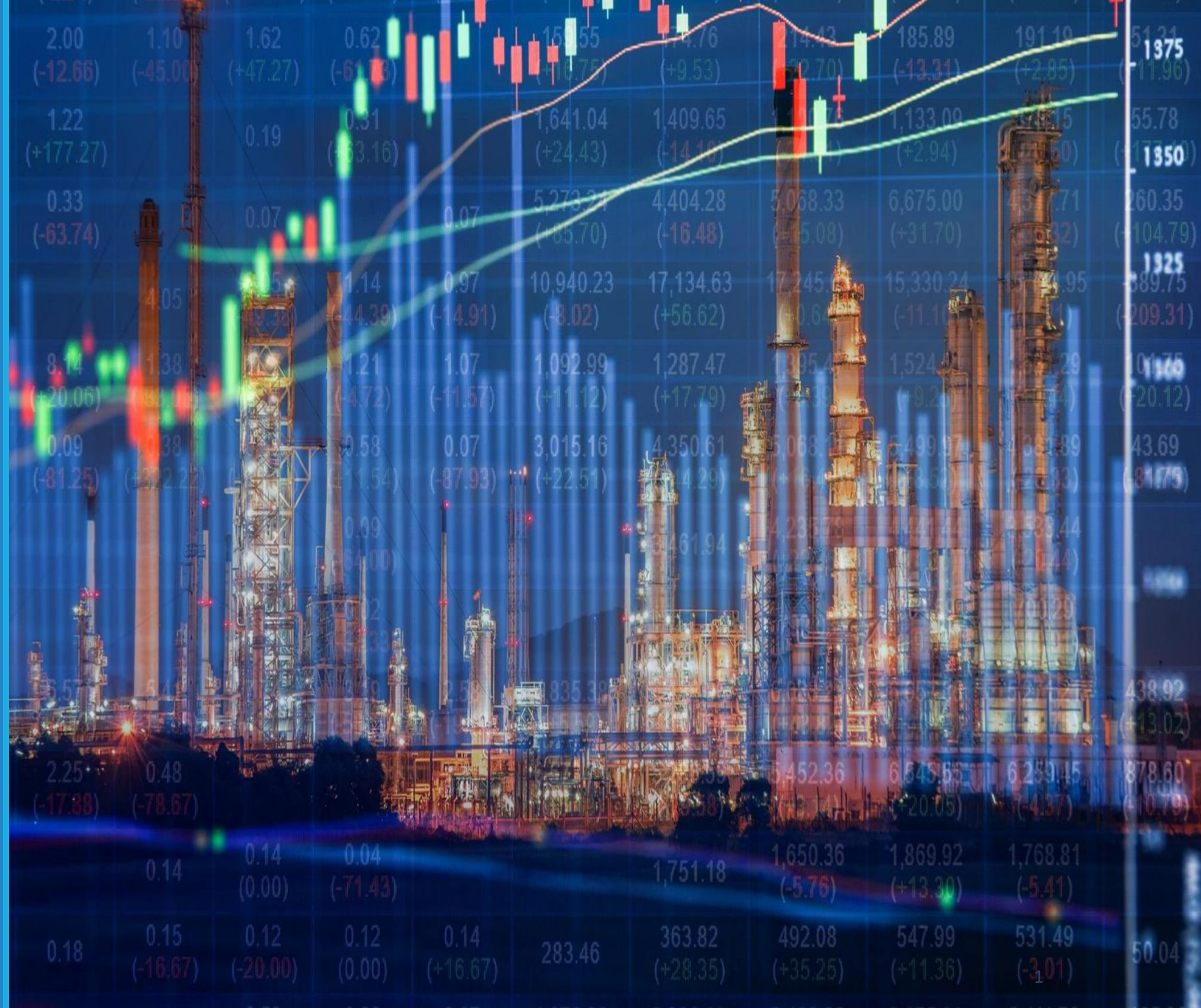
A Quick Tour of the Energy Market in Illinois

Illinois Association of County Zoning Administrators

Energy 101 Course

May 2026



Agenda

OVERVIEW	▪ Introductions ▪ Overview
ENERGY 101	▪ Energy System ▪ Energy Markets ▪ Energy Project Development
ENERGY SECTOR TRENDS	▪ Federal / State Policy ▪ Market Dynamics
OPTIONS FOR COUNTIES	▪ Role of Counties ▪ Capturing Benefits
DISCUSSION	▪ Open

INTRODUCTIONS

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Power Bureau	▪ Advisor on energy policy, planning, and procurement ▪ Retail and Wholesale energy transaction support ▪ Advisor to Metropolitan Mayors Caucus (check out the Energy Academy for seven free recorded energy training sessions)
Illinois Power Agency	▪ State Agency Director ▪ Managed energy, capacity and renewable energy procurement for ComEd, Ameren Illinois and MidAmerican Energy
Energy Resources Center	▪ Managed electricity and natural gas procurement, hedging, billing, and contracting for executive State of Illinois agencies
Nicor Energy Solutions	▪ Supported natural gas cogeneration power plant development for federal facilities in Illinois
Other	▪ Teach energy policy in the MSES at Northwestern University ▪ Research positions at Argonne National Lab and IIT

OVERVIEW

Key Questions: A good way to cover a lot of ground quickly

Energy 101	Quick tour of the electricity system, how energy markets operate to set prices, and how new power plants are financed.
Recent Developments	Recent changes in market conditions as well as federal and state energy policies.
Role for Counties	Some ideas regarding how Counties and Local Governments can capture more value from the current energy market and prepare for upcoming changes.

OVERVIEW

Housekeeping

Questions	• Ask questions as they occur to you. • If anyone is asking so many questions that I think that we're going off track, I will ask that person to hold their questions for after the presentation and we can have an in-depth discussion then.
Extra Materials	• There are hyperlinks in the presentation to take you to the source materials for slides. • I can send you a copy of a study I recently conducted for Sangamon County regarding the energy impacts of a proposed data center in a rural township.
Getting Started	• I'm going to ask a few questions to get to know you and the energy-related issues with which you are contending in your counties.

Energy 101

HOW THE REGIONAL GRIDS OPERATE

ENERGY 101

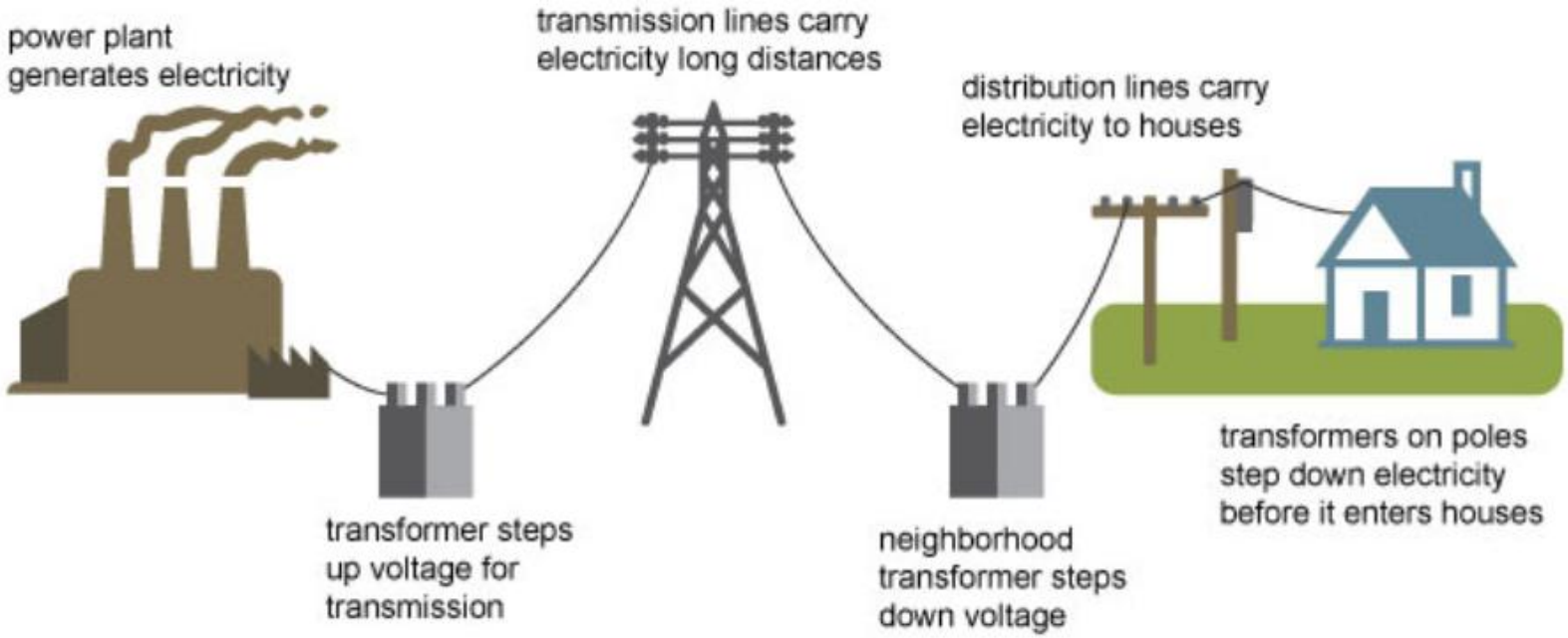
System Components

System Operations

Energy Markets

New Project Development

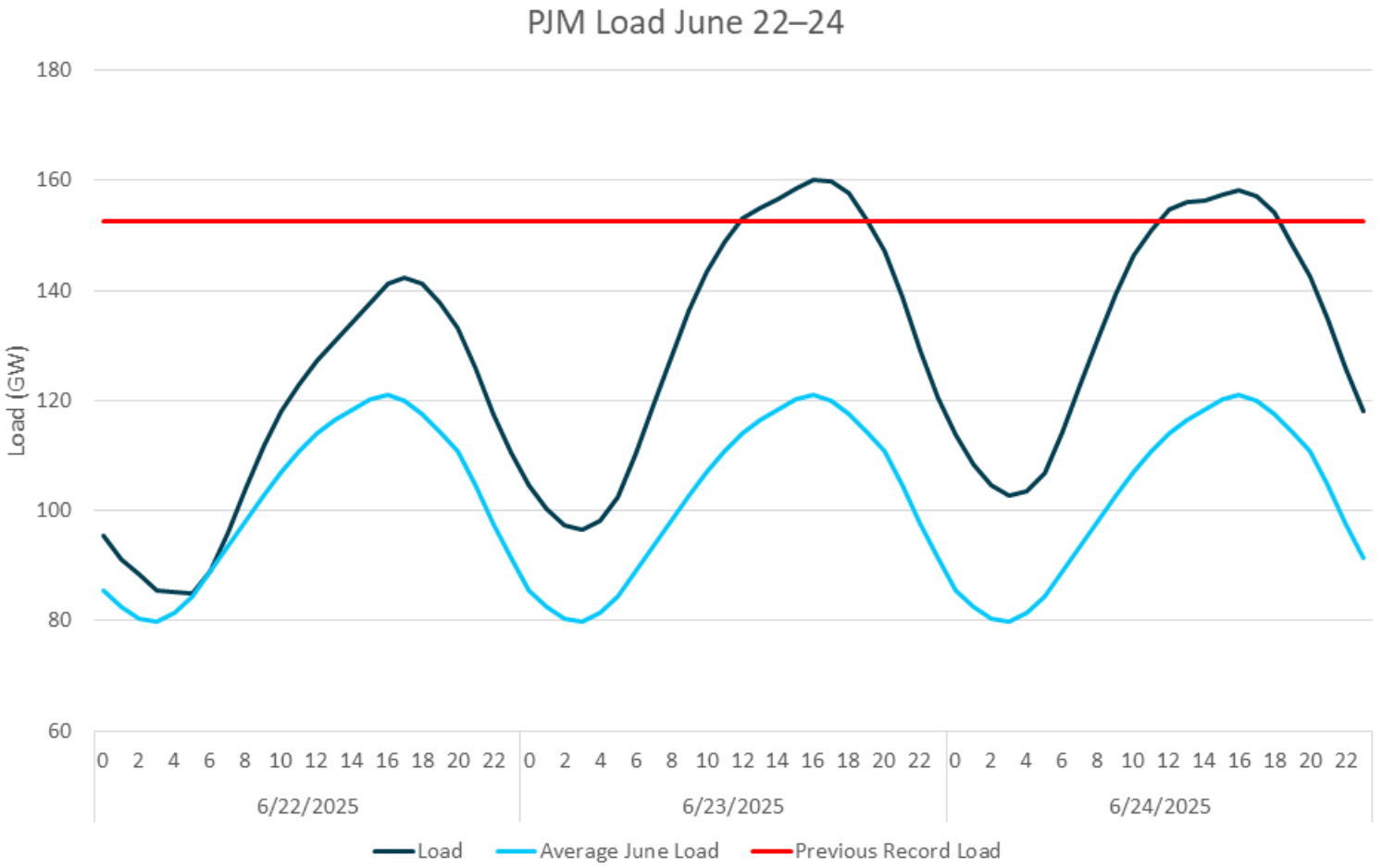
The General Supply Chain



SOURCE: ENERGY INFORMATION ADMINISTRATION

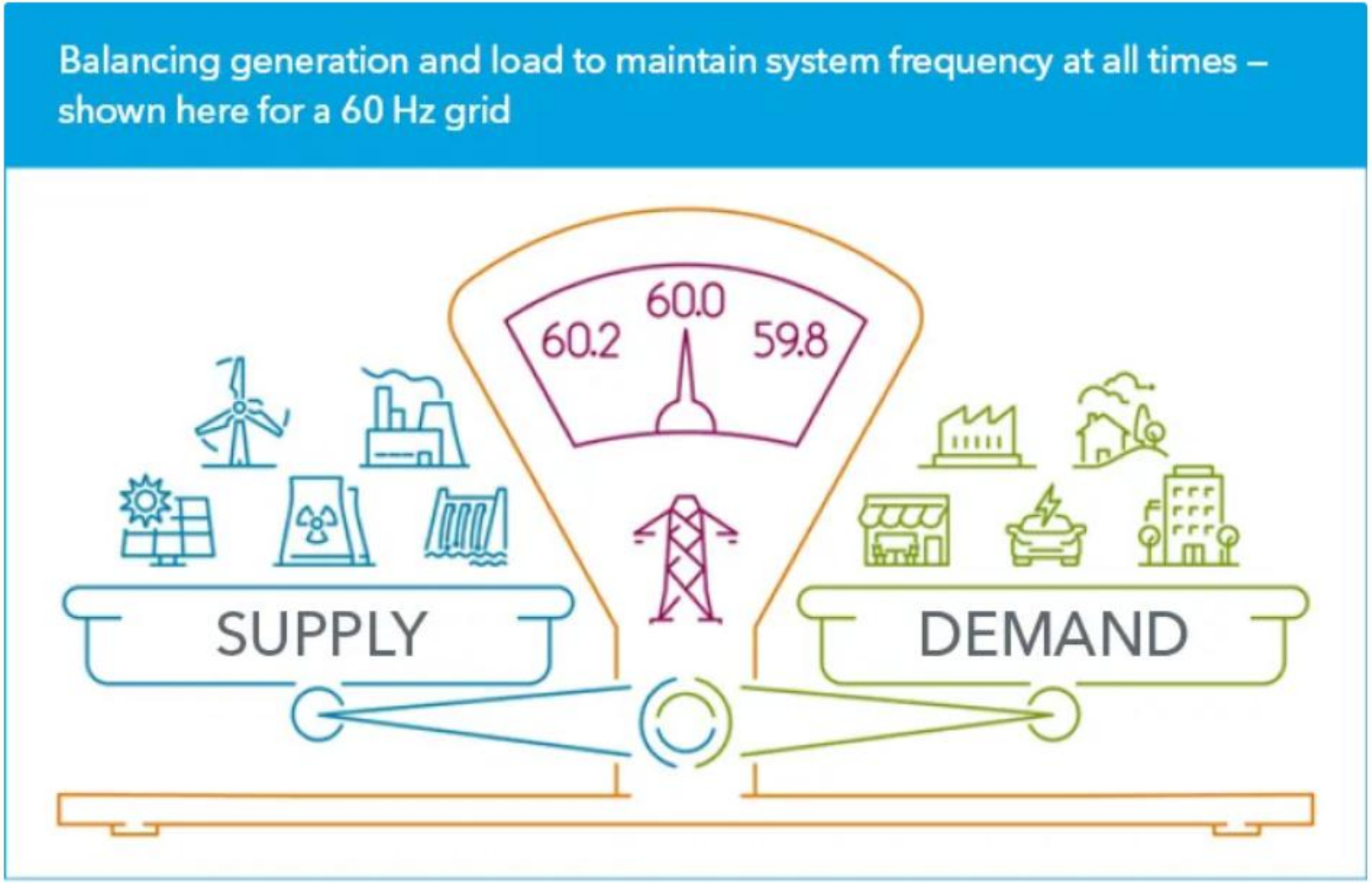
The System is Designed to meet for Maximum Potential Demand

For 15 separate hours across June 23rd and June 24th, load surpassed the previous PJM load record of 152.5 GW



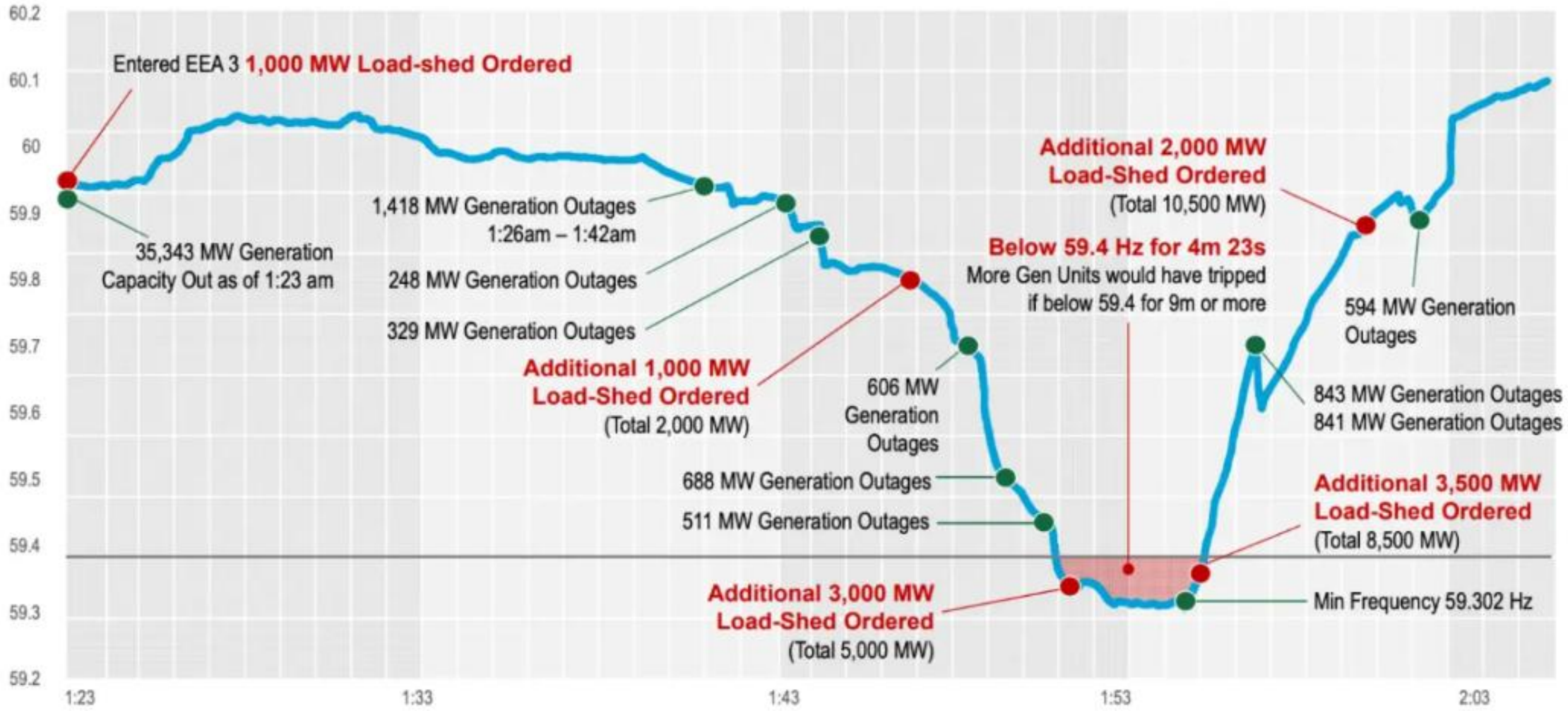
SOURCE: BTU ANALYTICS

Supply and Demand must remain in Balance



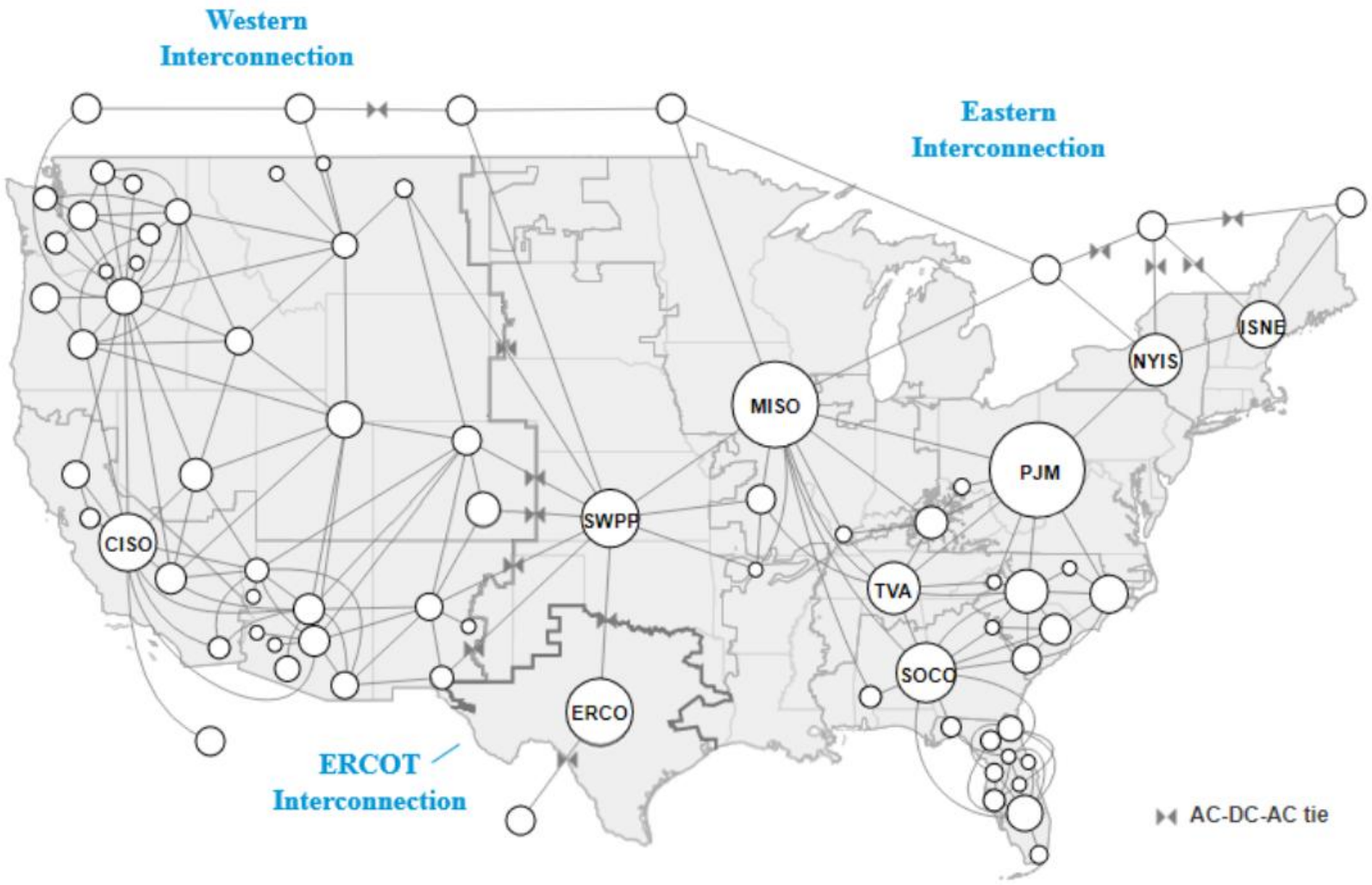
SOURCE: PACIFIC NORTHWEST NATIONAL LABORATORY

System Operations: Lose Balance - No Power



SOURCE: HOUSTON PUBLIC MEDIA

Balancing Authorities Manage System Balancing



SOURCE: ENERGY INFORMATION ADMINISTRATION

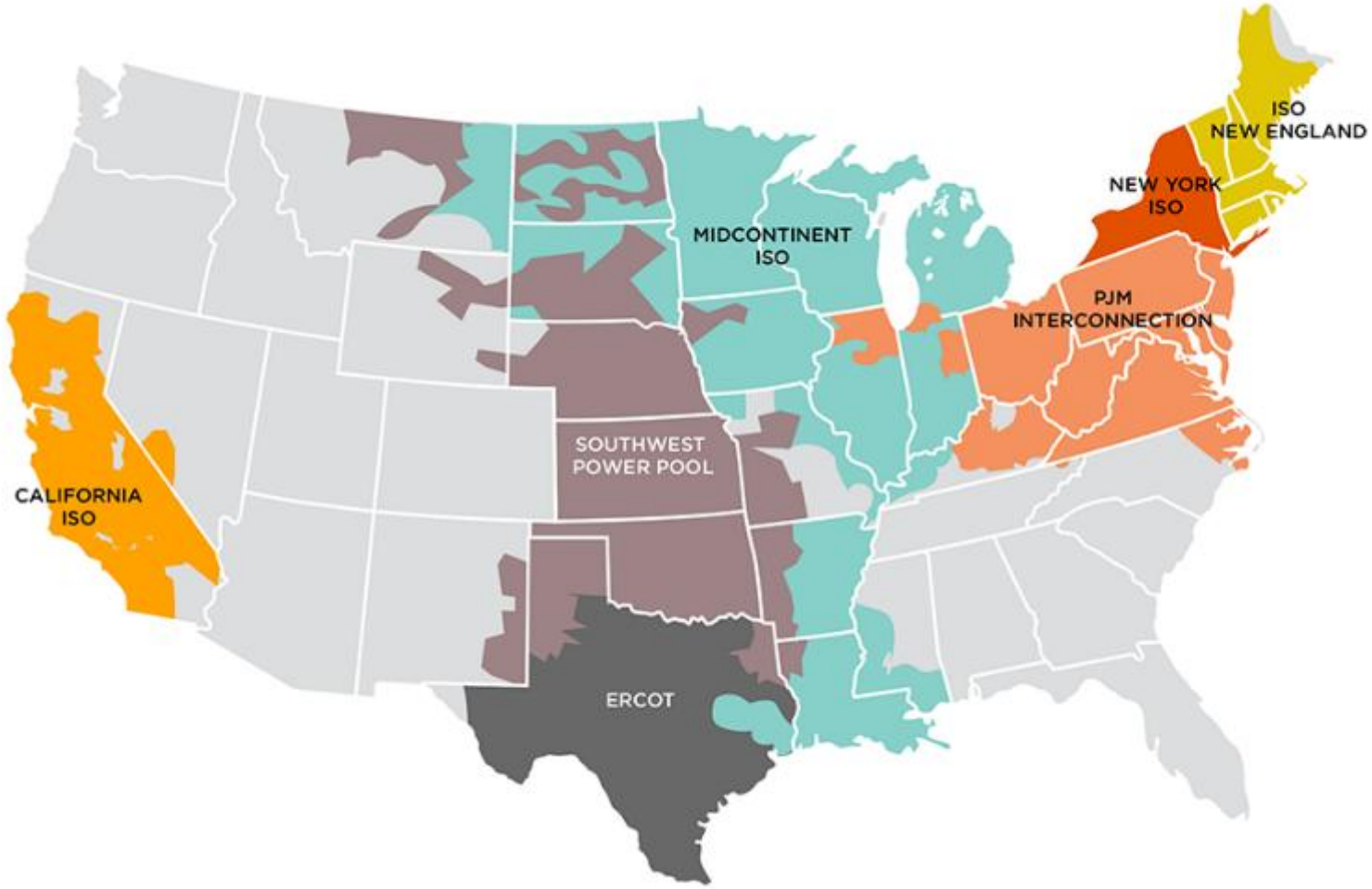
System Components

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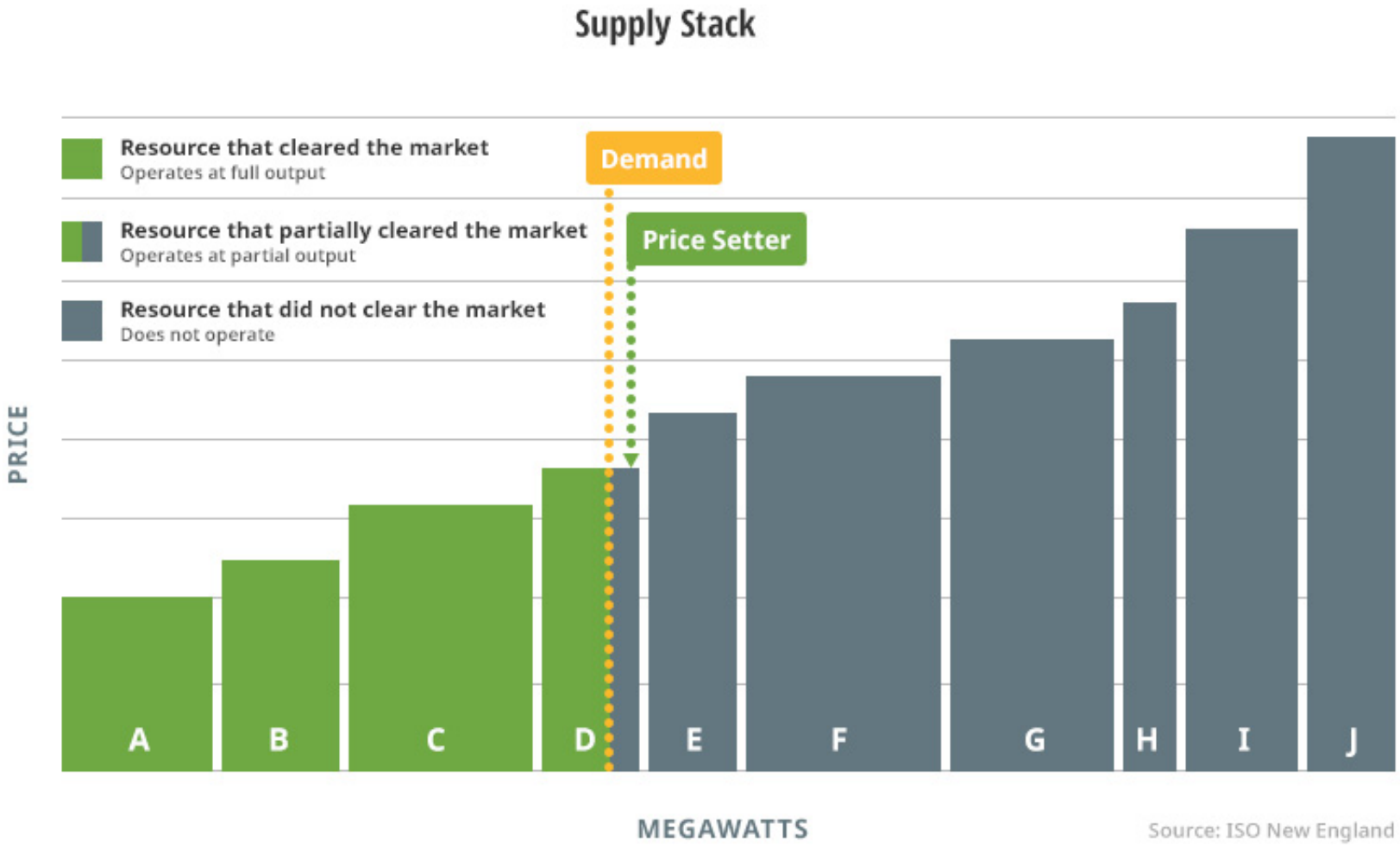
New Project Development

Some Balancing Authorities Operate Regional Grids as Markets (RTO/ISO)



SOURCE: SUSTAINABLE FERC PROJECT

RTO/ISO Use Auctions to Select which Power Plants Operate Hour-by-Hour



SOURCE: ISO-NE

Energy Markets: Price Reflects the Balance between Supply and Demand; NERC Projects Imbalances in Most Markets

Regional Grid for Central / Southern Illinois

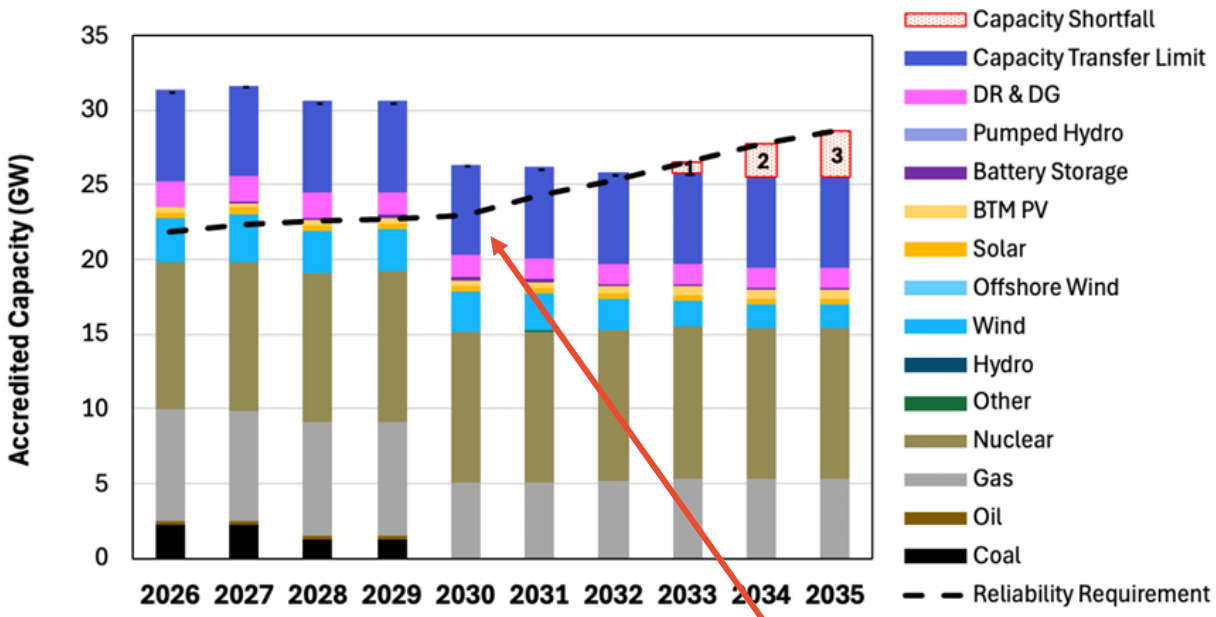
Regional Grid for Northern Illinois

Table 1: Capacity and Energy Risk Assessment Area Summary

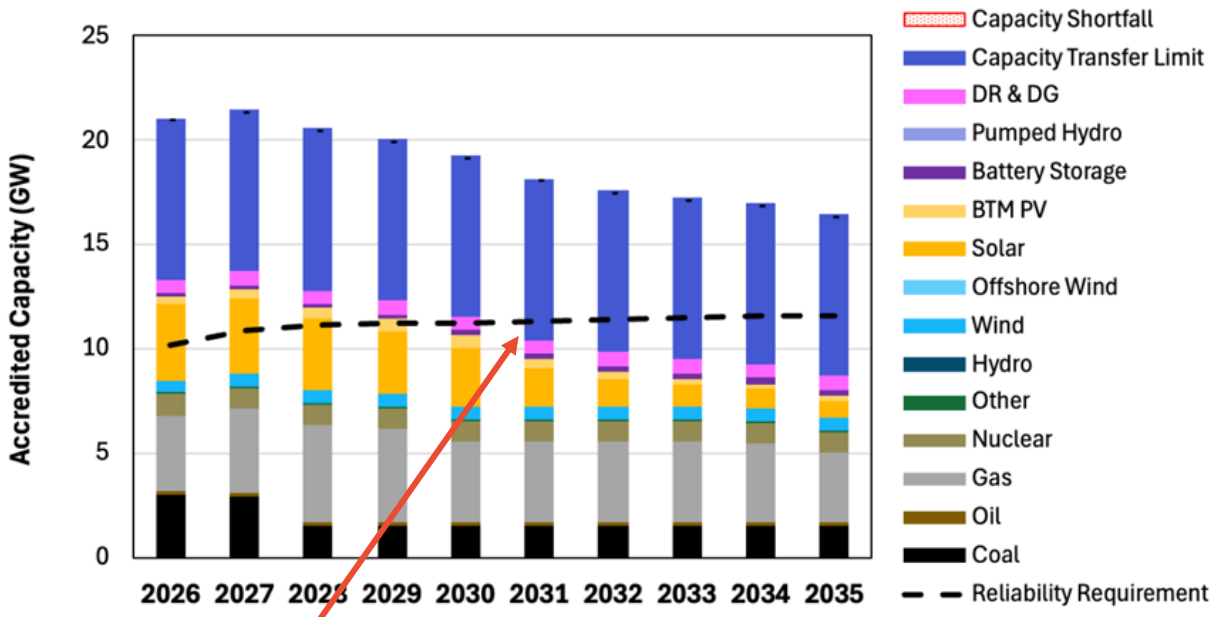
Assessment Area	Risk Level (High, Elevated, or Normal)					Risk Summary
	2026	2027	2028	2029	2030	
MISO						Projected resource additions do not keep pace with escalating demand forecasts and announced generator retirements. The recently approved *Expedited Resource Addition Study* (ERAS) process is expected to result in additional resources in the MISO system beginning in 2028 that are not included in the model for the *2025 LTRA*. Timely implementation of ERAS resources will eliminate reserve margin shortfall and improve expected unserved energy metrics.
MRO-Manitoba						With rising demand, planned reserves are falling, leading to potential resource shortfalls in low-hydro conditions.
MRO-SaskPower						With current resources, there is risk of insufficient generation during fall and spring when more generators are undergoing maintenance. Expected natural-gas-fired generator additions in Winter 2027 will boost planned reserves and reduce risks of unserved energy.
MRO-Southwest Power Pool (SPP)						Demand forecasts outpace resource additions, leading to falling reserve margins. Scenarios with low wind and high generator forced outages identify energy shortfall risks. SPP's *Expedited Resource Adequacy Study* is attracting additional resources.
NPCC-Maritimes						Demand growth forecasts have increased since the *2024 LTRA*, while expected capacity contributions from variable energy resources (VER) have declined, causing resource shortfalls in the near term. New natural-gas-fired generation planned for 2028 will reduce the potential unserved energy, but not below the elevated risk threshold.
NPCC-New England						Strong demand growth and persistent winter natural gas infrastructure limitations pose risks of energy shortfalls in extreme winter conditions.
NPCC-New York						Planned retirements of peaking generators create localized system adequacy needs as described in the New York ISO *2025 Q3 Star Report*.
NPCC-Québec						Demand growth projections are outpacing planned resource additions, leading to projected resource shortfalls in the winter season.
PJM						Current projections for resource additions do not keep pace with escalating demand forecasts and expected generator retirements. The anticipated resource margin falls below the Reference Margin Level starting in 2029. Recently approved new generation projects for expedited interconnection under the PJM Reliability Resource Initiative were not far enough along to include in the LTRA risk analysis.
SERC-East						Current projections for resource additions do not keep pace with escalating demand forecasts and planned generator retirements. With projected resources, supply shortfalls would occur in below-normal winter temperatures, resulting in unserved energy.
Texas RE-ERCOT						Probabilistic unserved energy metrics for 2026–2027 have improved since the *2024 LTRA*, but continued rapid load growth outpaces projected resource additions in later years. To mitigate increasing resource adequacy risks from load growth, Texas lawmakers have granted ERCOT operators additional authority to curtail new large loads if necessary to prevent grid emergencies. Texas lawmakers also established funding programs to expedite new resources that address reliability needs.
WECC-Basin						Demand forecasts outpace resource additions and expected generator retirements, leading to falling reserves. Resource additions nearing completion are predominantly solar PV, leading to a more variable resource mix. Unserved energy risk is in summer.
WECC-Northwest						Rapid forecasted demand growth is driving the need for more resources. Resource additions nearing completion are predominantly solar PV, battery, and wind, leading to a more variable resource mix. Periods of unserved energy are projected for both summer and winter.

Energy Markets: More Specifically, Imbalances are Projected for Illinois

Projected Supply and Demand Imbalance: ComEd



Projected Supply and Demand Imbalance: Ameren



Remember: PJM and MISO likely will not have extra capacity to deliver into Illinois starting in 2029.

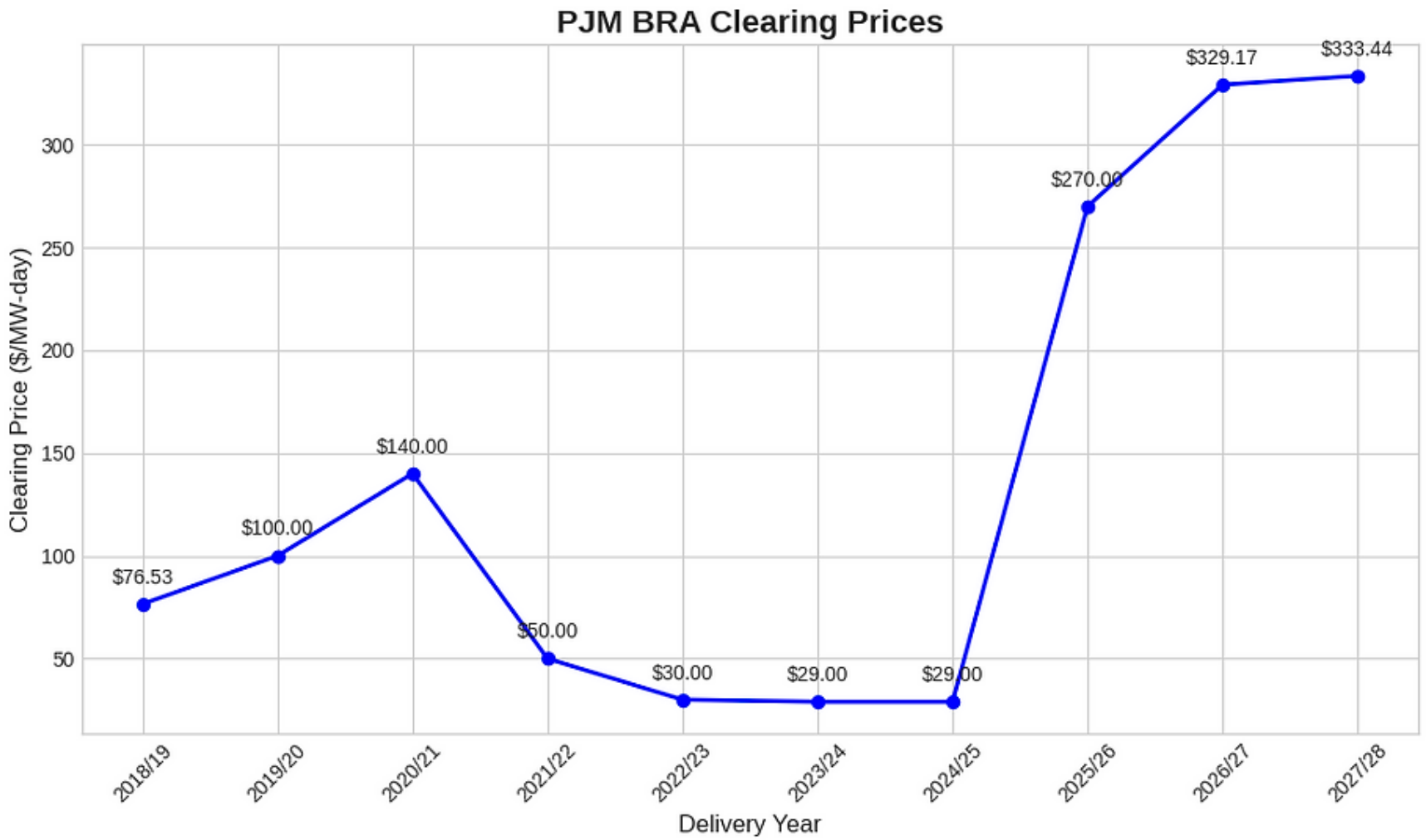
So, “Capacity Transfer Limits” will not be available starting in 2029-2030

Energy Markets: Market-Based Pricing can also Result in High Prices when Demand is greater than Supply

CUB STATEMENT: CAPACITY AUCTION LEADS TO RECORD PRICE SPIKE FOR SECOND STRAIGHT YEAR, THREATENS EVEN HIGHER COM ED BILLS IN 2026-27

CHICAGO, July 22, 2025
PRNewswire
"While we are relieved that the negotiated price cap prevented capacity costs from soaring even higher, this record price spike is unacceptable. CUB is deeply concerned that ComEd customers will continue to bear painfully high costs for another year, largely because of policy shortcomings from PJM. “

Citizens Utility Board (“CUB”)



In PJM, Most Power Plants are Proposed by Private Companies

Project Developers

Typically identify sites, acquire initial approvals, and possibly build power assets with the intent of selling to an IPP or Investor

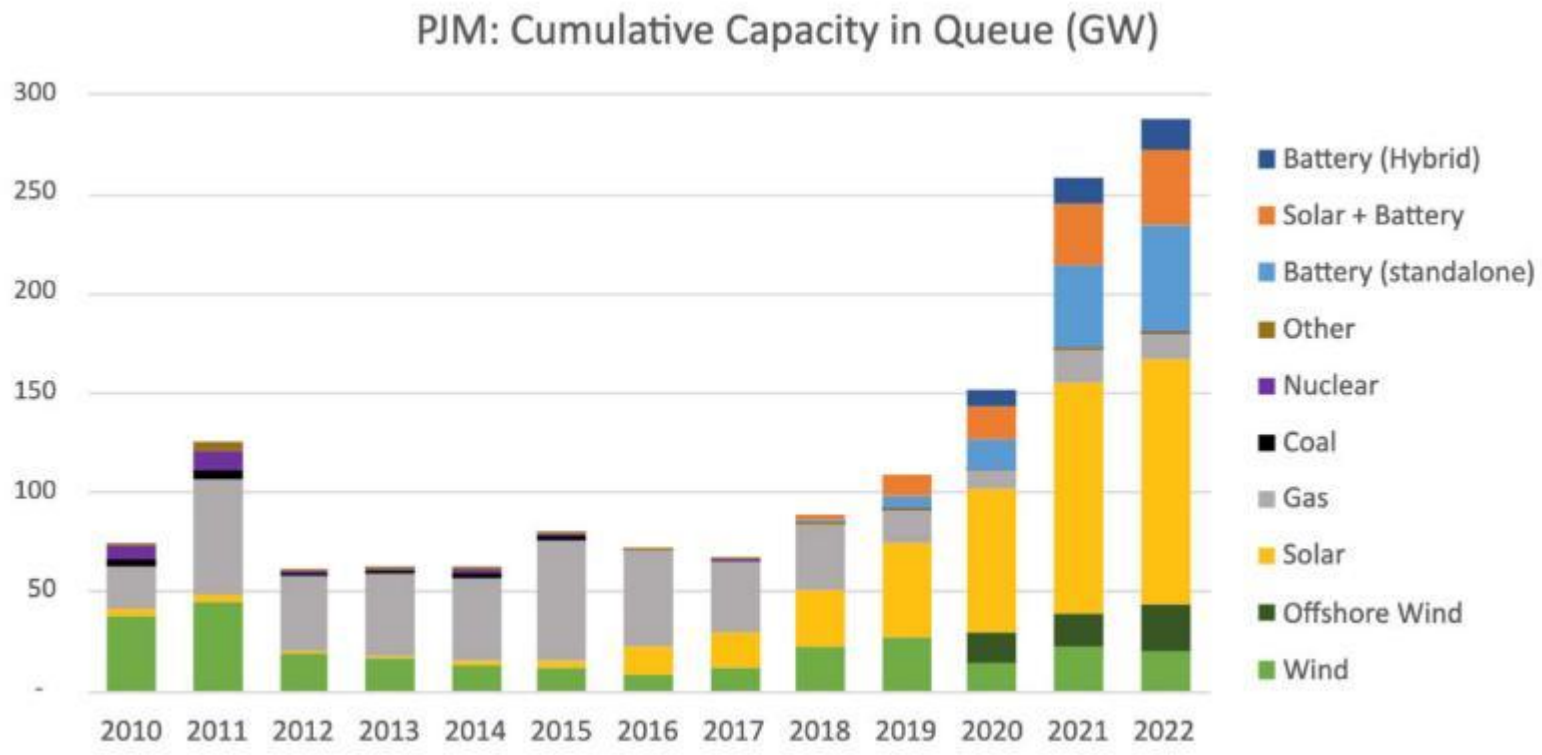
- Soltage
- Cenergy
- Energy Allied International
- Net Power
- Intersect Power
- Cypress Creek
- Summit Ridge Energy
- Kindle
- Nexamp

Independent Power Producers

May develop their own projects or acquire projects from other Project Developers to own and operate over the long term

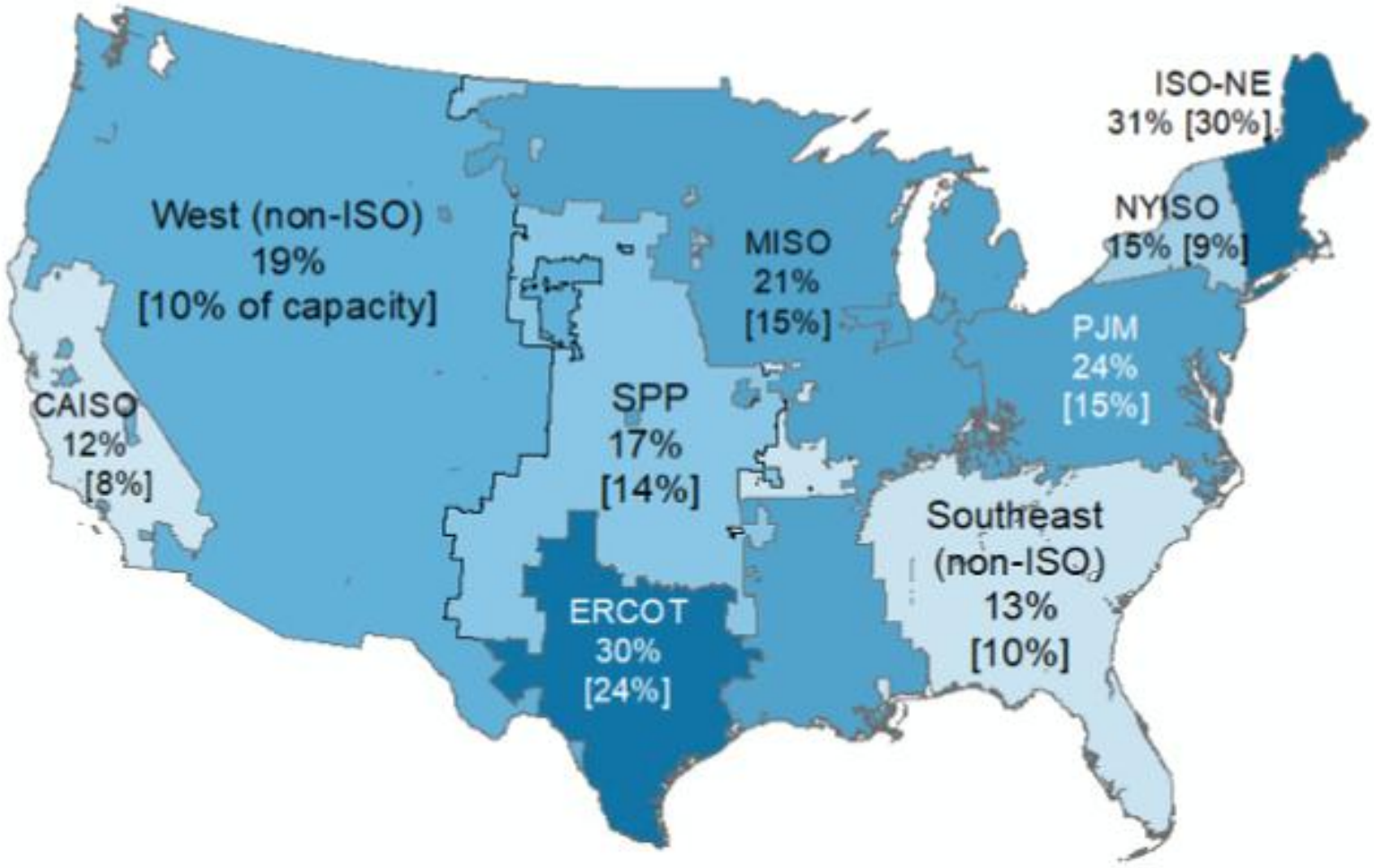
- Competitive Power Ventures
- Constellation
- NextEra
- NRG
- Talen
- Middle River
- Dynegy /Vistra
- Tensaska
- Invenergy

IPP's then need to Apply to Connect to the Regional Grid



SOURCE: PV MAGAZINE

Most Proposed Plants are Ultimately not Successful



SOURCE: LBNL

Energy Policy Trends

WHAT DIRECTION ARE THINGS HEADED

ENERGY POLICY TRENDS

Federal Policy

State Policy

Local Government

Federal Policy Change: Movement towards Fossil Fuels

Provision	Details	Positive/Negative for Industry
Oil and gas royalty rates	IRA raised royalty rates to 16.7%-18.7%. Range now returns to 12.5%-16.7%.	▲
Onshore oil and gas lease sales on federal lands	IRA mandated a few specific sales -- and tied them to renewables leasing. Quarterly lease sales are now required, with no renewables mandate, in Wyoming, New Mexico, Colorado, Utah, Montana, North Dakota, Oklahoma, Nevada and Alaska.	▲
US Gulf of Mexico lease sales	IRA mandated a few specific sales -- and tied them to renewables leasing. Now, in addition to lease sales held under the 2024-29 lease program, a minimum of 30 additional lease sales are required, with no renewables mandate. At least one lease sale is required by end-2025, and at least two annually across 2026-39.	▲
Cook Inlet, Alaska, lease sales	Mandates a minimum of six offshore lease sales through 2032, with at least one held in 2026.	▲
National Petroleum Reserve-Alaska lease sales	Mandates reinstatement of lease sales, with no fewer than five conducted over the next 10 years. At least one lease sale required within next 12 months.	▲
Arctic National Wildlife Refuge lease sales	Proposed mandated leases removed from final bill.	▼
Gas pipeline and LNG project permitting	Amendments to the Natural Gas Act to acclerate approvals and set judicial protections for pipelines and LNG export projects in exchange for $10 million and $1 million fees, respectively, were ultimately struck for violating Senate rules. No replacement measures included in final bill.	►
National Environmental Policy Act (Nepa) reviews	Establishes accelerated Nepa reviews for oil and gas projects in exchange for a fee of up to 125% of project costs.	▲
Methane emissions fee	IRA funding support removed to help operators address methane emissions; industry-wide methane fee delayed until 2035.	▲
Intangible drilling costs	IRA blocked oil and gas producers' ability to claim their full intangible drilling costs as tax breaks. Full accounting now reinstated.	▲
Strategic Petroleum Reserve (SPR)	Slashes funds for SPR restocking from $1.3 billion to $171 million versus earlier versions of the bill.	►/▼

SOURCE: INSTITUTE FOR ENERGY RESEARCH

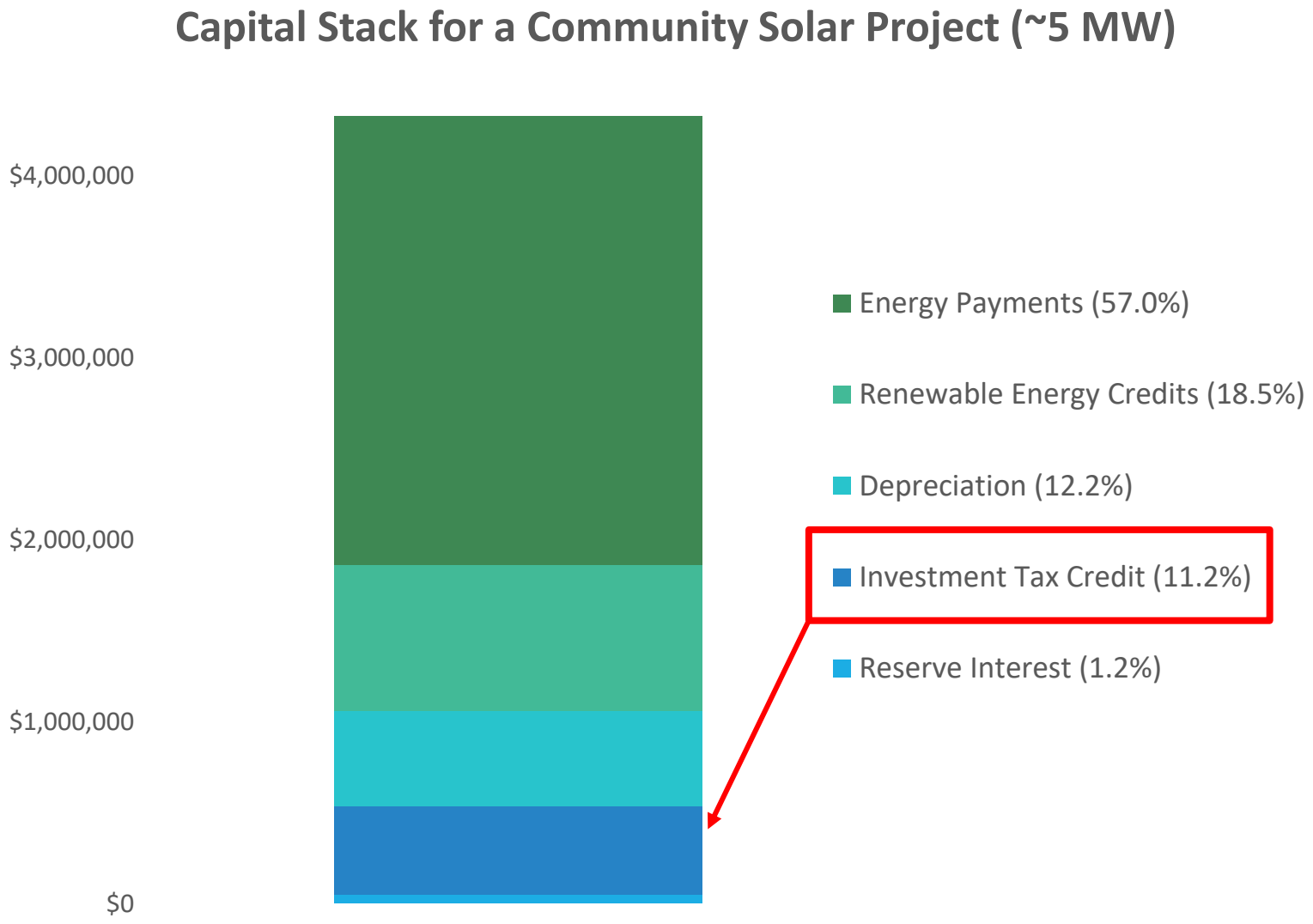
ENERGY POLICY TRENDS

Federal Policy

State Policy

Local Government

Federal Policy Change: The One Big Beautiful Bill Effectively Phases out Investment Tax Credit



State Policy: Mitigation Plan / Integrated Resource Plan

Objectives of the Illinois IRP and Mitigation Plan

Illinois law establishes two related planning processes to help ensure the power system remains reliable while the State transitions to cleaner energy.

Mitigation Plan

Objective: Address reliability risks identified in Resource Adequacy Study.

- Maintain reliable electric service
- Identify practical actions that can reduce or resolve identified shortfalls under different scenarios
- Prioritize low-emissions solutions
- Allow limited flexibility in emissions timelines only if necessary to maintain reliability.
- Provide a transparent process for agencies and stakeholders to review potential reliability solutions.

Focus: addressing reliability risks with practical mitigation strategies focused on 2026-2035.

Integrated Resource Plan

Objective: Develop a strategy for a reliable, affordable, and clean electric system in Illinois.

- Assess long-term capacity requirements and system constraints to ensure reliable service
- Evaluate different pathways for meeting identified needs
- Analyze system costs, reliability, and environmental impacts under different scenarios.
- Provide strategic guidance for future planning and investment decisions.

Focus: resource planning for the evolution of the Illinois electric system from today through 2045.

SOURCE: ILLINOIS COMMERCE COMMISSION

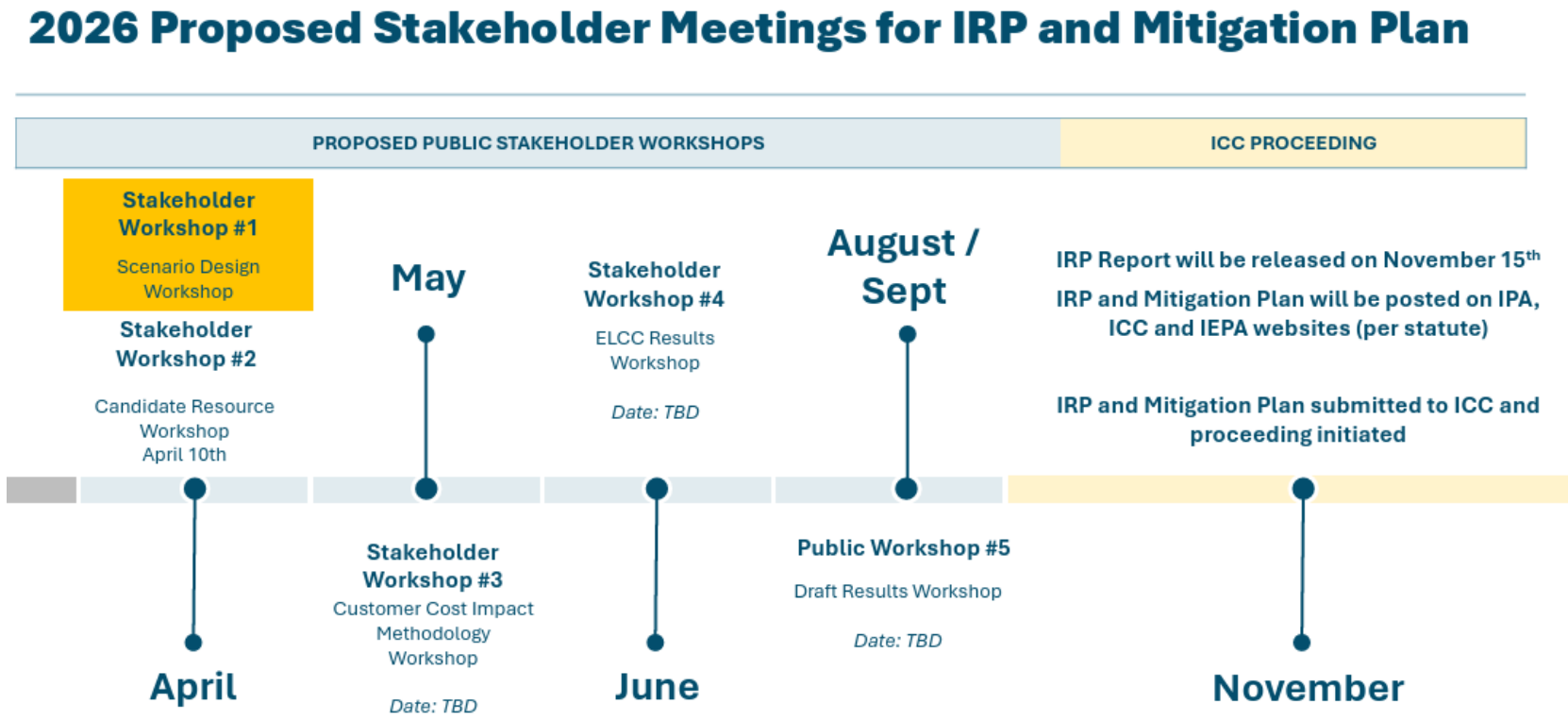
ENERGY POLICY TRENDS

Federal Policy

State Policy

Local Government

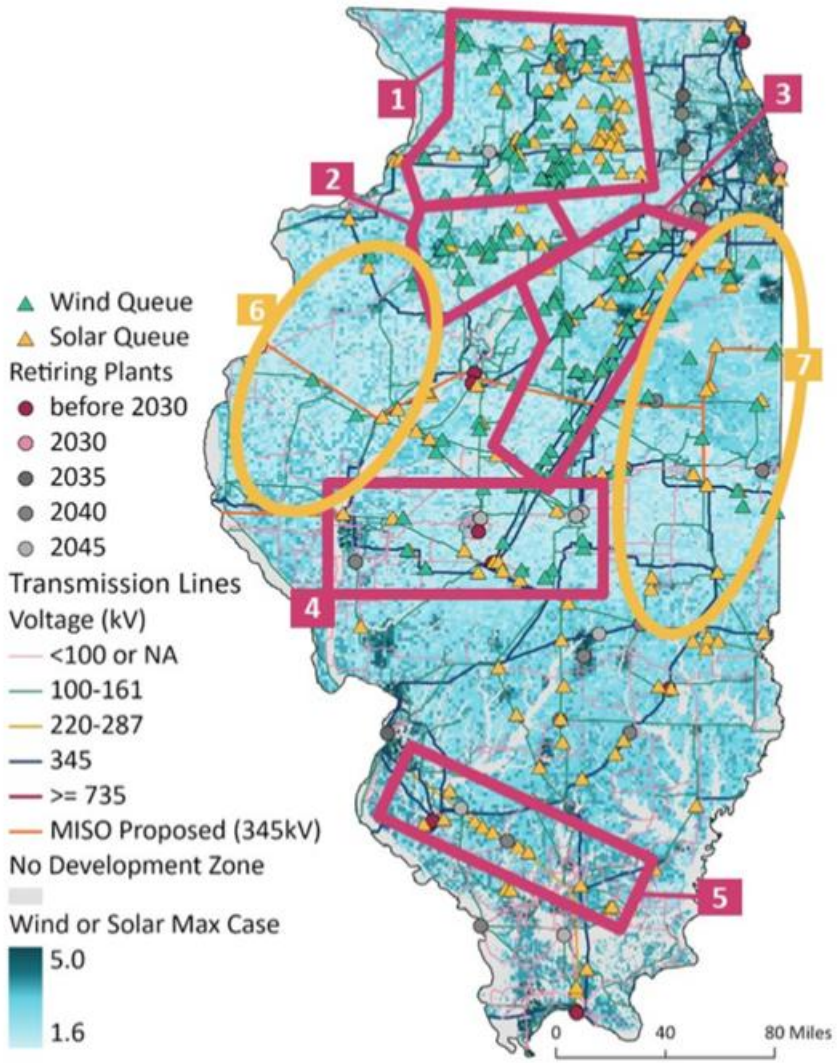
State Policy: Mitigation Plan / Integrated Resource Plan



SOURCE: ILLINOIS COMMERCE COMMISSION

State Policy: Renewable Energy Access Plan (REAP)

FIGURE 18: CANDIDATE RENEWABLE ENERGY ZONES



SOURCE: ILLINOIS COMMERCE COMMISSION

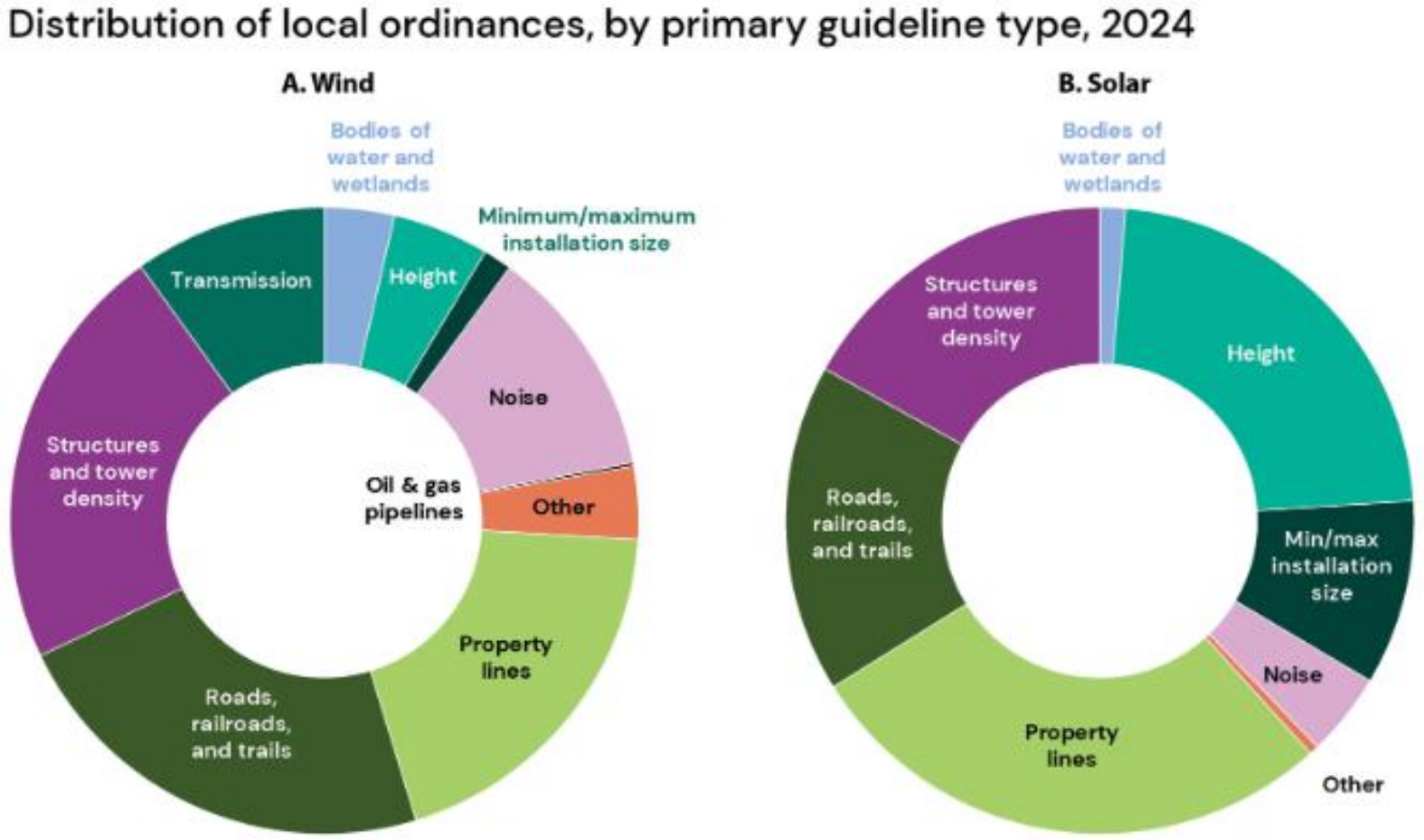
ENERGY POLICY TRENDS

Federal Policy

State Policy

Local Government

Counties are Definitely Part of the Energy Development Picture



Source: National Renewable Energy Laboratory (NREL) 2024a, 2024b; authors' calculations.

Note: Only 68 percent of ordinances can be categorized. NREL classifies ordinances of multiple types (e.g., Property lines, Height, and Noise) by the primary type (e.g., Property lines). Bans and moratoria are classified as Other. See the technical appendix for additional information.

SOURCE: BROOKINGS INSTITUTION

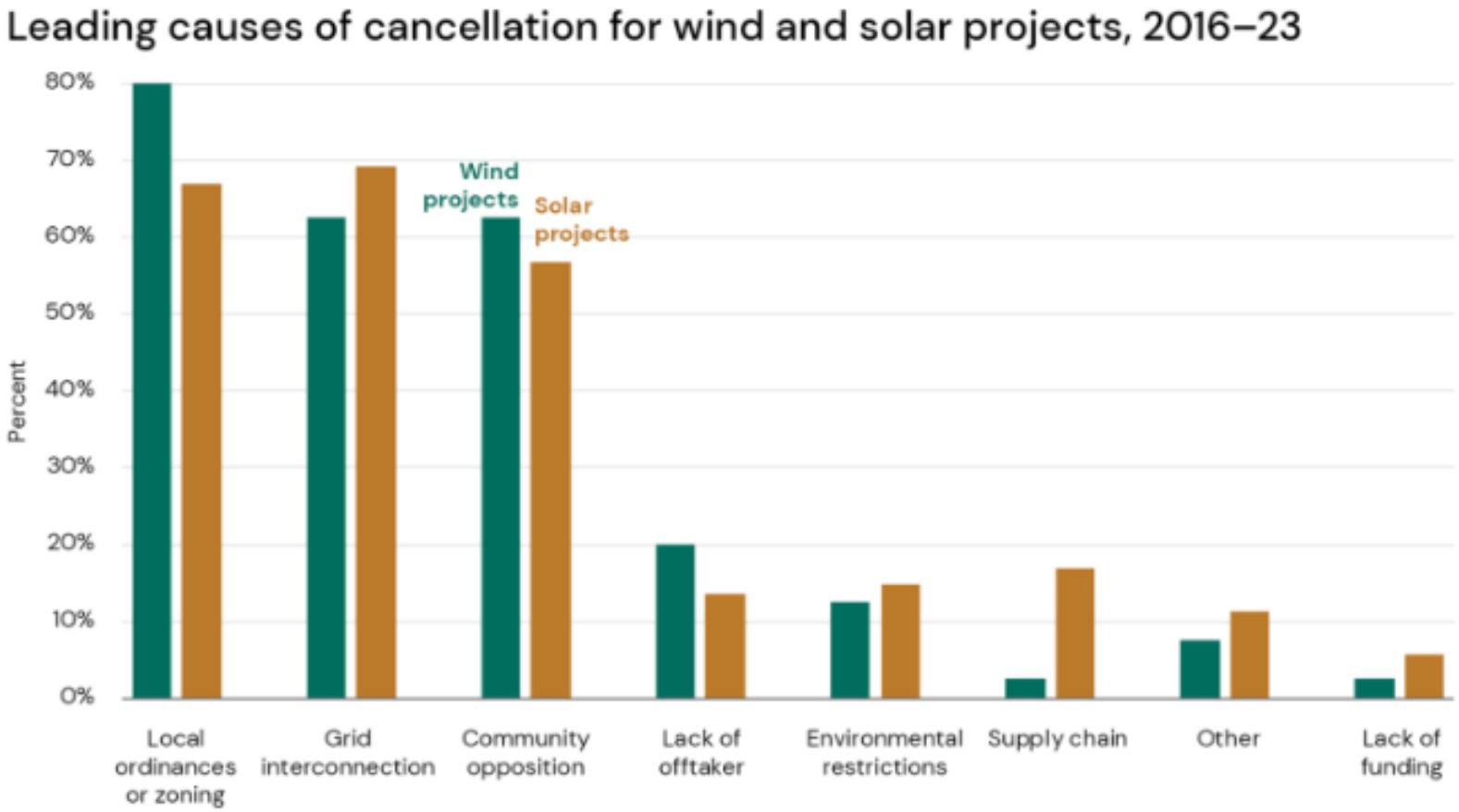
ENERGY POLICY TRENDS

Federal Policy

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Counties are Definitely Part of the Energy Development Picture



Source: Nilson, Hoen, and Rand 2023, p. 11.

Note: The sample consists of responses from 123 industry professionals from 62 companies, together responsible for about half of wind and solar capacity from 2016 to 2023. There are 88 solar projects and 44 wind projects. Respondents reported the top three reasons that a project was cancelled.

SOURCE: BROOKINGS INSTITUTION

Clean and Reliable Grid Affordability (CRGA) Act : Local Authority and Permitting (Limits to Local Governance)

GENERAL	SPECIFICS
▪ **Prohibition on Bans and Moratoria:** Forbids ordinances that ban or place a moratorium on the development of commercial wind and solar energy facilities, or disallow these projects in areas zoned for agricultural or industrial use ▪ **"No More Restrictive Than" Framework:** Mandates that any local ordinances governing renewable projects cannot be more restrictive than the standards set forth in the state law ▪ **Mandatory Approvals:** Require approval of any siting or special use permit application for a commercial wind or solar facility that complies with the state's standards and other applicable state and federal laws ▪ **Superseding Local Ordinances: E**xisting ordinances that were more stringent than the new state law were required to amend them to be consistent with the new statute. ▪ **Accelerated Consideration:** A public hearing must begin and conclude within 60 days of a complete application being filed, a final decision must be rendered within 30 days of the hearing's conclusion ▪ **Limits on Fees:** Wind ($125k), solar ($75k), Storage ($50k), Road Use (Road Use Agreements: *actual costs*)	▪ **Setbacks:** Wind (2.1 times the blade tip height), storage (150 ft. from nearest neighboring wall / 50 ft. from property line or road), solar (50 ft. from property line). ▪ **Height:** Wind asset height restrictions cannot be more restrictive than what is permitted by a Federal Aviation Administration (FAA). No Hazard. No component of a solar panel can exceed 20 feet in height. ▪ **Shadow Flicker:** Shadow flicker restrictions cannot be more than 30 hours per year at non-participating neighboring properties ▪ **Sound:** Regulations cannot be more restrictive than those established by the Illinois Pollution Control Board. ▪ **Decommissioning:** Several limits on decommissioning costs. ▪ **Surety:** Requirements cannot exceed 100% of the engineer's estimated cost, less the salvage value of the project. ▪ **Fencing:** Commercial solar projects must be enclosed by a fence of at least six feet in height. ▪ **Fees:** Prohibits unreasonable application fees for wind and solar projects are prohibited. ▪ **Mitigation:** Agricultural Impact Mitigation Agreement by IDOA is the standard for minimizing damage to agricultural land during and after construction (for renewables, but not battery energy storage).

Options for Counties

WHAT VALUE CAN BE CAPTURED

OPTIONS FOR COUNTIES

Spring / Veto Session

Opportunities

Potential Inclusions in New Legislation

- Disallow “no action” and “no ordinance” loopholes that result from the original language in CRGA
- Process for ICC administration of complaints by developers regarding rejections from local boards and commissions
- Increased targets for battery energy storage
- Roll-up of energy issues with the POWER Act proposal to regulate data centers
- Possible that major legislation may be pushed off until Veto Session (after the November election)

Energy Campus Approach



- Datacenter connects to the local utility.
- Solar farm is connected to the datacenter
- Increased jobs, investment, tax revenue, more appropriate for industrial zoning

Community Solar

- The state provides incentives for community solar farms
  - <5,000 kW
  - 40-50 acres of land
- To receive the incentives, the developer must share the farm's revenues with consumers (called 'Subscribers')
  - Usually developers agree to share 10-20% of energy sale revenues from community solar farms with the Subscribers
- This is the deal:
  - Energy from the solar farm is delivered to the Utility (kWh)
  - Utility issues bill credits to Subscribers (kWh * $/kWh)
  - Subscribers pay 80-90% of their bill credits to the Developer
- Bottom line:
  - Capture a bill credit for 10-20% of your total electricity bill
  - Terms usually 10-15 years
  - No investment, no performance exposure

THANK YOU

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