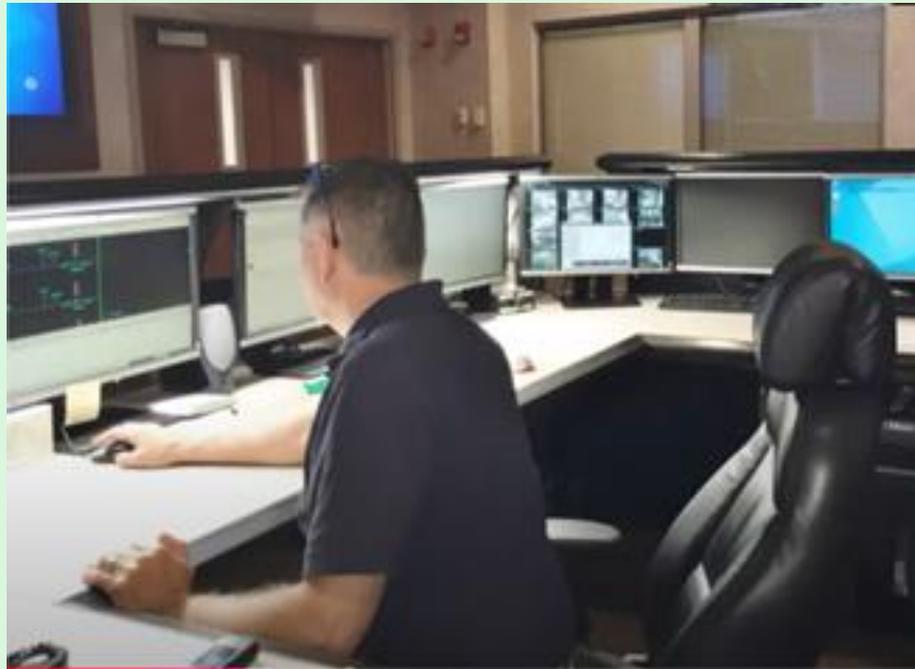


Electricity Modeling Team PUAB Update Status, Lessons Learned, Next Steps

One Naperville, One Team –
helping to shape our electricity future

February 19, 2026



Basic Flow for February 19 PUAB Update

- Why did we form the team? Who are the members?
What have we accomplished?
- Video podcast “Lessons Learned including our 5 Step Process”
- What are the next steps?

Why Did We Form the Modeling Team?

- The initial CES recommendation to renew with IMEA based on the MDR clause in the renewal contract did not show any quantified benefits.
- CES's final presentation to City Council in July added an evaluation of a 10% MDR for new nuclear. The associated bar graph showed Naperville's cost index would increase by 75%!
- This made no sense. Why would they recommend renewing based on an MDR that would increase our cost index by 75%?
- I identified multiple issues with CES's assumptions and proposed forming the modeling team.

Modeling Team Members

Brian Groth

Richard Stark

Olga Geynisman

Maher Diab

Jim Fillar

Phil Schrieber

Graham Morin

Tim Feritto

First Team Assignment

- Analyze the cost of our current power supply and then determine three options that balance carbon emissions and cost. Model the cost of these three MDR options for various market capacity and energy scenarios.
- Determine the cost benefit of battery storage and create a model to input the cost provided by battery vendors and translate that to Naperville savings.

Our MDR modeling approach

- Since Naperville must meet 100% of its requirements with IMEA before purchasing an MDR,
- We only needed to first determine the costs of **purchasing** energy, capacity, and **Emission Free Energy Credits (EFECs)** which was done for Brian through the RFP process,
- and then determine the multi-year prices for **selling** the energy and capacity in the Naperville Node of PJM.
- and then calculate the net cost for each year.

Modeling Team's Achievements

✓ Status

- ❖ Determined Major Trends Affecting Energy & Capacity Prices.
- ❖ Verified that the AI production cost model matches the spreadsheet model
- ❖ Developed an AI 10-year forecast for energy and capacity prices for the Naperville Node based on 10,000 iterations (Monte Carlo Simulations).
- ❖ Prepared an MDR net cost estimate for a 10-year nuclear PPA (see next slide)
- ❖ Identified 3 qualified energy forecasters.

10 Year Nuclear MDR Net Cost Analysis prepared by Gemini Pro (\$95/MWh)

Average annual net costs range from \$5.4M to \$18.8M with an average annual Base Cost = \$12.9M

Low Case = energy & capacity below the base case, which means we sell the energy and capacity for less, and our net costs increase.

Year	Low Case (5%)	Base Case (50%)	High Case (95%)
2026	\$15,536,218	\$13,815,963	\$12,002,981
2027	\$16,974,202	\$13,480,034	\$9,058,545
2028	\$17,988,424	\$13,201,989	\$5,338,796
2029	\$18,715,577	\$13,001,179	\$4,813,520
2030	\$19,223,225	\$12,823,081	\$4,404,240
2031	\$19,586,373	\$12,672,994	\$4,087,688
2032	\$19,847,808	\$12,532,076	\$3,816,105
2033	\$20,039,634	\$12,431,272	\$3,646,433
2034	\$20,180,467	\$12,326,976	\$3,496,150
2035	\$20,285,139	\$12,234,575	\$3,374,645
Total 10-Year Net Cost	\$188,377,065	\$128,520,138	\$54,039,102

High Case = energy & capacity above the base case, which means we sell the energy and capacity for more, and our net costs decrease.

Summary of Lessons Learned – AI developed pocdast

Every well-run project should include periodic evaluation reviews which then become a summary of the Lessons Learned.

The following is a summary of what the Modeling Team has learned through January of this year.

Overall Modeling Assessment

We've already made substantial improvement in our modeling capabilities. I rate us as a 3+ on a 5-point scale vs a 2 rating for the CES modeling.

The breakthrough was learning how to use AI to write the Python code for machine learning.

To reach the next level, we need:

- external forecasting validation (see next slide)
- to transfer our AI generated modeling skills to the Naperville Electric Utility staff

Next Steps

1. Purchase a capacity and energy price forecast from one of these 3 forecasting companies:

- ✓ Hitachi Energy
- ✓ Polar Consulting
- ✓ Ascend Analytics

2. Provide modeling support to Brian Groth for the initial components of Naperville's long-term electricity strategy, including:

- Battery Energy Storage System (BESS)
- Demand Response (DR) program design and valuation
- Virtual Power Plant (VPP) supported by a Distributed Energy Resource Management System (DERMS)

The End