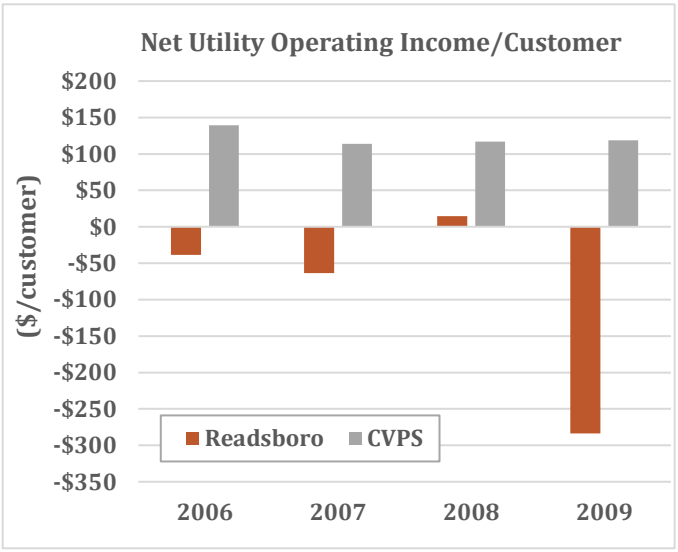
READSBORO, VT

The Readsboro MEU experienced significant rate increases in the late 2000s, which resulted in the municipal utility ultimately putting the utility up for sale. Prior to the sale, the city had voted three times on whether to sell the electric utility assets. The municipality's electric distribution assets were sold in 2011 to Central Vermont Public Service Corporation ("CVPS") in an effort to reduce rates. The proceeds from the sale to CVPS were to be used by the municipality for power restoration costs resulting from an ice storm, with the remaining balance available for town use.



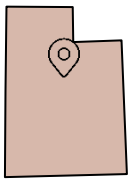
As shown in the chart at the right, the Readsboro MEU governing body approved several large increases in rates prior to the sale of its assets. In 2007, the Readsboro MEU received a 22% rate increase (after requesting a nearly 27% increase) and a 31% increase again in 2009. Readsboro's rate increases were largely to update accounting procedures and cover capital improvements. In comparison, CVPS's rates increased by just over 2% in 2007 and by 6% in 2010.

Despite the rate increases, the MEU still reported negative net utility operating income on a per-customer basis, indicating that the MEU's costs still exceeded revenue on a per-customer basis. As shown in the chart at the right, Readsboro's operating income loss reached $284/customer in 2009. If the MEU had not been sold, the municipality was expecting a further 28% rate increase to make up for operating losses. This financial instability contrasts with the stable operating income per customer achieved by CVPS (approximately $120-$140/customer) during this same period.[9]



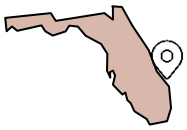
HERCULES, CA

In 2002, Hercules municipalized the electric assets of Pacific Gas and Electric Company ("PG&E") citing the opportunity to increase revenue. Once completed, the city began purchasing wholesale power at market prices, promising customers that it would be able to do so at competitive rates while making profits that would flow to the general fund; however, the scenario was based on assumptions of growth in Hercules that did not materialize. Instead, operating expenses greatly outweighed revenues and the city was forced to continually subsidize the MEU from the city's general fund. The city also had difficulty with its utility investments, having canceled a planned substation that cost customers millions. Around the same time, Standard & Poor's downgraded two of the city's bonds to junk or near-junk and placed the city on credit watch negative. In June 2012, due to cost escalation and the operational losses that increased MEU customer rates, a measure to sell the municipal utility was approved by 77% of voters. The electric distribution system was subsequently sold back to PG&E in 2014, with the accumulated capital and operating losses just through 2011 estimated to be $9 million.[10]



EAGLE MOUNTAIN CITY, UT

In November 2014, citizens in Eagle Mountain City voted to sell the electric and gas MEUs, a transaction that had been in negotiations for nearly a year. The city had concerns surrounding its debt from establishing the MEUs and saw proceeds from the sale as a way to reduce current and future debt and enhance the potential for rate stability through increased efficiencies associated with larger IOU ownership and operations. In 2015, Eagle Mountain City sold its electric system to Rocky Mountain Power and sold its gas system to Questar Gas.[11]

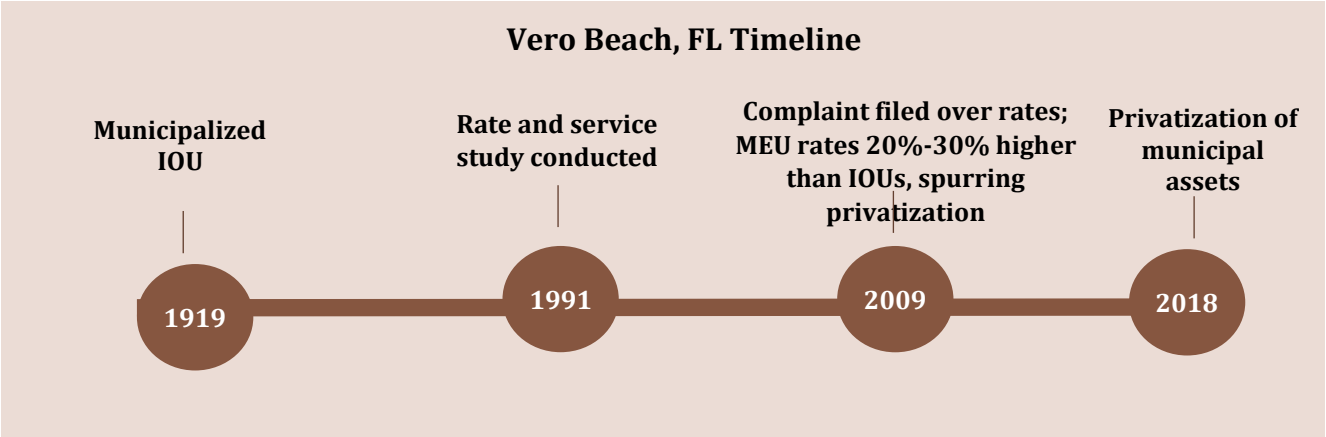


VERO BEACH, FL

Vero Beach had owned and operated its MEU since 1919. In 2009, a complaint filed against Vero Beach expressed concerns over the MEU's rates, use of electric utility funds, and customer representation. At that time, driven by poor management decisions, the MEU's residential rates were approximately 20-30% higher than comparable electric rates of Florida Power & Light ("FPL"), a neighboring IOU.[12]

Two of the reasons the complaint cited for rate increases were that the city had not conducted a rate and service study since 1991, and the city was relying on the electric utility as significant source of revenue to the general fund. The complaint noted that contributions from the MEU represented over half the city's entire budget. In addition, the MEU was also criticized for failing to offer energy conservation incentives that were offered by the IOU, and for failing to build up a monetary reserve for future emergencies. A major point of tension was the fact that around 60% of the MEU's customers lived outside the municipal borders, which was the largest proportion of customers outside the city limits for all municipal utilities in Florida. As a result, these customers felt they were not able to participate in and challenge utility decision making. While there were multiple legislative attempts to address this issue, all of them failed.[13]

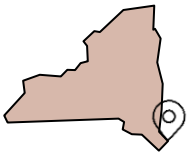
The sustained higher rates and resulting customer complaints prompted the city to pursue privatization. After almost a decade of effort, Vero Beach completed the privatization of its municipal electric utility in 2018, selling the MEU to FPL.



Examples of Municipalization Issues

The following are case studies illustrating the risks associated with municipalization:

- Long Island, NY – Asset Mismanagement
- Jefferson County, WA – Cost Escalation
- Boulder, CO – Protracted Municipalization Process
- Jacksonville, FL – Changing Energy Landscape



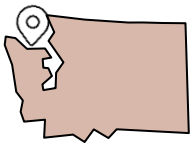
Long Island, NY – Asset Mismanagement

Long Island Power Authority ("LIPA") was originally created under the Long Island Power Act in 1985 as a state subdivision, and it owns electric transmission and distribution systems along Long Island and the Rockaways, a portion of New York City. In 1998, LIPA issued nearly $7 billion in bonds to finance acquisition of the transmission and distribution system of the former Long Island Lighting Company ("LILCO") and refinance portions of its debt, including costs associated with the Shoreham Nuclear Power Project, which was completed but never began commercial operations.

However, by the mid-2000s, LIPA's debt costs became onerous, resulting in the need for several financial restructuring efforts. In 2014, LIPA reported total debt of $7.6 billion (up 11% over 2010), with projections of $8 billion by 2018. In addition to its substantial debt load, between 2006 and 2012, storm costs (excluding Superstorm Sandy costs) exceeded annual budgets by an average of 239%. These increased costs resulted in higher electric rates.[14]

A report filed by the New York State Comptroller found that LIPA's average residential retail rate in 2013 was 22% higher than the New York median, and 78% above the national median. LIPA's commercial retail prices were even higher at 92% above the national median. [15]

In 2013, the state enacted legislation to stabilize rates, improve service, and improve accountability at LIPA. In 2014, after significant cost escalation, asset mismanagement and reliability issues, LIPA was required to select a local IOU to manage its electric system, choosing Public Service Enterprise Group ("PSEG"). Since PSEG began managing LIPA's assets, customer service has improved significantly, and PSEG has also made record-level system improvements on the system, including 700 miles of distribution lines rebuilt to improve reliability.[16]

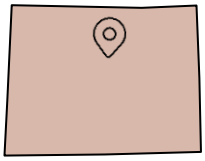


JEFFERSON COUNTY, WA – COST ESCALATION

In 2008, driven by the desire to obtain local control over its electric service, Jefferson County Public Utility District No. 1 ("JPUD") initiated a municipalization process to acquire the electric distribution assets of Puget Sound Energy ("PSE"). As part of the process, JPUD contracted for a preliminary feasibility study of an electric system acquisition. The feasibility study provided a 10-year comparison of the projected cost of continued electric service with PSE and the projected cost of service for a PUD. The study estimated that JPUD would be able to acquire PSE's assets for $47.2 million, with total financing requirements of $66 million including initial acquisition costs, separation, start-up and legal costs, working capital and financing expenses. The study concluded that JPUD could provide service beginning in 2011 at rates that were slightly higher than PSE's rates for the first three years of operation, but that rates would decrease noticeably in the fourth year, when low-cost power from Bonneville Power Authority ("BPA") became available. The study further noted that the acquisition would result in lower rates for PUD electric service in all ten years of the study if the acquisition year was assumed to line up more closely with the BPA power supply and if the parties relied on "more realistic" acquisition costs for the PSE assets and different financing assumptions.[17]

JPUD contracted a feasibility study for the purchase of PSE's electric distribution assets, valuing them at approximately $47 million – which was less than half of the final acquisition cost of over $100 million (excluding startup costs).

JPUD acquired the electric distribution assets of PSE in 2013 through a negotiated sale agreement, approximately five years after the acquisition was originally approved by the electorate. The sale price was $109.3 million, or approximately 2.3 times the projection in the feasibility study. In addition, actual operating costs and resulting electricity rates under JPUD operation have been higher than projected, altering JPUD's rates relative to PSE as originally estimated in the feasibility analysis. While JPUD was successful in securing power from BPA, its retail electric distribution rates currently exceed the rates charged by PSE. JPUD's initial rates for the 2013–2016 period remained comparable with PSE's 2013 rates. However, PSE increased rates an average of 1.4% per year over the past five years, while JPUD increased rates twice in 2017 totaling 6.6%, and increased rates again by 4.8% in 2018.[18]

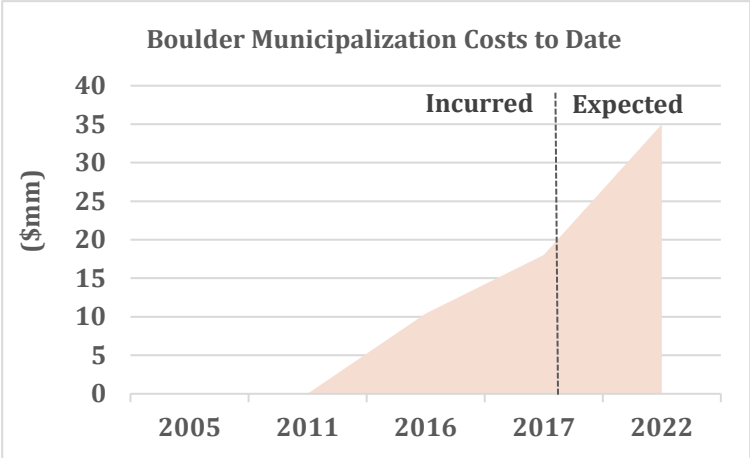


BOULDER, CO – PROTRACTED MUNICIPALIZATION PROCESS

Boulder's municipalization efforts to acquire the distribution system of Xcel Energy ("Xcel") within the city started about a decade and a half ago and remain unresolved. The city currently has an expected municipal utility start date of 2024, though after nearly 15 years and significant legal expenses to date, buyout costs remain uncertain.

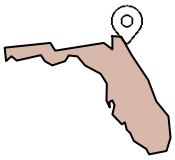
Boulder's estimated costs to acquire the Xcel electric utility assets have escalated considerably throughout the process, rising from less than $140 million in the 2005 preliminary feasibility study to between $300 and $337 million by current estimates depending on the range of separation costs to be incurred. Furthermore, the 2018 cost estimates do not include costs for stranded investments, originally estimated at $26 million (in 2018 dollars). While the city and Xcel remain far from determining acquisition costs for the system, Xcel and the city estimate buyout costs could reach $900 million.[19]

Given the protracted negotiation period and ongoing court battles, estimates for legal costs alone have risen dramatically over the past several years. Whereas the city's 2005 preliminary feasibility study did not estimate legal fees, the city's 2011 final feasibility study included $3 million in legal fees. However, as of March 2019, Boulder had already incurred $20 million in costs associated with its municipalization efforts, and city voters had approved another $17 million to be spent over the next five years, for a total of $35 million by 2022.[20]



Renewables Plan

Boulder's municipalization efforts were primarily driven by the goal of achieving more renewable power supply than was offered by Xcel at that time. However, as a result of the lengthy legal process, significant changes in the energy landscape have occurred since the start of the effort, primarily regarding renewables. In December 2018, Xcel announced a goal, which was codified in Colorado legislation in June 2019, of 100% zero-carbon electricity by 2050, including adding an additional 1,100 MW wind, 700 MW solar, and 275 MW storage, with a goal of 53% renewables by 2026. Xcel's Clean Energy Plan includes wind priced at $11-$18/MWh, solar at $23-$27/MWh, and solar plus storage at $30-$32/MWh. Thus, significant costs have been borne by Boulder for a goal that is now being pursued by the existing utility at a more cost-effective scale.[21]



JACKSONVILLE, FL – CHANGING ENERGY LANDSCAPE

Jacksonville Electric Authority ("JEA") is the current MEU for Jacksonville, Florida, but is currently exploring options to privatize its system. The decision is based on low sales driven by efficiency gains and distributed generation, which has led to rate increases, with more expected in the future.

In November 2017, a member of the JEA Board of Directors originally suggested considering privatization, but progress on the matter paused for most of 2018 due to executive turnover. In May 2019, JEA staff warned the Board of Directors of lower sales and noted that pursuing privatization would be the best way to avoid layoffs and rate increases. According to the presentation, JEA could face a $2.3 billion cash gap in 2030. In order to address this gap, JEA would need to increase rates by 52%, or increase rates by 40% and eliminate contributions to the city. The utility would likely also need to lay off a significant portion of its staff. The cash gap was caused in part by increasing operating expenses and decreasing revenues.[22]

***"Critical, industry-wide challenges such as revenue loss driven by energy efficiency and distributed energy resources, new disruptive technologies and competitors, when combined with JEA's current government constraints, make it impossible for the utility to optimally address changing customer demands and capitalize on the forces that are reshaping the industry today to create value"* – JEA.**

Source: JEA. "Florida's Largest Municipally-Owned Utility Formally Launches Competitive and Open Solicitation Process to Transform Northeast Florida." August 2, 2019. Available here.

JEA underestimated the effect of energy efficiency and other trends on its business. Specifically, the utility experienced flat to declining growth between 2007 and 2017 largely due to energy efficiency savings. The shortfall in JEA's revenue projections was $1.4 billion in free cash flow. Additionally, JEA's contributions to the city would have been $80 million per year higher under original forecasts. Distributed generation is also poised to continue to affect the utility, as JEA is currently losing more than $2.5 million in annual net income to distributed generation, and further disruption is expected as customer-owned distributed generation plus storage is projected to be at cost parity with JEA's generation by 2025. JEA has increased rates 71% since 2006 and has eliminated 407 jobs in response to these trends.[23]

Energy efficiency gains account for the bulk of JEA's reduction in sales, resulting in $1.4 billion in lost free cash flow between 2007-2017.

A formal process to solicit interest in the privatization of JEA was launched on August 5, 2019. JEA is looking for potential buyers to demonstrate how they will embrace industry changes, add new revenue streams, and "future-proof" the business. Proposals are due by September 30, 2019, with negotiations slated to start mid-October 2019.[24]

Ann E. Bulkley

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Ms. Bulkley is a certified general appraiser with expertise in the valuation of utility property. Ms. Bulkley has worked on acquisition teams with investors seeking to acquire utility assets, providing valuation services including an understanding of regulation, market expected returns, and the assessment of utility risk factors. She has assisted clients with valuations of public utility and industrial properties for ratemaking, purchase and sale considerations, ad valorem tax assessments, and accounting and financial purposes. Ms. Bulkley has also evaluated the feasibility of municipalization in several cities across the country.

In addition, Ms. Bulkley has more than two decades of management and economic consulting experience in the energy industry, with extensive state and federal regulatory experience on both electric and natural gas issues including rate of return, cost of equity, and capital structure issues.

Briana Adams

Project Manager

Ms. Adams analyzes energy asset value issues, municipalization trends, mergers and acquisitions in the energy space, utility of the future initiatives, fuel economics, gas-electric co-optimization, and infrastructure issues. Her recent work efforts have focused on valuing utility energy assets for municipalization proceedings.

Jessalyn Pryciak

Senior Analyst

Ms. Pryciak has experience conducting research and analysis in support of a range of regulatory proceedings. Her work includes the development of cost of capital exhibits and testimony, innovation and future of energy reports, regression models, and research on various regulatory issues.

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