

Welcome

Agenda:

- Cathy Clarkin (NEST)
Intro/Welcome
- Professor Paul Bloom (NCC):
Why this matters
- Maureen Stillman (NEST): What's
in the new contract
- Christine Nannicelli (Sierra Club
Beyond Coal): What's required of
our next electricity supplier
- Scott Buckley (CCL): Action
items for City Council
- Take action – breakout rooms
- Wrap-up

NAPERVILLE'S COAL PROBLEM SEIZE A CLEAN ENERGY FUTURE

Naperville's City Council is being asked to extend its coal contract until 2055. Find out how you can get involved in rejecting coal and creating a clean energy future for our community.

March 18, 6:30-8:00 PM

North Central College
Wentz Science Center
Room 101

RSVP: sustainnaperville.org

Naperville
residents,
80% of your
electricity comes
from coal!



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Citizens' Climate Lobby

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Fox Valley Electric Auto Association



Tri-Cities Coalition
RIVER PRAIRIE GROUP



The Climate Reality Project
CHICAGO METRO CHAPTER



DuPage Clean Energy Coalition





Outcomes

- Be inspired to advocate for a clean energy transition
 - Learn what's in the IMEA contract and sustainability plan
 - Understand the importance of Integrated Resource Planning and good governance for our next electricity contract
 - Be able to share talking points about the IMEA contract renewal
 - Start now by taking actions tonight to advocate against early renewal
-



Logistics

- Breakout rooms at 7:15
 - Write to City Council (this room)
 - Make a public comment to City Council (Room 115)
 - Inform your network about our Coal Problem (Room 111)
 - Media outreach – letters to the editor (Room 119)
 - Join our coalition leadership (hallway)
 - Informal Q&A 7:45
 - Signup for NEST committee, mailing list
 - Talk to speakers
-



Our message to City Council:

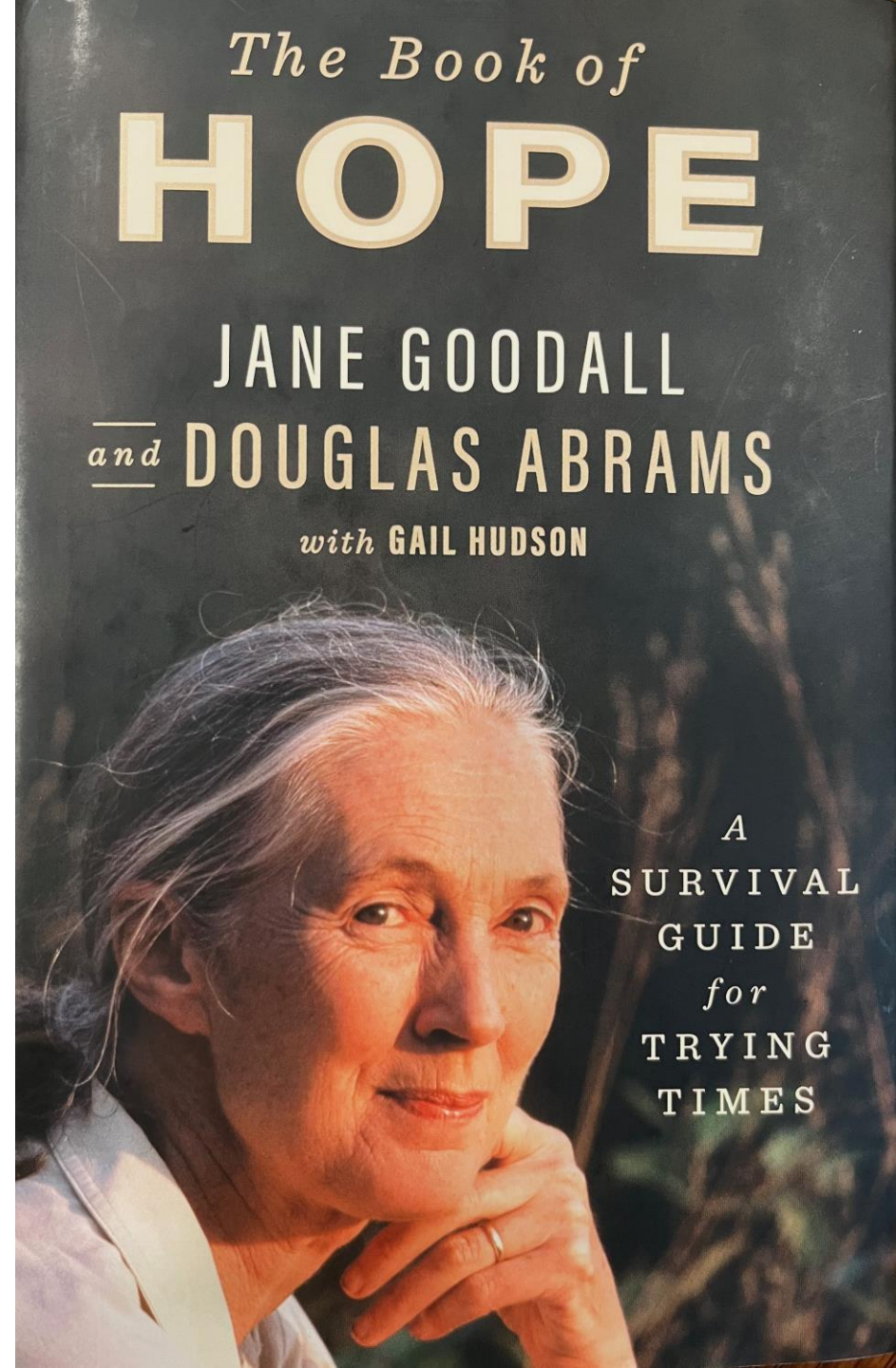
No early renewal of
the IMEA contract

We Can Make a Difference

“

*It is important to take action and realize that we **can** make a difference, and this will encourage others to take action, and then we realize we are not alone and our cumulative actions truly make an even greater difference.*

”



Welcome

- Thank you for joining us in the Wentz Science Center on the campus of North Central College in Naperville
- Stewardship of the environment and sustainable living are at the core of the mission of the Environmental Studies program
- We are very pleased to be part of a coalition working for clean energy

Human-Caused Climate Change

- You can scarcely be alive in this world and not hear something about climate change
- The world is warming, the climate system is being disrupted, and the direct cause is human activities
 - Specifically, due to the greenhouse gases like carbon dioxide that we emit into the atmosphere because of the way we live our lives
- Most of that CO₂ is due to our use of fossil fuels - coal, oil and gas
 - Coal produces about 96 pounds of CO₂ per million BTU produced from combustion. Natural gas is about 53, gasoline about 70.
- The energy we use for everything – transportation, home, commercial and industrial applications – is changing our planet (for the worse)

Global Warming – Who Cares?

- IPCC and US Government assessments predict some of the following impacts of climate change for Naperville and the surrounding area
 - Increased heavy precipitation events (frequency and intensity) and flood risk
 - Increased frequency of drought events and wildfire risk
 - Larger/faster temperature swings (infrastructure failure)
 - Shift in mean temperature range (new diseases and vectors)
 - This is all already happening and will get worse as we continue to emit GHGs
- The upper Midwest gets off pretty easy
 - No sea level rise to contend with, no vanishing water resources. Food will get more expensive with crop failures, but we're rich (compared to most)
 - We can **adapt** to just about all of this with better infrastructure. It's good to be affluent...

Global Warming – So, we’re off the hook?

- No. Three arguments for why.
- We share this world with every other living thing on the planet. We (in the industrialized world) have caused this problem. Something about being “my brother’s keeper”...
- Climate change is cumulative. How bad the future gets depends a great deal on how we behave tomorrow. If we do nothing, adapting is going to get much more expensive.
- Still not worried? Well, those not so terrible local impacts mean that our part of the world is going to look pretty good to the 100s of millions of climate refugees that are going to be fleeing from poor countries that can’t adapt to catastrophic impacts.
 - When someone tells me we have a border problem now, well...

The Way Forward

- The cheapest, most efficient, most globally beneficial way of reacting to climate change is called **mitigation**
 - Keep the problem from getting worse by stopping the thing that causes the problem – don't put GHGs into the atmosphere
- But this is a hard problem because our civilization is inextricably linked with massive energy usage, and we get the vast majority of that energy from burning fossil fuels
 - Nobody in their right mind is suggesting we go back to being subsistence farmers or hunter gatherers
 - Every rational, well-informed consideration of this problem leads to the same place – replace fossil fuels and do it fast

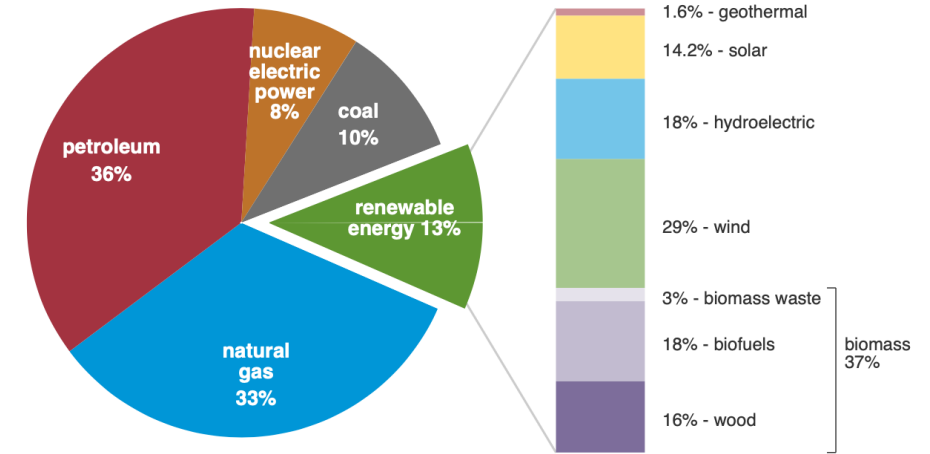
Renewable Energy

- In 2022 80% of US energy came from fossil fuels, 8% from nuclear and 13% from renewables
- Over the last 20 years, and especially the last decade, renewables have become dirt cheap
 - Note that levelized cost does not include the price of emitting carbon
 - This makes fossil fuels even more expensive relative to renewables
 - Coal is the worst – and “cleaning” it up with things like CCS simply doesn’t work

U.S. primary energy consumption by energy source, 2022

total = 100.41 quadrillion British thermal units (Btu)

total = 13.18 quadrillion Btu

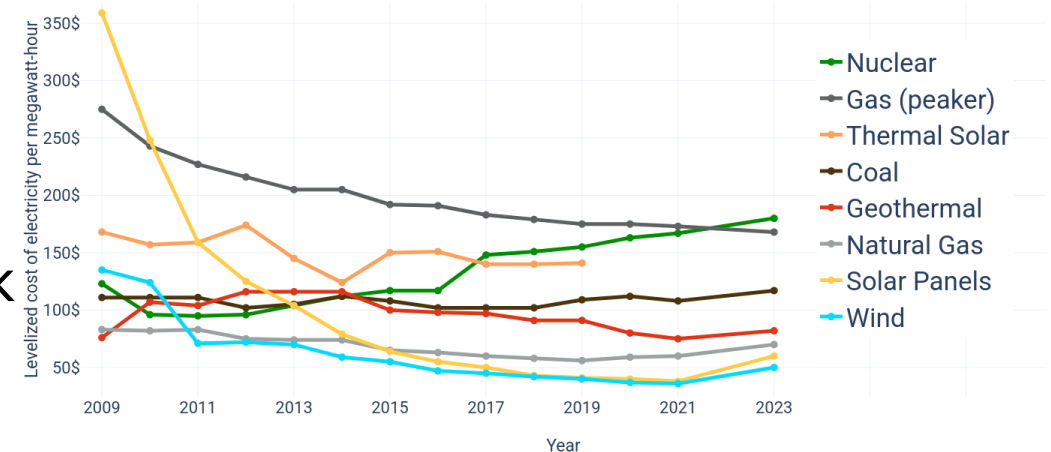


Data source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.3 and 10.1, April 2023, preliminary data



Note: Sum of components may not equal 100% because of independent rounding.

Electricity costs according to data from Lazard



Climate Change Mitigation

- So, to keep the problem from getting worse, there are a few basic steps that the experts agree on
- Convert every use of fossil fuels to electricity
 - Transportation, residential, industrial, etc
- Produce LOTS of renewable (carbon free) electricity
 - This involves wind, solar, storage, grid infrastructure to handle intermittency
 - The problem is even easier in IL because we have lots of existing nuclear power
- This can be done with tech we have right now
 - And the tech we need is rapidly evolving and getting even cheaper
 - Solar and Wind are already cheaper than any fossil fuel
 - Storage costs have plummeted in the last few years and more/better options becoming available.
- There are always going to be niche uses that are harder, but there is a LOT of progress that get be made to get to “net zero” VERY quickly

Meanwhile, in Naperville...

- Obviously, since Naperville is an affluent and enlightened community in Illinois, we are rapidly moving to carbon free forms of electricity to power our lives
 - Nope
- Instead, thanks to a long-term contract that the city signed with IMEA in 2011, we have the dirtiest electricity in the state
 - 80% produced by burning coal at two very large plants downstate
- But since the cost of renewables has plummeted and we now know even more clearly that we must reduce our CO₂ emissions, we are going to move to cleaner renewables or nuclear as soon as the contract is up
 - Again, nope – IMEA wants the city to extend the contract through 2050 – and they want us to do so well in advance of the expiration of the original contract
- This is why we are here tonight - so we can learn more about this idea which is bad on so many levels, and what we can all do to prevent it from happening.

The background of the slide features two tall, grey industrial smokestacks with red and white horizontal bands. Each stack is emitting a thick, white plume of smoke that rises into a sky filled with soft, white clouds. The smokestack on the right has the letters 'E', 'L', and 'E' visible vertically on its side.

Naperville Electricity Energy Sources and Current Status

Maureen Stillman

NEST Chair Energy Committee

3-18-2024

Naperville Electric supply and power purchase contract

Carbon Pollution

55%
Electricity

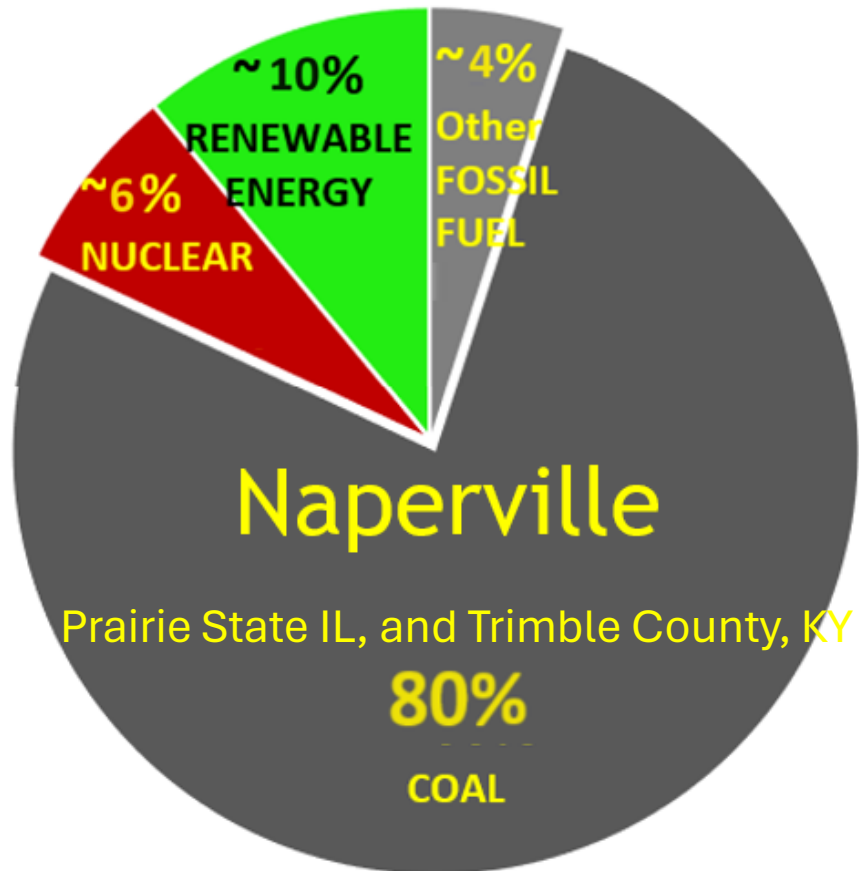
25%
Vehicles

20%
Natural Gas

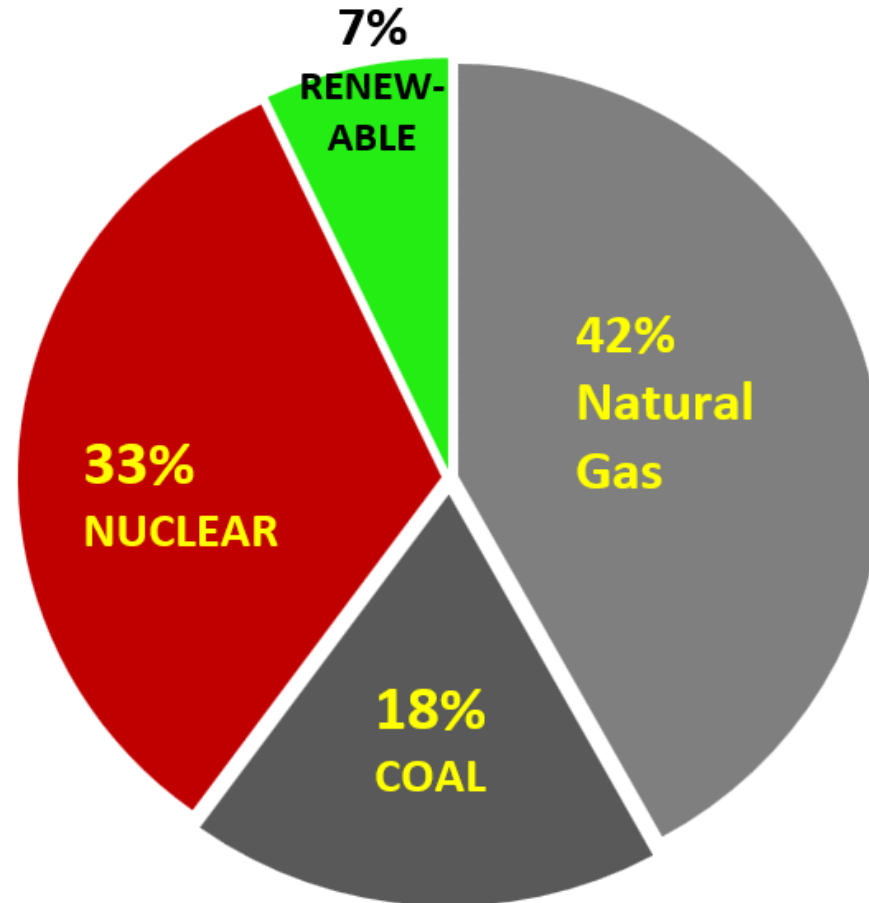
- Our electric utility produces **over half** of Naperville's carbon pollution (greenhouse gas emissions)
- Our electricity comes from IMEA (Illinois Municipal Electric Agency)
- 2022 total electric cost \$105 million for 1.3 million Mega Watt hours (MWh)
- Contract with IMEA signed in 2007 which ends in 2035 requires us to buy **all** of our electricity from IMEA
- In 2024, **5 years prematurely**, IMEA has requested city council to sign a **sole source** 20 year contract extension

Contract extension value is \$2 billion dollars

Incorporated Naperville energy mix



Unincorporated Naperville energy mix provided by Spark Energy



VS.

Recent 2023 customer bill in unincorporated Naperville

- 40% clean energy With a mix of renewable and nuclear
- 18% coal
- 42% natural gas



IMEA Sole Source Contract Extension vs Competitive Bid

Competitive bid allows direct comparison between vendors and levels the playing field

- IMEA proposed 20-year extension/renewal from 2035 – 2055
- Contract value is \$100 Million x 20 years = **2 billion dollars**
- City Council decision required by April 2025
- Current contract end date is 2035 when bonds are paid in full
- IMEA proposal is a sole source contract with no competition. **(Does not allow us to seek bids from other vendors)**
- We want a competitive bid process to receive proposals from other vendors
 - Evaluate them on a variety of metrics
 - Need open and transparent bidding process

The IMEA extension is being presented as a sole source contract which allows NO competition

Technology Innovation + Grid Upgrades

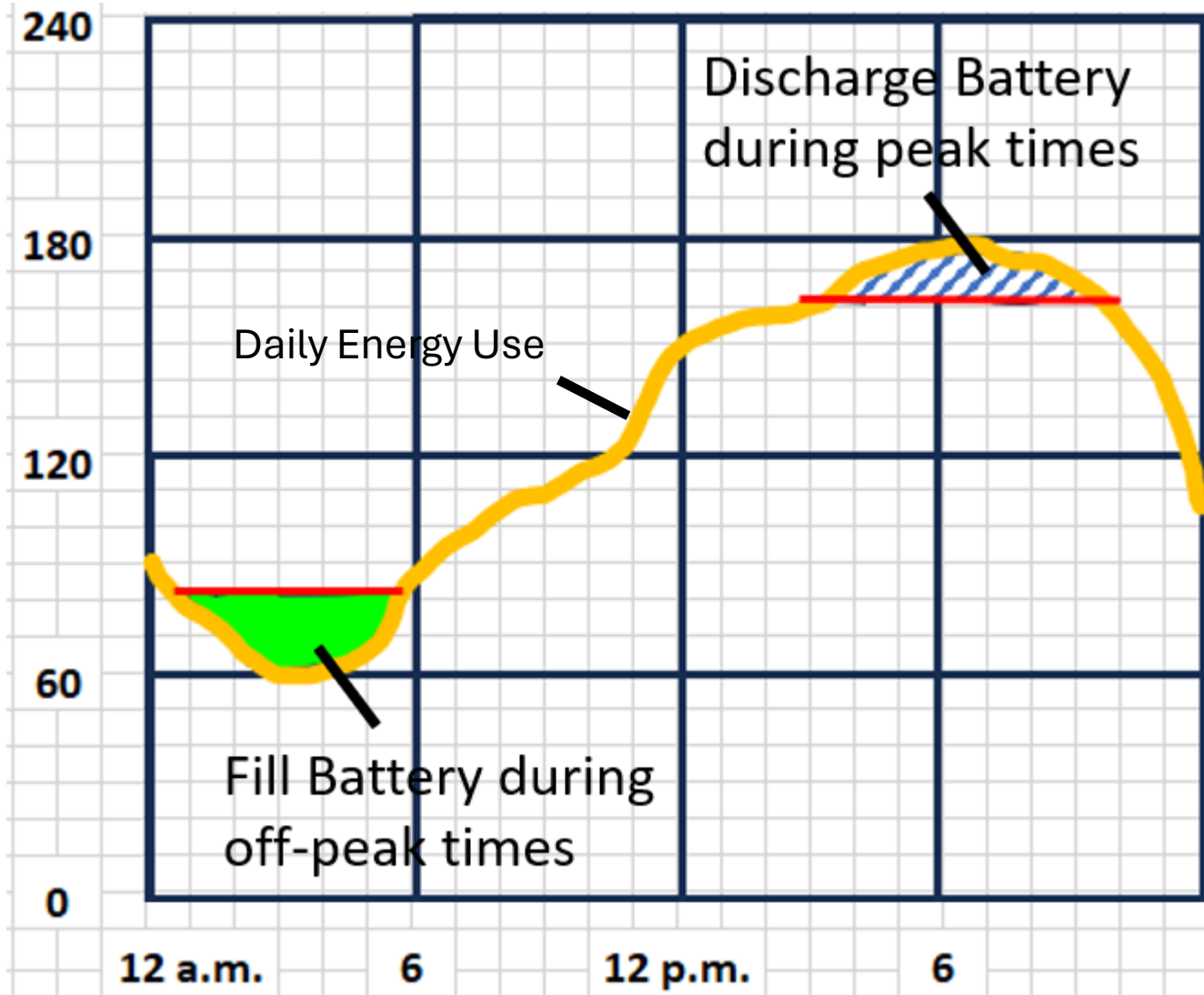
- **Technology in the Utility industry is rapidly changing**
- **Renewable Projects are backlogged by delays connecting to the regional grid**
- **Grid upgrades have been announced – to alleviate the renewable backlog**
 - DOE Federal Grid Innovation Program* 58 projects funded across 44 states
 - Our Independent Systems Operators (ISO) PJM will benefit
- **Let's Incorporate New Energy Technologies**
 - Aggregators with Clean Energy Solutions, microgrids, small modular reactors etc.
 - Utility Scale Battery Storage technologies
 - Innovations in Solar and other renewable energy methods

[^]<https://www.energy.gov/gdo/grid-innovation-program>

IMEA contract extension summary – Highlights

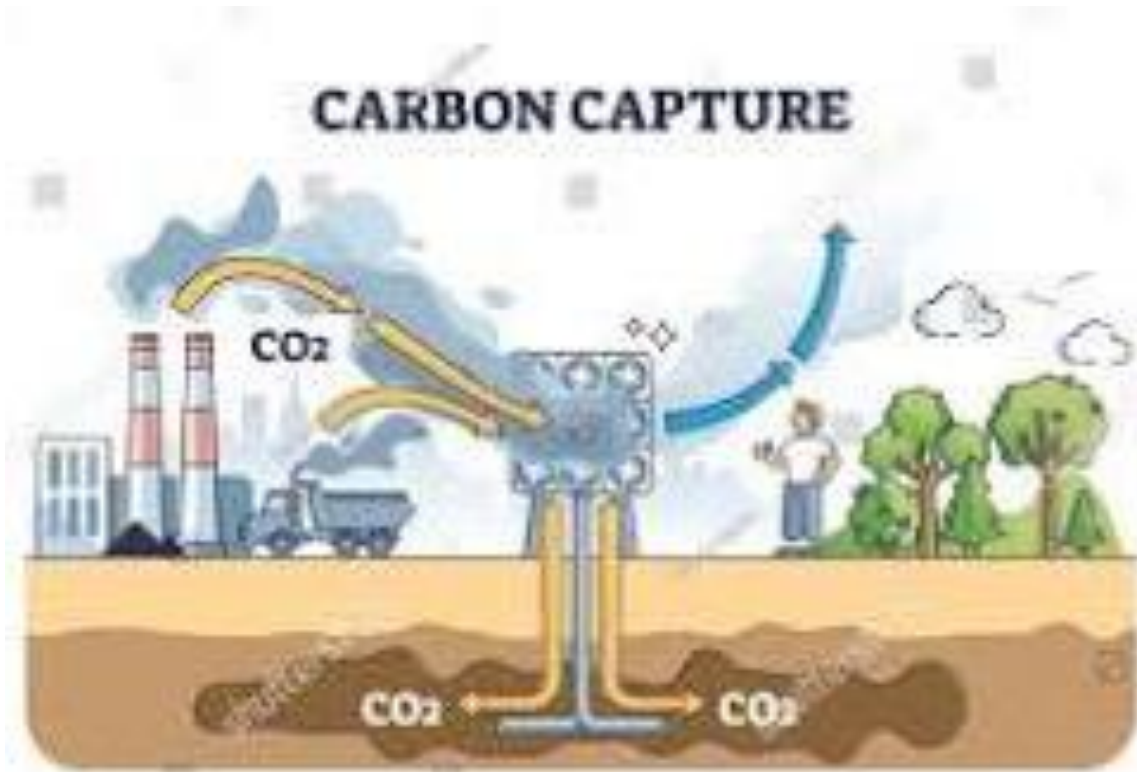
- Member Directed Resource (MDR)
 - Option to supply 10% of Naperville electric power with renewables or battery storage devices (approximately 35MW)
 - But IMEA will add it into the pool of energy resources and control it
- Coal generated electricity is prioritized over renewables
 - So renewable energy sources may only be partially used
- We still cannot buy power from any other source other than IMEA
- IMEA may again issue long term bonds or other financial instruments
 - Bonds may be used to pay for maintenance on aging coal plants
 - Locking us into long term commitments another 20 years or more
- Peak shaving using batteries is banned

“PEAK SHAVING” Using Utility Scale Batteries



- Fill the battery during off-peak times
- Discharge the battery during peak times to “flatten” the curve
- Businesses are charged EXTRA for peak usage every month (a “demand charge”)
- **Peak Shaving would save businesses money – but IMEA contract extension will ban this for 30 years!**

Coal Carbon Capture

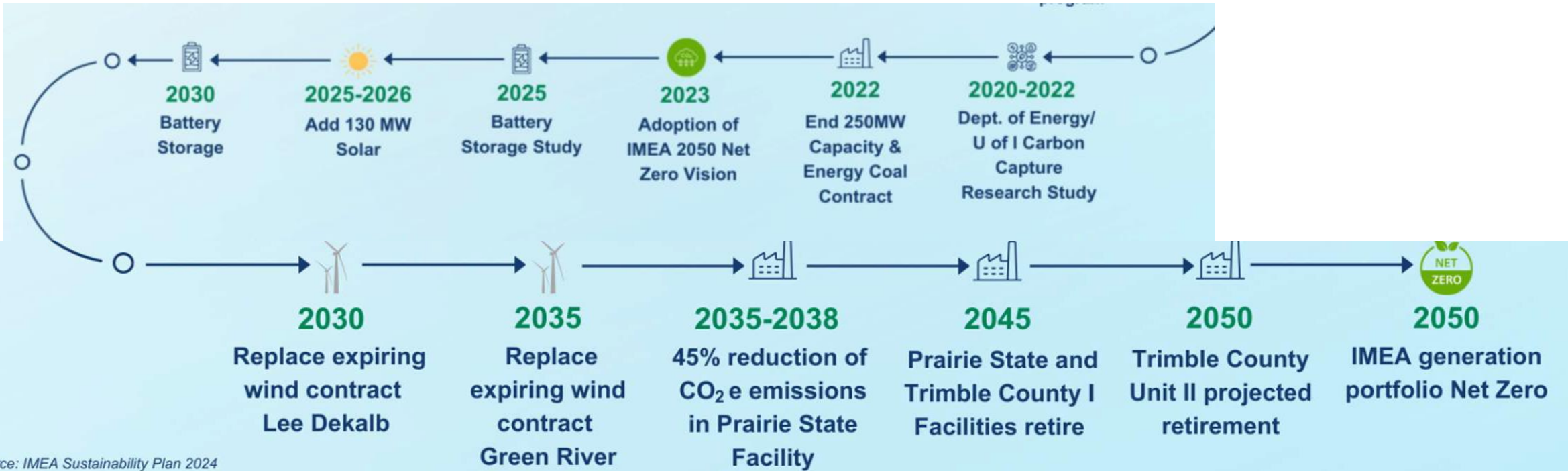


No one has ever tried to perform coal carbon capture on the scale of Prairie State

- Illinois Clean Energy Jobs Act (CEJA) mandates Prairie State reduce carbon pollution **45% by 2035**
- Carbon Capture is a technology that extracts carbon from the coal burning process and stores it underground
- Prairie State plans to implement this to reduce carbon
- Expensive - **\$2 billion** dollars to build **\$174 million** per year to operate
- Experimental - Prairie State sent a letter to the EPA acknowledging that the **90% capture rate required by the EPA was unrealistic, because “CCS technology is not yet adequately demonstrated”**



IMEA sustainability plan – ratified 12/2023



Issues

- IMEA owns 15% of Prairie State so there is an implicit conflict of interest
- If Prairie State implements carbon capture, we could still be burning 80% coal until 2045!
- No explicit prohibition for IMEA to replace coal with other fossil fuels
- **Increasing renewables by 10% does not mean that coal will decrease by 10%**
- **There is No stated goal for IMEA to decrease coal**
- IMEA Sustainability plan has no contractual obligation
- Future bonds will lock us into long term contracts

IMEA needs to get serious about replacing coal with other power sources and build this into the plan

Conclusions

We require changes to both the sustainability plan and to the contract – both fall short

- Put the brakes on signing extension
- Add contractual targets for increasing % of clean energy and decreasing % of coal
 - Naperville has the opportunity set the terms of the next electricity supply contract with ambitious clean energy goals
- Signing an extension now that would extend 30 years to 2055 is **premature**
- Take advantage of new **technologies – e.g. allow battery peak shaving**
- Sustainability document does not go far enough to reduce reliance on coal
- This is a status quo contract in terms of its reliance on coal which preserves IMEA ownership – we will pay for maintenance until 2050
- IMEA should be **Encouraging** New Electric Generation Technologies

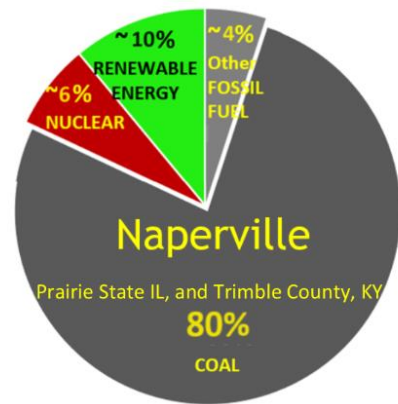
Navigating the Energy Transition & the Importance of Energy Planning

Christine Nannicelli
Senior Campaign Representative

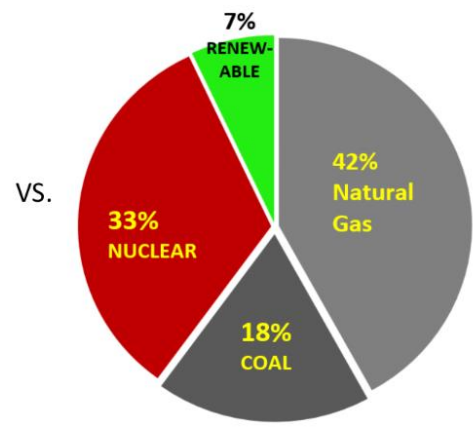


Risky Energy Investments Historically

Incorporated Naperville energy mix



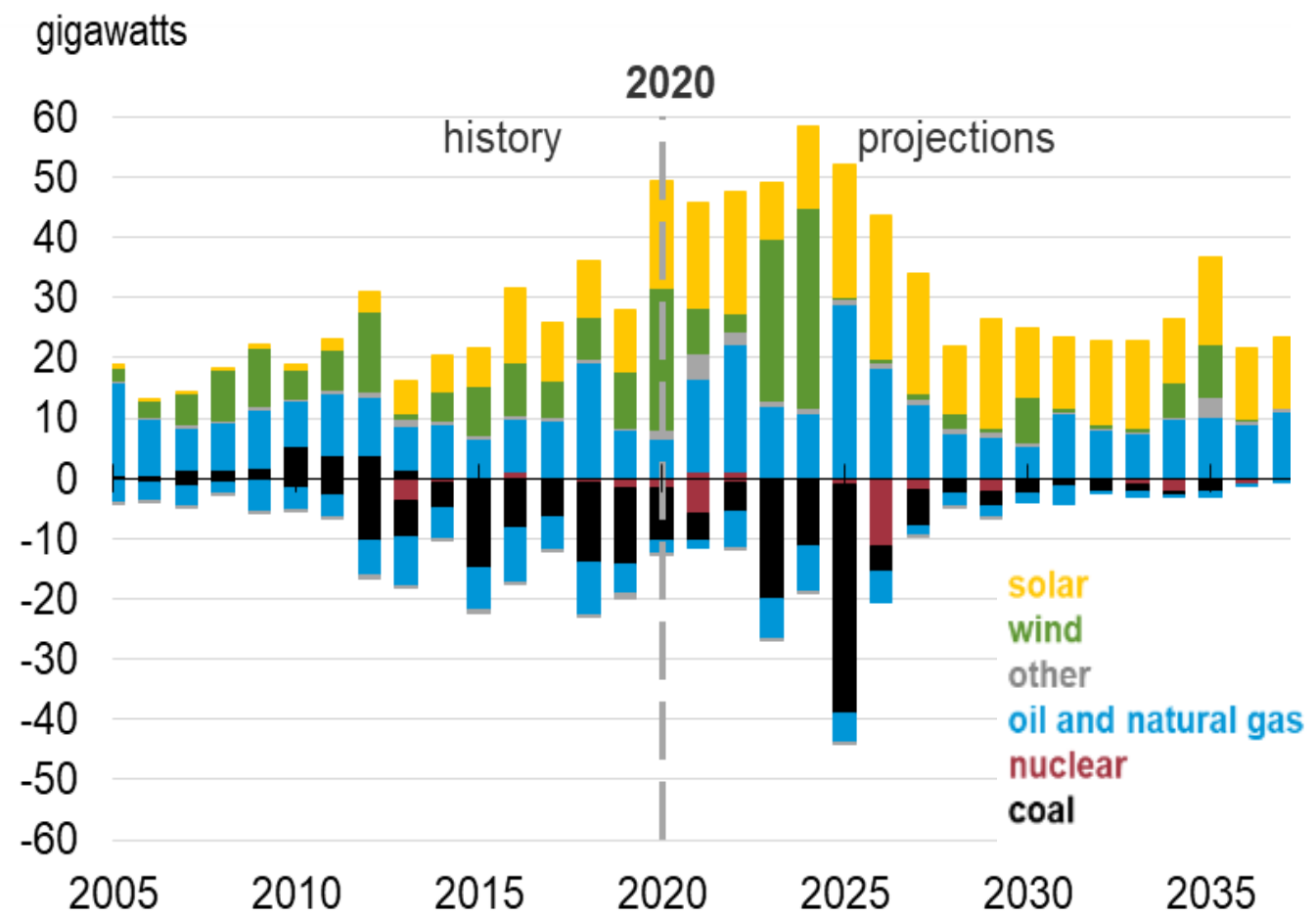
Unincorporated Naperville energy mix provided by Spark Energy



vs.

IMEA's power supply portfolio is disproportionately coal-dominated and historically bucks trends in energy investments. When the Prairie State coal plant investment was being considered, the majority of new capacity investments were going toward gas and wind, not coal.

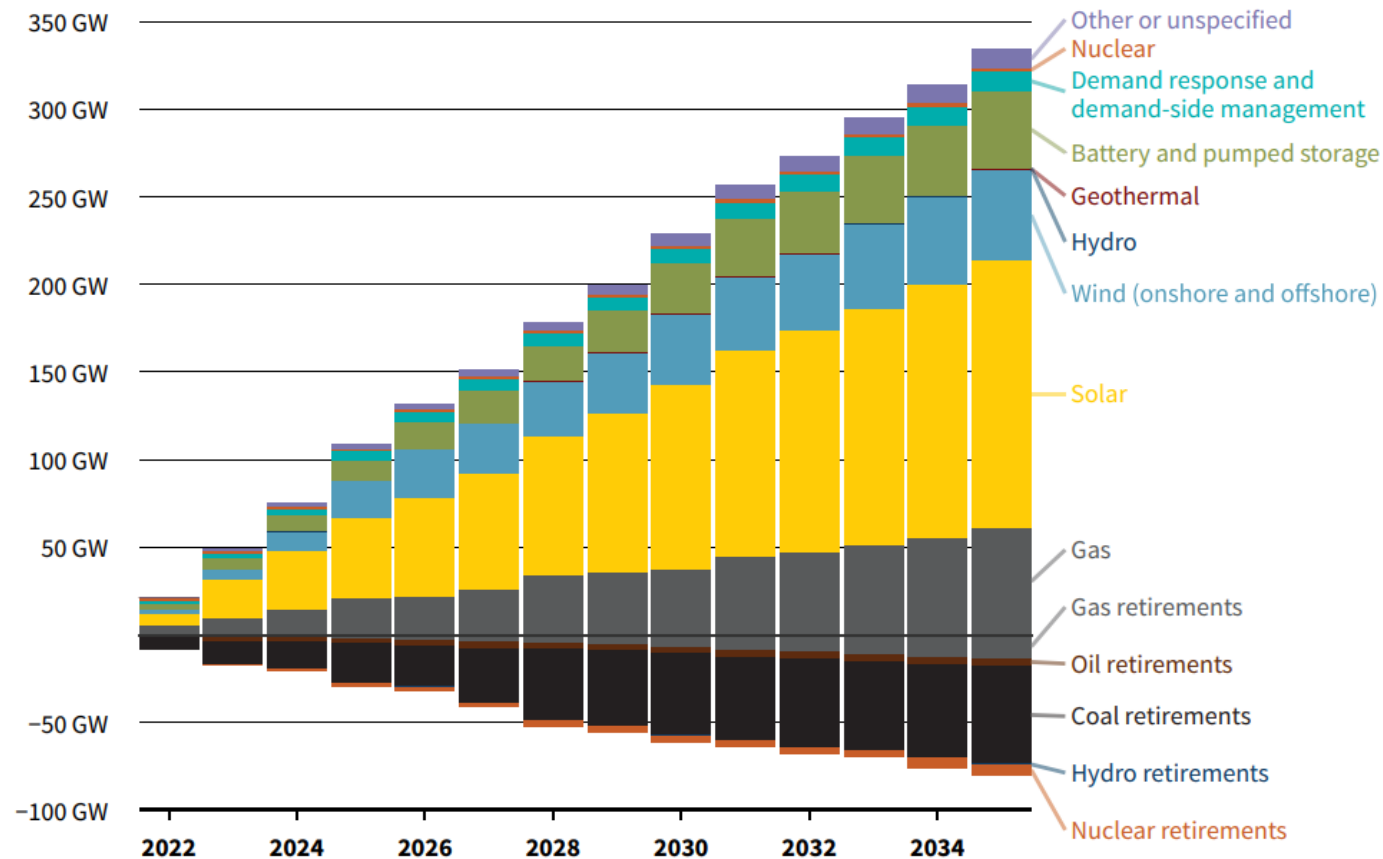
Annual electricity generating capacity additions and retirements AEO2021 Reference case



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021) Reference case and July 2020 Form EIA-860M

Looking Ahead: Energy Trends

Exhibit 5 Cumulative capacity of projected retirements and additions in 104 utility resource plans, September 2022



Source: RMI analysis of EQ Research data as of September 2022

- More cost effective to retire coal units and invest in cleaner energy resources
- Majority of new capacity investments in renewables
- We're skeptical of new gas being able to fully recoup investments

Assessing Future Energy Decisions

New Clean Energy Incentive Opportunities from Inflation Reduction Act



Assessing economics of clean energy supply options (wind, solar, battery storage) and demand side options like energy efficiency programs.

Existing Resources & Environmental Compliance Strategy



Economic appraisal of existing resources and cost analysis of pathways to meet environmental standards.

Meeting Projected Energy Needs & Reliability Obligations of Regional Energy Markets

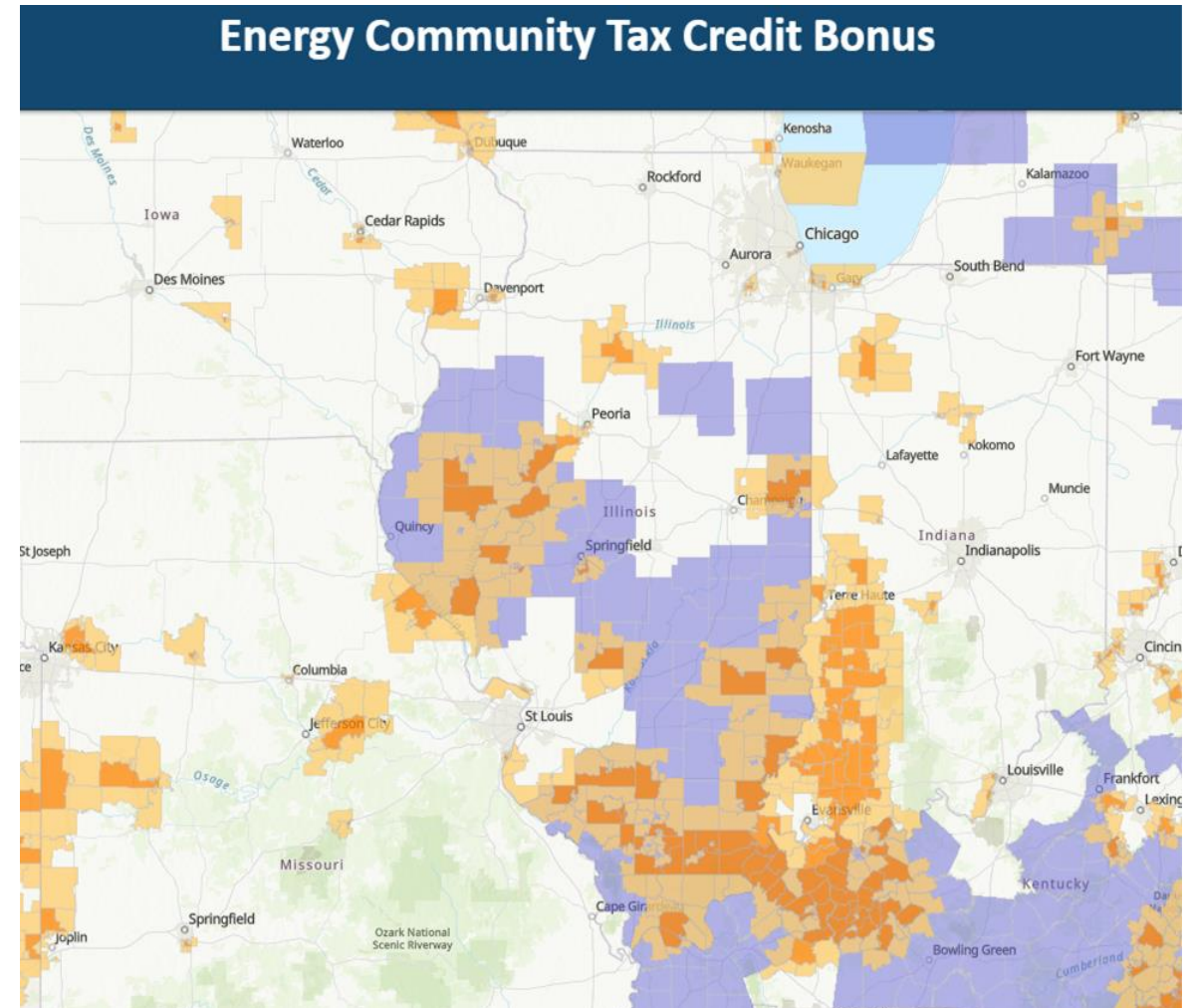


Projected load forecasts for energy demand and analysis of scenarios to meet both energy and capacity needs.




Clean Energy Game Changer for Public Power

Huge Opportunities in the Inflation Reduction Act for Public Utilities with the expansion of tax credits for wind and solar.

- **Direct pay** tax credit available for rural electric cooperatives and municipal electric authorities
- **Adders:**
 - Domestic content +10%
 - **Energy communities + 10%**



Department of Energy Map: Energy Community Tax Credit Bonus.

		
45 & 45Y - Production Tax Credit	48 & 48D - Investment Tax Credit	25D - Residential Energy Projects; 25C Efficiency
2.6 cents per kWh on an annual inflation adjusted basis	30%	30% for project costs for energy projects; efficiency projects have an annual cap

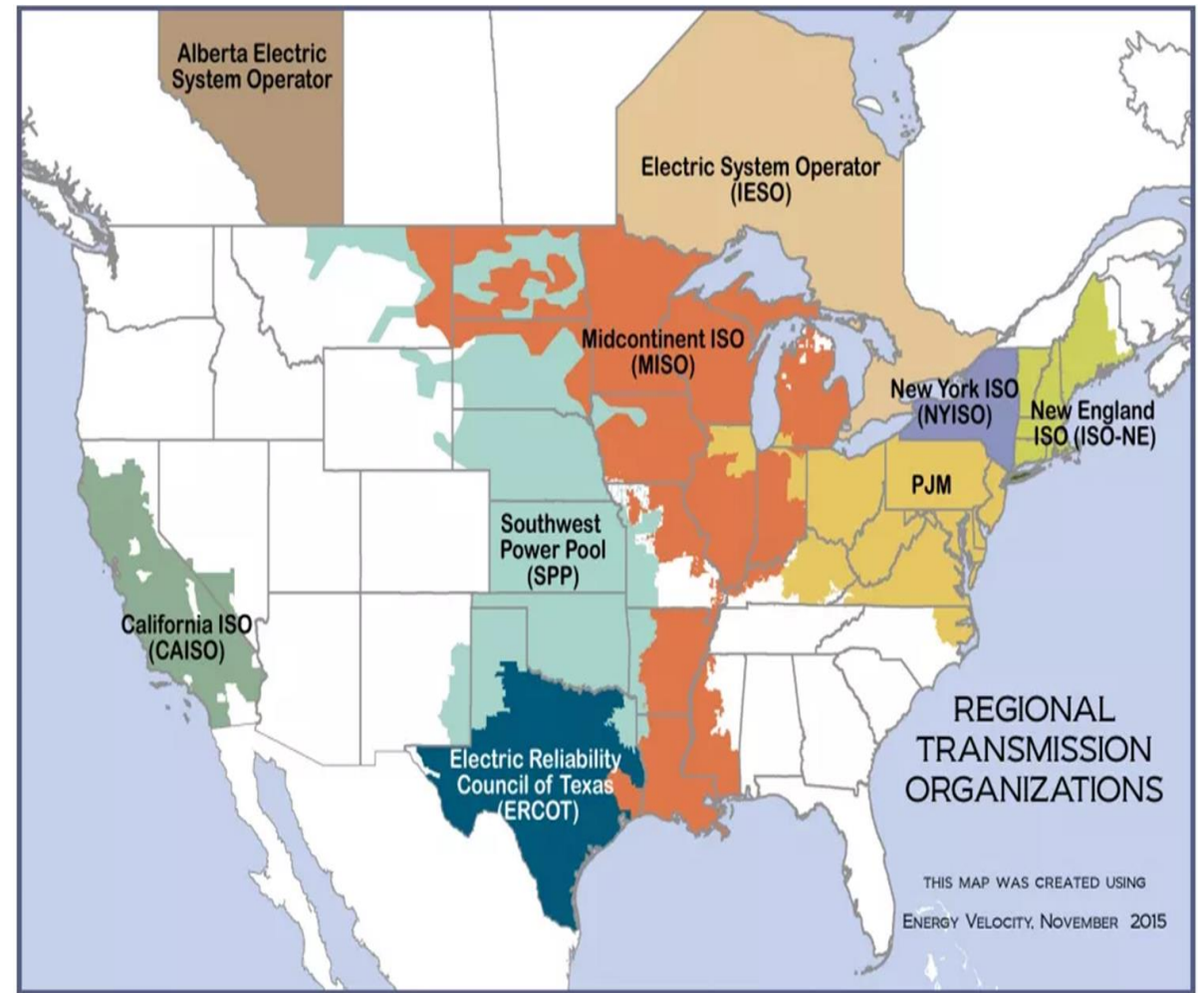
Environmental Compliance Issues for IMEA

1. Compliance with IL's Climate & Equitable Jobs Act (CEJA):
 - a. 2035-2038: 45% emissions reduction (~6 MT CO₂)
 - b. 2045: Zero emissions standard (CO₂ + co-pollutants)
2. Compliance with USEPA's recently finalized Soot Pollution Rule. Prairie State is one of the most significant contributors to St. Clair County being in non-compliance for new soot standard and could force additional pollutants control costs at plant (~\$162M/unit)
3. *Compliance with USEPA carbon dioxide emissions guidelines for existing coal plants and new gas plants to be finalized this Spring.*
4. *Carbon capture (even with 3rd party partnership) presents significant risk and long-term liability with injection well monitoring and storage risks.*



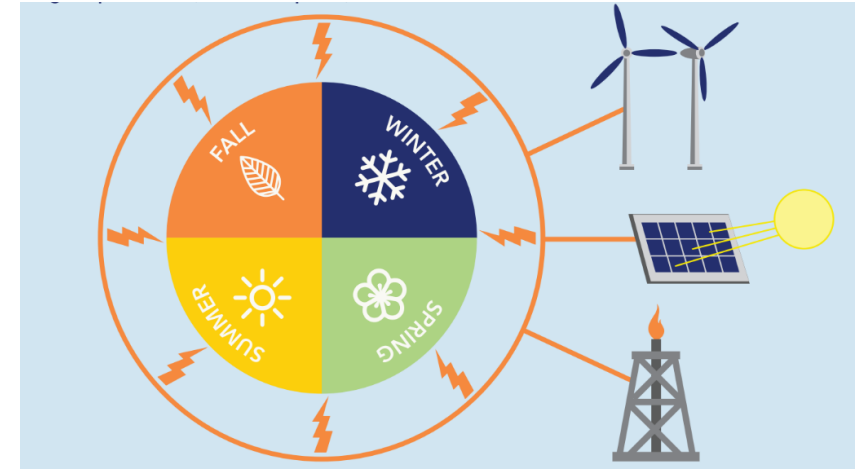
Meeting “Capacity” & Reliability Needs

- Regional Transmission Organizations (RTOs) coordinate and monitor the majority of our electrical power system; they run wholesale energy markets and place a critical role in managing reliability.
- IMEA members are located in both PJM and MISO energy markets. Every load serving entity within different RTOs are responsible for meeting reliability requirements designated by its RTO.



Meeting “Capacity” & Reliability Needs

- Winter storm trends over the last few years have shown that renewables, especially wind, are increasingly playing a critical role in maintaining grid reliability in extreme weather events, and gas and coal are not as reliable as once thought
- Unfortunately, RTOs credit energy resources differently in meeting “capacity” obligations. Renewable energy resources have and continue to be undervalued for the capacity they provide to the power grid
- Even though there isn’t an equal 1-1 replacement between fossils and renewables, clean energy replacement is still in many instances cost-effective, especially with IRA incentives



For PY 23-24 case, accreditation increases marginally in non-summer months and stays the same for summer months for most of the resource classes with the inclusion of expanded hours

Resource Class	Summer		Fall		Winter		Spring	
	Base	Proposed	Base	Proposed	Base	Proposed	Base	Proposed
Gas	88%	88%	88%	88%	66%	66%	68%	69%
Combined Cycle	90%	90%	88%	89%	74%	74%	74%	75%
Coal	91%	91%	87%	88%	72%	73%	74%	74%
Hydro	96%	96%	97%	96%	92%	92%	88%	88%
Nuclear	90%	90%	83%	85%	84%	86%	77%	80%
Pumped Storage	98%	98%	98%	98%	47%	50%	70%	67%
Storage	94%	94%	89%	93%	90%	91%	97%	95%
Solar	36%	36%	28%	31%	0%	2%	15%	18%
Wind	11%	11%	15%	15%	13%	16%	16%	16%
Run-of-River	100%	100%	100%	100%	100%	100%	100%	100%

Notes:

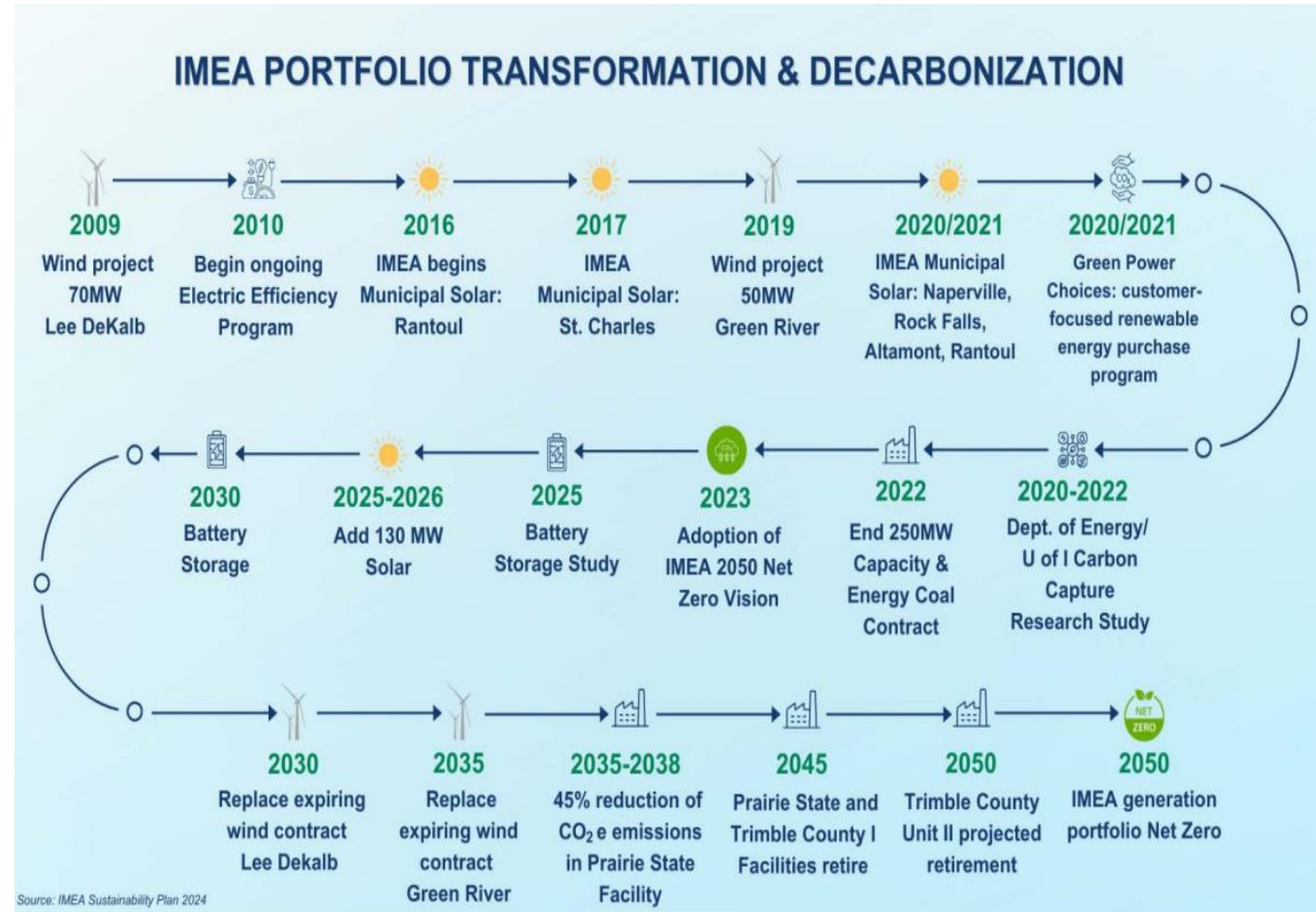
1) Base: LOL-only hours (our previous proposal)

2) Proposed (Expanded): LOL + low margin hours with weights and a cap (as applicable)

Does IMEA have an Energy Plan?

IMEA's "Sustainability Plan" isn't a credible sustainability plan and it isn't an integrated resource plan.

- Lacks any clear strategy to comply with environmental emissions standards. There is a vague reference to considering carbon capture project at PSEC.
- Lacks analysis of possible compliance scenarios to comply with environmental standards and projected reliability needs.
- Lacks analysis of Inflation Reduction Act clean energy incentives for public owned utilities



Public Power in Illinois is at a Crossroads

Real Clean Energy
Opportunities --
Inflation Reduction Act

Compliance Strategy
with Environmental
Standards

Meeting Reliability
Needs of Regional Energy
Markets



Stronger Local Oversight
from City Councils &
Ratepayers

Transparency Energy
Planning (Integrated
Resource Planning- "IRP")
with Public Engagement

A Power Sales Contract w/
IRP commitment;
environmental compliance
strategy, public engagement

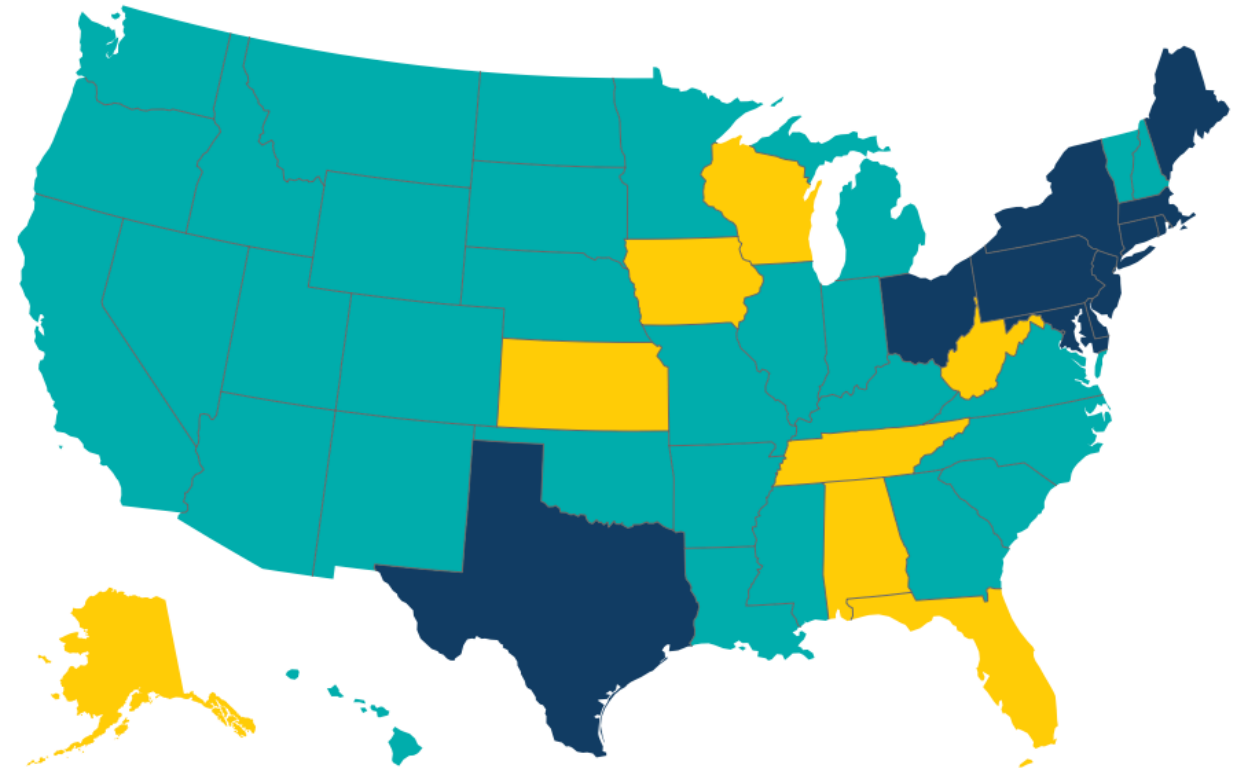
Energy Planning: “Integrated Resource Planning” (IRP)

Integrated Resource Planning involves a comprehensive planning study for utilities with a recommended mix of supply and demand-side resources to ensure reliable service to customers in the most cost-effective way.

- IRPs have become an industry standard practice and typically required across the country
- In the late 80’s, integrated resource planning (IRP) was adopted to assess demand and supply resources to meet electricity needs at lowest cost

Planning requirements by state

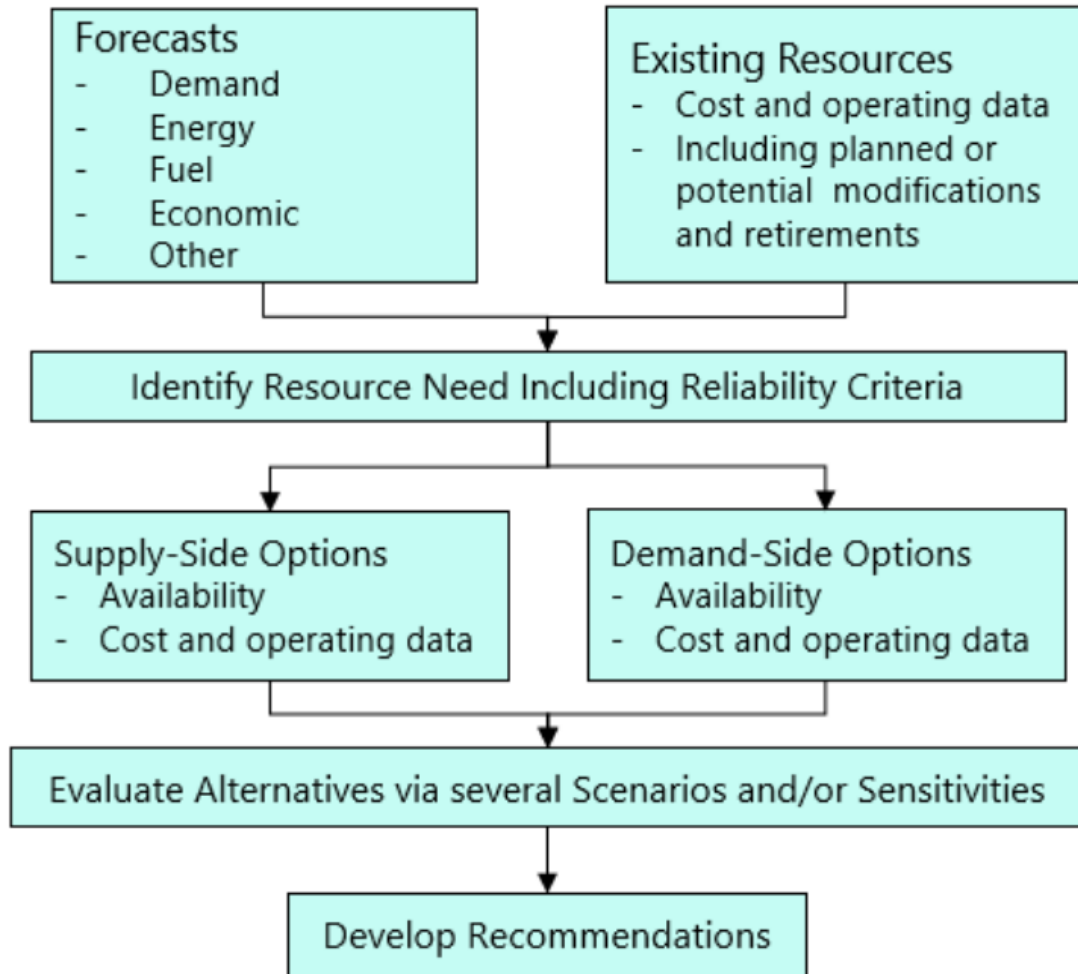
■ Has IRP requirement ■ No IRP requirement ■ No IRP requirement — primarily restructured



Source: US Environmental Protection Agency, *State Energy and Environment Guide to Action: Resource Planning and Procurement*, Figure 2; RMI analysis of EIA-860M to add distinction for primarily restructured states

Energy Planning: “Integrated Resource Planning” (IRP)

Figure 5: Typical IRP Process Diagram



Basic components of a traditional IRP should include:

- A demand forecast over a 20 year time horizon
- An assessment of supply side generation resources
- An economic appraisal of renewable and non-renewable resources
- An assessment of feasible conservation and efficiency resources
- A least-cost plan for meeting utility energy and reliability requirements
- An action plan

Energy Planning: “Integrated Resource Planning” (IRP)

Options to enhance resource planning



Source: RMI

Source: Rocky Mountain Institute “Reimagining Resource Planning,” 2023

Growing complexity in energy landscape, state and federal policy objectives and stakeholder interests increase the importance of considering how to improve the scope of traditional Integrated Resource Planning to ensure it is Comprehensive, Trusted, and Aligned.

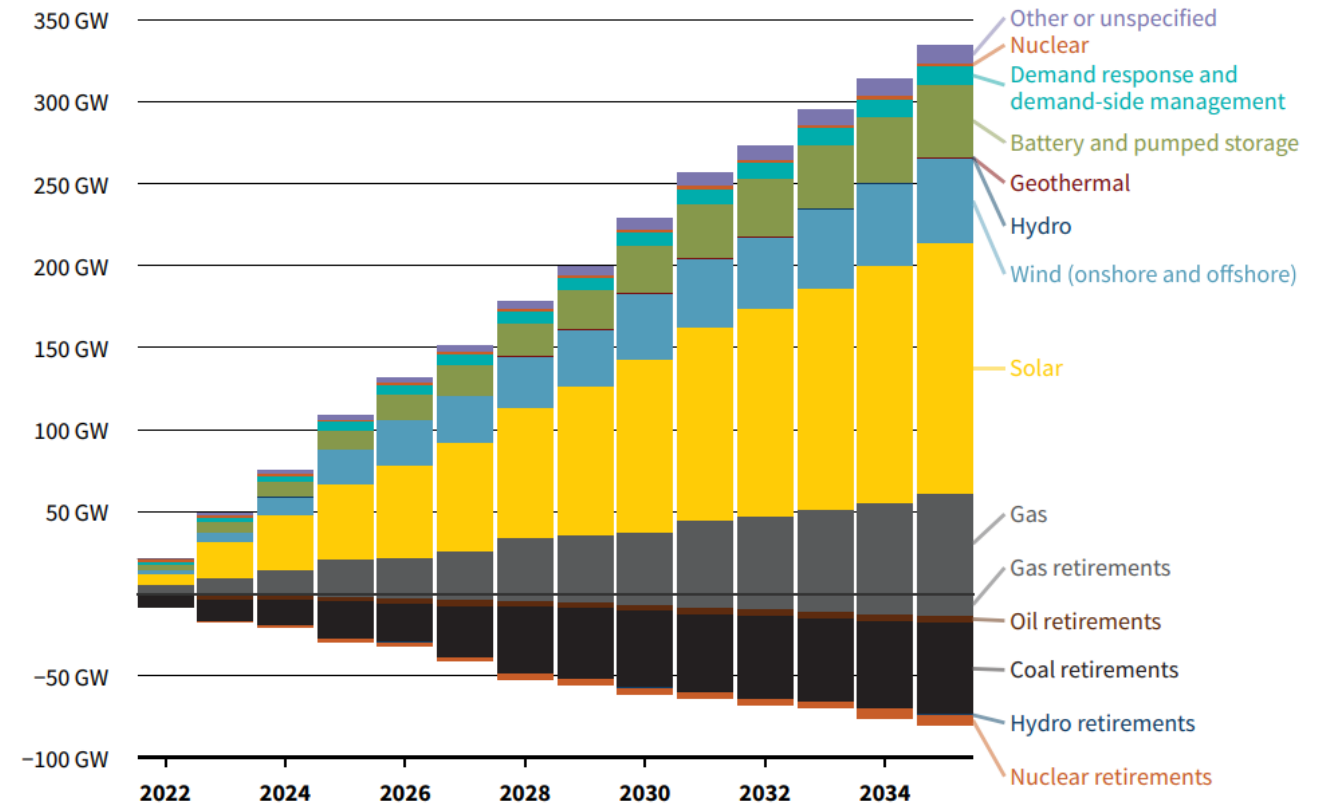
- Incorporating analysis on health impacts and air quality, environmental justice and climate objectives.
- Consider equity, affordability, jobs, etc.
- Prioritizing transparency and deepening stakeholder engagement
- Integrate broader grid planning (transmission and distribution) to complement resource planning

Energy Planning: “Integrated Resource Planning” (IRP)

Utility trends are pretty clear:

- More cost effective to retire coal units
- Majority of new capacity investments in renewables
- We’re skeptical of new gas being able to recoup their investments

Exhibit 5 Cumulative capacity of projected retirements and additions in 104 utility resource plans, September 2022



Source: RMI analysis of EQ Research data as of September 2022

Recommendations for the City of Naperville?

1. Stop the rush to sign an early renewal of the IMEA contract and provide an open, public engagement process to review the next contract with the public and City Council.
2. Require in our next power contract a real coal-to-clean energy transition plan that is guided by transparent energy planning analysis (integrated resource planning) and public input to assess the most cost-effective ways to meet energy demand, reliability needs, and environmental compliance requirements.
3. Support state legislation requiring regular, transparent energy planning analysis (integrated resource planning) of municipal utilities, joint action agencies and cooperatives

From Info to Action:

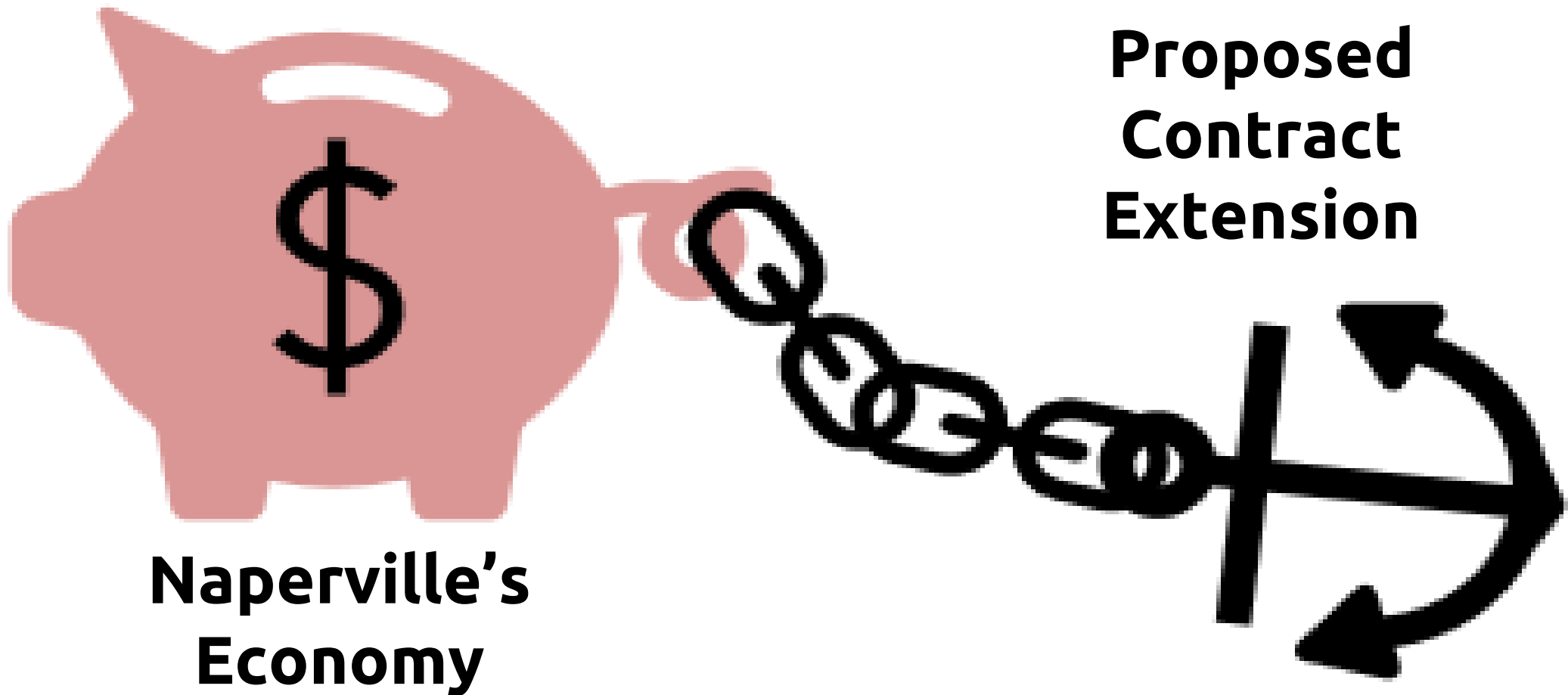
Let's *spea*k and *wri*te to:

- Persuade City Council to vote “no” on the contract extension proposal.
- Enlist others to join us.

But how? We know that . . .

1. Some CC members already oppose the extension, but not enough.
2. Remaining members prioritize Naperville's economy over environmental concerns.
3. Council is hearing *only* from NEST/environmentalists.

What's our message?



In your communications:

1. Use your own words and experiences
2. Be respectful
3. Be brief and clear
4. Appeal to shared community values
5. Paint a positive picture of a better future

Take Action: Breakout Sessions

1. Write to City Council (this room)
2. Make a Public comment to City Council (Rm 115)
3. Activate your network (Rm 111)
4. Write letters to the media (Rm 119)
5. Join our coalition leadership (hallway)

Return to this room at 8:15 for informal Q&A