

# Electricity Modeling Team PUAB Update

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

November 6, 2025



# Update Topics

- Modeling Team Mission
- Team Members
- First Assignment
- Our TEAM + AI approach
- Example CES model
- What we've learned so far
- Our next steps

# Modeling Team Mission Statement

Our mission is to support the City of Naperville's Public Electric Utility with advanced, data-driven modeling tools that will help evaluate and optimize electricity sourcing strategies.

Team Members  
Combined  
Extensive Modeling  
Experience  
with  
Electricity  
Sourcing and Market  
Knowledge ...

**Brian Groth**

**Diab Maher**

**Olga Geynisman**

**Richard Stark**

**Graham Morin**

**Jim Fillar**

**Phil Schrieber**

**Tim Ferritto**

**Russ Paluch**

**Gemini Pro Deep Research**

# 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.

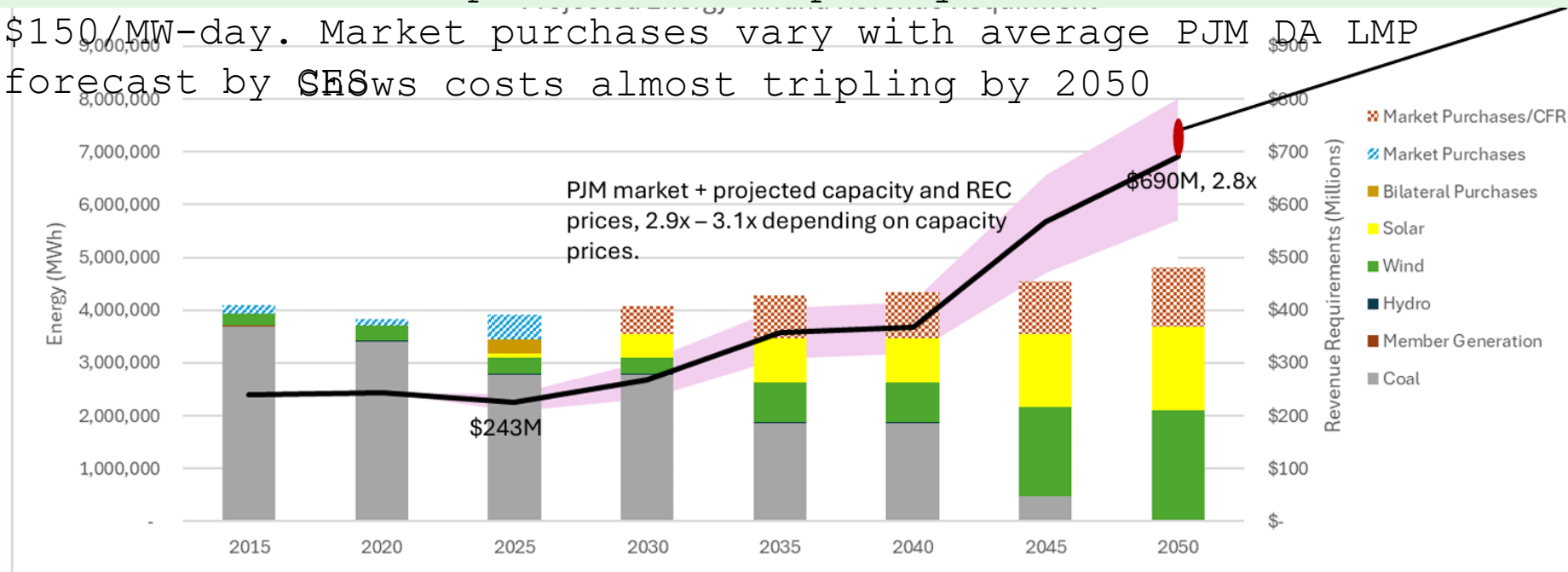
# Our modeling approach

Combining the  
best of  
Team plus AI

- Prepare a Spreadsheet and AI model for the base case:  
Renewal w/IMEA no MDR
- Team decides the values for the cost variables, including the most likely ranges
- Prepare 'spreadsheet' and AI models cost models for each option
- Use AI to conduct 'due diligence' for each option
- The team will then evaluate and create the best combined model for each option
- Model the CO<sub>2</sub> emissions for each option

# Example: CES model for IMEA future "revenue" requirements

Solar PPA @ \$80+8/MWh, including energy, RECs and capacity (accounting for solar capacity factor and capacity accreditation) at 1% escalation. Wind PPA @ \$85+10/MWh, including energy, RECs and capacity (accounting for solar capacity factor and capacity accreditation), at 1% escalation. Battery capacity contract @ \$9/kW-month at 1% escalation; market purchase of capacity also included @ \$150/MW-day. Market purchases vary with average PJM DA LMP forecast by CESs costs almost tripling by 2050



Source: IMEA [presentation](#) to Naperville, Oct. 2024, CES Analysis, IPA's [estimate](#) that RPS costs to increase at least 3x by 2043.

## What we've learned so far

- AI provides high quality narrative information for the major trends and causes of variation in pricing, etc.
- For long-range planning in an environment that is rapidly changing, multiple models need to be run to understand which variables have the biggest impact. AI enables us to quickly run these models.
- AI makes mistakes and doesn't always follow all of the prompt instructions. The solution is to ensure that the Modeling Team is staffed with members who have strong reasoning skills and market knowledge.
- The best solution will be achieved from the best team members plus AI.



## Next Steps

- ✓ Compare and adjust spreadsheet & AI standalone models
- ✓ Prepare ranges for the variables to be approved by the whole team.
- ✓ Update the spreadsheet and AI MDR option models with the approved variable ranges.
- ✓ Prepare the cost benefit of battery storage and create a model to input the cost provided by battery vendors and translate that to Naperville savings
- ✓ Enter the RFP price information into the models
- ✓ Prepare the carbon emission models