St. Charles Electricity Supply Considerations

November 2024

St. Charles is Facing a Rare Energy Supply Decision

- IMEA is proposing a long-term contract to St. Charles 10 years in advance of the proposed start date

- This goal of this presentation is to offer a perspective on the implications of signing this contract. It covers key topics, including:
  1. Reliability
  2. Sustainability
  3. Cost
  4. Case Studies from Other Cities

Reliability:

PJM, not IMEA, Uses a Portfolio of Assets to Ensure Reliability

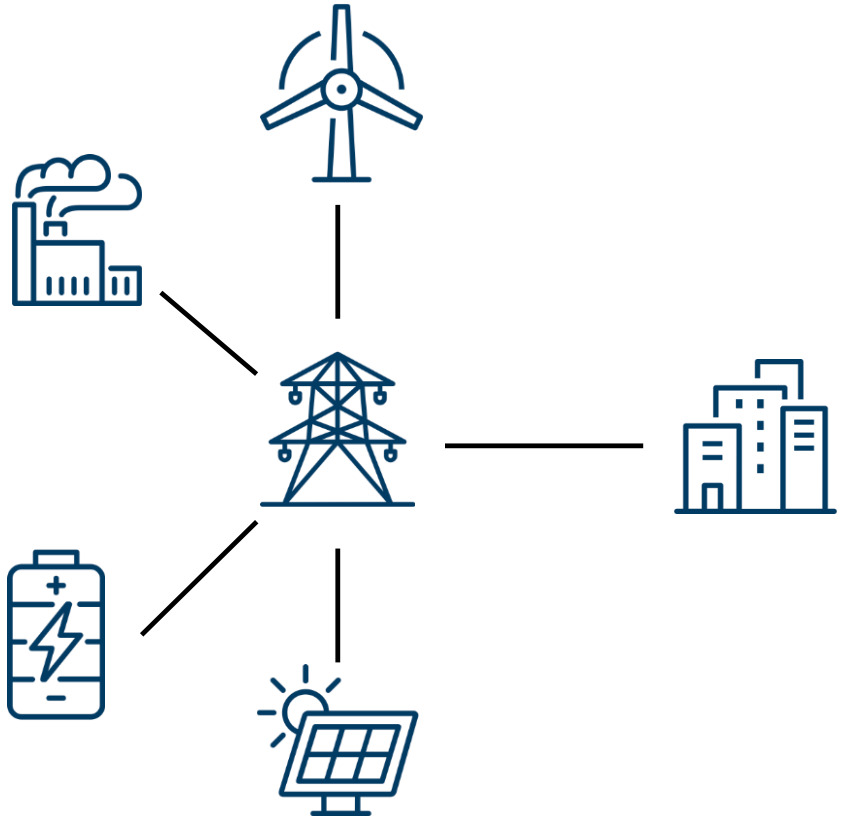
- St. Charles is located in PJM, a regional transmission operator that allows for competition among electricity generators.
- The reliability of electrical service across the region is maintained by PJM, *not* individual utilities or power providers.
- Generation provided by IMEA and other companies is integrated into a system that collectively ensures that supply equals demand.

Source: https://www.ferc.gov/power-sales-and-markets/rtos-and-isos

Reliability:

PJM, not IMEA, Uses a Portfolio of Assets to Ensure Reliability

- No individual generator runs all the time
  - For example, Prairie State Coal was not available to generate electricity for 10% of the hours in 2023.[1]
- PJM uses a *diverse generation fleet*, a robust transmission system, and advanced analytical tools to provide reliable electricity service to 65 million Americans.[2]
- Local reliability could be enhanced through microgrids that can “island” from the grid.

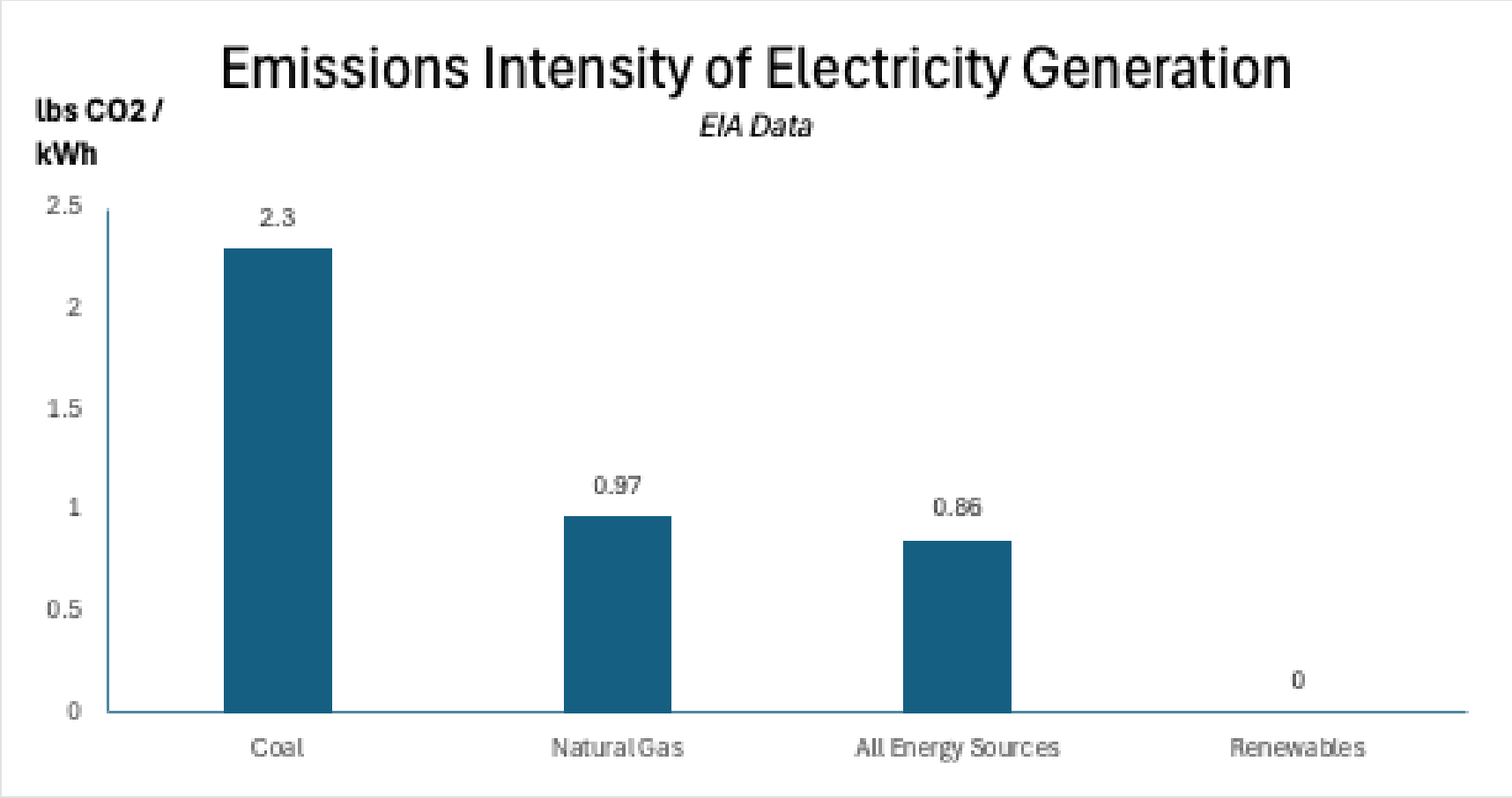


1. https://prairiestateenergycampus.com/about/annual-performance/
2. https://www.pjm.com/-/media/library/reports-notices/special-reports/2021/20210311-reliability-in-pjm-today-and-tomorrow.ashx

Sustainability:

IMEA's Coal-Based Electricity is High in Emissions

Coal plants are among the most polluting forms of electrical generation



Source: https://www.eia.gov/tools/faqs/faq.php?id=74&t=11

Sustainability:

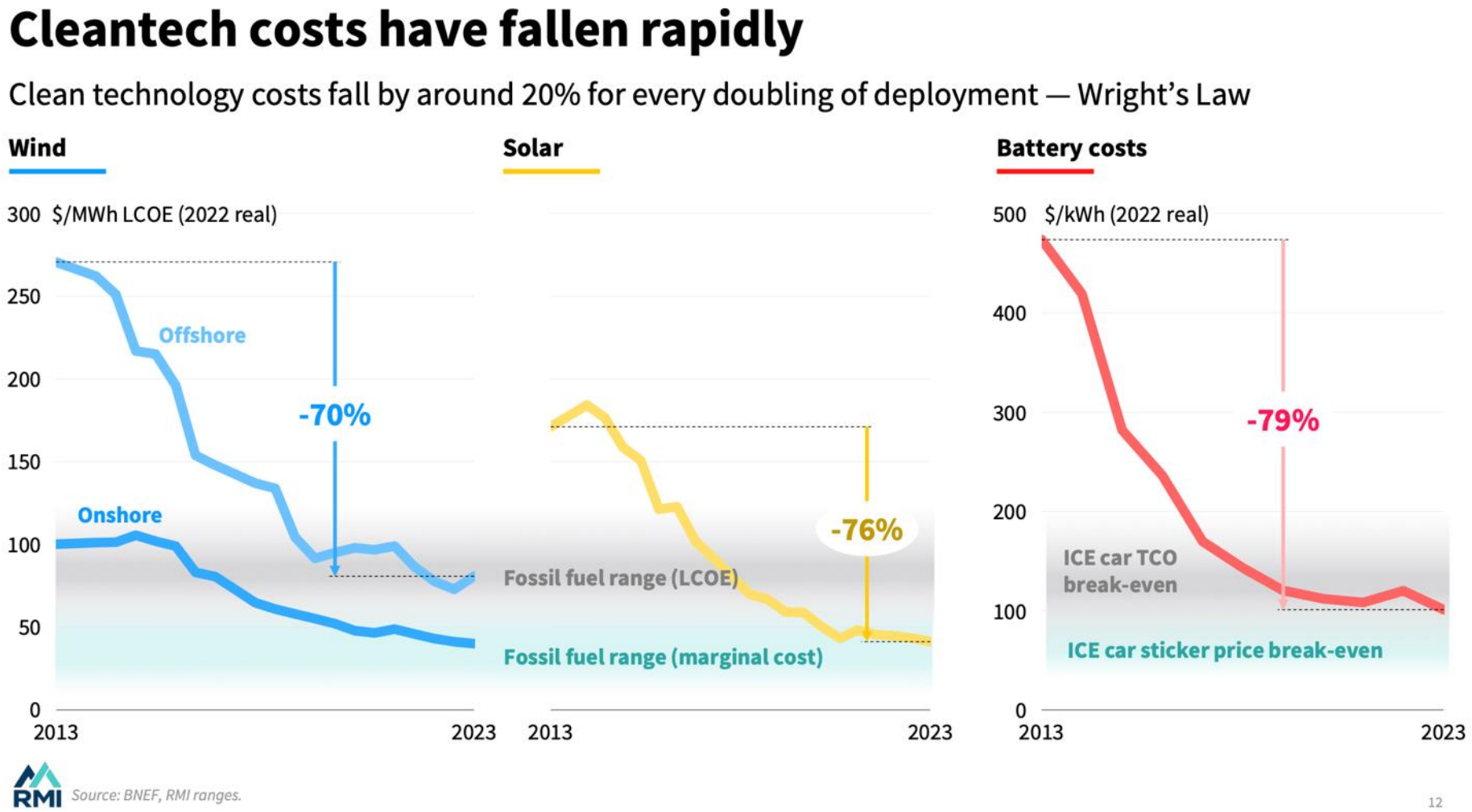
IMEA's Coal-Based Electricity is High in Emissions

- 80% of IMEA's electricity is from coal.
- Prairie State is the largest source of emissions in the state of Illinois.[1]
- RMI estimates suggest that in 2022, IMEA's electricity was 3x more carbon intensive than Illinois's average.
- Prairie State is the source of ~30% of SO2 emissions from electricity generation in Illinois.[2] SO2 exposure can lead to breathing difficulty, decreased lung function, and higher rates of hospitalization.[3]

1. https://www.epa.gov/ghgreporting/ghgrp-2022-emissions-location
2. EIA data, https://www.eia.gov/electricity/data/emissions/xls/emissions2023.xlsx
3. https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/sulfur-dioxide

Cost:

Coal is Increasingly Uneconomic Compared to Alternatives

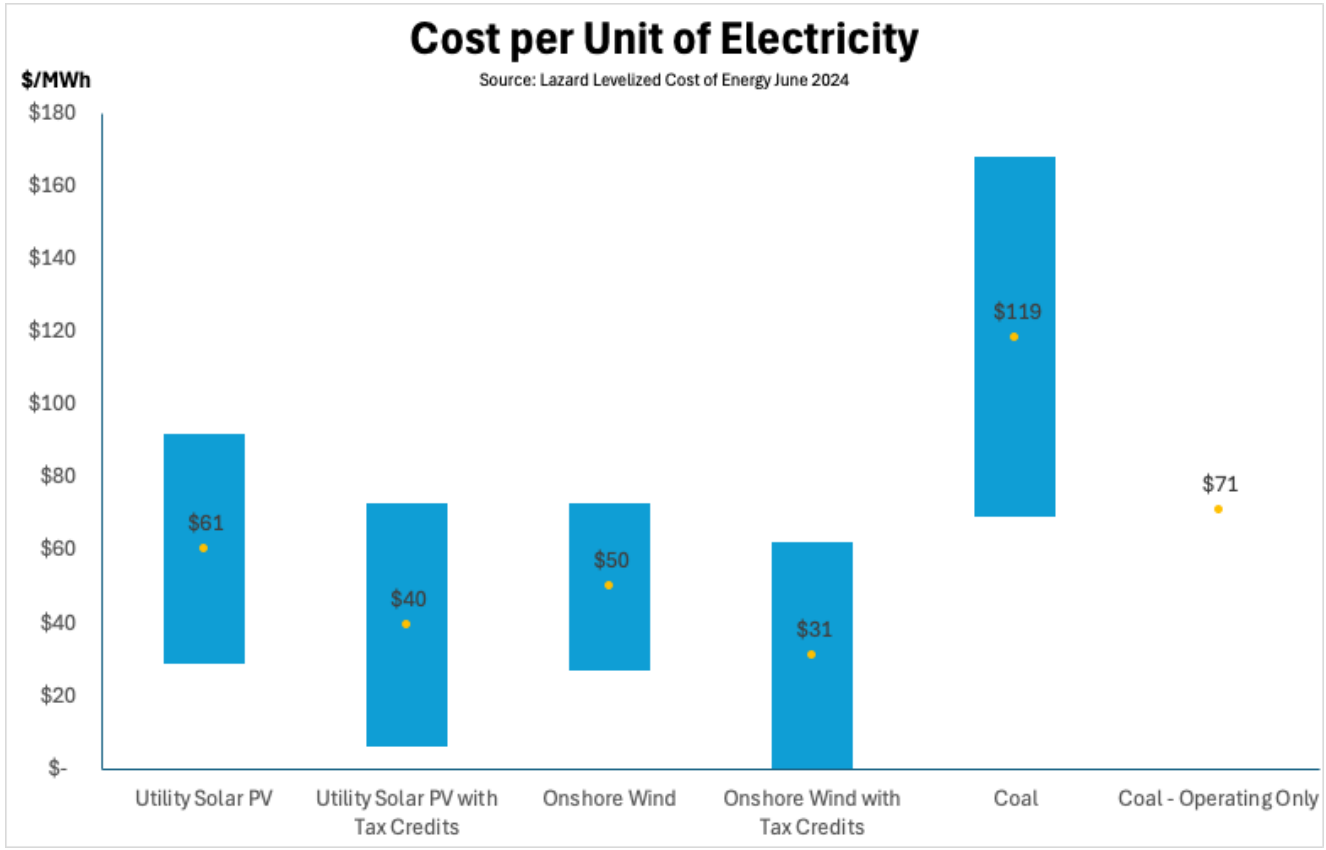


Source: The Cleantech Revolution, RMI, https://rmi.org/insight/the-cleantech-revolution/

Cost:

Coal is Increasingly Uneconomic Compared to Alternatives

- Without tax incentives, wind and solar are already the least expensive type of new electrical generation.[1]
- With tax incentives, building new wind and solar facilities is cheaper than power from existing, fully-depreciated coal generators.[1]
- Wind and solar costs are expected to decline further over time due to ongoing learning curves.[2]

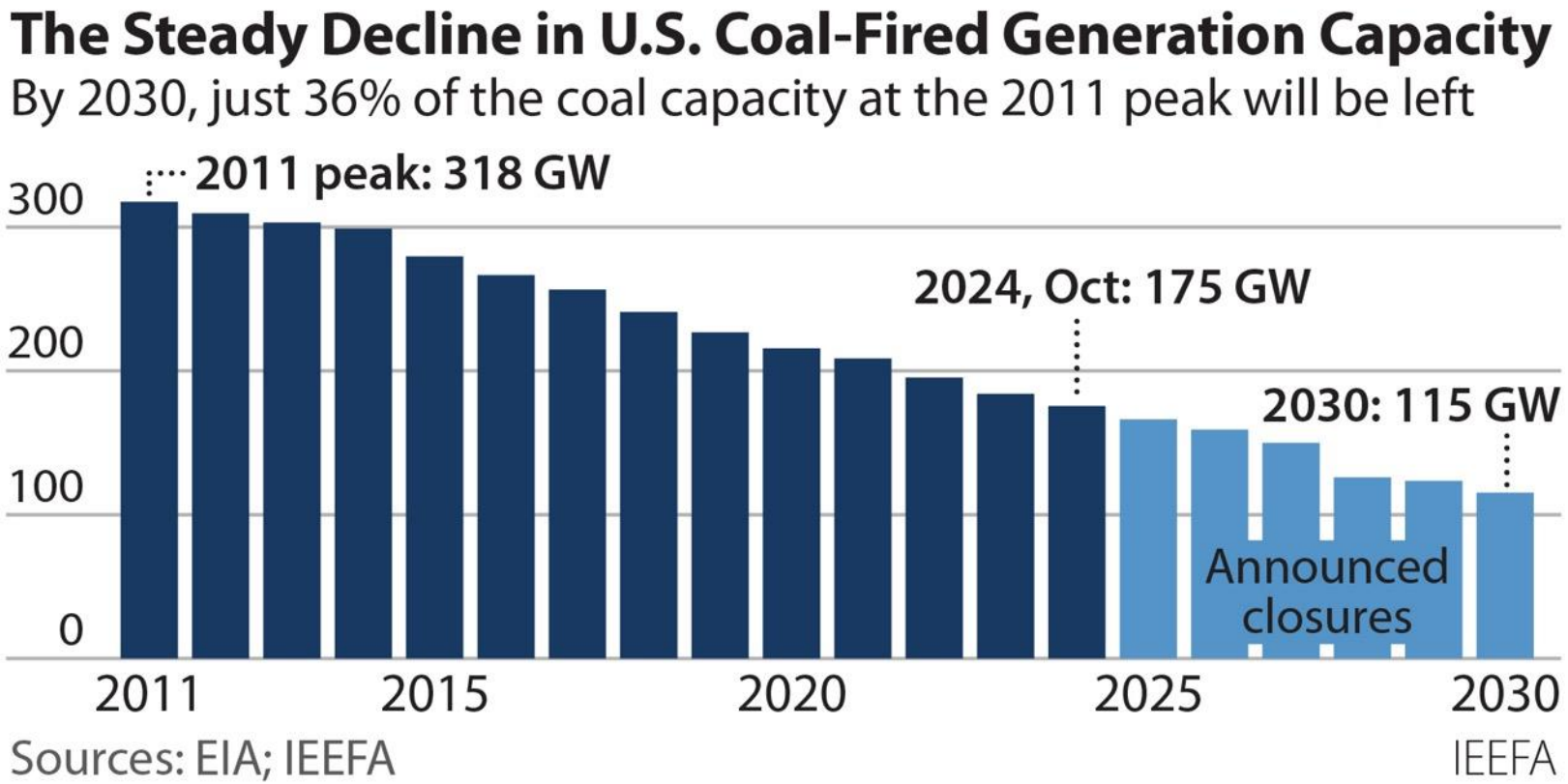


1. https://www.lazard.com/media/xemfey0k/lazards-lcoeplus-june-2024-_vf.pdf

Cost:

Coal is Increasingly Uneconomic Compared to Alternatives

Coal plants continue to close across the US due to their inability to compete with renewable energy and natural gas generators



1. https://ieefa.org/resources/nowhere-go-down-us-coal-capacity-generation

IMEA's Approach Exposes St. Charles to Significant Risks

- In financial markets, investors mitigate risk through diversification – this same approach can be used in energy markets as well.
- IMEA's relies heavily on 2 coal plants and has not offered scenario planning, creating risks:
- **Sustainability Risks**
  - IMEA's reliance on coal locks in high emissions for the St. Charles, including harmful SO2 emissions
  - Large companies increasingly want to power their operations with clean energy–high emissions from power could deter corporate investment in St. Charles
- **Cost Risks**
  - IMEA's financial risks are, fundamentally, St. Charles's risks unless St. Charles is willing to let IMEA go bankrupt
  - IMEA's heavy reliance on 2 coal plants subjects them to asset-specific performance risk – a failure at one of these plants during key grid moments could subject them to heavy losses
  - Future environmental regulations may pose additional costs and risks on IMEA. This is not purely academic – Prairie State is being sued[1] due to an alleged failure to comply with key EPA regulations

1. https://www.bnd.com/news/local/article291678600.html

Case Study:
Springfield, MO Leveraged a Portfolio of Generation

- Springfield is a city of 170,000 people that is served by a municipal utility
- Springfield's municipal utility meets demand with a portfolio of assets
- 45% of their electricity comes from renewable sources, particularly low-cost wind energy
- The City plans its generation using an integrated resource plan

"It does take a balanced portfolio, and I think that's what really got us through [a winter storm] – to have the different types of generating units."

–Cara Shaefer, CU's director of communications and energy services[1]

1. https://sbj.net/stories/cu-satisfied-with-renewable-energy-goal,73303

Case Study:

Chicago Bought Clean Energy and Supported Workforce Training

- The City of Chicago was unhappy with their retail provider's default offer
- The City issued an RFP seeking low-cost, clean electricity
- Chicago signed a 5-year retail contract:
  - Solar power covers 70% of the city's load
  - An annual $400k investment to support local community workforce training
- Cook County later signed a similar, 12-year agreement with the same providers

"The signing of this agreement demonstrates that the City of Chicago is leading by example and driving high-impact climate action, building the clean energy workforce of the future and equitably distributing meaningful benefits to foster the local clean energy economy for all."

–Mayor Lori E. Lightfoot[1]

1. https://www.chicago.gov/city/en/depts/mayor/press_room/press_releases/2022/august/Purchase100PercentCleanRenewableEnergy2025.html

Case Study:

Taos, NM, Saved Its Customers Money by Switching to Clean Energy

- Kit Carson Electric Cooperative provides electricity to 29,000 people, including Taos, New Mexico
- In 2023, Kit Carson split away from its supplier, Tri-State Generation and Transmission, in favor of a private electricity provider, Guzman Energy
- The shift is expected to increase renewables usage and “cut customers’ bills by as much as 25 percent.”[1]

1. https://www.santafenewmexican.com/news/local_news/kit-carson-electric-completes-split-from-tri-state/article_d5aa2bbe-2a31-11ed-94ca-fbe7eb9134fb.html

St. Charles Has Alternatives and Opportunities to Explore Them

- Cities and municipal utilities in Illinois have contracted with alternative providers, such as Constellation and NextEra (e.g., Rochelle, Champaign, and Geneva)
- Alternative providers may be able to create offers that benefit the community's needs:
  - **Reliability** would be unaffected (since PJM handles this)
  - **Sustainability** would be enhanced by adopting non-coal generation assets
  - **Costs** could decline if lower-cost generation sources, such as wind and solar, are purchased
  - **Risks** associated with coal generation (e.g., financial exposure to regulatory and asset risk, public relations concerns, and possibly health impacts) could be mitigated
- The State of Illinois has received a $400M grant to help municipalities study their energy options – St. Charles may wish to consider applying for this program next year
- The full process to switch power providers can often be completed in 1-2 years, but St. Charles may wish to start conversations with providers sooner to better understand its options

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