EXHIBIT A

EnergySense Resilience Center

Rochelle Municipal Utility

Energy Action Plan

Submitted to RMU by:

University of Illinois System

EnergySense Resilience Center

50 Gerty Dr

Champaign, IL 61820

(800) 214-7954

Energysense-info@illinois.edu

energysense.illinois.edu

Submitted: August 5, 2026

Contents

1 Acknowledgements

This Energy Action Plan is the result of the efforts of multiple groups. The input and efforts of funders and contributors is gratefully acknowledged.

1.1 Report Authors

The Rochelle Municipal Utility Energy Action Plan was developed by the EnergySense Resilience Center (EnergySense) at the University of Illinois System. Report contributors include:

Shawn Maurer, Technical Director and Lead Author

Cassie Carroll, Marketing & Outreach Program Director

Devin Day, Engagement and Program Specialist

Todd Rusk, Associate Director

Anthony Santarelli, Business Development Specialist

Grishma Dahal, Building Energy Specialist

1.2 Steering Committee Members

We thank the Rochelle Energy Action Plan Steering Committee for their support in the development of this Energy Action Plan.

Andy Shaw – Lee-Ogle Enterprise Zone, Blackhawk Hills Regional Council

Jeff Feigenschuh – Rochelle City Manager (former)

Blake Toliver – Rochelle Municipal Utilities Electric Superintendent

Jill Calkins – Tri-County Opportunities Council Executive Director

Tom Byro – Creston Village President

Todd Rusk – EnergySense Associate Director

Daniel Payette – Blackhawk Hills Regional Council

Jenny Thompson – Assistant to City Manager

Danielle Bettner – Rochelle Municipal Utilities Assistant to Superintendent

Tammy Saenz – Tri-County Opportunities Council LIHEAP Director

Reid Elliott – Creston Village Board

Shawn Maurer – EnergySense Associate Technical Director

1.3 Project Sponsors

The Rochelle Energy Action Plan is the result of funding provided by an Energy Efficiency Community Block Grant, obtained with assistance from the Lee-Ogle Enterprise Zone and Blackhawk Hills Regional Council.

This program is offered in partnership with the Illinois Environmental Protection Agency Office of Energy and supported by funding from the U.S. Department of Energy.

1.4 Our Vision

The Rochelle Energy Action Plan will position RMU to continue to provide affordable, resilient energy to its customers through energy efficiency, practical energy acquisitions, and community support and engagement in our energy future.

1.5 Our Goals

Rochelle Municipal Utilities aspire to achieve the following energy goals in 2026 through 2050

- RMU power purchases and generation need to align with State requirements in the Clean Energy Jobs Act (Public Act 102-0662). CEJA states, for all electric generating units and large greenhouse gas-emitting units of 25 MWe or larger must:
  - Reduce coal-based power emissions by 45% by January 1, 2035, or if unable to reduce by this date, retire or otherwise reduce emissions by 45% by June 30, 2038.
  - Reduce coal-based power emissions by 100% by December 31, 2045.
  - Reduce gas-based emissions to zero by January 1, 2045 through plant retirement, 100% green hydrogen fuel, or other commercially available technology
- Maintain stable, affordable energy costs for RMU customers
- Identify short-term energy efficiency measures to reduce electric demand
- Identify long-term resiliency efforts to maintain stable electric rates
- Improve the environmental sustainability of RMU power generation

2 Executive Summary

This Energy Action Plan provides strategies for Rochelle Municipal Utilities (RMU) and the communities it serves, including the City of Rochelle, Village of Creston and Village of Hillcrest, to help maintain reliable, cost-effective electric service for the customers in its service territory. EnergySense Resilience Center at the University of Illinois System facilitated development of this plan through stakeholder interviews, public outreach and feedback, energy assessments of major community facilities, and coordination with a community steering committee. The steering committee includes municipal leadership from each of the three communities served by RMU, Blackhawk Hills Regional Council, RMU management, and the local administrator of the low-income energy assistance programs.

Strategies in this EAP are divided into 4 core focus areas:

- Short-term energy efficiency
- Long-term resilience and sustainability
- Affordability and rate structures, and
- Community engagement

Short-term energy efficiency focuses on strategies that will reduce customer energy costs directly through on-site energy efficiency projects such as completing energy assessments and installing more efficient technologies that, over time and with broad implementation, will reduce peak power demand and energy consumption on RMU's grid. This provides room for the utility to grow new residential, commercial, and industrial clients with existing resources. It also helps RMU customers with reducing their own energy costs.

Long-term resilience and sustainability strategies focus on installing generation capacity to help RMU and its customers generate low-cost power with local infrastructure and reduce reliance on unsustainable energy fuels, such as natural gas or coal. Energy sources can be unsustainable for multiple reasons, including volatile prices, limited availability, and interruptible delivery networks. They can also be unsustainable due to their impact on local and global environment, such as the emission of air pollutants or greenhouse gases.

Affordability and rate stability strategies focus on policy changes RMU can implement to improve their ability to access and purchase energy at more stable wholesale prices, including trimming peak demand, implementing corrective tariffs, and pursuing grant and funding opportunities for new developments.

Community Engagement focuses on strategies to keep engagement with the plan's strategies high, particularly those that involve RMU customer actions. If the community does not support the energy action plan, progress can stagnate to the point that many efficiency gains are lost, and funding opportunities are missed. Maintaining engagement with community members, business and municipal stakeholders, and electric generation stakeholders will ensure the most opportunities for improvement are opened to RMU and the communities it serves to stabilize or lower energy costs.

2.1 Energy Action Focus Areas

Table 1: Summary of Energy Action Plan Strategies

Focus Areas	Strategies
4.0 Short-Term Energy Efficiency	4.1 Implement Measures from Assessment Reports
	4.2 Create Municipal Energy Efficiency Program
	4.3 Support Energy Efficiency Retrofits
	4.4 Create Low-Income Efficiency Kits
5.0 Long-Term Resilience and Sustainability	5.1 Install 5 MW Solar and Battery Storage Plant
	5.2 Implement an Aggregated Distributed Energy Resource Program
	5.3 Support Wastewater Reclamation Plant Biogas Generation
	5.4 Incentivize Optional Advanced Energy Efficiency Codes
	5.5 Implement Microgrids at Key Community Facilities
	5.6 Establish A Local Generation Planning Study
	5.7 Construct Clean Generation Identified in Planning Study
6.0 Affordability and Rate Stability	6.1 Implement Power Factor Correction and Tariffs
	6.2 Implement Large-Demand Customer Interconnection Program
	6.3 Join a Larger Joint Action Agency to Improve Buying Power
	6.4 Pursue Grants for Grid and Power Development
	6.5 Construct a Sustainable Energy Test Campus in Rochelle
7.0 Community Engagement	7.1 Create a Community Dashboard to Track Progress
	7.2 Raise Awareness of Existing Support Programs and Incentives
	7.3 Communicate Programs at Community Events
	7.4 Share EAP Progress Through Community Channels
	7.5 Maintain Ongoing Stakeholder Feedback

3 Introduction

3.1 Purpose of This Plan

The purpose of this plan is to achieve RMU's goals of providing affordable, stable power aligned with State-mandated requirements in the Climate and Equitable Jobs Act, improving the utility's overall resilience and sustainability. As the act requires reduction in emissions or closure of large fossil-fuel power plants to achieve a carbon-neutral state energy grid by 2050, RMU will need to shift from its primary power source, Prairie State Energy Campus, to zero-carbon sources. Small generation sources of less than 25 MW-electric can continue to use fossil-fuel sources but are subject to Illinois EPA air emissions standards, which includes RMU's natural gas peaker facilities.

Origin of the Plan

- CEJA bill requires closure of large fossil-fueled power plants by January 1st, 2045.
- RMU obtains ~30% of capacity from Prairie State Energy Campus, a large coal plant.
- Multiple power-purchase agreements (PPAs) with diverse fuel sources make up the balance of service for RMU.

3.2 Steering Committee and Plan Partners

Rochelle Municipal Utility

Rochelle Municipal Utility (RMU) is the electricity provider for customers in the City of Rochelle, the Village of Creston, and the Village of Hillcrest. RMU is focused on providing reliable electric services at stable rates for customers in these communities.

Municipal Officials

Municipal officials from Rochelle and Creston have provided a voice for the communities served by RMU in the development of this Energy Action Plan.

Blackhawk Hills Regional Council/Lee-Ogle Enterprise Zone

The Lee-Ogle Enterprise Zone (LOEZ), administered by the Blackhawk Hills Regional Council (BHRC) helped RMU and local communities apply for the funding through an Energy Efficiency Community Block Grant offered by the Illinois EPA Energy Office to develop this Energy Action Plan, and continues to provide support to identify and apply for additional funding to support this Plan.

EnergySense Resilience Center

EnergySense Resilience Center is a center at the University of Illinois System that serves communities, businesses, and public agencies to empower them with practical solutions for climate, energy, and sustainability. EnergySense contracted with Rochelle and BHRC to help develop the Energy Action Plan.

3.3 Community Background

The City of Rochelle is an industrial and commercial shipping hub west of Chicago and South of Rockford, with connections to two large railways, BNSF and Union Pacific through a city-owned short-line railroad, that facilitates broad access to rail-served industry. Additionally, Rochelle has ready access to 4 main trucking corridors; Interstates 39 and 88, and Illinois highways 38 and 251. Rochelle is also a short distance from US-30. As such, the community has a strong industrial and warehousing business base. The community population has been stable for the past 25 years with area median income being about 20% less than the Illinois median income. As such, maintaining energy affordability is a core concern for the population. Encouraging industrial growth to take advantage of Rochelle’s hub status also raises concerns about rising electric demand and the impact of industry, particularly data centers, on local energy prices. Hillcrest is a primarily residential community to the north of Rochelle, and Creston is a small residential and commercial community to the east of Rochelle.

The area has a significant Spanish-speaking population, with about 22% of residents speaking a non-English language at home, according to US Census data. As the communities move forward with the plan, ensuring communications acknowledge this potential language barrier will be important to ensure full community engagement.

Figure 1: Local transportation corridors.

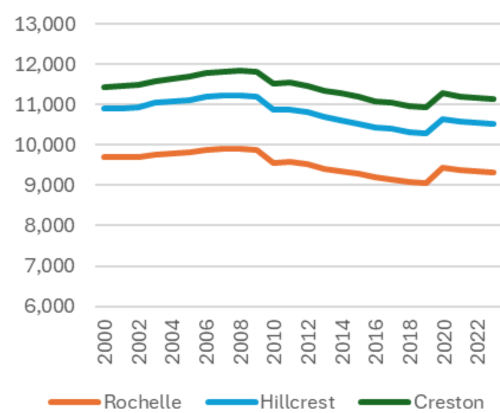


Figure 2: Community population growth trend.

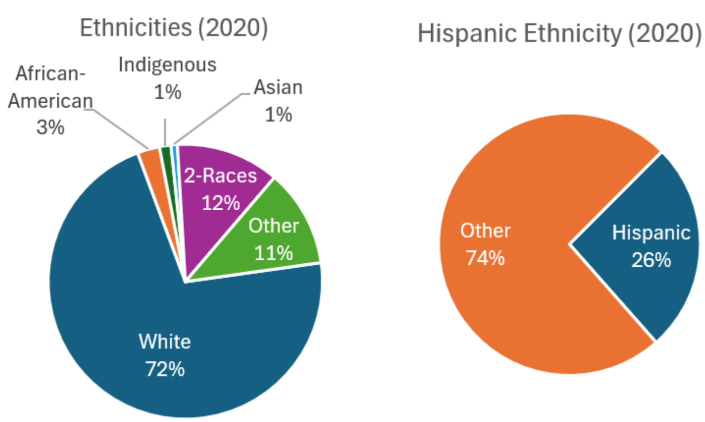


Figure 3: Community demographics

4 Short-Term Energy Efficiency

Measures in this focus area can be implemented immediately, and their impacts will accrue over time. These efficiency measures will reduce overall energy consumption for RMU customers, helping reduce their energy costs, while also reducing energy demand for RMU, helping the utility avoid purchases of high-cost energy from regional transmission markets or construction or purchases of generation capacity to cover energy demand.

4.1 Implement Measures from Energy Efficiency Reports

Implement the recommended measures from the 5 assessment reports completed as part of the EAP's development.

As part of the EAP's development, five energy assessments were completed for large consumers in the community including: the RMU Water and Water Reclamation facilities, Rochelle Township High School, a refrigerated warehouse, and Rochelle Community Hospital. The five reports identified a total of about 0.240 MW of peak electric demand savings and 1,800 MWh of annual electric energy savings that have payback periods for each client of less than 5 years. On top of the recommended savings, the reports also identify an additional 1 MW of potential peak savings and nearly 3 GWh of energy savings through additional longer-term efficiency projects, on-site combined heat and power, or renewables with simple paybacks ranging from 10 to 50 years or more. Some of these longer-term projects are covered by future strategies in this report.

Savings for this strategy assume the measures recommended in each energy assessment report are implemented within the next 3 to 5 years, a common timeframe for project implementation at commercial facilities. Any natural gas savings attributed to the recommended

Implementation years:	Now-2030
Projected annual energy savings:	0.24 MW 1,800 MWh 8,450 therms
Projected annual GHG reductions:	1,350 MT-CO_{2e}
Electric Savings:	$190,000
Gas Savings:	$7,100
Customer Investment:	$550,000
Simple Payback:	~3.0 yr

Priority Steps

Priority 1: Identify existing incentives to support efficiency measures

Priority 2: Support clients with measure implementation

Priority 3: Communicate successful implementation of measures

Priority 4: Track savings impact and report to community measures are also included in the savings and emissions reductions. Payback listed is the average noted for the recommended measures in the assessment reports. If any of the additional non-recommended measures are implemented from these reports as well, the potential savings will be increased. Linking clients to available utility, municipal, state, or federal funding opportunities can help drive these projects forward. Costs estimated are the client-only costs of implementation.

4.2 Create a Municipal Energy Efficiency Program

Establish a municipal energy efficiency program that sets up the leadership of the community as exemplars of energy efficiency for others in the community. Implementation of conservation projects should be highlighted in social media or a community dashboard to encourage community participation in efficiency programs.

Impacts for this measure are based on the savings identified in Strategy 4.1. While the completed energy assessments focused on sites that used the most energy in the community, the municipal facilities included in this strategy use significantly less energy, though there are more total buildings. As the systems serving municipal buildings are likely to be smaller and simpler, the costs to implement efficiency measures are also lower.

Municipal facilities included as part of this analysis include the following:

- Rochelle Municipal Utilities office
- Municipal airport facilities
- Transportation department
- City hall and police department
- Fire department
- Park district buildings, including local museums
- Public library
- Central elementary school

Implementation years:	Now-2030
Projected annual energy savings:	.05 to 0.1 MW 250 to 500 MWh
Projected annual GHG reductions:	190 - 370 MT-CO_{2e}
Potential Savings	\$31,000 - \$61,000
Potential Cost:	\$100,000 - \$200,000
Payback Period:	1.5 – 3.0 years

Priority Steps

Priority 1: Identify method of program implementation (internal program or ESCO contract)

Priority 2: Implement energy efficiency projects at municipal facilities

Priority 2: Highlight completed projects in municipal newsletters, social media posts, and local news media

Priority 3: Track savings impact and report to community

Additional facilities already covered by previous assessment reports in Strategy 4.1 include water and water recovery facilities, and the township high school.

Highlighting successes is the true purpose of this measure, as showing success municipally can encourage more community participation by fostering a sense of joint community action. Showing that municipal agencies are good stewards of tax dollars as well as energy resources can help spur additional energy efficiency projects from industries, small businesses, and residents creating a larger overall impact in the community, and greater reductions in demand and energy consumption for RMU. EnergySense recommends that as part of this efficiency program, RMU and the served municipalities should document benchmark energy consumption as energy use intensity in kBtu/sf/yr, and energy cost intensity in $/sf/yr for each of these facilities and track the reductions as energy efficiency projects are implemented. Posting newsletters and social media articles raising awareness of these projects, successes, and savings will help others in the community to start looking for their own opportunities, as well as highlighting good stewardship of taxpayer funds by municipal agencies.

Costs are not split between the utility and the municipal facilities for this measure as the costs are all within the municipal budget, though internal budgeting may track these entities independently. The implementation of this measure can take many forms. Municipal facilities can work with RMU directly to implement efficiency projects and offset some capital costs to improve payback periods for larger projects. Alternatively, an Energy Services Company (ESCO) can establish a performance contract which will offset upfront capital costs and pay back those costs over a contracted period using implemented savings. ESCO contracts guarantee savings or pays the difference to the client, which helps the municipality ensure they are getting the most out of an energy assessment and project implementation, at the expense of maintaining energy costs at current levels until the contract is complete. An ESCO contract can be for a single municipal building, all municipal buildings, or a subset of buildings.

4.3 Support Energy Efficiency Retrofits

Implementation years:	Now - 2032
Projected average annual energy savings:	3.6 MW Peak 40,212 MWh/yr $4,900,000/yr[1]
Projected average annual GHG reductions:	29,457 MT-CO_{2e}
Client Investment:	$7,300,000
RMU Investment:	$1,000,000
Client Payback:	~2 years
RMU Payback:	~7 years
Per Customer Investment[1]:	$3,000 - $4,000
Cost Savings:	$1,500 - $2,000
Payback:	~2 years

Priority Steps

Priority 1: Complete study to identify appropriate incentive levels for efficiency measures

Priority 2: Advertise availability of incentives to community through multiple channels

Priority 3: Set metrics for recruitment of buildings into programs and track progress

Create or revise existing energy efficiency rebates for quick-payback measures and communicate their availability to the community.

Energy efficiency is the most cost-effective way to reduce utility peak demand and annual energy consumption. Wind or solar, currently the lowest-cost sources of new energy, cost between $56.75 and $94.20 per MWh.[2] Energy efficiency programs range from $24 to $35 per MWh.[3]

Supporting measures that have high impact and quick returns on investment can build early momentum for longer-term efficiency projects, as well as reduce energy costs for RMU customers. An energy assessment program helps identify the most cost-effective measures for customers to implement in their homes and businesses. Below is a non-comprehensive list of energy efficiency measures that typically have the shortest payback periods:

[1] Per customer investment assumes a 7,500 sf business, indicating a total of about 1,900 to 2,000 efficiency retrofit projects will be implemented across the community.

[2] https://www.eia.gov/outlooks/aeo/electricity_generation/

[3] https://www.aceee.org/sites/default/files/cost-of-ee.pdf

- High runtime lighting – 24/7 security lights, greenhouse lighting, outdoor lights, and indoor lighting on for more than 10-12 hours per week can pay back in a few months to 2 years by upgrading to LED lighting.
- Air Sealing – sealing up drafts improves occupant comfort and improves building durability. Air sealing at common leakage points such as doors, windows, outlets, and other penetrations can pay back in 1 to 3 years.
- Smart thermostats – these allow customers to enlist in demand response programs or set schedules to reduce consumption when buildings are unoccupied. Payback can be from a few months to 2 years.
- Electric resistance heating – replacing with cold-climate heat pumps can cut peak demand by 30-50% for heating. The upgrade typically pays back in 3 to 5 years.
- Variable frequency drives – for commercial clients, VFDs on fans and pumps 20HP and larger with runtime of 2,000 hours per year or more typically payback in less than 5 years.
- HVAC Controls Commissioning – commissioning results in 10%-30% energy savings per building in larger facilities with automation installed and pays back in less than 1 year.

The above savings assume $0.50 per square foot of implementation costs on average, based on ACEEE estimates for the cost of energy efficiency in the US. Savings are based on the assessments completed by EnergySense, amounting to about 10% energy savings per building, which is on the low end of typical energy assessment identified savings of 10% to 30%. Total cost to implement energy efficiency projects for Rochelle was estimated at about $7.7 million. The costs were split between client costs and utility costs using data from ACEEE on typical efficiency program metrics for municipal utilities. ACEEE found that first-year energy efficiency programs cost utilities between $0.58 and $0.35 per kWh saved (note as savings accrue over the life of the program, actual costs are typically $0.045/kWh to $0.075/kWh).[4] We used the upper end of this estimate to make a conservative estimate of program costs for RMU, totaling just over $1 million, split 50/50 between program administration and incentives for customers.

While clients can see quick paybacks around 2 years (excluding any co-incident natural gas savings and including a portion of RMU's investment as incentives), RMU's avoided costs in terms of market rates for capacity and energy result in a payback period of about 8 years to administer the program. However, avoided electric costs for RMU will accrue over time, especially as market prices for electricity and power are expected to continue to rise, so the payback period for RMU is likely to be shorter. Accrued savings and avoided cost over time are also why focusing on early, easy efficiency gains are important to capture the greatest benefit from energy and demand reductions.

Support can also include low- or no-cost options for RMU outside of monetary incentives, such as hosting a list of verified contractors or ESCO's that provide clients with a quick, trusted reference for service providers, educational programs, and efficiency guides for customers.

[4] https://www.aceee.org/sites/default/files/cost-of-ee.pdf

4.4 Create Low-Income Electric Efficiency Kits

Create low-income electric savings kits to assist low-income families with reducing their energy costs.

In line with the above themes, energy efficiency is the quickest, lowest cost means to reduce electric demand and energy consumption. This measure focuses on low-income homes that are looking for assistance reducing their energy costs. Nicor gas provides free energy efficiency kits for customers with natural gas service[5] that include low-flow faucet aerators and shower heads, shower timers, and weatherstripping to help reduce natural gas consumption for heating and hot water. RMU's electric-only customers do not benefit from this free resource, though, and the items in Nicor's kits focus on reducing natural gas consumption. Creating free kits focused on electric savings would provide a quick and easy way for low-income residential clients and multifamily properties to start reaping the benefits of energy efficiency to reduce their utility costs. Savings for this measure will heavily depend on the number of RMU customers participating in the program, so data is presented on a per-client basis. Participation impacts also stress the importance of communicating the availability of the program regularly and marketing its benefits to the community.

Implementation Years:

Now - 2030

Projected household annual energy savings:

420 - 850 kWh

Projected household annual cost savings:

$50 - $100

Projected household annual GHG reduction:

0.3 to 0.6 MT-CO_{2e}

Projected kit cost to RMU:

Priority Steps

Priority 1: Set eligibility criteria for kits

Priority 2: Determine kit contents and variations on kits for specific customer goals

Priority 3: Evaluate internal or external party management of kits

Priority 4: Advertise kits to eligible customers through local community action agencies

Kits can be specialized to specific project types or types of savings, as the examples from Nicor's site indicate. Below are some examples of potential electric energy efficiency kits.

- Heating savings kit: weatherstripping or rope caulk, outlet gaskets, window plastic and tape, and smart thermostat
- Water savings kit (limited to electric water heaters): pipe insulation, faucet aerators, and low-flow shower heads

[5] https://www.nicorgas.com/ways-to-save/residential-savings/free-products-and-services.html

- Commercial savings kit: smart thermostats, smart plugs or power strips, weather stripping or rope caulk, small cans of spray foam, and some types of LEDs
- Home electronics kit: LED bulbs, smart power strips or plug-in outlet control, outlet gaskets

Free kits should also include instructions for users on how to use each kit item. Flyers showing proper installation of weather stripping and window film installation ensures these items reduce airflow and improve insulation. Flyers for electronic controls like smart power strips or controlled outlet plug-ins ensure customers don't create nuisance issues from plugging incompatible devices into outlets that can automatically turn off while ensuring devices with vampire loads are controlled.

Savings for this measure are based on similar kits in an income eligible program managed by the University of Illinois – Chicago's Energy Resources Center for ComEd, which resulted in $76/household savings.[6] The cost of each kit to RMU usually runs in the range of $150 to $175, depending on kit contents. Establishing working relationships with local income assistance groups like food pantries and community action agencies can help distribute kits to more families and increase impacts. These organizations are more likely to interact with customers in need of assistance on a regular basis and can help hand out kits to those in need.

Rochelle could manage this program internally, or contract with a third party to manage the program. One of the challenges with existing programs is underutilization. Later strategies in this plan that support communication and awareness can improve utilization using RMU and municipal resources, but working with a third party that specializes in these programs can yield additional benefits and higher impact. Such companies can conduct early billing analysis, community surveys, or other investigations that can help quantify the number of kits needed to assist with program budgeting, kit development and stocking, and marketing and outreach of the program to target customers to achieve the greatest impact. They can also create these kits in bulk, obtaining bulk purchase discounts that may improve the cost-effectiveness of this strategy.

[6] https://erc.uic.edu/energy-efficiency/income-qualified/

5 Long-Term Resilience and Sustainability

Measures in this focus area primarily focus on large-scale projects involving multiple building sites, RMU's transmission facilities, or work with a longer implementation horizon than the next 5 years. These projects have larger impacts on the local grid for individual projects than the strategies in the previous section.

5.1 Install 5MW Solar and Battery Storage Plant

Install a community renewable energy system with battery energy storage system to maximize the use of renewable energy and offset spot purchases of energy. Analysis of renewable options indicated east and west oriented solar with battery storage reduced energy and demand costs the most.

EnergySense assessed the impact of pairing a 5MW wind farm or 5MW solar array in different orientations with a 5MW, 30 MWh battery storage system to evaluate impacts on overall utility costs.

RMU has a very flat energy demand profile due to high industrial loads, which tend to be flatter than commercial and residential loads. Solar or wind production alone would introduce large dips and rises in demand that can result in curtailment of the renewable energy source, wasting the generated energy. Increased operating costs can also occur due to variable capacity demand induced by renewable contributions to RMU's transmission system. Both conditions increase utility costs to operate a large renewable system. Adding a battery energy storage system has multiple benefits:

1. Time-of use arbitrage, shifting demand to low-cost periods
2. Match generation more closely to RMU's flat demand profile, maintaining local stability and reducing renewables curtailment
3. Supply up to 6 hours of 5MW back-up service in the event of an outage or power shortage

Implementation years:	2026-2031
Projected annual energy savings:	<3 MW Peak 8,900 MWh
Projected annual GHG reductions:	6,500 MT-CO_2
RMU Investment:	$17,000,000
Federal ITC:	$4,700,000
IL Shines SREC:	$250,000
Payback Period:	28 years

Priority Steps

Priority 1: Identify site for renewable and battery energy storage system

Priority 2: Determine purpose(s) for battery storage system

Priority 3: Identify management system to optimize for desired purpose(s)

Priority 4: Determine if system will be RMU-owned or a PPA contract

4. Employ battery in existing demand response program, stacking large demand management rebates and passing those savings along to customers
5. Improve local grid reliability through voltage and frequency stabilization using smart inverters
6. Deferral of transmission upgrades such as new transmission lines or substations by trimming RMU's peak demand

EnergySense compared the generation capability of three renewable systems: a south-only oriented solar array, a solar array with 50/50 east and west-facing panels, and a wind turbine array, the seasonal average production of each is shown in Figure 4. Comparing the levelized cost of energy after incentives, solar is about $12/MWh while wind was about $27/MWh, so wind is not as cost effective as solar; however, the more consistent wind generation increases battery availability allowing RMU to offset peak demand costs more consistently than a solar-charged battery. South-facing solar has the best economics in our modeling, though.

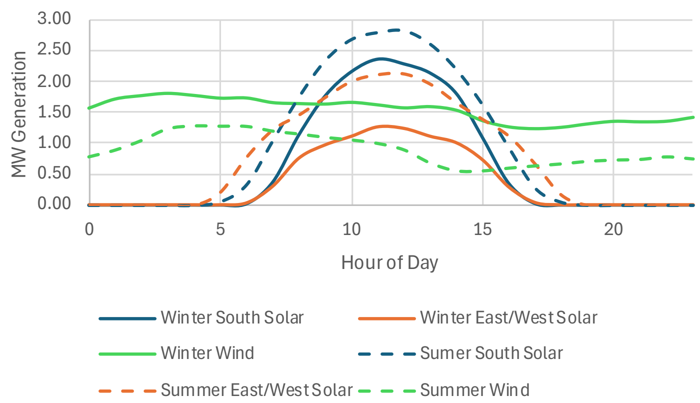


Figure 4: Comparison of winter and summer average generation for various renewables.

For our analysis, we built an hourly model of RMU's current annual demand based on past utility data from RMU and IMPA and assigned hourly energy prices based on RMU's contracts for Prairie State power, NextEra PPAs, and local generation costs. The baseline model was adjusted using basic power arbitrage to estimate potential savings where renewables recharge the battery, and peak demand is reduced using the battery and any excess renewable generation not used for recharging. While our savings are based on the most recent contract information we have for RMU's power and energy, they may miss some periods where charging the battery with low-cost energy can offset high-cost periods, which would improve savings potential.

Incentives for this project include Federal Clean Energy Investment Tax Credits, which offer a 30% direct-pay eligible tax credit for qualified generation and storage facilities. The credit can be boosted by 10% if the project meets domestic product requirements, which is not included in our analysis to keep values conservative. State incentives from the Illinois Shines Adjustable Block Program contribute additional savings to a solar generator but is not available for wind at this scale. Additional incentives not included in our analysis include a freeze on property taxes, which can further improve economics but is not factored into this analysis.

5.2 Implement an Aggregated Distributed Energy Resource Program

Implementation years:	2026-2031
Projected annual energy savings:	Variable Peak 7,800 MWh/yr $504,000/yr
Projected annual GHG reductions:	5,700 MT-CO_2
Economics for RMU:	$12,000,000 Investment Max 23 yr payback
Economics for RMU customer (5kW offset):	$10,000 Investment $500 SRECs Incentive 7-8 Yr Payback

Priority Steps

Priority 1: Develop ADER specifications to ensure technologies can communicate with RMU billing and control software

Priority 2: Establish ADER Program terms and equipment specifications for participation

Priority 3: Develop incentive and rate structures for participation based on estimated impacts

Priority 4: Track program participation and align with RMU goals

Develop an aggregated distributed energy resource (ADER) program, also known as a virtual power plant (VPP) program using customer-owned solar and battery energy storage systems.

ADER programs can include rooftop solar, battery storage, electric vehicles (EVs), smart thermostats, water heaters, and other advanced technologies and communication devices that increase energy flexibility for customers and utilities. This strategy focuses on implementing behind-the-meter battery storage with renewable projects to help customers maximize the use of their renewable energy, increase property resilience, and improve participation in demand response programs.

Aggregating distributed resources can have a similar impact on RMU's capacity profile as establishing a centralized 5MW plant with generation and battery storage but increases deployment flexibility and shares the costs of implementing ADERs with RMU's customers. Our analysis assumes RMU's goals for this program align with installing about 5MW of distributed renewables in the community, as well as a combined 5MW/30MWh of behind-the-meter battery storage.

RMU would need to ensure they specify for ADER participants which inverter vendors comply with communication protocols needed to network with RMU’s billing and metering. Generally, this requires compliance with UL 1741 and IEEE 1547, standards for inverter-based interoperability, smart grid functions, and interconnection of equipment with local distribution and transmission systems. Listing specifications that quality for an RMU ADER program, or developing a list of approved vendors, will help ease customer participation. RMU may also consider incentives for development of ADER resources for low-income households or small businesses, highlighting utility bill cost savings, that will help improve social equity for these programs. Customized rate structures with time-of-use pricing will help encourage customer participation to lower costs, as well. RMU’s existing time-of-use rates align more with RMU’s flat demand profile. Developing a rate that aligns with peak prices on the energy market may help clients support RMU with capacity when market prices are high and shift consumption to lower-cost periods for the utility. The net benefit would be lower overall utility rates.

The Department of Energy suggests an initial rollout of 5% to 15% of local capacity being covered by ADER programs to ensure stable operation and resolve customer issues before increasing program participation. For RMU, our 5MW target for this strategy is 7% to 8% of the current peak of 74 MW, measured over the past 3 years.

5.3 Support Water Reclamation Plant Biogas Generation

Implementation Years:

2035-2045

Projected annual energy savings:

.03 MW Peak Demand

192 MWh Electric Energy

$17,000 Energy and Demand Costs

Projected annual GHG reduction:

181 MT-CO_2

Economics:

$157,000 Investment

12.5 year Payback

Priority Actions:

Priority 1: Identify additional incentives for CHP

Priority 2: Identify vendor to build system

Priority 3: Coordinate funds between Rochelle, RMU Electric, and RMU Water Reclamation Facility

Priority 4: Obtain grant funds for the CHP project

Rehabilitate the on-site decommissioned anaerobic digesters at the RMU wastewater reclamation facility (WRF) to generate biogas, then use a CHP system to generate electricity using the biogas. The RMU WRF has already made strides to implement renewable energy generation to offset high electric demand at the site for multiple pumps, blowers, HVAC systems, lighting, and miscellaneous devices by installing a solar array at the plant. The solar array currently only offsets daytime peak demand, though, with billing from the WRF indicating a peak demand of about 770 kW during peak plant operations.

The site has decommissioned-in-place digester tanks that could be retrofitted to accommodate anaerobic digestion of solids to generate biogas to supplement the biogas currently generated by the anaerobic lagoon. Reusing the existing tanks may help reduce implementation costs. Rather than flaring biogas, it could be burned in a combined heat and power (CHP) generator to produce electricity for the plant, even at night. Heat from the CHP could be used in the nearby solids handling building to provide space heating or help dry solids with a heater system.

Based on WRF loading, the estimated biogas production can support a 36-kW reciprocating engine CHP system which would supply up to 192,000 kWh and 12,000 therms per year of electric and heating energy, about 9.5% of current electric consumption. Investment cost of $157,000 and operational costs around $4,800 per year are estimated. A CHP system is expected to reduce WRF annual energy costs by about $17,000 per year for electricity and avoids $3,000 in heating costs from natural gas if heat from the CHP is used to heat the digesters or nearby buildings, netting a payback of about 10 years when incorporating the avoided natural gas cost. If the CHP runtime is optimized to flatten the WRF peak demand, cost savings could be higher due to further decreases in peak demand. If additional biogas generation is needed to ensure more consistent operation of the CHP system, plant solids can be supplemented with a community grease trap, organic waste, or other collection program that can boost biogas production and help improve the quality of the biogas.

Nicor offers a custom incentive to pay for this project, estimated at $7,300 based on offset heating from the CHP for heating the digester and nearby buildings. Additional funding through a pending Climate Pollution Reduction Grant (CPRG) grant program to reduce biomethane emissions can help to improve the economics of this measure was announced in December 2025.[7]

[7] https://omb.illinois.gov/PUBLIC/GATA/CSFA/Program.aspx?csfa=3806

5.4 Incentivize Optional Advanced Energy Efficiency Codes

Implementation Years:

2035-2045

Projected annual energy savings:

$2.22 to $2.90/sf energy savings

Projected annual GHG reduction:

2.5 – 4.0 MT-CO_2 per sf

Economics:

$2.25 to $3.11/sf cost premium to builders

Payback in 0 to 8 years

Priority Actions:

Priority 1: Select a beyond-code program to support

Priority 2: Determine who qualifies for incentives, incentive levels, and incentive structure

Priority 3: Determine incentives for beyond-code compliance

Priority 4: Track metrics such as reduced demand or energy, number of buildings, etc… to encourage code use

Adopt optional advanced building energy codes to mitigate the impact of new construction and significant renovations on electric demand in RMU's territory. Rochelle Municipal Utilities and the municipalities it serves can promote high-performance and energy-efficient design in new buildings through the incentivization of advanced energy codes. Advanced building codes such as LEED, the Stretch Energy Code, or Passive House include energy-efficient building envelope, HVAC systems, lighting and building automation systems design, and incorporation of on-site renewables to reduce energy demand for new construction and significant renovations. Advancements in energy codes over the past two decades have essentially flattened new electric demand in Illinois and started reducing overall consumption, as shown in Figure 5. Further energy code advancement would continue this trend and may help reduce demand overall.

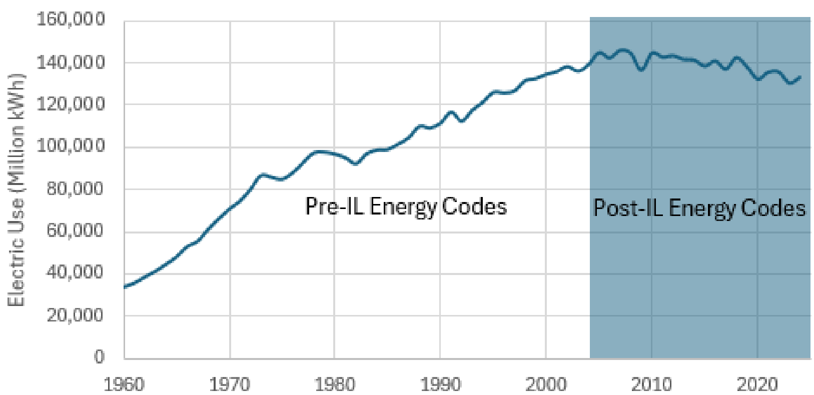


Figure 5: Total Illinois electric consumption pre- and post-energy code adoption.

Creating new facilities or renovating buildings using energy performance considerations will reduce long-term operating expenses, ensure occupant comfort, and reduce energy use in the future, reducing long-term life cycle costs for new building owners. While advanced energy codes can have marginally higher first-costs for construction, the initial costs usually pay back in 8 years or less, based on analysis of Illinois' Stretch Energy Codes[8]. Incentives for building beyond the code can be based on the expected cost premium to go beyond code, modeled energy savings, or individual building system efficiency improvements. The incentive can be an up-front payment to assist with higher capital costs, or a financing mechanism that recoups program costs over time, such as on-bill financing or a property tax incentive for verified high-performance construction. The incentive implementation will depend on RMU and municipal staffing capabilities and comfort with analysis methods to determine incentive levels for each building.

Success for the beyond-code strategy relies on public awareness of the program's impact and encouraging new participants using program successes. Communicating the number of beyond-code buildings constructed, their estimated avoided energy demand and emissions, and the savings for building owners on monthly fees will draw in new program participants. Particularly focusing on avoided energy costs and how those savings contribute to paying down construction loans faster will encourage more participation in beyond-code programs.

[8] https://cdb.illinois.gov/content/dam/soi/en/web/cdb/business/codes/ecacouncil/stretch/docs/2026-commercial-stretch-cost-analysis.pdf

5.5 Implement Microgrids at Key Community Facilities

Implement microgrids at key community facilities to help mitigate costs and keep community facilities operational in the event of power outages. Microgrids consist of small on-site generation, battery storage, and grid interconnections that allow facilities to be more resilient to fluctuating energy costs and potential service interruptions.

Critical facilities may include hospitals, emergency services like police and fire departments, water and wastewater treatment, schools, and community storm shelter facilities. Microgrids will help to provide backup power in case of an outage due to utility load, weather, or other emergencies.

Under normal operations, microgrids can help these critical facilities reduce utility costs by using the cheapest available source of energy for power. Microgrids can switch between on-site fossil-fuel generators, battery charging or discharging, renewable energy, or the grid to optimize costs for facility owners. Microgrids, similar to the ADER measure, can also be set up to help RMU manage peak demand, frequency and voltage fluctuations, and help stabilize local power transmission by reducing loads on nearby transformers and substations.

Implementation years:	2026 – 2035
Projected annual energy savings:	0.2 MW Demand 1,075 MWh Electric $100,000 Total
Projected annual GHG reductions:	1,000 MT-CO_2
Investment:	$2,200,000
Incentives:	$720,000 (SREC + Federal ITC)
Simple Payback:	15 years

Priority Actions

Priority 1: Identify critical facilities and major energy users that may benefit from microgrids

Priority 2: Assess microgrid needs for each facility

Priority 3: Identify building efficiency and local grid resilience grants to support microgrid implementation

Priority 4: Develop and implement priority microgrid and resiliency projects

Priority 5: Monitor system performance and resilience benefits to optimize performance

Evaluation of this strategy is based on the microgrid recommendation for Rochelle Community Hospital in their energy assessment report, including solar arrays and battery storage, but excluding a combined heat and power (CHP) system. While CHP is beneficial due to the hospital's unique need for year-round heating to generate electricity and heat simultaneously, available data indicated too little heating load to justify the CHP system's operation. While results won't necessarily scale linearly for different buildings, the Community Hospital is a critical community facility and provides a good example of potential benefits from microgrids and could be a high-value pilot project. Focusing on community buildings like the hospital, schools, or public shelters provides higher visibility for these projects and highlights the non-energy benefits, such as supporting community services after storm damage or other utility disruptions.

Microgrids are a significant investment for facilities, often exceeding limited capital budgets. Identifying incentive programs such as building energy efficiency grants, grid reliability grants, and other funding sources and helping facilities apply for and obtain these grants will ensure successful implementations. Programs like the Small Utility Clean Energy Planning Grant[9] can help with these projects if they are integrated into a larger utility generation and resiliency portfolio. For microgrids that include solar and batteries, Federal Investment Tax Credits of 30%, up to 50%, of those microgrid system components are available, as are SRECs through Illinois Shines. If a CHP system is installed as part of a microgrid, Nicor custom incentives will apply to the reduction in heating from using CHP heat. The ITC and SREC incentives are included in this analysis based on an assumed solar array capacity of 800 kW_{dc} and a battery for storage and energy price arbitration.

[9] https://illinoisclimatebank.com/financing-programs/municipal-cooperative-utilities/clean-energy-planning/

5.6 Establish a Local Generation Planning Study

Implementation Years:

2026-2029

Potential Study Costs:

$50,000 to $250,000

Funding Available:

$200,000 from Small Utility Clean Energy Grant

Priority Actions:

Priority 1: Apply for Small Utility Clean Energy Planning Grant and other applicable grants as they arise

Priority 2: Create a project team to develop the study

Priority 3: Identify technology for in-depth engineering analysis

Establish a local firm generation planning study to identify viable sources of local energy generation to replace 45 MW to 50 MW of RMU's baseload demand with local generation.

RMU prides itself on the ability to provide stable electric rates to its customers through municipally owned generation, strategic long-term power purchase contracts, and investments in transmission and generation resources.

Maintaining stable prices will require a blend of locally owned and operated baseload generation sources and peak shedding capacity. Market-rate purchases are subject to high price volatility hour by hour. PPAs, while they do provide stable prices for the duration of the PPA contract, are subject to large cost increases when contracts need to be renewed. Self-owned generation and long-term baseload generation contracts best maintain stable energy prices. Having direct local control of baseload energy generation allows RMU to better control their own energy rates. The list of technologies that can be investigated is broad:

- Biomass generators
  - Rochelle has an estimated maximum of 2 MW of sustainable timber resources through public and private forestry resource management, i.e. collection of felled limbs and trees, and sustainable planting and harvesting of trees. Harvest of crop waste including corn stalks and cover crop waste can also be used to create synthetic gas, which is the primary fuel for biomass electric generation, as opposed to direct combustion.
- Ultra-deep geothermal generation
  - Typically, this method of electric generation requires geologic activity to bring inner-Earth heat near the surface. However, new technologies are allowing deep drilling at less expense, which may make geothermal generation more feasible. Current data

available indicates low-grade or mid-grade heat is a potential[10], but power generation is not likely for the Rochelle area without new technology that can convert ground heat to steam for power generation.

- Nuclear generation
  - Recent Illinois legislation lifted the state's ban on large nuclear power development[11], and technologies are developing to support small modular reactors[12]. While a large nuclear system may not be feasible for Rochelle, generating more power than needed, SMR's may be a viable option for baseload power if the technology advances in the coming years, as current test units produce between 1 MW and 50 MW of capacity.
- Fuel cell generation
  - Rather than combustion of natural gas, fuel cells use chemical conversion processes to create hydrogen or oxides that, when combined with air, create electricity with heat and water as byproducts, and carbon dioxide as waste gas from conversion of the natural gas to the appropriate fuel cell input. The primary benefit of fuel cells is that they eliminate particulate emissions and other combustion pollutants, though they do still emit CO_2 as a greenhouse gas. There are a wide range of fuel cell types with various use cases that can be investigated for RMU or electric customer uses.[13] Using renewably-sourced hydrogen for fuel cells can remove CO_2 emissions from fuel cell operation.
- Gas turbine generation
  - Gas turbines for power generation are a well-established technology, with typical generator capacities of 0.5MW to 300 MW[14]; however, to avoid CEJA zero-emissions requirements for large generation, individual turbines will need to be limited to 25 MWe, or larger units would need to use green fuels such as renewably-sourced hydrogen or biogas.
- Combined-cycle generation
  - These types of electric generators are similar to gas turbine generators, except the waste gases from combustion in the primary turbine are used to turn a secondary turbine, usually a steam turbine, to increase generation efficiency. The gas used can be natural gas, hydrogen, or biogas. Waste heat from the gas turbine passes through a heat recovery boiler to generate steam that is used in a secondary turbine. These systems typically are sized from 30 to 150 MW for industrial uses, and 400 MW to over 1200 MW for utility-scale generation. The requirements for zero-carbon electric

---

[10] https://geomap.projectinnerspace.org/geomap/ - Map estimates 454 GW of geothermal capacity, with a future power potential for Illinois District 16 of 40.39 GW – enough to power 30 million homes. Power potential is determined as 150 °C while the future designation indicates the technology is not currently available.

[11] https://gov-pritzker-newsroom.prezly.com/gov-pritzker-signs-historic-clean-and-reliable-grid-affordability-act

[12] https://npre.illinois.edu/about/illinois-microreactor-project

[13] https://www.energy.gov/cmei/fuels/fuel-cell-basics

[14] https://www.epa.gov/sites/default/files/2015-07/documents/catalog_of_chp_technologies_section_3._technology_characterization_-_combustion_turbines.pdf

generation in CEJA would require a small combined-cycle generation plant to use renewably-sourced hydrogen or biogas.

The goal of this study will be to identify which technology or combination of technologies can be used to provide RMU's baseload power supply for the lowest possible cost. This will minimize the impact new baseload generation will have on RMU's energy rates. Based on current data, RMU's average demand is between 45 MW and 50 MW. The next section will present the range of cost performance metric for each of these electric technologies to inform impacts to RMU's electric rates. The study goals should be:

- Identify which technologies are viable in RMU's service area
- Identify which technologies present the lowest life-cycle costs, levelized cost of energy, and levelized avoided costs of energy
- Identify the stability of fuels sources for each technology, both in cost and availability
- Estimate the dispatchability of the system; its ability to adjust power output on-demand

5.7 Construct Clean Generation Identified in Planning Study

Implementation Years:

2029-2040

Implementation Cost:

$840/kW to $12,600/kW

Funding Available:

$200,000 to $2,000,000

Priority Actions:

Priority 1: Apply for Small Utility Clean Energy Planning Grant and other applicable grants as they arise

Priority 2: Identify engineering firm(s) to construct firm generation technology

Priority 3: Identify ongoing supply lines for necessary fuels, equipment, and maintenance materials

Priority 4: Apply for interconnection queues, appropriate permits, environmental impact studies, and any other required permitting

Construct a clean firm generation technology selected during the planning study.

As a follow-up to Strategy 6.5, implementation of clean firm generating capacity is a key component of RMU's ability to maintain stable energy prices. This measure will focus on identification of additional funding sources, which will likely depend on the type of electric generator, capacity of the system, and current trends in federal and state funding for infrastructure projects.

This strategy mainly focuses on the implementation of the chosen technology, including:

- Submitting an RFP to engineering firms to design and construct the system
- Completing environmental impact studies, interconnection applications and queuing, siting and purchasing of land and easements, and other administrative necessities
- Locking in supply lines for potential fuels and maintenance parts needed to ensure reliability and resilience
- Identifying and applying for current grants, loans, and financial assistance that applies to the chosen technology, and establishing any bonds or other financing vehicles to support the project
- Constructing the generation facility and commissioning systems

Costs to implement new baseload power will range from $836/kW for combustion turbines to $12,631/kWh for biomass with carbon capture and storage technology. Looking at overall life-cycle costs provides a better comparison of generation technologies than first capital costs. A summary of current technologies and their ranges for various metrics is included in Table 1. Data in the table is from the Energy Information Administration, including system capacity factor, levelized cost of energy (LCOE) and levelized avoided cost of energy (LACE). Incentives may be available, depending on the chosen generation technology, to reduce implementation costs and improve LCOE. Planning funds from US DOE and USDA Rural Development Energy programs may also help with various phases of planning and construction for this project.

Table 1: Summary of Electric Generation Economic Data

Technology	Capacity Factor[1]		LCOE[2]		LACE[3]		LCOE/LACE ratio	
	min	max	min	max	min	max	min	max
Nuclear	81%	99%	$104.34	$122.65	$49.30	$70.12	0.5	0.6
Biomass	50%	62%	$90.10	$179.09	$51.13	$106.09	0.6	0.6
Combined Cycle	44%	72%	$66.04	$96.00	$55.07	$85.46	0.8	0.9
Combined Cycle w/ Carbon Capture and Storage	44%	72%	$66.65	$95.62	$47.85	$67.38	0.7	0.7
Combustion Turbine	9%	25%	$152.29	$209.01	$100.58	$187.55	0.7	0.9
Geothermal	62%	69%	$44.17	$52.61	$55.20	$69.09	1.2	1.3
Fuel Cell	43%	85%	$445.39	$673.70	$66.00	$205.00	0.1	0.3

Table Notes:

1.) Capacity Factor is the ratio of energy produced to the maximum energy it could produce if it operated at maximum power 24/7.

2.) LCOE = Levelized cost of energy is the construction and operating cost for a plant over its lifetime divided by the energy it produces

3.) LACE = Levelized avoided cost of energy is the marginal cost of electricity dispatch weighted by the hours in each marginal cost period plus the cost of meeting system planning reserves weighted by the system capacity divided by total number of hours in a year the plant is expected to operate

The ratio of LACE to LCOE presents a value-to-cost comparison for each technology. A ratio higher than 1 indicates a technology may be more attractive as a new build than technologies with lower ratios. Note that LCOE in the table is based on system costs excluding grants or other incentives. On-site access to fuel, technology availability, marginal energy and capacity prices, and local resource availability can impact the LACE and LCOE values and shift the value-to-cost ratio, but the above table provides a starting range for comparison.

Note that fuel cell technology is not yet broadly employed at the utility scale, so levelized energy and avoided costs are based on smaller-scale systems, 100 kW to 200 kW in capacity. This loss of economy-of-scale inflates LCOE and deflates the LACE. Utility-scale systems, as they're developed, may result in lower LCOE and higher LACE, improving the value-to-cost ratio.

6 Affordability and Rate Stability

6.1 Implement Power Factor Correction and Tariffs

Improve power factor from the current average of 0.66 to over 0.90 using synchronous condensers or capacity banks installed at client facilities or strategic distribution system locations.

Also, implement power factor tariffs to incentivize customers to correct power factor at their facilities and reduce cost-shifting to other clients.

Low power factor is detrimental to the RMU distribution system because it increases the current in transmission lines, transformers, switchgears, and other grid components. This increases heat generation, and thus degradation in these components. Higher heat degrades wire insulation, absorbs available capacity of generation equipment and transmission lines, and can create voltage drops.

Power in a utility system has 3 components:

1. Real power, measured in kW, does actual work in electrical devices.
2. Reactive power, measured in kVAr, is created by motors, transformers, and other inductive or capacitive loads due to the alternating magnetic fields that make these devices work. Reactive power does no work, but the resulting need to increase current to compensate for reactive power decreases efficiency and increases heat generated in electrical components.
3. Apparent power, measured in kVA, is the result of combining real and reactive power in a system, and is the load seen by generators supplying the grid.

Implementation years:	2026-2027
Projected annual energy savings:	20 MW Peak 4,750 MWh
Projected annual GHG reductions:	3,500 MT-CO_2
Investment:	$1,400,000
NITS Fees reduced:	$760,000
Current Losses:	$270,000
Payback:	~2 years

Priority Actions

Priority 1: Evaluate opportunities for power factor correction improvements.

Priority 2: Conduct technical assessments of system losses and power factor performance.

Priority 3: Implement targeted power factor correction upgrades and grant program

Priority 4: Monitor system performance and efficiency benefits.

Based on the current average power factor of 0.66 and an assumed 50 MW average monthly real power demand, the apparent power seen by generators and the regional grid is about 78 MVA. Correcting power factor to 0.9 reduces the apparent power to 56 MVA, a reduction in apparent demand of 29%. ComEd's current Network Integration Transmission Service (NITS) fee is $38,531 per MW-yr. Assuming RMU's Network Peak Load (NPL), the apparent power seen by ComEd, is equal to the average monthly apparent demand of 78 MVA, power factor correction to 0.90 can reduce apparent demand to 56 MVA. The savings to RMU in transmission fees would be $760,000 per year. This level of savings may be reduced by the operation of RMUs peaker plants, so a more in-depth hourly or sub-hourly analysis of RMU's peak demand on their ComEd interconnections is necessary to confirm savings potential.

In terms of local transmission benefits, power in a conductor is equal to resistance times the square of current ($P=I^2R$); thus, reducing current can free up significant capacity in electrical systems. Poor power factor increases current, and thus current losses. Current losses in a well-managed utility are usually around 3% of peak demand. Applying these losses to RMU's system, assuming the difference between customer price and market price accounts primarily for system maintenance costs, we estimated an additional $270,000 per year in reduced maintenance costs could be realized.

This measure assumes capital cost for RMU to install power factor correction equipment owned by the utility. The equipment could be installed at strategic locations, such as near industrial substations, where correction can be close to the sources of low power factor and remove the most strain from RMU's distribution network. Alternatively, RMU can incentivize customers to install their own power factor correction equipment. To encourage participation in power factor correction programs, RMU can revise and implement their current power factor rider[15]. Currently, the rider provides for the following added charge to a facility's peak demand charge based on site power factor.

- 95%-91%: 3% capacity charge increase
- 90% to 86%: 9% capacity charge increase
- 85% to 81%: 12% capacity charge increase
- Below 80%: 25% capacity charge increase

As these rider rates were developed and published in 2015, the rider should be updated to align with current demand fees, operating costs, and capital development to address low power factor for RMU. Changing metering to measure kVA (apparent power) instead of kW (real power) for industrial and/or commercial accounts can also recoup the costs of low power factor and spread cost impacts over more customers based on their apparent power use and avoids the need to update the existing power factor rider. Care should also be taken not to shift cost of implementing power factor correction onto clients that do not have a significant impact on the distribution system's overall power factor, such as residential clients.

[15] https://www.rmu.net/~documents/rochelle-municipal-utilities/electric-division/electric-rates/rider-2-power-factor/?layout=file

The Small Utility Clean Energy Planning Grant may help offset a portion of the installation costs for correction equipment, offering up to $200,000 in funding for utility improvement projects. RMU can leverage grant funds from the Small Utility Grant, coupled with funding derived from RMU's power factor tariffs to fund and develop a grant program to encourage the implementation of power factor correction for RMU customers through a cost-sharing program. Such a program can support utility-owned power factor correction located to serve a specific client or client cluster, or to incentivize individual customers to install their own on-site power factor correction equipment, depending on RMU's needs.

6.2 Implement Large-Load Customer Interconnection Program

Develop a large-load customer interconnection program that ensures infrastructure investments are not offset to other customers.

One highlighted concern among RMU customers was the impact of high-demand new industries, such as data centers, on RMU's capacity use and customer rates. These large-demand industrial and commercial clients also present a significant source of new jobs and tax revenue for Rochelle, Creston and Hillcrest. The primary concern is that if a large-demand customer approaches RMU for interconnection, but the large demand doesn't materialize, RMU's existing customers can be left paying for underutilized infrastructure. On the other hand, it is also possible for a large-load customer to lower rates for other RMU customers by contributing additional revenue to RMU.

Energy Systems Integration Group and the Brattle Group[16] drafted a white paper on how to determine the impact new large loads will have on customer rates. The white paper defines various load sizes in terms of MW per MWh, which could be a good metric for RMU to adopt for decision-making on classifying a new customer as a large load. The following areas can be assessed for ways to mitigate the impact of new large-load customers.

1. **Analyze available headroom for new loads:** If a new load exceeds current capacity availability for

Implementation years:	Now-2035
Applied sample load:	1 MW new client 7,000 MWh/yr
Distribution Service Cost:	$812,000
RMU rate Impact avoided:	$0.002/kWh

Priority Actions

Priority 1: Review IL POWER Act and similar legislation to identify strategies for RMU/Municipalities to adopt

Priority 2: Define "new large-load customers" for RMU interconnection, inclusive of gas stations, groceries, municipal facilities, schools, nursing homes, and industrial users

Priority 3: Define requirements for large-load customer program that align with RMU's sustainability goals

Priority 4: Create a grant program to facilitate compliance with the large-load program

Priority 5: Establish universal maintenance contract language for maintenance of large-load technologies to be managed by RMU

[16] https://www.esig.energy/wp-content/uploads/2026/05/ESIG-Large-Load-Rate-Impacts-primer-WP-2026.pdf

RMU, or capacity of local transmission infrastructure, special considerations may be required to connect that customer to RMU's system

2. **Set large-load tariffs to isolate existing customers from new large load interconnections:** Large-load tariffs should aim to isolate existing customers from the costs to construct dedicated infrastructure for a new large-load client. Strategies may include "but for" charges, a new rate class, high load-factor maintenance requirements, or required grid flexibility measures. RMU may also consider requirements for a percentage of on-site renewables or low-carbon generation to meet internal emissions targets through private development. CEJA fossil-fuel phase-out requirements will only apply if customer generation exceeds 25 MWe for a single generator.
3. **Require large-load long-term commitments or exit fees:** RMU can consider adding long-term agreements with fixed capacity "take-or-pay" charges, transmission service agreements that lock in reserved capacity at target rates, and incorporate exit fees that cover the cost of dedicated infrastructure if a new large-load customer does not meet contracted capacity or load factor requirements.

The Illinois POWER Act[17], proposed legislation for mitigating the impact of hyperscale data centers in Illinois, may also contain useful strategies for RMU to implement locally for large-load customers to mitigate electric and water costs for existing customers including:

1. **Large-demand self-direct program:** Large-load customers can receive a lower energy rate for providing a certain amount of their demand from renewable energy sources or through providing energy storage resources – consider a grant program to support implementation.
2. **Consumption disclosures:** Mandate that large consumers report their peak demand and energy consumption totals and reflect those impacts on local power and energy rates
3. **Encourage large-demand customer participation in community assistance funds:** have large-demand customers pay a fee into a community assistance fund to help support utility cost-reduction incentives for targeted community members, such as low-income residents or small businesses
4. **Mandate participation in load flexibility programs:** Ensuring large-load customers participate in load-shedding programs for a portion of their load can help offset impacts on energy market prices for RMU's existing customers.

The specifics of the strategies employed will depend on RMU's current load carrying capacity, long-term power purchase agreements, future energy generation development, and other factors, so estimating impacts and costs for this measure can be difficult. Recommendations in this section align with existing policies noted in a Town Hall Question and Answer session in 2025.[18] RMU policies for a potential large data center. We assume a single 1 MW customer attempts interconnection with RMU, requiring new distribution service with a small substation.

---

[17] https://www.ilga.gov/Legislation/BillStatus/FullText?GAID=18&DocNum=4016&DocTypeID=SB&LegId=0&SessionID=114

[18] https://www.cityofrochelle.net/data-center-qa/

Based on a cost of $812,000 per MW of new load and 408,000 MWh of annual existing energy demand, the avoided rate hike for existing customers is about 2 cents per kWh for each MW of added new customer loading. The costs are highly dependent on the need for distribution lines and substations for new large loads, which may not always be necessary, but this analysis provides an upper bound of the potential impact that can be avoided for existing RMU customers when connecting new large loads to RMU's network.

For load-management systems incorporated at RMU customer sites as part of this program, such as bring-your-own power or battery systems, an RMU managed maintenance plan will help ensure that those systems are ready and available when RMU needs to shed load, without the risk of customer maintenance lapsing and the benefits of load shedding being lost. This ensures the benefits of the program are maintained long-term, helping to minimize the risk of rate hikes due to new loads, and avoids issues with major increased or drops in load that might cause instability in RMU's local distribution network.

6.3 Join a Joint Action Agency to Improve Buying Power

Engage with other Joint Action Agencies to increase the buying power of RMU to develop new generation resources. As Rochelle currently has a peak demand of about 74MW, they fall into a capacity category that makes establishing future generation capacity difficult. Joining a joint action agency (JAAs) can help diversify RMU's portfolio of energy sources.

Implementation Years:

2035-2045

Potential Rate Impact:

$0.01 to $0.02/kWh avoided rate increases

Priority Actions:

Priority 1: Evaluate options for Joint Action Agency memberships

Priority 2: Identify RMU goals to achieve by joining a JAA, such as improving sustainability, resilience, or diversity of generation sources

An example of a JAA's buying power is Rochelle's current membership with Northern Illinois Municipal Power Agency (NIMPA), which combines the loads for RMU, Geneva, and Batavia to purchase a share of Prairie State Energy Campus's (PSEC) generation capacity. Pooling demand from these communities generated enough load and capital investment to purchase a share in PSEC's output. According to RMU's current wholesale electric supplier, Indiana Municipal Power Agency (IMPA), typical new generation is between 200 MW to 650 MW, depending on the electric generator. This is much more capacity than RMU needs for current loads. Joining a larger JAA and sharing development costs with multiple municipalities helps reduce costs to construct new generation. Looking at revenues from American Municipal Power (AMP), one of the largest JAAs in the country, $/kWh costs have been at $0.071/kWh[19] while the average for ComEd is about $0.104/kWh.[20] Another consideration is that CEJA limits new large generation to renewable or zero-carbon options, which can increase development costs for baseload capacity like nuclear power or green hydrogen turbines.

Larger JAAs that can help Rochelle increase their buying power include:

- Illinois Municipal Energy Agency (IMEA) – 32 municipalities all within Illinois
- American Municipal Power (AMP) - 130 members across 10 states in the Midwest and Northeast.
- Create new JAA – Connecting with other municipal utilities might reveal a desire for a new agency. Communities such as Naperville and St. Charles have both recently considered a new JAA.[21]

---

[19] https://www.amppartners.org/wp-content/uploads/2025/09/AMP-2024-Stewardship-and-Sustainability-Report_Final.pdf

[20] https://www.citizensutilityboard.org/blog/2026/06/10/why-is-comed-price-spiking/

[21] https://www.stcharlesil.gov/Services/Utilities/Electric-Utility/Illinois-Municipal-Electric-Agency-IMEA

6.4 Pursue Grants for Grid and Power Development

Continue to identify and apply for grants to improve RMU's distribution network, build renewable and battery capacity, and assist customers with efficiency and behind-the-meter solutions.

Illinois and Federal grants are available to support development of microgrid resources, small utility planning and upgrades, and community efficiency and resilience programs. The following summary of available grants and related projects can serve as a starting place for RMU, Rochelle, Creston, and Hillcrest to support further Energy Action Plan developments with additional funding.

Implementation Years:

2026-2035

Funding Available:

Opportunities range from $50,000 to $2,000,000

Priority Actions:

Priority 1: Identify grants that align with proposed projects

Priority 2: Create a project team to develop the grant applications

Priority 3: Align project timelines with grant application and completion deadlines

Federal Funding Sources and Support:

2. Grid Resilience and Innovation Partnerships: This $10.5 billion program intends to enhance grid flexibility and resilience in the face of increasing demand, cybersecurity threats, and aging infrastructure through the release of regular notices of funding opportunity. The current round of funding applications closed May 20, 2026, but should see another notice of funding in 2027. Projects that could be supported by these funding include microgrids, power factor correction, renewables and energy storage development, and upgrades to RMU infrastructure or management systems that might enable more flexibility for the local grid, such as implementing a distributed energy resources management system (DERMS).
3. USDA Rural Development Electric Programs Grants and Loans: The USDA Rural Development program currently has eight electric programs directed to rural communities, defined as communities with less than 20,000 residents. Through the Rural Utilities Services program, low-interest loans for distributed energy generation, electric infrastructure improvements, and energy efficiency programs related to aiding low-income customers are available, with some programs supplementing loans with small grants where funding is available.
4. Advanced Research Projects Administration – Energy Programs: ARPA funds many projects focused on grid resilience and sustainability that may be of interest to RMU. The website lists funded projects and project contacts whom RMU may reach out to and see if involvement can further RMU's Energy Action Plan goals. Projects include development of utility grid optimization algorithms and control architecture, efficient transmission components such as flywheels and circuit breakers, and industrial efficiency programs.

While ARPA isn't awarding funds directly to utilities and communities, being aware of research and opportunities at Illinois institutions and other research agencies can open the door to collaborations and participating in future funding awards.

5. American Public Power Association Demonstration of Energy and Efficiency Developments: DEED funding supports research, pilot projects, and education to improve operations and services at public power utilities. The DEED program requires a membership fee, 20.5% of APPA membership dues. Dues are paid by RMU's joint action agency, NIMPA, but DEED fees may not be included in those dues. DEED membership allows members to apply for grants up to $125,000 per project, but typically ranging from $25,000 to $50,000. Some DEED projects include long-duration energy storage systems, analyzing energy efficiency resources, and drone mapping and distribution line analysis for loading and insulation faults.

State Funding Sources and Support:

6. 40101d Grid Resilience: Announced in September of 2023, $8 million per year over 5 years will be awarded to support microgrids, weatherization, automation, and emission-reducing grid upgrades, as well as promoting workforce development in the energy sector. A cost match is required, dependent on system size based on MWh of sales per year. The most recent notice of funding closed in March, 2026 but new funding will be released again in 2027. Funding is focused on enhancing grid resilience in Illinois.
7. Small Utility Clean Energy Planning Grant: $2 million awarded over a 5-year period intended to support 8-12 utilities. This grant is designed to facilitate the transition of municipal and co-op utilities to cleaner energy sources through planning. The program supports technical assessments, procurement strategies, and implementation planning to secure renewable PPAs and renewable generation. The current round of funding closed in April 2026 but is expected to reopen sometime in winter 2026 based on past release cycles.
8. Resilient Energy for Wastewater Infrastructure Grants: These grants award $200,000 to $2,000,000 to publicly owned wastewater treatment facilities to improve resilience against weather, cybersecurity, service interruptions, aging assets, and other risks. The first round of funding closed in April 2026, but future notices of funding are expected in 2027.

6.5 Construct a Sustainable Energy Test Campus in Rochelle

Implementation Years:

2026-2050

Investment Costs:

$10,000,000 to $20,000,000

Funding Opportunities:

$1,000,000 or more

Priority Actions:

Priority 1: Locate and acquire land for campus

Priority 2: Determine technologies to showcase and test

Priority 3: Determine cadence for EAP updates

Constructing a sustainable energy testing and research campus to investigate the effectiveness of various energy generation technologies, understand which work best in their location, and assist with decision-making and resource planning.

As a first step, Rochelle will need to identify and acquire land for the construction of a sustainable testing campus to include a hosting building, land for geothermal, wind, and solar fields, and for other generation technologies.

The campus would have the goal of establishing Rochelle as a hub for sustainable energy research in the state. Hosting the sustainability campus would also allow Rochelle to partner with research groups like Argonne National Labs, Rocky Mountain Institute, or the National Laboratories, as well as Universities and Colleges. These partnerships can help draw in additional grant and funding opportunities to support the construction or different novel energy technologies, or combinations of technologies. State workforce development programs through trade schools and community colleges, or the Department of Commerce and Economic Opportunity's CJEA Workforce Development programs support the economic growth and competitiveness of the state and Rochelle and opens doors to additional funding opportunities. Connecting with workforce development programs will also require networking with professional trade organizations to train designers, installers, reviewers for permitting and compliance programs, all of which can bring more jobs to the Rochelle area.

Rochelle's location near two Interstates means that stakeholders from research, design, construction, and permitting fields can easily reach this Sustainable Energy Testing and Training Campus, as drive time from Chicago is 1.0 to 1.5 hours, from Springfield is about 2 hours, and from St. Louis is about 4 hours. Ease of access to the campus could make the facility a hub for energy research in the state.

Funding opportunities include Energy Efficiency Revolving Loan Funds, Equitable Energy Future Planning Grants, Illinois Shines for any solar components of the campus, Illinois Clean Energy Innovation Funds, Small Utility Clean Energy Planning Grants, 40101d Grid Resilience Grants and other funding opportunities that may arise for future viable technologies.

7 Community Engagement

7.1 Create a Community Dashboard to Track Progress

Implementation Years:

2026-2035

Implementation Cost:

$15,000 to $90,000

Funding Available:

$15,000 to $90,000

Priority Actions:

Priority 1: Identify key performance metrics to track in the dashboard(s)

Priority 2: Identify audience and host location for dashboard(s)

Create and host an Energy Action Plan dashboard to track progress on implementation of Plan strategies. The success of the EAP will require regular updates on progress toward Plan measures. The development of a community dashboard can help maintain stakeholder engagement with the EAP to ensure ongoing progress. The current EAP webpage may be a good location to link to a Dashboard webpage.

The dashboard can track key performance metrics regarding implementation of the EAP so that the community is passively updated on progress toward key goals or strategies in the plan. Having access to information will help keep community members engaged in the plan's progress. Key metrics may include, but are not limited to:

- average or avoided market energy prices
- peak or avoided demand
- sources of electric capacity
- data on community emissions reductions compared to a baseline year
- track timelines and progress on implemented EAP strategies
- display current status of projects and progress toward goals
- track participation rates in incentive programs
- highlight success stories and other case studies

Tracking progress on strategies raises awareness, encourages and maintains participation in efficiency and demand management programs, and informs RMU and municipal officials which programs may need more support or modification to improve participation, reduce costs, or increase effectiveness. It is possible that multiple dashboards for different programs may be desired with different audiences for each. For example, one dashboard for utility improvement projects could be visible only to RMU employees while another tracks customer participation in demand response and distributed energy resource programs that is visible to the community. Implementation costs can potentially be limited to RMU and municipal staff salaries it a webpage is developed internally. If features of a webpage that are desired are beyond the scope of existing staff to develop, there may be a nominal webpage development fee to track EAP progress.

7.2 Raise Awareness of Existing Support Programs and Incentives

Implementation Years:

2026-2050

Funding Available:

Up to $200,000

Priority Actions:

Priority 1: Create central page detailing available support programs and incentives for residents

Priority 2: Create social media posts and news releases encouraging participation in programs.

Promote existing utility incentives and low-income assistance programs offered by Nicor and Tri-County Opportunities Council and increase program visibility to communities.

The Tri-County Opportunities Council administers the low-income home energy assistance program (LIHEAP) which offers utility bill assistance and furnace repair assistance. They also administer the local weatherization assistance program that offers insulation, furnace repairs and cleaning, and air sealing for low-income residents, as well as installing safety equipment like smoke and CO detectors and fire extinguishers.

Promoting these services as available in RMU's billing mailer, on utility and municipal websites, and in social media will increase awareness, as TCOC noted that the LIHEAP and weatherization programs are currently underutilized. Highlighting the availability of these programs and assisting RMU customers with identifying if they qualify will improve utilization of the program and help community members with the highest energy burden afford their utilities. With large investor-owned utilities being mandated by the Clean and Reliable Grid Affordability Act (CRGA) to invest in low-income households[22], TCOC is expecting more funds to be available for LIHEAP in coming years. Ensuring eligible community members are participating in LIHEAP and weatherization assistance will help mitigate their costs and reduce RMU's electric demand.

RMU also offers incentives to residential customers for installing windows, insulation, exterior doors, high-efficiency toilets, central air conditioning, water heaters, smart thermostats, and tankless water heaters. Additional incentives that support commercial buildings with VFDs and LED lighting upgrades have been phased out but could provide benefits to RMU for reducing demand. The applications for each commercial are still on RMU's "documents" website and could be revised and renewed to support EAP goals improve existing building efficiency.

Additional municipal incentives on the city's website include a façade improvement program and multiple small business programs. Some energy efficiency projects that also improve commercial appeal for small businesses could also be funded by these existing programs.

Hosting or linking to these disparate incentives in a one-stop-shop can help residents and commercial entities locate these resources and utilize them. As efficiency program utilization

[22] https://gov-pritzker-newsroom.prezly.com/gov-pritzker-signs-historic-clean-and-reliable-grid-affordability-act

increases, energy savings will accrue and help RMU reduce overall energy demand. Also, as new programs are brought online to align with EAP strategies, hosting new and existing programs on the same webpage raises awareness of all programs and can help reduce confusion about which programs apply to various RMU customers, and which programs are active or inactive at any given time.

7.3 Communicate EAP Programs at Community Events

Implementation Years:

2026-2050

Funding Available:

Up to $200,000

Priority Actions:

Priority 1: Identify well-attended local community events

Priority 2: Determine how EAP awareness can be raised at each event

Priority 3: Create materials to distribute at each event

Identify existing community events and celebrations such a fairs, parades, concerts, and festivals and host booths or sponsor event attractions to raise and maintain awareness of the Energy Action Plan.

Conversations with Rochelle municipal and utility staff noted that community participation in information sessions is typically low. Asking residents and business owners to take time out of their busy days to attend a special informational event can result in low attendance, especially as RMU customers conduct their day-to-day lives.

Promoting the Energy Action Plan and associated programs at existing community events can increase participation. Some existing community events that could host an EAP informational booth or have sponsored content to raise community awareness include:

- Independence Day Celebration
- Lincoln Highway Heritage Festival
- Downtown Night Markets

Each event can host informational booths at an event community members will already be attending, increasing interaction with the plan and associated programs. This can improve utilization of existing programs such as those listed above in Strategy 8.2, and any new programs started as part of the EAP.

Educating the community on the need for and purpose of the Energy Action Plan can also increase future community involvement in the plan to help ensure community members are invested in the program, supportive of the goals, and engaged in future developments.

7.4 Share EAP Progress Through Community Channels

Implementation Years:

2026-2050

Implementation Costs:

$300 to $1,500 per year

Funding Available:

Up to $1,000,000, tied to other implementations

Priority Actions:

Priority 1: Identify all media outlets available to municipalities including webpages, social media sites, radio stations, newspapers, and other outlets

Priority 2: Determine an appropriate cadence for information releases to maintain engagement

Provide regular updates on EAP progress to local newspapers, radio channels, and social media sites to maintain community awareness and interaction with the Plan.

Like Strategy 7.3, maintaining community awareness of the EAP will help ensure the community is engaged with the plan and any resulting programs that can help them and the local utility stabilize or reduce energy costs through demand management and energy efficiency measures.

Regularly promoting the EAP and its successes through local news outlets, such as the local radio station and newspapers will help the community maintain awareness of the plan. Highlighting successful implementation of strategies and their impacts on key metrics, such as reduced emissions, demand, or average energy costs for customers will ensure community members and businesses engage with the plan strategies. This will increase involvement in efficiency and demand response programs, encourage installation of customer on-site batteries and renewables, and ensure the community is aware of RMU’s efforts to maintain affordability.

Frequent communication with the community also helps maintain trust that the utility is working it the best interests of its customers, working to limit energy costs, maintain stable service, and improve the resilience and sustainability of RMUs energy services. Communication that is too frequent, however, can lessen the impact of each release. Too many notices to community members can create burn-out and apathy. Updates on a quarterly or biannual cadence allow time for news to accrue, and for each post to appear fresh and exciting. This also allows time for significant progress on plan strategies to be achieved, so that there are significant success stories to present in each informational release.

Illinois’ Equitable Energy Future Gran Program can, as part of funding to implement strategies for energy efficiency and renewable energy, can also fund community outreach and marketing. The program can fund up to $1,000,000 to contractor businesses or nonprofit organizations that propose projects that meet equity building criteria. Such funding could be applied to stakeholders within Rochelle, such as TCOC, to support strategies in the plan.

7.5 Maintain Ongoing Stakeholder Feedback

Implementation Years:

2026-2050

Priority Actions:

Priority 1: Determine management of feedback mechanisms

Priority 2: Determine how to respond to community feedback

Priority 3: Determine cadence for EAP updates

Continue to gather stakeholder feedback through the feedback form on the Energy Action Plan website.

Continuing to gather stakeholder feedback can help RMU and Rochelle adapt the EAP over time to changing community needs and goals. Ongoing feedback can also reveal is a chosen strategy needs to be adjusted to better align with community needs. Maintaining engagement with the community and incorporating community feedback into the plan will ensure community members feel a sense of ownership in the EAP.

Currently, the EAP website has a form link to gather community feedback. The form currently sends feedback to EnergySense staff. To ensure ongoing feedback to RMU and the plan's steering committee, one of the following options should be chosen to maintain this feedback mechanism:

1. EnergySense maintains the feedback form and passes feedback to the steering committee as part of a future EAP technical assistance partnership or future grant programs supporting EAP goals.
2. Municipal, Community Action Agency, or RMU staff take over ownership of the form and receive community feedback directly.
3. A contract with another entity assisting RMU with EAP strategy implementation, such as an ESCO, takes over management of community feedback and reporting to the steering committee.
4. Rochelle or RMU develops a new feedback mechanism using their respective websites, billing mailers, postcards, or community event feedback booths.

Important to feedback is ensuring that respondents feel their input is acknowledged and impactful. Responding to feedback from the community doesn't require responding to individuals, but regular updates on feedback received, and notification of decisions regarding feedback is important to keeping the plan an active part of the community. Updating the plan on a regular cycle based on feedback ensures that community members feel heard, and the plan reflects changing conditions in the community and the overall energy landscape in the state and beyond. Updated too frequently, the plan will be hard to act upon, updated too infrequently, and the plan isn't flexible and responsive to changes over time. Looking at plan updates every 3 to 5 years gives time to implement portions of the plan, evaluate effectiveness, and gather feedback, and incorporate necessary updates.

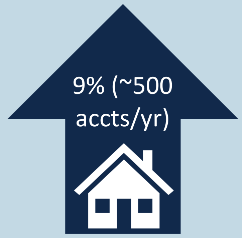
8 Existing Energy Picture

8.1 Current Load Profile

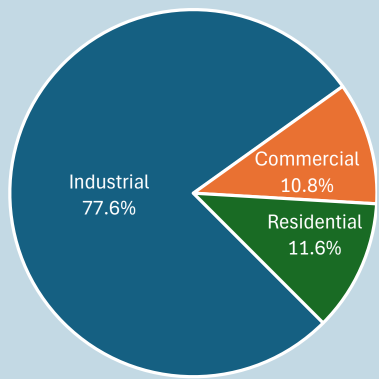
RMU's energy consumption has been very stable for the past four years, with demand increasing 3% on average and total consumption increasing by 8% year-over-year, while new electric accounts are added at a rate of about 500 accounts per year, a 9% increase year-over-year. Industrial energy consumption is the bulk of the community's energy profile, consistently over 75% of total energy consumption, and growing by an average of 1.5% of total energy each year. Thus, industrial energy use profiles, which are typically very flat and stable, will continue to drive the energy profile for RMU. Flat energy consumption will mean that renewable sources like wind and solar will need to be paired with energy storage for RMU to obtain the most benefit for their customers.

Energy Trends

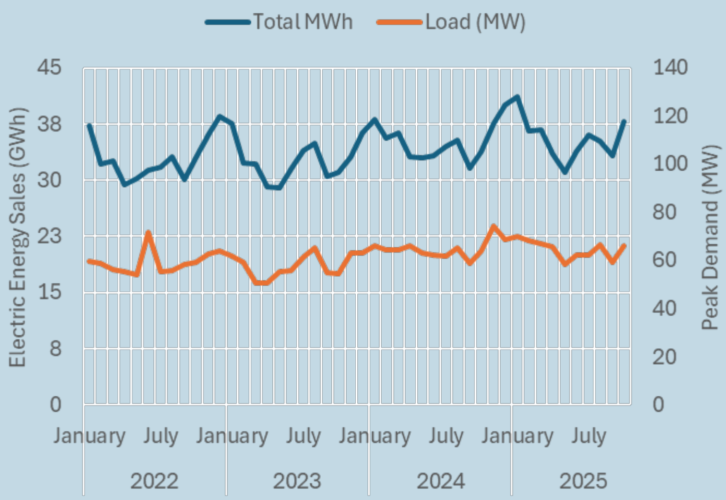
- 9% increase in accounts annually, mostly residential, indicating some growth in number of households.



- Industrial energy consumption contributes over 75% the local demand, with a flat load factor of 0.76.

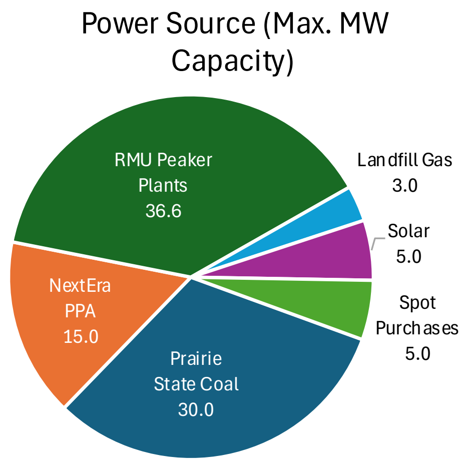


- Year-over-year electric consumption for eth past 3 years has increased 8% while peak demand increases about 3% on average.



8.2 Building Energy Related Emissions:

Electric supply capacity, shown to the right, is largely from the Prairie State Energy Campus, a coal-fired plant in southern Illinois. The remaining 45 to 48MW of current demand is supplied by power purchase agreements with NextEra Energy, LLC, in-town diesel or natural gas peaker plants, and spot purchases from the energy market. With this blend of power sources, RMU's electric emissions total about 0.733 MT-CO_{2e} per MWh of energy use, or 1.61 lbs-CO_{2e} per kWh. RMU has capacity to support up to 190 MW of peak demand through 2 interconnections to the regional grid, 3 substations, 20 miles of high-voltage transmission lines, and 300 miles of local distribution lines.



Natural gas consumption for the community is not shown in the pie chart but is a significant portion of overall community emissions for building energy, accounting for 63% of total emissions. The sum of all emissions amounts to an average of 73 tons of CO_2 emissions per resident, or 815,000 MT-CO_{2e} for the combined Rochelle, Creston, and Hillcrest area for building energy consumption.

8.3 Local Energy Wins

8.3.1 Solar Net Metering:

RMU and the City of Rochelle allow customers to install solar up to 10 kW and obtain net metering for their installations. Larger solar arrays need to be approved by the Rochelle City Council, up to a maximum of 350 kW. A couple examples include the solar arrays that added 312 kW at the wastewater reclamation facility and 1,500 kW at a large refrigerated warehouse. Overall, solar capacity is increasing steadily for RMU.

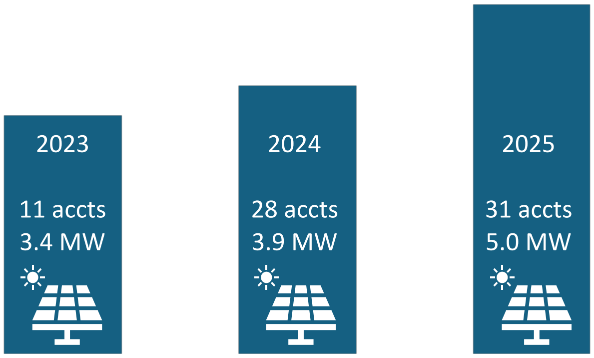


Figure 6: Rochelle distributed solar totals over last 3 years.

8.3.2 Public Library LEED Designation

The Creston-Dement Public Library moved to a new location in March of 2025 that was designed to meet US Green Building Council Leadership in Energy Efficient Design (LEED) standards. Constructing buildings that follow enhanced performance and sustainable designs helps to minimize their impact on the environment, including through the installation of highly-efficient lighting and air conditioning systems. The Library presents one case study on how advanced building design standards can benefit public facilities and reduce energy demand.

8.3.3 CPower Demand Management Program

In May of 2021, the City of Rochelle and RMU entered a contract with CPower to manage RMU's demand response program. The program provides a check to RMU customers for voluntarily reducing their demand during PJM's peak demand periods, limited to 10 events per year of up to 8hrs per event. The program is available to commercial and industrial customers with 200 kW or higher. The customer gets to elect to an agreed load drop that allows them to balance business needs with their ability to shed demand and participate in the program. The no-cost optional nature of the program and annual payments for reduced load that can be adjusted by the client to meet their needs makes the program attractive to large commercial and industrial customers.

8.4 Available Incentives

8.4.1 Federal Incentives and Support

1. Grid Resilience and Innovation Partnerships: This $10.5 billion program intends to enhance grid flexibility and resilience in the face of increasing demand, cybersecurity threats, and aging infrastructure through the release of regular notices of funding opportunity. The current round of funding applications closed May 20, 2026, but should see another notice of funding in 2027. Projects that could be supported by these funds include microgrids, power factor correction, renewables and energy storage development, and upgrades to RMU infrastructure or management systems that might enable more flexibility for the local grid, such as implementing a distributed energy resources management system (DERMS).
2. USDA Rural Development Electric Programs Grants and Loans: The USDA Rural Development program currently has eight electric programs directed to rural communities, defined as communities with less than 20,000 residents. Through the Rural Utilities Services program, low-interest loans for distributed energy generation, electric infrastructure improvements, and energy efficiency programs related to aiding low-income customers are available, with some programs supplementing loans with small grants where funding is available.
3. American Public Power Association Demonstration of Energy and Efficiency Developments (DEED): DEED funding supports research, pilot projects, and education to improve operations and services at public power utilities. The DEED program requires a membership fee, 20.5% of APPA membership dues. Dues are paid by RMU's joint action agency, NIMPA, but DEED fees may not be included in those dues. DEED membership allows members to apply for grants up to $125,000 per project.
4. Clean Electricity Investment Credits: Taxpayers with a qualifying facility or energy storage technology placed in service after Dec. 31, 2024, can apply for a 6% credit that can be increased to 30% if meeting labor requirements and 20% additional credit if meeting domestic product and energy community requirements. Qualifying facilities include electric generation using fossil-fuels with carbon capture and sequestration netting zero carbon emissions, or renewably-sourced energy.

8.4.2 State Incentives

5. Commercial Property-Assessed Clean Energy (C-PACE): C-PACE financing can be used to fund eligible improvements to non-residential properties, up to 25% of the property value. Eligible improvements include energy efficiency, renewable energy, resiliency, electric vehicle charging, or water use reduction projects. C-PACE offers non-recourse financing, limiting liability for borrowers, that has fixed loan rates and terms up to 40 years, limited to the useful life of the upgrade.
6. Small Utility Clean Energy Planning Grant: Funded by US EPA Climate Pollution Reduction Grants, this program facilitates the transition of municipal and co-op utilities to cleaner energy sources by supporting planning efforts. Funding up to $200,000 can be applied to

projects that facilitate the retirement, replacement, or re-contracting of fossil-fuel-based electricity sources.

7. 40101d Grid Resilience: Announced in September of 2023, $8 million per year over 5 years will be awarded to support microgrids, weatherization, automation, and emission-reducing grid upgrades, as well as promoting workforce development in the energy sector. A cost match is required, dependent on system size based on MWh of sales per year. The most recent notice of funding closed in March, 2026 but new funding will be released again in 2027. Funding is focused on enhancing grid resilience in Illinois.

8. Resilient Energy for Wastewater Infrastructure Grants: These grants award $200,000 to $2,000,000 to publicly owned wastewater treatment facilities to improve resilience against weather, cybersecurity, service interruptions, aging assets, and other risks. The first round of funding closed in April 2026, but future notices of funding are expected in 2027.

8.4.3 Municipal and Utility Incentives:

9. City of Rochelle Façade Improvement Program: Offers a 50% matching grant up to $5,000 for eligible façade improvements. Eligible improvements include new doors, windows, façade repairs and improvements, along with other aesthetic items. Improving facades can also provide an opportunity to improve insulation and air sealing for the public right-of-way facing portion of a business.

10. RMU Residential Incentives: RMU offers a range of incentives to encourage residents to improve the efficiency of their homes and home equipment. The following incentives are provided:
    - Attic Insulation: Incentive of 50% of cost, up to $350, to add a minimum of R-19 insulation that improves insulation to R-49 or better.
    - Window Replacement: Incentive of 50% of cost, up to $300 per window or $3,000 maximum for ENERGY STAR® rated windows with U-factor less than 0.30.
    - Exterior Door replacement: Incentive of $25 for ENERGY STAR® doors with less than 50% glass.
    - Toilet Upgrade: Incentive of $75 for WaterSense® certified toilets for customers supplied by RMU water.
    - Central Air Conditioning: Incentive of $300 to $700 for AC units less than 6 tons in capacity, depending on rated efficiency.
        - Mini-split air conditioners receive a $400 incentive
        - Window air conditioners receive a $75 incentive
        - Central AC tune-up receives a $35 incentive
    - Water Heaters: Incentive of $125 for tankless water heaters
    - Smart thermostats: Incentive of 50% of cost up to $100 for thermostats with remote access or learning capability.
    - Various incentives for ENERGY STAR® certified appliances ranging from $50 to $150.

11. Net Metering for Renewables:

- Solar PV up to 25 kW is allowed to connect to RMU’s service and receive net metering. Larger systems must obtain City Council approval and will receive a negotiated rate for generation.

8.4.4 Tri-County Opportunities Council Assistance Programs:

TCOC administers the Low-Income Home Energy Assistance Program (LIHEAP) and Weatherization programs. LIHEAP helps families that have income at or below 60% of the State Median Income, a 2-person household income of $53,995, and whose rent is greater than 30% of their income. Weatherization assistance applies to families with income at or below 200% of the Federal poverty level, which is $43,280 for a 2-person household. Programs include:

- LIHEAP provides billing assistance with a one-time payment on utility bills.
- LIHEAP also provides furnace repair or replacement assistance to eligible customers.
- Weatherization provides energy savings measures in the home to reduce energy costs. The measures may include:
    - Attic, wall, basement, or crawl space insulation addition or repair
    - Air sealing around doors and windows using caulk, foam or silicone strips, or canned spray foam
    - Repair or replacement of exterior doors
    - Installation of health & safety devices such as smoke or CO sensors and fire extinguishers
    - Cleaning and tuning of the furnace, including filter replacements, heat exchanger cleaning, and minor repairs
    - Replacement of furnace if repairs cannot be completed

8.4.5 Summary of Incentive Applicability to Report Strategies

The following table uses the numbered bullet above to indicate which program can provide grants or funding support for the listed strategy.

Table 2: Summary of Incentives Applicable to Each Strategy.

Focus Areas	Strategies	Applicable Incentives
4.0 Short-Term Energy Efficiency	4.1 Implement Measures from Assessment Reports	5
	4.2 Create Municipal Energy Efficiency Program	3,5,6,9,10
	4.3 Support Energy Efficiency Retrofits	2,3,5,6,10
	4.4 Create Low-Income Efficiency Kits	2,3,6,10
5.0 Long-Term Resilience and Sustainability	5.1 Install 5 MW Solar and Battery Storage Plant	1,2,3,4,6,7
	5.2 Implement an Aggregated Distributed Energy Resource Program	1,2,3,4,5,6,7,11
	5.3 Support Wastewater Reclamation Plant Biogas Generation	1,2,4,5,6,7,8
	5.4 Incentivize Optional Advanced Energy Efficiency Codes	2,5,6,7
	5.5 Implement Microgrids at Key Community Facilities	1,2,3,4,5,6,7,11
	5.6 Establish A Local Generation Planning Study	2,3,6
	5.7 Construct Clean Generation Identified in Planning Study	1,2,3,4,5,6,7,11
6.0 Affordability and Rate Stability	6.1 Implement Power Factor Correction and Tariffs	1,2,3,5,6
	6.2 Implement Large-Demand Customer Interconnection Program	2,3,6
	6.3 Join a Larger Joint Action Agency to Improve Buying Power	N/A
	6.4 Pursue Grants for Grid and Power Development	N/A
	6.5 Construct a Sustainable Energy Test Campus in Rochelle	1,2,3,4,5,6,7,11
7.0 Community Engagement	7.1 Create a Community Dashboard to Track Progress	2,3,6
	7.2 Raise Awareness of Existing Support Programs and Incentives	2,3,6
	7.3 Communicate Programs at Community Events	2,3,6
	7.4 Share EAP Progress Through Community Channels	2,3,6
	7.5 Maintain Ongoing Stakeholder Feedback	2,3,6

9 Appendices

9.1 Appendix A. Glossary

Aggregated Distributed Energy Resource (ADER)	A compilation of multiple small-scale sources of electric energy generation including wind, solar, and combustion that are pooled together to create utility-scale impacts such as load balancing, deferment of infrastructure upgrades, and shifting of peak demand.
American Council for an Energy Efficient Economy (ACEEE)	A non-profit research organization that develops policies to reduce energy waste and combat climate change.
Blackhawk Hills Regional Council (BHRC)	An economic development district and regional planning organization serving Carroll, Jo Daviess, Lee, Ogle, Stephenson, and Whiteside counties.
Burlington Northern and Santa Fe (BNSF) Railway	One of two major freight railways that connects to Rochelle's municipal railway service.
Capacity Factor	The amount of time a generator runs at maximum power capacity over time, calculated as the actual power output over time divided by the rated capacity over the same time window
Clean and Reliable Grid Affordability Act (CRGA)	An act signed into law January 8th, 2026, with the goal of reducing utility bills for working families and secure long-term energy for Illinois. The plan includes funding to develop new energy resources, enables new regulation to support consumers, and enhance cost-saving programs.
Clean Energy Jobs Act (CEJA)	Public Act 102-0662 amended the state Article 5 statute for Energy Transition to include goals for the phase-out of fossil fuel generation in electric plants with a rated capacity of 25MW-electric or higher by 2045 to move Illinois toward a net-zero emissions electric grid.
Climate Pollution Reduction Grant (CPRG)	A $5-billion federal grant program to fund implementation of climate and energy plans to reduce greenhouse gas emission and other harmful air pollutants.
Combined heat and Power (CHP)	Combined heat and power is used in two ways: primarily to generate electricity and harvest waste heat from the generator for space or water heating; or to generate heating and obtain electricity as a secondary benefit. Both types of systems are used to minimize energy costs by maximizing the utilizable energy from a combustion or chemical conversion process.

ComEd	An investor-owned utility company that serves the areas around Rochelle. Rochelle is connected to ComEd's utility services through two interconnecting substations.
Energy Action Plan (EAP)	The proposed plan for Rochelle Municipal Utilities and communities it serves to reduce electric consumption, improve the resilience of utility service, and maintain stable costs for customers.
Energy Efficiency & Conservation Block Grant (EECBG)	A funding structure available through the Illinois Environmental Protection Agency's Office of Energy that provides public institutions with funding to develop energy or climate plans, conduct facility audits, and execute energy efficiency upgrades in public facilities using funding from the federal Infrastructure Investment and Jobs Act.
Energy Service Company (ESCO)	A company providing performance contracting services that pays the upfront capital costs for energy efficiency projects and recoups the capital cost through energy savings over a contracted period.
EnergySense Resilience Center (EnergySense)	EnergySense is a technical assistance program housed at the University of Illinois System under the Office for Vice President of Economic Development and Innovation's Illinois Innovation Network. EnergySense has a mission to empower communities and businesses and public agencies with practical solutions for climate, energy, and sustainability.
Gigawatt-Hour (GWh)	A unit of energy consumption equivalent to 1,000,000 kWh. Energy is the sum of power consumption over an hour.
Heating, Ventilating, and Air Conditioning (HVAC)	The systems that maintain indoor temperatures and humidity and exchange stale indoor air for fresh outdoor air.
Illinois Environmental Protection Agency (EPA)	The Illinois EPA is tasked with safeguarding environmental quality consistent with the social and economic needs of the State, so as to protect health, welfare, property, and the quality of life. Illinois EPA administers the funding that supports the development of this Energy Action Plan.
Indiana Municipal Power Agency (IMPA)	A joint action agency in Indiana that purchases energy from a diverse portfolio of generators and provides that energy at competitive costs for their member municipalities.
Investment Tax Credit (ITC)	A federal tax rebate program that helps offset the costs of clean-energy systems installed at private or public facilities with a credit on federal taxes.

Joint Action Agency (JAA)	A non-profit, cooperative organization formed by municipal electric utilities to expand buying capability for energy and generation through sharing of operational costs, increases in bargaining power, and reduction in loan rates for large capital projects.
Leadership in Energy Efficient Design (LEED)	An advanced building design program founded by the U.S. Green Building Council to promote sustainable construction practices that awards certification based on minimizing the embedded carbon in construction materials, reducing community emissions through strategic building siting, and energy efficient design and operation of the building.
Lee-Ogle Enterprise Zone (LOEZ)	A program administered by the Blackhawk Hills Regional Council designed to stimulate economic growth and neighborhood revitalization through state and local tax incentives and property tax abatements.
Levelized Avoided Cost of Energy (LACE)	The avoided cost for implementing generation such as reduced transmission infrastructure costs and fees accrued over the useful life of a generator divided by the expected energy production of the generator over its useful life.
Levelized Cost of Energy (LCOE)	The construction and ongoing maintenance and operating costs for a generator divided by the expected energy production over the useful life of the generator
Light-Emitting Diode (LED)	A lighting technology that passes electricity through a specialized material that emits light when energized. LEDs emit much less waste heat energy than comparable incandescent and fluorescent lighting technologies and thus consume less power.
Load Factor	A comparison of actual energy generation over a fixed period to the theoretical maximum energy that could be generated over the same period. In the case of electric generation, this is the ratio of actual energy consumption over a month or year to peak power maintained 24/7 over the same period.
Megawatt (MW)	A unit of power intensity equivalent to 1,000 kW. Power is the instantaneous consumption of electricity to power equipment such as motors or lights.
Megawatt-Hour (MWh)	A unit of energy consumption equivalent to 1,000 kWh. Energy is the sum of power consumption over an hour.
Metric ton of carbon dioxide equivalent (MT-CO_{2e})	The most common unit for comparing greenhouse gas emissions and their impact on overall global warming. CO_2 is the benchmark value, while other greenhouse gases are assigned a multiplier to

	equate their impact to that of carbon dioxide. A metric ton is equivalent to 2,204 pounds.
Microgrid	A microgrid is a combination of electric generation resources serving a single building or campus that might include renewables, on-site generators, battery or thermal storage, and an interconnection to the local transmission system that are controlled by a centralized system to provide back-up power in an outage, and minimize energy costs through selection of the lowest-cost source of generation at a given time.
Network Integration Transmission Service (NITS) Fees	These are fees assessed by an independent system operator or regional transmission organization on regulated wholesale energy markets to recover the cost of operating, maintaining, and upgrading high-voltage transmission grids.
Network Service Peak Load (NSPL)	A measure of a wholesale energy buyer's peak demand on a regional transmission grid based on peak electric demand at the exact hour of local transmission's peak demand from a prior historical period, usually the previous year. For RMU, this would be the peak demand measured at their substations connected to ComEd/PJM at the same hour as the previous year's peak demand in ComEd's territory.
Nicor	A natural gas company that serves the Rochelle area.
Northern Illinois Municipal Power Agency (NIMPA)	A joint action agency consisting of the municipalities of Rochelle, Geneva, and Batavia that pooled resources to purchase a portion of generation capacity from Prairie State Energy Campus.
Passive House	Passivhaus-Institut, locally Passive House Institute United States (PHIUS), provides design guidance for constructing buildings with fully electrified appliances and systems that use 40% to 60% of the energy of a standard building, and power themselves using on-site or community-based renewable systems to achieve net-zero on-site consumption.
Pennsylvania-New Jersey-Maryland Interconnection, LLC (PJM)	A regional transmission organization based in Pennsylvania that coordinates wholesale electricity, grid reliability, and competitive power markets in 13 states, primarily in the Northeast and Midwest. Rochelle is interconnected with this transmission organization through substation connections with ComEd.
Power Factor	Power factor is the ratio of actual power to apparent power, with lower numbers indicating more wasted energy in a transmission or building distribution system, which is worsened through the operation of inductive loads such as motors, lighting ballasts, and computer systems.

Power Purchase Agreement (PPA)	A PPA is a contract between an electric generator and a customer that typically includes zero up-front costs, third-party ownership of generation equipment, and stable energy prices for energy generation. PPA's provide a way to lock in long-term stable energy prices and hedge against short-term price volatility in regional markets.
Prairie State Energy Campus (PSEC)	An advanced coal-fired power plant with a generating capacity of 1600 MW constructed in Marissa, IL. PSEC provides 30 MW of baseload capacity to RMU.
Production Tax Credit (PTC)	The production tax credit is an IRS program that pays commercial electric generation owners a tax credit based on their actual electric production over 10 years. While the PTC is generally lower than the ITC, it can be more beneficial for high-output, high-capacity-factor projects with stable long-term generation.
Resilience	Refers to the ability of a system to withstand and recover from a disruption. In terms of electric utilities, it is the ability to provide continuous energy supply to customers without interruption and minimizing the duration of outages when they do occur.
Rochelle Municipal Utility (RMU)	RMU supplies electricity, water, and wastewater service to the City of Rochelle and the Villages of Hillcrest and Creston. This report focuses on impacts to the municipal electric utility.
Simple Payback	Simple payback is a basic economic benefit indicator equal to dividing the initial capital cost for a project, less any incentives, by the annual savings anticipated from an upgrade.
Solar Renewable Energy Certificate (SREC)	A tradeable credit that represents the environmental benefits of 1,000 kWh of solar electric generation. Credits are tracked through solar system registrations with state Public Service Commissions or regional tracking registries that create certificates as energy is produced.
Stretch Energy Code	The Illinois Stretch Energy Code is a voluntary, stricter, more energy-efficient alternative to the state's base energy code that can be adopted by local municipalities interested in reducing local climate impacts. Every three years, the code advances efficiency to reduce consumption below a minimum improvement beyond a baseline code, the 2006 IECC.
Sustainability	Refers to reducing the environmental impact of operating a facility. In terms of an electric utility, this may refer to zero-carbon electric generation, energy conservation programs, and minimizing impacts to natural habitat due to construction of facilities.

Union Pacific Railway	The second of two major freight railways that connect to Rochelle's municipal railway service.
Vampire Load	The electric load from devices that occurs when the device appears to be off. TVs, computers, gaming consoles, chargers, and "smart" electronics have small power draws even when they are in stand-by mode or off that add up to $100 to $200 per year in electric costs.
Virtual Power Plant (VPP)	The ability for a utility to access voluntarily-submitted customer systems such as water heating, HVAC, stationary and vehicle batteries, and non-essential electronics for load shedding activities to reduce peak demand and associated charges.
Wastewater Reclamation Facility (WRF)	A facility that receives municipal and industrial wastewater, treats it to remove hazardous materials, removes beneficial nutrients, and discharges clean water to a nearby waterway.