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PRELIMINARY MUNICIPAL UTILITY FEASIBILITY STUDY

City of Chicago, Illinois

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Report Summary

Study Background

- NewGen Strategies and Solutions, LLC (NewGen) conducted a preliminary investigation into the establishment of a municipal electric utility to serve the residents and businesses of the City of Chicago, which is currently provided service by Commonwealth Edison Company (ComEd).
- The intent of this Preliminary Feasibility Study (Study) is to determine if the City should continue with its efforts to establish a locally controlled municipal electric utility.
- This Study developed a financial feasibility analysis as well as a review of the City's public policy objectives as they relate to electric utility operations.
- Because the State of Illinois has established retail choice for electric customers to choose their energy supplier, this Study focused on an analysis of the estimated costs of electric delivery service for a proposed City utility compared to ComEd.

Study Findings

- The financial pro forma cash flow model developed for this Study to determine the financial feasibility of creating a municipally owned electric utility for the City indicates that the average annual electricity delivery rate for the City-owned system would be greater than the average ComEd delivery rate for each year over the Study period (2020-2039).
- A review of various scenarios analyses suggests the difference in average delivery rates between the City-owned system and ComEd is primarily due to the substantial estimated investment required to sever the City electric distribution system from the ComEd system (severance costs). NewGen did not prepare an engineering assessment of the severance cost, as the costs for which would be significant, and it was not included in the scope for this preliminary Study.
- The City has established several strategic goals and objectives that relate to electric utility operations. A municipally-owned utility may help to achieve many of these goals; however, it may take the City many years to establish its own utility. Alternatives to municipalization exist which may be consistent with the City's strategic goals and its overall public policy objectives.

Study Recommendations:

- If the City were to continue consideration of municipalizing the ComEd electric distribution system, it is recommended that it conduct additional analyses regarding potential severance costs.
- The City should review its public policy objectives as they relate to electricity usage to ensure they are consistent with its current and future policies.
- The City should consider the inclusion of specific public policy, energy-related goals, and objectives in its negotiations with ComEd regarding possible renewal of its Franchise Agreement.
- NewGen recommends that the City not pursue municipalization of the ComEd system at this time, as the financial feasibility suggests higher annual average retail delivery rates for City service than the projected ComEd rates and the City can likely achieve many of its public policy objectives without acquiring the ComEd system assets.

EXECUTIVE SUMMARY

In the fall of 2019, the City of Chicago engaged NewGen Strategies and Solutions, LLC (NewGen) to conduct a preliminary investigation into the establishment of a municipal electric utility (MEU) to serve the residents and businesses of the City of Chicago, Illinois (Chicago or the City). Commonwealth Edison Company (ComEd), a wholly-owned subsidiary of Exelon Corporation, currently provides retail electric supply and delivery services to the City. The intent of this Preliminary Feasibility Study (Study) is to determine if the City should consider establishment of a locally controlled MEU. This includes the development of a financial feasibility analysis as well as a review of the City's public policy objectives as they relate to the electric utility operations in the City.

NewGen developed a financial pro forma cash flow model to determine the financial feasibility of creating a MEU for the City. The financial model estimates the cash needs of the City's electric utility, as described herein, to provide electric delivery services to its customers. The projected operating revenues (i.e., the utility's revenue requirement) are designed to recover the utility's costs for operations, capital investments, and debt service, as well as any margin required to meet its financial obligations. The total MEU revenue requirement is divided by the total energy sales in kilowatt hours (kWh) to determine an "average system retail delivery energy rate."

The average system rate is a metric utilized to compare the potential costs of operating the MEU to the costs of continuing to obtain delivery service from ComEd. The preliminary financial feasibility analysis suggests that the average annual MEU delivery rate would be greater than the average ComEd delivery rate for each year of the Study period (2020-2039). A review of various scenario analyses suggests this difference in average rates is primarily due to the substantial estimated investment required to sever the MEU system from the ComEd system. As discussed herein, the severance costs are estimated to be approximately $3.9 billion and is driven primarily by transmission and substation equipment costs. NewGen did not prepare an engineering assessment of the severance cost. The costs to conduct an engineering assessment would be significant and were not included in the scope for this preliminary feasibility Study. If the City were to continue consideration of municipalizing the ComEd distribution system, it is recommended that the City conduct additional analyses regarding the potential severance costs.

The City has initiated several strategic planning efforts to address specific environmental and social public policy objectives. A municipally-owned utility may serve to achieve some of these goals and objectives. However, it could take many years for the City to acquire the electric distribution facilities within the City from ComEd and establish its own utility. The City should review its public policies as they relate to electricity usage to ensure they are consistent with its current goals and objectives. The City may be able to achieve some of its public policy objectives with continued service through ComEd. The City should consider the inclusion of specific energy-related public policy goals and objectives in its negotiations with ComEd regarding possible renewal of its Franchise Agreement.

NewGen recommends that the City not pursue municipalization of the ComEd system at this time as the financial feasibility suggests higher average retail delivery rates for MEU service than the projected ComEd rates and the City can likely achieve its public policy objectives without acquiring the assets of ComEd.

Section 1
INTRODUCTION

In the fall of 2019, the City of Chicago (City), through its Department of Law (DOL) and Department of Assets, Information, and Services (AIS), engaged NewGen Strategies and Solutions, LLC (NewGen) to conduct a preliminary investigation into the establishment of a municipal electric utility (MEU) to serve the residents and businesses of Chicago. Commonwealth Edison Company (ComEd), a wholly-owned subsidiary of Exelon Corporation, currently provides delivery services as well as default electric supply to Chicago. Terms and conditions regarding ComEd's responsibilities specific to the City and service in Chicago are provided in the "Ordinance and Agreement between the City of Chicago and Commonwealth Edison Company," effective January 1, 1992, herein referred to as the "Franchise Agreement." This report provides the results of a Preliminary Feasibility Study (Study) conducted by NewGen.

Preliminary Feasibility Study

The intent of this Preliminary Feasibility Study is to determine if the City should consider establishing a locally controlled MEU. NewGen's scope of work, as documented in this Report, includes the development of a financial feasibility analysis as well as a review of the City's public policy objectives as they relate to electric utility operations in Chicago. NewGen designed the scope of work to be accomplished in a phased approach. Phase I results are presented in this Preliminary Feasibility Study, which provides an initial evaluation to determine the costs / benefits of establishing a MEU and an assessment of the City's existing electricity-related public policy goals. If the City decides to proceed with its municipalization efforts, more in-depth analyses will be performed in Phase II.

The analysis developed in the Preliminary Feasibility Study utilizes confidential and non-confidential data to determine potential average system electric rates associated with a MEU for the City. The public policy review endeavors to provide a review of the City's public policy objectives as they relate to certain aspects associated with electric utility operations. These aspects include providing affordable and reliable power, promoting environmental stewardship, supporting economically disadvantaged communities, supporting minority- and woman-owned businesses, and encouraging investments in new technology. The intent of this report is to determine if the financial and policy analysis warrant moving forward with additional municipalization efforts, including potential Phase II efforts.

Phase I Feasibility Study Elements

The following highlights the Phase I Feasibility Study elements:

- Develop an assessment of the City's existing and future public policy goals and objectives as they relate to the electric utility operations.
- Determine an initial estimate of the value of ComEd assets utilizing publicly available and confidential data as well as the provisions of the City's existing Franchise Agreement with ComEd.
- Estimate the cost of severance and review reintegration issues, utilizing publicly available and confidential data, including data provided by ComEd pursuant to the Franchise Agreement.

- Determine preliminary estimated start-up, financing, operations and maintenance (O&M), and administrative and general (A&G) costs utilizing publicly available data and NewGen professional experience.
- Project estimated costs (average rate revenues) of providing MEU service (i.e., revenue requirement), compared to the costs (average rate revenues) under continued ComEd service.
- Prepare a report that presents the results of the Preliminary Feasibility Study.
- Attend an on-site or on-line meeting to present the Phase I Preliminary Feasibility Study results, as requested.

Feasibility Study Process

The Phase I Feasibility Study was initiated with a conference call in November 2019. The City provided confidential and non-confidential information, including a copy of its existing Franchise Agreement, historic Franchise Annual Reports prepared by ComEd for the City and submitted to the City as specified in the Franchise Agreement, and other relevant information. Information was also obtained from ComEd's Federal Energy Regulatory Commission (FERC) filing requirements, including ComEd's FERC Form 1 Annual Report, and ComEd rate filings to the Illinois Commerce Commission (Commission). The City and NewGen had continuing communication to facilitate review of Study results and address concerns raised during the Study process.

The State of Illinois initiated retail choice for electric customers in 1997 (Electric Service Customer Choice and Rate Relief Law and subsequent amendments, collectively referred to herein as the Customer Choice Law). Essentially, this legislation allows customers the opportunity to obtain their power supply from an entity other than ComEd or Ameren Illinois (the two main investor-owned utilities in the state) and is generally referred to as "retail choice" in the electric industry. According to a report by the National Conference of State Legislatures, approximately 35% of ComEd customers were served by an alternative power supply in 2018. Customers are still provided electric delivery service through their incumbent utility, such as ComEd, which continues to own, operate, and maintain the electric delivery system. The legacy generation function was divested from the incumbent utilities into separate non-regulated entities or subsidiaries of larger companies. For example, Exelon Corporation, the parent company of ComEd, owns generation assets in Illinois and other states. One provision within the amendments to the Customer Choice Law allows municipal entities to aggregate the supply load within their municipal boundaries and solicit power to serve that load (Municipal Aggregation). The result of the retail choice legislation impacts the analysis conducted for this Study, as discussed herein.

ComEd's residential and commercial electric bills in Chicago have two primary categories of cost recovery, in addition to taxes and fees, for the electricity that powers homes and businesses. The first is a Supply Charge, which is either provided by an alternative retail electric supplier (ARES) or, if the customer does not elect to receive supply from an ARES, from ComEd as default supply. ComEd's default supply is procured for it by a state agency, the Illinois Power Agency.[1] The second cost recovery category is for delivery/distribution services, the most significant of which is the Delivery Charge. The Delivery Charge relates to recovery of ComEd's costs for delivering power from the power supplier to the retail customer. The focus of this Study is on the municipal acquisition of ComEd's distribution-related assets within the City, whereby the City would become a "distribution utility" and procure generation and transmission

[1] Municipalities may elect to implement municipal aggregation, in which case the customer's supply may be through a supplier that is selected by the municipality.

services from other providers as appropriate. For the purposes of this Study, it is assumed that a portion of the transmission cost is recovered in the Delivery Charge; however, those costs are not anticipated to be material to this analysis. Further study of the transmission services provided by the power supplier and those provided by the electric delivery utility is recommended if the City decides to move forward with additional review.

Various taxes and fees are also added to the to the customer's bill. These charges include cost recovery for various program fees (environmental cost adjustments, renewable portfolio standard charges, zero emissions standard, and energy efficiency[2]) as well as other fees and taxes (franchise costs, state taxes, municipal taxes). This Study did not review the basis for the taxes and fees. It is assumed the program fees are mandated or approved by the Commission, the franchise payment is consistent with the terms of the Franchise Agreement, and the state and municipal taxes are the results of various legislation and regulations enacted by the appropriate jurisdiction.

Since customers in Chicago can independently choose their power supply provider, it is assumed that the Supply Charge portion of the customer bill may not change regardless if the City of ComEd owns the distribution system. Therefore, an analysis of power supply costs was excluded from this Study.

The ability to select a power supply provider has a dramatic impact on the feasibility associated with the potential for municipal ownership of the utility. Prior to deregulation in Illinois and in other state jurisdictions that maintain integrated utilities, a major source of the typical retail rate differential between municipally-owned and investor-owned systems was the cost recovery of the rate of return and income and other tax requirements associated with the investor-owned generation assets. This is because generation assets, in general, are expensive to build and therefore represent a significant portion of the utility's rate base upon which the rate of return in calculated. Because municipally owned utilities do not have a rate of return and are non-taxable entities, they are generally able to own and operate generation assets at a lower cost than investor-owned utilities. However, the advent of competitive power markets across the country, including within the State of Illinois, has impacted this potential cost differential between the two types of utility ownership models. For this Study, it is assumed that power supply costs would be the same for retail customers regardless of ownership of the delivery system, and therefore these costs have been removed from the feasibility calculation.

Similarly, because taxes and fees are added to the Supply and Delivery Charges (and in most cases are not bundled within them), they too have been omitted from the Study. Presumably, if the City were to acquire the ComEd distribution-related assets, it would implement a "payment-in-lieu of tax" or transfer to the City's general fund (which is common among municipally owned utilities) in the same amount that is presently recovered under the franchise fee. Similarly, it is assumed that any other applicable jurisdictional taxes that apply to customers within the City would be applicable under a MEU through some type of intergovernmental agreement. Additionally, it is assumed that the State of Illinois would require that the MEU remit payment in some form equal to the amount currently recovered in the state tax portion of the retail rates from ComEd. Finally, it is assumed for this Study that fees mandated by the Commission for environmental and energy efficiency programs would be kept in place in some form regardless of the entity that owns the delivery assets.[2]

The Study did not review the implications of the current property taxes that are paid by ComEd to the City (or other local taxing jurisdictions) and how those costs are recovered in the current ComEd rate structure. If the City were to move forward with Phase II, it is recommended that property taxes be evaluated and

[2] Illinois statute allows ComEd to recover a rate of return, income taxes, and other costs incurred in implementing its energy efficiency programs.

potentially included in the cost recovery analysis for the City owned utility in the form of a payment in lieu of tax or general fund transfer.

Policy Assessment

In addition to the financial feasibility analysis, NewGen conducted a strategic assessment of the City's goals and objectives as they relate to the City's municipalization review. The strategic assessment is critical to defining success for the MEU and aided in guiding the various analyses and discussions during the Study process. Additionally, this assessment was designed to provide a discussion of alternatives to municipalization that are supportive of the City's overall objectives as they relate to electric utility services.

ComEd Data Request

In support of the ongoing discussions between the City and ComEd regarding the future Franchise Agreement, as well as this Study, the City requested additional information from ComEd pursuant to its rights under the existing Franchise Agreement. The intent of this data request was to solicit specific information regarding ComEd's operations within the City, such as customer class billing determinants, as well as other relevant and pertinent information to support this Study, including estimates for potential severance costs (as reviewed herein). The City sent the data request to ComEd on February 21, 2020 and ComEd provided its responses by March 30, 2020.

Asset Value Estimate

The Franchise Agreement (Section 5) includes provisions for municipal acquisition of ComEd's facilities. These provisions require "cash consideration" for the cost of the facilities equal to the cost of "reproduction new minus depreciation" (although those terms are not defined in the Franchise Agreement). However, the Franchise Agreement limits the purchase price to "a maximum consideration equal to the Licensee's investment in Utility Facilities" made by the utility, which equates to what is generally referred to as the "Original Cost" or "Gross Plant" of the assets. The minimum consideration is equal to the "difference between Licensee's investment in Utility Facilities and the amount of the Licensee's Depreciation Reserve." This is equal to what is generally referred to as "Original Cost Less Depreciation" or "Net Plant" of the assets.

Utilizing data provided in ComEd's Annual Franchise Report to the City, NewGen estimated the value of the Original Cost of the distribution only assets, as well as communications equipment, within the municipal boundaries of the City (FERC plant Accounts 360 through 373 and Account 397). NewGen applied an estimate of the distribution depreciation reserve based on the total ComEd system, using data in ComEd's FERC Form 1 Annual Report as of December 31, 2019. An analysis of the average age of the assets identified as "Outside Chicago" compared to those "Inside Chicago" provided in the ComEd Annual Franchise Report to the City suggests that the average installation year is similar between these two groups of assets. Therefore, it is assumed that the depreciation reserve ratio is the same for both groups of distribution related assets.

As indicated, the Franchise Agreement refers to a minimum and maximum value for municipal acquisition. Based on the methodology identified above, NewGen estimated a minimum value of approximately $4.0 billion and a maximum value of approximately $5.7 billion to purchase the electric distribution system located within the City. For the purpose of this Study, the Base Case analysis utilizes the arithmetic average of those two values, or approximately $4.9 billion (see Table 1-1).

Table 1-1
Valuation Estimate for Electric Distribution Plant
Located within the City of Chicago

Description	2019 Value ($ Million)
Distribution Plant Investment (1)	$5,747
Distribution Depreciation Reserve Ratio (2)	31%
Distribution Plant Accumulated Depreciation	($1,763)
Distribution Net Plant	$3,983
Estimated Purchase Price for City of Chicago Electric System per Franchise Agreement (3)	
Minimum (Original Cost Less Depreciation)	$3,983
Maximum (Original Cost)	$5,747
Mid-Point (Average)	$4,865

(1) Estimated by NewGen based on ComEd data.
(2) Reserve ratio based on total Company data per ComEd, FERC Form 1 Annual Report at December 31, 2019. Average age of plant Inside and Outside Chicago is similar, therefore, reasonable to assume same depreciation reserve ratio.
(3) Section 5 of the City of Chicago-ComEd Franchise Agreement states the City can purchase the Licensee's Utility Facilities for cash consideration equal to the Reproduction Cost New Less Depreciation value, subject, however, to a maximum consideration equal to the Licensee's Investment in Utility Facilities (i.e., gross plant) and a minimum consideration equal to Licensee's Investment in Utility Facilities and the amount of Licensee's Depreciation Reserve as shown on Licensee's books of account (i.e., net plant).

Estimated Severance Costs

The City requested from ComEd an estimate of the severance costs associated with the potential formation of a MEU. When a utility, such as ComEd, designs a distribution system, their primary responsibility is to provide safe and reliable service to its customers. Generally, if the utility provides service to a multi-jurisdictional area, the electric distribution system is not designed to conform to municipal boundaries, but rather for an efficient and redundant system to serve load. For the purposes of this Study, severance cost refers to the costs for physical or administrative processes by which assets acquired by the City within its municipal boundaries would be reconfigured to serve load within the City. Similarly, assets that are outside the municipal boundaries but serve load within the City would need to be reconfigured to exclude City load. In a municipalization effort, the purchaser is responsible for paying severance costs; however, the specifics of the severance plan and associated costs are often contentious issues.

For this Study, an estimate of severance costs was provided by ComEd, which was reviewed critically and adjusted by NewGen as described below. This review was conducted utilizing conceptual design and cost estimate information provided by ComEd and not subject to a detailed engineering assessment, which was beyond the scope of this Study. An independent, detailed estimate of the severance costs would require a field investigation and review of detailed maps or Geographic Information System (GIS) output to document where ComEd assets intersect the City's municipal boundaries relative to the location of the load to be served by the MEU. Such an assessment would require engineering expertise in electric distribution system design, planning, procurement, and construction. The severance plan and estimated costs are often the subject of intense debate in a municipalization effort. ComEd will likely challenge an independent cost estimate prepared for the City in an appropriate legal jurisdiction (either at the Commission or in a judicial forum). Previous efforts to determine appropriate and acceptable severance

costs for municipalities smaller and less complex than the City required several years to complete and significant expenditures by the municipal entity.

ComEd's estimate for severance was categorized by several functional areas for the utility and its operations. ComEd identified severance costs essentially as "Work Needed within City Grid" and "Work Needed within Remaining ComEd Grid." NewGen made several adjustments to ComEd's severance estimate based on a review of information provided by ComEd and professional experience, which resulted in a revised severance cost estimate equal to approximately $3.88 billion. A summary of NewGen's severance estimate is provided in Table 1-2 below.

Table 1-2
Preliminary Severance Estimate for City of Chicago ($ Million)

Functional Area	Work Needed within City Grid	Work Needed within Remaining ComEd Grid	Total
Transmission (1)	$897	$514	$1,411
Substation / Distribution (1)	$702	$822	$1,524
Information Technology (2)	$758	$165	$923
Operations (3)	$-	$-	$-
Communications, Relay, SCADA (2)	$7	$19	$26
TOTAL (4)	**$2,363**	**$1,520**	**$3,884**
Low End (-30%)			$2,718
High End (+30%)			$5,049

(1) Adjustment made to ComEd estimate for Chicago Grid (see text).
(2) Adjustment made to ComEd estimate for Chicago Grid and Other ComEd (see text).
(3) Operations cost moved to start-up for MEU.
(4) Numbers may not add due to rounding.

The ComEd severance estimate assumed that the City would become a transmission service provider within the region; however, NewGen does not agree that becoming a transmission service provider is a requirement for the City to become a municipally owned electric utility. NewGen's severance cost estimate assumes that the City will not acquire ComEd transmission facilities and that the MEU will be "severed" by installing revenue meters on the high side (138 kV and 345 kV) of the substation transformers.

With respect to municipal border issues, NewGen assumed the City will need to build some, but not all, of the new substations estimated by ComEd along the municipal boundary to separate the MEU from ComEd's remaining electric system. These new substations will require dedicated transmission assets, the costs for which were estimated based on data provided by ComEd and included in the severance estimate shown in Table 1-2 above. However, it is assumed these transmission assets will be operated by ComEd.

ComEd also included an estimated cost for severance associated with its investments in Information Technology (IT). The IT severance investments estimates include costs for real-time information systems, customer systems, ComEd infrastructure, a data center (new build), and associated security systems. NewGen reduced the real time systems cost estimate as some of this cost is already recorded in the distribution plant accounts and therefore is included in the purchase price estimate (see Asset Value Estimate). NewGen also adjusted a portion of the customer systems cost since the City's costs for new

data systems would be less expensive than the cost of ComEd's existing data systems which would have limited use to the new MEU.

In addition, NewGen assumed the Operations cost estimate provided by ComEd is a "start-up" cost for the City and financed accordingly (See Section 2). Lastly, the ComEd severance cost estimate for Communications equipment was adjusted to remove transmission-related costs since the City does not intend to acquire ComEd transmission facilities.

NewGen applied a range of plus or minus 30% (+/- 30) to its revised severance cost estimate, which is typical for a planning level cost estimate. This resulted in an estimated range of severance costs from approximately $2.7 billion to $5.0 billion. The midpoint of this range is approximately $3.9 billion, which served as the severance cost estimate for the Base Case analysis presented herein. The result of the financial feasibility analysis suggests that severance costs would need to be significantly reduced to approximately $125 million for the average delivery rates for ComEd and the MEU to be equivalent over the period of this Study, all other things being equal. It is recommended that further analysis of the potential severance cost estimate be included in subsequent phases of a municipalization effort, if requested by the City.

Stranded Costs

Stranded costs can be an item for review during a municipalization feasibility study. The economic theory supporting stranded costs suggests that investments which are unable to be recovered due to a municipalization effort are "stranded." Therefore, entities which incur stranded costs (e.g. the incumbent utility) are entitled to compensation for the "stranded" portion of those assets. For municipalization efforts, stranded costs have historically been associated with generation assets built for specific or anticipated load. When a municipal entity's load is served by another resource (and not the incumbent utility), the generation assets may be considered stranded. However, in most areas of the country today, generation assets are dispatched into a power market and are therefore not dedicated to specific entity's load, and therefore would not be considered stranded as the result of a successful municipalization effort.

The existence of the Customer Choice Law, which separated power supply from delivery services, suggests that stranded generation costs for this Study would not exist. Further, it is assumed that the acquisition and severance costs for the delivery assets (and related systems) would eliminate any claim for stranded costs for the portion of the system assets that remain with ComEd. Therefore, it is assumed that there are no stranded costs applicable to this Study. If the City were to move forward with its municipalization effort, it is recommended that additional analyses of any potential claims for stranded costs be conducted as part of the City's Phase II investigations.

City of Chicago Electric Load

Information regarding electric load within the City of Chicago by class was provided by ComEd in response to the City's data request. In total, ComEd served approximately 1.3 million customers in the City in 2019. Total annual energy consumption for 2019 was approximately 23.4 billion kilowatt hours (kWh), and the total billed demand (for customers that are charged a demand rate) was approximately 39.6 million kilowatts (kW).

ComEd Retail Rates

Estimates of the projected ComEd retail delivery rates were determined from published tariffs (in effect at the time of this Study, in 2020), as well as information by customer class provided by ComEd in response to the City's data request. A summary of the average delivery rate by class by sub-class for the City is provided in Table 1-3.

Table 1-3
Current ComEd Rate Tariffs for Delivery Services to Customer Classes in the City

Customer Class	Customer Charge ($/Month)	Metering Charge ($/Month)	Distribution Facilities Charge ($/kWh) (1)	Demand Charge ($/kW)	Average Delivery Rate by Class (2)
Residential					$0.06135/kWh
Single	$10.59	$5.09	$0.0362	$ -	
Multi-Family	$7.45	$5.09	$0.0270	$ -	
Single - Space Heat	$12.31	$5.09	$0.0175	$ -	
Multi-Family - Space Heat	$8.19	$5.09	$0.0168	$ -	
Small Commercial					$0.02330/kWh
Watt Hour	$11.89	$4.03	$0.0200	$ -	
Small (0 - 100 kW)	$13.01	$10.11	$0.0012	$7.09	
Medium (100 - 400 kW)	$20.77	$17.78	$0.0012	$7.33	
Large (400 - 1,000 kW)	$108	$18.30	$0.0012	$7.45	
Large Commercial					$0.01696/kWh
Very Large (1 MW - 10 MW)	$611	$17.40	$0.0012	$7.48	
Extra Large (>10 MW)	$1,502	$41.09	$0.0012	$6.39	
Railroad	$6,430	$139	$0.0012	$3.53	
High Voltage	$671	$44.00	$0.0012	$5.34	
Street Lighting					$0.00892/kWh
Dusk to Dawn	$ -	$ -	$0.0075	$ -	
Other General Lighting	$ -	$ -	$0.0169	$ -	

(1) Includes IL Electric Distribution Charge of $0.0012/kWh.
(2) Weighted average using data provided by ComEd (see Table 1-4).

2020 Average Retail Rate for ComEd

The average retail rate for customers within the Chicago area served by ComEd was determined using delivery tariff rates (as published in ComEd's tariff at the time of Study publication) applied to actual 2019 billing data provided by ComEd for customers within Chicago. The average retail delivery rates by customer class for ComEd shown in Table 1-3 were calculated based on representative customers weighting to reflect the customer mix within the City. The weighted average delivery rate (weighted by percent of customers in class by load) was determined for each class and summed to create an average delivery retail rate for ComEd for Chicago customers in 2020. For the purposes of this Study, ComEd

delivery rates were assumed to increase annually at the current rate of inflation of 2.0%. Table 1-4 provides a summary of the analysis developed for the ComEd average retail delivery rate for the Chicago service territory.

Table 1-4
Average Delivery Rate for ComEd Customers in Chicago (1)

Customer Class	Average Delivery Rate by Class ($/kWh) (2)	% of Load by Customer Class in Chicago (3)	2020 Weighted / Average Rate for City of Chicago Delivery Only (4)
Residential	$0.06135	27%	$0.01677
Small Commercial	$0.02330	37%	$0.00859
Large Commercial (5)	$0.01696	34%	$0.00584
Street Lights	$0.00892	1%	$0.00012
TOTAL		**100%**	**$0.03132**

(1) Estimated average retail delivery rate for ComEd customers in Chicago for 2020 (see text).
(2) Average Retail Rate by customer class, from Table 1-3.
(3) Percentage of total annual load by customer class.
(4) Sum of the percentage times the average retail rate.
(5) Large commercial rate includes Railroad rate and load.

Section 2
FINANCIAL MODEL DEVELOPMENT

NewGen developed a financial pro forma cash flow model to determine the financial feasibility of creating a MEU for the City. The financial model estimates the cash needs of the City's electric distribution utility, as described herein. The operating revenues are designed to recover the MEU's costs for operations, capital investments, and debt service, as well as any margin required to meet its financial obligations. The total MEU revenue requirement is divided by the total energy sales in kilowatt hours (kWh) to determine an "average system retail delivery rate." This average rate is compared to the ComEd average delivery rate in Table 1-5 to determine the potential financial feasibility of the municipalization effort.

For the purposes of this Study, it is assumed that the MEU would become operational "overnight." This is a simplifying assumption applied purposely for estimating the potential feasibility of the municipal effort for this Phase I Study. In reality, the development of a MEU for a city with the size and complexity of Chicago would require lengthy engagement with ComEd that would likely require at least several years to accomplish. If the City were to move forward with its municipalization effort, it is recommended that an applicable timeframe and budget be developed for further analysis during subsequent phases of this Study.

A summary of the cost items included in the Base Case and High and Low scenarios for the financial model for the first year of analysis (2020) is provided in Table 2-1.

Table 2-1
MEU Financial Model Results for Year 1
(Base Case Scenario)

Line Item	2020 Base Case ($000) (1)	2020 Value - High Scenario ($000) (1)	2020 Value - Low Scenario ($000) (1)
Operating Revenues	$1,046,906	$1,192,882	$894,995
Projected Operating Expense			
Power Supply Expense (2)			
Transmission Expense (3)	23,868	23,868	23,868
Distribution / Customer / A&G Expense (4)	314,350	314,350	314,350
Total Operating Expenses	$338,218	$338,218	$338,218
Total Non-Operating Expense (5)	$708,687	$854,664	$556,777
Total Revenue Requirement	$1,046,906	$1,192,882	$894,995
Contributions / (Withdrawals) to Reserves			
Average Retail Rate Analysis			
Total Sales (MWh) (6)	23,400,000	23,400,000	23,400,000
Average MEU Delivery Rate ($/kWh) (7)	$0.0447	$0.0510	$0.0382
Average ComEd Delivery Rate ($/kWh) (8)	$0.0313	$0.0313	$0.0313
Difference between MEU and ComEd Rate ($/kwh)	$0.0134	$0.0197	$0.0069
% Difference MEU v ComEd	43%	63%	22%

(1) Numbers may not add due to rounding.
(2) No power supply expenses assumed.
(3) Assuming 25% of ComEd Transmission Costs are in Delivery Charge.
(4) Total Operating Expense for Distribution / Customer / A&G based on ComEd FERC filing data.
(5) Total Non-Operating Expenses includes Debt Services for Acquisition, Severance and Start-Up Costs, as well as Cash Required for Debt Service.
(6) Total estimated sales in mega-watt hours (MWh = 1,000 kWh) for 2020 developed by NewGen to reflect estimated load growth.
(7) Average MEU rate is the total Operating Revenues divided by the total kWh sales.
(8) Average ComEd rates for Delivery Charge see Table 1-5.

The Base Case suggests that for the first year of MEU operation (assuming 2020), the resulting average delivery rate for the City owned system would be higher than the average delivery rate for the ComEd system by approximately $0.0134/kWh (~43%). For an average residential customer using 450 kWh per month, the estimated delivery-related charges would be approximately $14.09 per month under continued service from ComEd in 2020. For a similar customer served under the MEU, the estimated monthly delivery-related charges would be approximately $20.12, or an increase of $6.03 per month.

As indicated above, the Base Case assumes an acquisition cost that is approximately $4.9 billion and a severance cost of approximately $3.9 billion, which results in a total non-operating annual expense of approximately $709 million for the City owned utility in 2020, as more fully described in this section. A scenario analysis regarding these two variables is presented in Table 2-1 above. The "High Scenario" assumes the high end of the range of acquisition and severance costs (approximately $5.7 billion and $5.0 billion) and the "Low Scenario" assumes the low end of the range of these costs (approximately 4.0 billion and $2.7 billion). The High Scenario results in an average system delivery rate for the City that is approximately $0.0196/kWh higher (~63%) than the corresponding ComEd delivery rate. The Low

Scenario results in an average system delivery rate for the City that is approximately $0.0069/kWh (~22%) higher than the corresponding ComEd delivery rate for 2020.

The results of this Study suggest that under the Base Case, the average system delivery rate for the City would exceed the average system delivery rate for ComEd for all years (2020-2039). However, because the average system delivery rates for the City are influenced by the debt required to acquire and sever the ComEd system, the change in the delivery rates from year to year for the MEU is expected to be less than the annual change for the ComEd rates. As indicated, the ComEd rates are anticipated to increase at inflation. The debt service payments are constant over the Study period; therefore, the City rates are anticipated to increase at a rate less than inflation. Under the Low Scenario the MEU rates are still higher than the ComEd rates at the end of the Study; however, the percentage difference is reduced from approximately 22% in 2020 to 3% in 2039.

Financial Model Assumptions

There are several key assumptions which support the estimated costs within the financial feasibility model. In addition to the estimates for the asset purchase price and severance described in Section 1, the assumptions include the start-up costs and costs for the continued operation of the MEU. A summary of these assumptions is provided below.

Distribution-Related Assets / Severance Costs

As indicated in Section 1, the distribution-related assets to be acquired for the creation of the MEU include all of the equipment and systems currently in place to serve the customers within the City boundaries. This includes a portion of the electric substations within the City boundaries and all the various distribution equipment that conveys, transforms, or otherwise manages the power at the distribution level (low voltage). The transmission equipment and the high voltage circuit breakers will remain part of the ComEd system. The Base Case analysis assumes an acquisition cost of approximately $4.9 billion (the mid-point between the minimum and maximum value referenced in the Franchise Agreement) and a severance cost of approximately $3.9 billion.

For the purposes of the feasibility analysis, it was assumed that the MEU will be able to finance the acquisition and severance cost of the ComEd assets over a 30-year period utilizing taxable debt. The taxable debt interest rate utilized for this analysis is 4.5% per year, based on input from the City's Department of Finance and Chief Financial Officer.

In response to legislation enacted by the State of Illinois (see Section 3), as well as City regulatory activity via its existing Franchise Agreement, ComEd invested significantly in the City's distribution infrastructure over the past 20 years. ComEd's Annual Franchise Report indicates approximately $1.9 billion in investments from 1999 to 2019 to address corrective maintenance, replace or upgrade facilities, improve reliability, address system growth needs, and resolve emergent issues within the City's system; however, it is not clear if this value reflects the total investment in the City's electric system over this time period. It is assumed for this Study that the City would support a similar investment strategy for its distribution system to maintain or improve on the existing level of reliability. If the City chooses to move forward with its municipalization efforts, it is recommended that it evaluate ComEd's ongoing investments as they relate to distribution reliability concerns as part of its Phase II investigations.

Start-Up Costs for Municipal Electric Utility Operation

The initial operation of the MEU will require cash to fund various activities prior to, and within, the first few months of operations. This includes the "start-up" costs for the new MEU to begin operation. After this initial period, it is assumed that the rate revenue from MEU customers will support the cash needs of the MEU. This includes regulatory and professional services necessary for establishing the electric utility within the City, such as attorney fees, engineering and consultant fees, regulatory fees, and other fees/charges. The total cash necessary for the regulatory/professional services is estimated to be approximately $200 million. This value is a preliminary "high level" estimate based on NewGen's experience in the industry and does not reflect a detailed assessment of services needed from professional service providers.

The other cash needs for the MEU prior to, and during, the start-up period include construction of an operations service center, and the pre-funding of a rate stabilization fund (to provide liquidity for the MEU), spare parts and equipment costs (based on an estimate of ComEd general plant assets, such as vehicles and inventory), and working capital (cash) for purposes of paying for services prior to billing customers. It was assumed that the entirety of the estimated start-up costs can be amortized with the issuance of debt by the MEU over a 30-year period at a tax-exempt rate of 3.6%, based on input from the City's Department of Finance and Chief Financial Officer. This is a simplifying assumption as there may be limitations with the use of bond funds for operations.

A summary of the estimated start-up costs is provided in Table 2-2 below.

Table 2-2
Estimated Start Up Costs for Chicago Utility ($000) (1)

Cost Type	Description	Amount
Regulatory, Professional Services	Legal, Technical Assistance	$200,000
Operations and Equipment	Service Centers, Vehicles, Inventory	$268,000
Rate Stabilization Fund Starting Balance	Reserves	$300,000
Working Capital (Cash)	12% of Operating Costs	$41,000
TOTAL		**$809,000**

(1) Costs estimated based on ComEd input and professional experience (see text).

Continuing MEU Operation

The continued operation of the MEU will require cash for operations and non-operating expenses. The following provides a summary of the assumptions regarding the continuing costs for MEU Operation.

Utility Operating Costs

The MEU operating costs include those associated with delivery of power from the power supplier to retail customers. For purposes of this Study, it is assumed that delivery costs include a portion of transmission-related expenses, distribution expenses (associated with O&M of the locally owned distribution system), customer expense (associated with billing and managing customer accounts), and A&G expenses (costs associated with management and other expenses). The basis for these costs were obtained from ComEd's 2019 FERC Form 1 Annual Report and were applied on a unit cost basis ($/kWh) to the retail sales within the City. For transmission-related expenses, the Study assumed 25% of transmission O&M expenses reported in ComEd's 2019 FERC Form 1 Annual Report would be included in the retail delivery rate, whereas 75% would be included in the power supply rates.

Total MEU operating costs are estimated to be approximately $338 million annually in 2020 (Table 2-3). These costs are estimated to increase at the annual rate of inflation of 2.0%. This Study assumes that the City would be able to operate the delivery system at the same unit cost ($/kWh) as ComEd.

Table 2-3
Estimated Operations Costs for Chicago Utility ($000) (1)

Cost Type	Unit Rate ($/kWh)	2020 Amount
Transmission Expense	$0.00100	$23,868
Distribution Expense	$0.00550	$131,290
Customer Expense	$0.00274	$65,406
General and Administrative Expense	$0.00493	$117,654
TOTAL		**$338,218**

(1) Costs estimated based on ComEd FERC filings and professional experience (see text).

Renewals and Replacements

Ongoing capital investments in the system are necessary for the MEU to continue to provide reliable service to customers. These investments are typically normal capital expenditures referred to as "renewals and replacements" and are assumed to be equal to approximately 1/50th of the Gross Plant (Original Costs) for the assets to be acquired, adjusted for current price levels, or approximately $165 million annually.[3] The projected annual capital expenditures are equal to approximately 2.8% times gross plant, which reflects a 50-year average service life for distribution plant, escalated for inflation as adjusted for the estimated average age of distribution plant inside the City. These investments are assumed to be financed annually with a combination of cash required for debt service and tax-free debt.

Non-Operating Expenses

Debt service for the acquisition and severance costs is based on a 30-year bond issue at the taxable rate of 4.5%, which equates to approximately $543 million in annual costs. The startup costs debt issue is based on a 30-year bond issue at a tax-free rate of 3.6%, which equates to approximately $45 million in annual costs. Non-operating expenses for the MEU include cash required for debt service, which is estimated to be approximately $118 million per year in 2020. The cash generated from rates is utilized to maintain a desired debt service coverage ratio (DSCR)[4] of at least 1.2x for the duration of the Study. This cash is also utilized to offset a portion of the future renewal and replacement (ongoing) capital, as part of the City's stated financial policies for its water and wastewater utilities (paying for capital as needed from rate revenue). The portion of renewals and replacements not funded by cash is likely to be financed with non-taxable debt, at an estimated annual cost of approximately $2.6 million.

The 1.2x DSCR represents a conservative estimate of the coverage ratio required by lending institutions for municipal debt and is applied to the combined debt service obligations of the City for this Study. It is anticipated that the combined debt would be pledged to future revenues of the City's utility (revenue bonds) and that the 1.2x DSCR would be sufficient to maintain strong ratings from the rating agencies (indicative ratings of "a+" or "a" for debt issued by the City for this effort). All debt issues for this Study

[3] This assumes that ComEd electric distribution plant has an average service life of 50 years based on an analysis of data filed in ComEd's 2019 FERC Form 1 Annual Report.

[4] Debt service coverage ratio is defined as Operating Revenues minus Operating Expenses, the sum of which is divided by total annual Debt Service payment.

assume a debt issuance cost that is equal to 1% of the amount to be financed. A summary of the estimated debt service costs and other non-operating expenses for the City electric utility is provided in Table 2-4.

Table 2-4
Estimated Annual Non-Operating Expenses for Chicago Utility ($000) (1)

Cost Type	Description	Amount
Debt Service – Taxable	Acquisition and Severance	$543,000
Debt Service – Non-taxable	Start-Up Costs	$45,000
Renewals and Replacements – Non-taxable	Debt Funded Equipment	$2,573
Cash Required for Debt Service	Reserves / Ongoing Capital	$118,115
TOTAL		**$708,687**

(1) Costs estimated based on ComEd data response and professional experience (see text).

Total Revenue Requirement/Average System Rate

The financial model determines the revenue requirement (the total dollars needed to support the MEU) based on the individual expenses identified herein. The revenue to be recovered from rates is equal to the revenue requirement of the utility. The average system delivery rate is equal to the revenue requirement divided by the total energy (kWh sales) to determine a unit rate ($/kWh). This rate would not necessarily be equal to the retail delivery rates charged by the MEU for its customers, as customer class rates would be based on a cost of service analysis upon creation of the MEU. Because different customers place different demands on the system and use electricity at different times, the rate design of the MEU would need to be tailored to assure that delivery rates are cost-based for each customer class or adjusted to fit specific policy requirements of the City.

The average system delivery rate is a metric utilized to compare the potential costs of operating the MEU to the costs of continuing to obtain delivery service from ComEd. The results of the financial feasibility analysis suggest that the average annual MEU delivery rate would be greater than the average ComEd delivery rate over the Study period (2020-2039). A review of various scenarios suggests this difference in average rates is primarily due to the substantial estimated investment required to sever the MEU system from the ComEd system. If the City were to continue its efforts to municipalize the ComEd distribution system, it is recommended that the City conduct additional analysis regarding the potential severance costs.

A summary of the estimated cash flows and resulting average annual delivery rate for the period of this Study is provided in Appendix A.

Section 3
PUBLIC POLICY ASSESSMENT

This Study includes a review of the City's existing electricity-related policies to provide strategic guidance for the municipalization process. The Study seeks to align the City's public policy goals with the feasibility analysis associated with its municipalization effort. Specific policy goals were defined by City Council when it enacted Resolution R2019-157 in 2019 (better known as the Ready for 100 Resolution), which targets 100% clean, renewable energy by 2050, the related Chicago Climate Charter (similar to the national level Paris Agreement, which includes reductions in Greenhouse Gas (GHG) emissions), and the Resilient Chicago initiative. Potential policy objectives that may relate to the City's electric utility municipalization effort are as follows:

- Affordable Power – provide low cost power to City residents, businesses, and energy users
- Reliable Power – increase the reliability and dependability of power delivery service within the City
- Environmental Stewardship – support renewable power and reduction in greenhouse gas emissions associated with current forms of energy usage in the City
- Support Economically Disadvantaged Neighborhoods / Communities – provide programs designed to provide opportunities to reduce the impact of electricity-related costs within certain segments of the City's population
- Support Minority / Women-Owned Businesses in the City – continue to promote minority and women-owned businesses associated with the operations of an electric utility
- Investments in Technology – seek out opportunities to showcase new technologies to improve all aspects of electric utility operations, such as electric vehicle charging and improved communication systems

Several of the public policy objectives are already addressed in the City's current Franchise Agreement with ComEd. The following section provides a summary of these issues and how they may be impacted by the formation of a municipal utility.

Municipalization Effort

A successful municipalization effort would allow the City to advance its strategic objectives as they relate to current and future electric energy usage in Chicago. However, some of the City's objectives may also be achieved through a possible renewal of the Franchise Agreement with ComEd. Alternatives to a municipal electric utility may include the City choosing to again be a Municipal Aggregator (for all load within the City, with opt-out or opt-in provisions), continuing with the current practice as a Municipal Load Aggregator (for load only associated with municipally-owned facilities), continued partnership with ComEd for specific investments (to be negotiated in the next iteration of the Franchise Agreement), or specific investments paid for by the City without the direct involvement of ComEd.

Existing Electricity Market / Applicable Legislation

In addition to the Customer Choice Law, which provided for development of retail electric choice by consumers in the state, there are two other significant pieces of legislation that directly impact ComEd's

operations. These include the Energy Infrastructure Modernization Act (EIMA) enacted in 2011 and the Future Energy Jobs Act (FEJA) enacted in 2016. EIMA included changes to the regulatory process, established reliability performance metrics, and allowed specific targets for infrastructure investment, including installation of smart meters and systems, among other provisions. For ComEd, EIMA specified $2.6 billion in investments be made in its service territory, including within the City. Most provisions of EIMA are set to expire in 2022. FEJA requires additional investments in ComEd's energy efficiency programs, expands the definition of "low income" customers, amends requirements for renewable energy, creates community solar programs, and includes provisions for job training in "new energy jobs," among other items. It is important to note that while specific investments required by EIMA expire in 2022, the requirements under FEJA continue well into the future. Any municipalization effort will need to consider the impacts and potential requirements of FEJA on the MEU in the future.

Municipal Aggregation

The City indicated that previously it chose to be a municipal aggregator to secure electric power for the load of its residents and business, as provided under the Municipal Aggregation provisions of the Illinois Power Agency Act. During that time, the City obtained its electricity supply from Constellation Energy; however, ComEd continued to provide power delivery and customer service. The City chose to discontinue its role as a municipal aggregator as it was determined to not be in the best interests of its residents and businesses at that time. The City's experience as a municipal aggregator should be examined more fully if it decides to move forward with municipalization efforts. Many municipal utilities are required to go to great lengths to defend their actions and are often "second guessed" after the fact by stakeholders, public interest groups, citizens, and others.

However, in the future, municipal aggregation may be an effective way for the City to achieve specific environmental and economic goals associated with its power supply. Specifically, the City could potentially issue a competitive request for proposal for a power supply portfolio that includes greater contributions from renewable and/or non- or low-greenhouse gas emitting resources than currently offered by ComEd. Additionally, under FEJA, ComEd is required to have a default power supply that consists of 25% renewables by 2025 (although it is unclear if ComEd will meet this target).

The municipal aggregation option may allow the City to either advance the timeframe identified by FEJA or increase the percentage contribution of renewable resources. Further, the City could choose to aggregate only a portion of Chicago load, such as it currently does for the load associated with its own energy usage (i.e. municipal load) and select a power supply portfolio that would meet its own policy objectives. Under either scenario, the City would not need to acquire and operate ComEd's electric distribution system.

Franchise Agreement – Policy Implications

The City's Franchise Agreement with ComEd specifies the terms and conditions under which ComEd has the right to utilize the public rights of way within the City and to provide electric service to the residents and businesses within the City. The current Franchise Agreement took effect in 1992 and expires on December 31, 2020.

The Franchise Agreement includes "standard" provisions that require specific investments to be made by ComEd. These include restoration of streets and property (after work completed by ComEd), relocation of utility property at the request of the City, tree trimming within the rights of way utilized by ComEd,

allowance for use of utility poles / conduit by the City, and undergrounding future planned overhead utility systems, as requested by the City and within an annual budget of $1 million.

Specific unique provisions in the Franchise Agreement, among others, provide for requirements for various equal opportunity / affirmative action programs by the City and delivery of the previously mentioned annual report. These provisions are discussed below.

- Section 7 – Equal Opportunity / Affirmative Action. From a public policy perspective, the Franchise Agreement includes a requirement for equal opportunity / affirmative action programs to be implemented by ComEd. This section requires ComEd to comply with specific City ordinances as they relate to utilizing Minority and Women-Owned Business Enterprises as part of its procurement program. Additionally, ComEd is required to expand opportunities for minorities and women in "all areas of employment, including, but not limited to, hiring, promotion, recruitment or recruitment advertising, compensation and selection for training and apprenticeship." Further, ComEd is required to conduct a semi-annual business development workshops for the purposes of supporting and expanding opportunities for its affirmative action program, and to expand its community outreach program to focus on employment and procurement for minorities and women.
- Section 8 – Enforcement. ComEd is required by the Franchise Agreement to develop and provide to the City an annual report. The annual report includes a requirement to provide a "Plant Report" detailing ComEd's original cost of the assets within the City limits and the year they were put into service, which served the City well in its efforts to determine the financial feasibility of municipalization. The annual report also provides a description of ComEd's implementation of various terms and conditions of the Franchise Agreement, including reliability reports (by City ward), the preceding years' construction activities within the City, its equal opportunity / affirmative action activities and initiatives, and plans and forecasts related to generating capacity and alternative sources of power. This Study was not designed to provide an independent assessment of ComEd's compliance with the reporting or other elements of the Franchise Agreement. However, City staff indicated that ComEd has generally met the requirements of the annual report provisions of the Franchise Agreement.

NewGen understands the City has a team working on electric utility franchise issues. NewGen recommends that the City consider ways to keep or expand provisions in the new franchise agreement to move forward on achieving the City's policy objectives.

With regard to the Franchise Agreement, it is generally recognized in the industry that the term of such agreements is becoming shorter. Historically, investor-owned utilities requested terms of 30 years or longer for a typical franchise agreement. However, a recent survey of 3,538 municipalities nationwide developed by the National Renewable Energy Laboratory found that "Before 1995, many cities adopted franchise agreements with over 30-year terms, but since 1995, most cities have adopted 20-year contracts."[5] It is recommended that the City push for a shorter franchise period for its renewed Franchise Agreement with ComEd if it decides to not pursue its municipalization efforts.

[5] Webinar presentation on Municipal Franchise Agreements (presented by J. Cook, National Renewable Energy Laboratory, hosted by the National League of Cities), https://www.nrel.gov/solar/municipal-franchise-agreements.html .

Summary of Relevant Policy Efforts by the City

Public policy planning efforts regarding specific environmental and energy-related concerns have included the "Chicago Climate Action Plan" started in 2010 by Mayor Richard M. Daley and continued under the "Resilient Chicago" efforts under Mayor Rahm Emanuel, as well as the Ready for 100 Resolution. Based on conversations with City staff, it is assumed that at a high level, the goals and objectives of the previous administrations will continue under Mayor Lori Lightfoot and into the future.

Several of the specific policy objectives and goals within the City's existing plans directly relate to its electric energy usage as provided by ComEd. Many of these goals and objectives relate to electricity usage by the City; however, they are not dependent on the ownership of the distribution assets. The Resilient Chicago plan identifies 50 specific action items to be accomplished to achieve its vision of a city where "residential, neighborhoods, institutions and government agency are successfully connected to each other in the pursuit of economic opportunity, safety, equity and sustainability." Clearly, not all of the action items relate to the City's energy usage and its current relationship with ComEd. However, the following is a summary of the energy-related goals and objectives and a determination of how they may relate to the ownership of the electric distribution assets.

- Partnership with ComEd. Some of the electricity-related specific action items envision partnering with ComEd to implement and undertake these actions. For example, Action ID #18 is titled "Partner for Resilience: Commonwealth Edison and the City of Chicago," which describes the investments made by ComEd for its "Community of the Future" initiative, which includes distributed energy resources (DER) and the Bronzeville Community Microgrid, which is currently under construction. This action item also identifies additional efforts to reduce housing cost burden and promote affordability for residents through extensive energy efficiency programs and investments by ComEd. Other action items in the Resilient Chicago plan relate to the promotion of electric vehicles, advancement of the Chicago Climate Charter, and promotion of renewable electricity usage (Action ID# 27, 30, 31). A list of these specific action items is provided as Appendix B to this Study. With the exception of the partnership item with ComEd (Action ID #18), the other action items can likely be achieved with or without the City's municipalization of the electric distribution system.
- Increase in Electric Vehicles (EVs). Action items related to the promotion of EVs (including funding privately-owned or leased commercial vehicles, the City's fleets, as well as zero-emission transit busses) are examples of action items that could be readily achieved under the status quo electric distribution system operation (continued ownership by ComEd). However, it is feasible that a municipally-owned electric utility may be able to respond faster and more efficiently to requests for the installation of charging stations throughout the City to support the new EV fleets as well as customer-owned EVs (i.e. public charging stations). Alternatively, the City could request specific EV-related investments to be made by ComEd as part of its renewed Franchise Agreement as a means to achieve these policy objectives.
- Push for Renewable Energy. The City has identified a push for more use of renewable energy, including greater access to community solar programs, as well as improving the energy efficiency of the City's buildings. However, it is not a requirement that the City become a municipal utility to achieve these action items. As discussed herein, the City currently has the option of obtaining a separate contract for power supply under the Municipal Aggregation option.
- Community Solar. The City may be in a better position as a municipal entity to locate and install community solar facilities, as such efforts would require coordination through multiple City departments. However, ComEd has an established community solar program, with specific

projects that are being planned and are anticipated to be operational in 2020. Similar to requests for EV charging stations, the City could push for specific numbers of community solar programs to be implemented within City boundaries by ComEd through the renewed Franchise Agreement negotiations. However, the City would need to adhere to the method by which ComEd structures its Community Solar programs, which includes a bill credit for the production share of the solar resource and a bill from the Community Solar Developer for the subscription. The City, if it were a municipal utility, would have the ability to structure its Community Solar programs in a manner which it believes is the most equitable, and would not have to follow ComEd's structures for such programs.

- Energy Efficiency Programs. With regard to energy efficiency programs, as a municipal utility, the City would likely have greater control over which buildings are retrofitted, the schedule for these investments, and how such a program would be funded. However, in 2018 ComEd launched a new suite of offerings for low income customers as part of its Energy Efficiency Program and committed an average of $42 million annually for these efforts. These Energy Efficiency programs may be utilized in coordination with the City to expand opportunities for additional investment.
- Additional Action Items. Other action items identified by the City in its 2019 Resilient Chicago Plan include specific commitments made under its Chicago Climate Charter (similar to the national level Paris Agreement, which includes reductions in Greenhouse Gas (GHG) emissions), and the Ready for 100 Resolution, which targets 100% clean, renewable energy by 2035. Additionally, the City established specific targets for electrification of the Chicago Transit Authority (CTA) bus fleet by 2040, among other milestones. A municipally-owned utility could support the achievement of these goals; however, it is not a necessary requirement to achieving these goals.

Section 4
CONCLUSIONS AND RECOMMENDATIONS

NewGen investigated the financial feasibility and associated public policy considerations regarding the creation of a locally owned MEU for the City. This would require the City to acquire the existing electric distribution-related assets of the incumbent utility, ComEd, as well as make significant investments to sever the system from ComEd. This would also require the City to coordinate the choice of power supply for its customers; however, this transaction might continue to be between the retail customer and the power supply entity. The City would need to coordinate delivery of power to the electric substations it owns, as well as maintain the local distribution system, and bill customers for their delivered power.

The results of the financial analysis conducted for this Feasibility Study suggest that based on the costs associated with the acquisition and severance of the ComEd distribution system, the average delivery system retail rates would be higher for the City than the current provider, ComEd. The preliminary feasibility analysis relies on a series of assumptions with regard to the acquisition of the ComEd assets as well as the costs to operate and maintain the MEU. The primary driver of the average delivery rate differential is the estimated costs to sever the distribution system from ComEd, which was determined from a critical review of ComEd data and not the result of a detailed engineering assessment. Conducting a detailed engineering assessment of severance costs was outside the scope of this preliminary feasibility Study. It is recommended that if the City decides to move forward with its municipalization of ComEd's Chicago assets, that it conduct a detailed engineering assessment of applicable severance costs.

Achievement of the City's existing electricity-related public policy objectives does not require the establishment of a municipally-owned utility. This is due to the nature of retail choice in the State of Illinois and the existing relationship the City has with ComEd through its Franchise Agreement. A municipally-owned utility may serve to achieve some of these goals as identified herein; however, it may take many years for the City to acquire the electric distribution facilities within the City from ComEd and to separate the MEU system from the remaining ComEd system. Alternatively, the City could choose to identify specific metrics to be achieved by ComEd as they relate to some of these goals during its pending Franchise Agreement renewal negotiations. Based on the financial feasibility which suggests a higher average retail delivery rate for MEU service and because the City can likely achieve its public policy objectives without acquiring the assets of ComEd, NewGen recommends that the City not pursue municipalization of the ComEd system at this time.

Appendix A
PROFORMA FINANCIAL ANALYSIS RESULTS

City of Chicago Electric Municipalization - Pro Forma Financial Analysis ($000)

Line No.	Item	Assumption Description	Forecast Years -> 2020	2021	2022	2023	2024	2025	2026	2027	2028
1	**REVENUE/EXPENSE PROJECTION**										
2											
3	**Operating Revenues**	Calculation	$1,046,906	$1,060,052	$1,070,929	$1,084,037	$1,095,022	$1,108,662	$1,121,377	$1,133,183	$1,146,473
4											
5	**Projected Operating Expense**										
6	Power Supply Expense	N/A	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Transmission Expense	Input - $/kWh	$23,868	$24,449	$25,045	$25,654	$26,277	$26,915	$27,568	$28,237	$28,921
8	Regional Market Expense	N/A	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Distribution Expense	ComEd - $/kWh	$131,290	$134,488	$137,761	$141,112	$144,542	$148,052	$151,645	$155,322	$159,086
10	Customer Expense	ComEd - $/kWh	$65,406	$66,999	$68,630	$70,299	$72,008	$73,757	$75,547	$77,379	$79,254
11	General and Administrative Expense	ComEd - $/kWh	$117,654	$120,520	$123,454	$126,457	$129,530	$132,676	$135,895	$139,191	$142,564
12	Total Operating Expenses		$338,218	$346,457	$354,890	$363,522	$372,357	$381,400	$390,655	$400,129	$409,825
13											
14	**Non-Operating Expense**										
15	Debt Service - Renewals and Replacements	Debt Issue	$2,573	$5,184	$7,855	$10,566	$13,338	$16,148	$19,009	$21,931	$24,904
16	Debt Service - Taxable	Midpoint	$543,000	$544,000	$543,000	$544,000	$543,000	$544,000	$544,000	$543,000	$543,000
17	Debt Service - Non-taxable	Start Up Costs	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000
18	Cash Required for Debt Service	Input DSCR	$118,115	$118,837	$119,171	$119,913	$120,268	$121,030	$121,602	$121,986	$122,581
19	Total Non-Operating Expense		$708,687	$713,020	$715,027	$719,479	$721,605	$726,178	$729,611	$731,917	$735,485
20											
21	**Contributions/(Withdrawals) to Reserves**	Fund Balances Change	$0	$575	$1,012	$1,036	$1,060	$1,085	$1,111	$1,137	$1,164
22											
23	**KEY PERFORMANCE INDICATORS**										
24	**Revenue Requirement ($000)**										
25	Chicago MEU	Equal to Revenues	$1,046,906	$1,060,052	$1,070,929	$1,084,037	$1,095,022	$1,108,662	$1,121,377	$1,133,183	$1,146,473
26	ComEd Rates	Calculation	$732,915	$750,768	$769,042	$787,747	$806,892	$826,488	$846,545	$867,074	$888,085
27	Difference		$313,990	$309,284	$301,886	$296,290	$288,130	$282,174	$274,831	$266,109	$258,388
28	*% Difference*		*42.8%*	*41.2%*	*39.3%*	*37.6%*	*35.7%*	*34.1%*	*32.5%*	*30.7%*	*29.1%*
29											
30	**Average Rate ($/kWh)**										
31	Chicago MEU	Calculation	0.0447	0.0451	0.0454	0.0457	0.0460	0.0464	0.0467	0.0470	0.0474
32	ComEd Rates	Avg Delivery Rate (ComEd)	0.0313	0.0319	0.0326	0.0332	0.0339	0.0346	0.0353	0.0360	0.0367
33	Increase / (Decrease) to ComEd Rates		0.0134	0.0132	0.0128	0.0125	0.0121	0.0118	0.0115	0.0110	0.0107
34											
35	**Effective Debt Service Coverage Ratio (DSCR)**	Calculation	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

City of Chicago Electric Municipalization - Pro Forma Financial Analysis ($000)

Line No.	Item	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
1	**REVENUE/EXPENSE PROJECTION**											
2												
3	**Operating Revenues**	$1,161,239	$1,173,913	$1,188,086	$1,202,566	$1,217,358	$1,233,653	$1,249,073	$1,263,636	$1,280,922	$1,296,164	$1,312,955
4												
5	**Projected Operating Expense**											
6	Power Supply Expense	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Transmission Expense	$29,622	$30,338	$31,072	$31,823	$32,591	$33,378	$34,182	$35,006	$35,849	$36,712	$37,594
8	Regional Market Expense	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Distribution Expense	$162,938	$166,881	$170,916	$175,046	$179,273	$183,599	$188,026	$192,556	$197,193	$201,938	$206,795
10	Customer Expense	$81,173	$83,137	$85,147	$87,205	$89,310	$91,465	$93,671	$95,928	$98,238	$100,602	$103,021
11	General and Administrative Expense	$146,016	$149,549	$153,165	$156,866	$160,654	$164,531	$168,498	$172,558	$176,713	$180,966	$185,317
12	Total Operating Expenses	$419,749	$429,905	$440,301	$450,940	$461,828	$472,972	$484,377	$496,049	$507,993	$520,218	$532,728
13												
14	**Non-Operating Expense**											
15	Debt Service - Renewals and Replacements	$27,916	$30,990	$34,115	$37,291	$40,519	$43,787	$47,106	$50,489	$53,912	$57,399	$60,938
16	Debt Service - Taxable	$544,000	$543,000	$543,000	$543,000	$543,000	$544,000	$544,000	$543,000	$544,000	$543,000	$544,000
17	Debt Service - Non-taxable	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$44,000
18	Cash Required for Debt Service	$123,383	$123,798	$124,423	$125,058	$125,704	$126,557	$127,221	$127,698	$128,582	$129,080	$129,788
19	Total Non-Operating Expense	$740,299	$742,788	$746,538	$750,350	$754,223	$759,344	$763,328	$766,187	$771,495	$774,479	$778,726
20												
21	**Contributions/(Withdrawals) to Reserves**	$1,191	$1,219	$1,247	$1,277	$1,307	$1,337	$1,369	$1,401	$1,433	$1,467	$1,501
22												
23	**KEY PERFORMANCE INDICATORS**											
24	**Revenue Requirement ($000)**											
25	Chicago MEU	$1,161,239	$1,173,913	$1,188,086	$1,202,566	$1,217,358	$1,233,653	$1,249,073	$1,263,636	$1,280,922	$1,296,164	$1,312,955
26	ComEd Rates	$909,590	$931,600	$954,126	$977,181	$1,000,776	$1,024,925	$1,049,639	$1,074,931	$1,100,815	$1,127,305	$1,154,414
27	Difference	$251,649	$242,313	$233,960	$225,385	$216,581	$208,729	$199,434	$188,705	$180,106	$168,858	$158,541
28	*% Difference*	*27.7%*	*26.0%*	*24.5%*	*23.1%*	*21.6%*	*20.4%*	*19.0%*	*17.6%*	*16.4%*	*15.0%*	*13.7%*
29												
30	**Average Rate ($/kWh)**											
31	Chicago MEU	0.0478	0.0481	0.0485	0.0489	0.0493	0.0497	0.0502	0.0505	0.0510	0.0514	0.0519
32	ComEd Rates	0.0374	0.0382	0.0389	0.0397	0.0405	0.0413	0.0422	0.0430	0.0439	0.0447	0.0456
33	Increase / (Decrease) to ComEd Rates	0.0104	0.0099	0.0095	0.0092	0.0088	0.0084	0.0080	0.0075	0.0072	0.0067	0.0063
34												
35	**Effective Debt Service Coverage Ratio (DSCR)**	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

Appendix B
POLICY ASSESSMENT SUMMARY MATRIX

The following provides a summary of electricity specific policy goals and action items identified in the Resilient Chicago policy document.

Name (ID)	Status	Timeline	Goal from Resilient Chicago Document
18. Partner for Resilience: Commonwealth Edison and the City of Chicago	New	Varies	Improve Infrastructure Planning to Ensure that Investments are More Strategic, Proactive and Coordinated
27. Promote the Adoption of Electric Vehicles	Developing	1-5 years	Improve Transportation Connection between areas with High Unemployment and Workforce Opportunities
30. Advance the Chicago Climate Charter	Ongoing	>5 Years	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options
31. Shift to 100 Percent Renewables for City Electricity Needs	Ongoing	< Year	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options
32. Improve the Energy Efficiency of Chicago's Buildings	Ongoing	1-5 years	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options
33. Fund Clean Commercial Vehicle Fleets	Ongoing	1-5 Years	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options
34. Electrify City Vehicle Fleets	Ongoing	1-5 Years	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options
35. Adopt Zero Emission Transit Buses	Ongoing	1-5 Years	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options
37. Promote Greater Access to Community Solar	Developing	<1 Year	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options
38. Commit to Ready for 100	Developing	1-5 Years	Reduce Citywide GHG Emissions through City Renewable Energy Generation, Energy Efficiency and Mobility Options