



# **IPA Power Hour 6 — Long-Term Regional Transmission Planning, State Initiatives, and the Power Grid**

July 26, 2024

- 1. Introductions and Housekeeping**
- 2. Long-Term Regional Transmission Planning:  
Overview, benefits, barriers, and opportunities**
- 3. Federal Policies Around Transmission Reform and Planning:  
Unpacking FERC Order No. 1920 & Upcoming FERC  
Transmission Actions**
- 4. Illinois Policies and Initiatives Around Transmission Reform  
and Planning**
- 5. Q&A**

- **Today's Power Hour:**

- Provides an overview on the role of Regional Transmission Organizations in long-term regional transmission planning and highlights current challenges and opportunities on transmission planning and reform.
- Discusses Federal Energy Regulatory Commission's (FERC) rules, particularly FERC Order No. 1920 and upcoming FERC transmission actions.
- Highlights Illinois' policies and initiatives around long-term planning and regional transmission planning, different key players in the state, and efforts that are forthcoming to address the issue.

**Power Hour is a series of educational and informative presentations on a wide range of clean energy topics and emerging issues.**

- Power Hour webinar series started in 2021.
- To-date, the Agency has hosted 33 Power Hour webinars, garnering over 1,000 attendees and over 1,500 post-webinar views on the IPA YouTube channel
- Invited energy thought leaders and experts locally and nationally.

**WEBINAR ARCHIVES:** <https://ipa.illinois.gov/about-ipa/ipa-events/previous-power-hour-events.html>

# Power Hour Webinar Metrics

## *IPA Power Hour Webinar Series Statistics*



**33**

Power Hours  
Webinars  
Hosted



**1,000+**

Attendees from  
2023 - June 2024  
(Zoom)



**1,500+**

Recording Views  
from 2023 - June 2024  
(IPA YouTube)



**2,200+**

Website  
Clicks (IPA  
Events Page)

*Popular  
Power Hour  
Webinar*

*Topics  
(2023 - June 2024)*



The State of  
Wind Energy



Renewable Energy  
Financing:  
Distributed Solar



Clean Energy Future for  
Public Schools:  
Challenges and Solutions

# The Illinois Power Agency



## About the IPA

### **Vision:**

*"A clean, reliable, and cost-effective energy future for residents and businesses across Illinois"*

- Independent State Agency created in 2007
- Responsible for the development of an annual Electricity Procurement Plan for customers of electric utilities
- Supports the Illinois Renewable Portfolio Standard (RPS) through the development and implementation of:
  - Long-Term Renewable Resources Procurement Plan
  - Competitive procurement for utility-scale projects
  - Solar incentive programs for homes and businesses





# PJM Introduction and Transmission Planning

Illinois Power Agency Power Hour  
Long-Term Regional Transmission Planning, State Initiatives, and the Power Grid

***Jason Stanek***

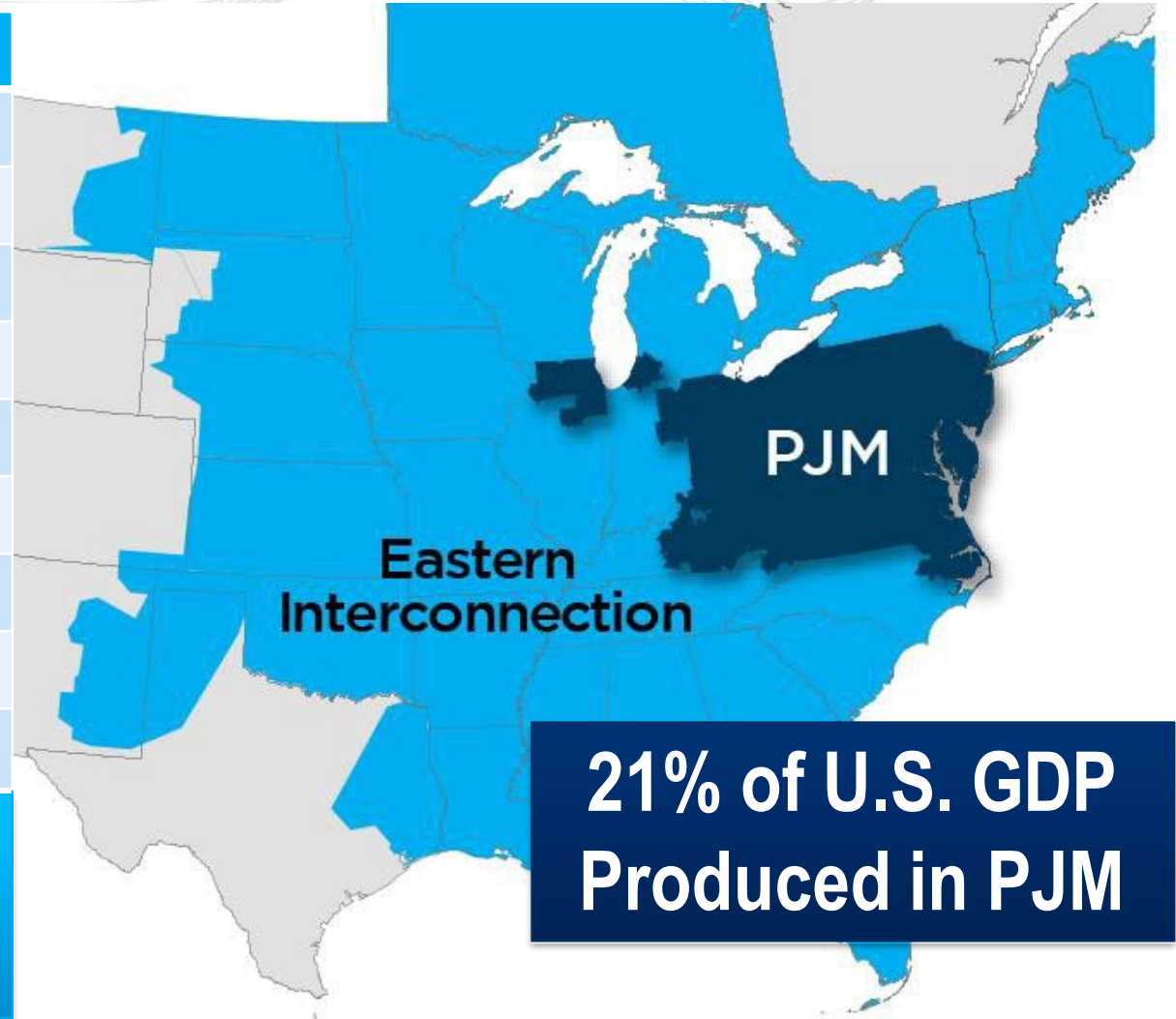
Executive Director, Governmental Services

**July 26, 2024**

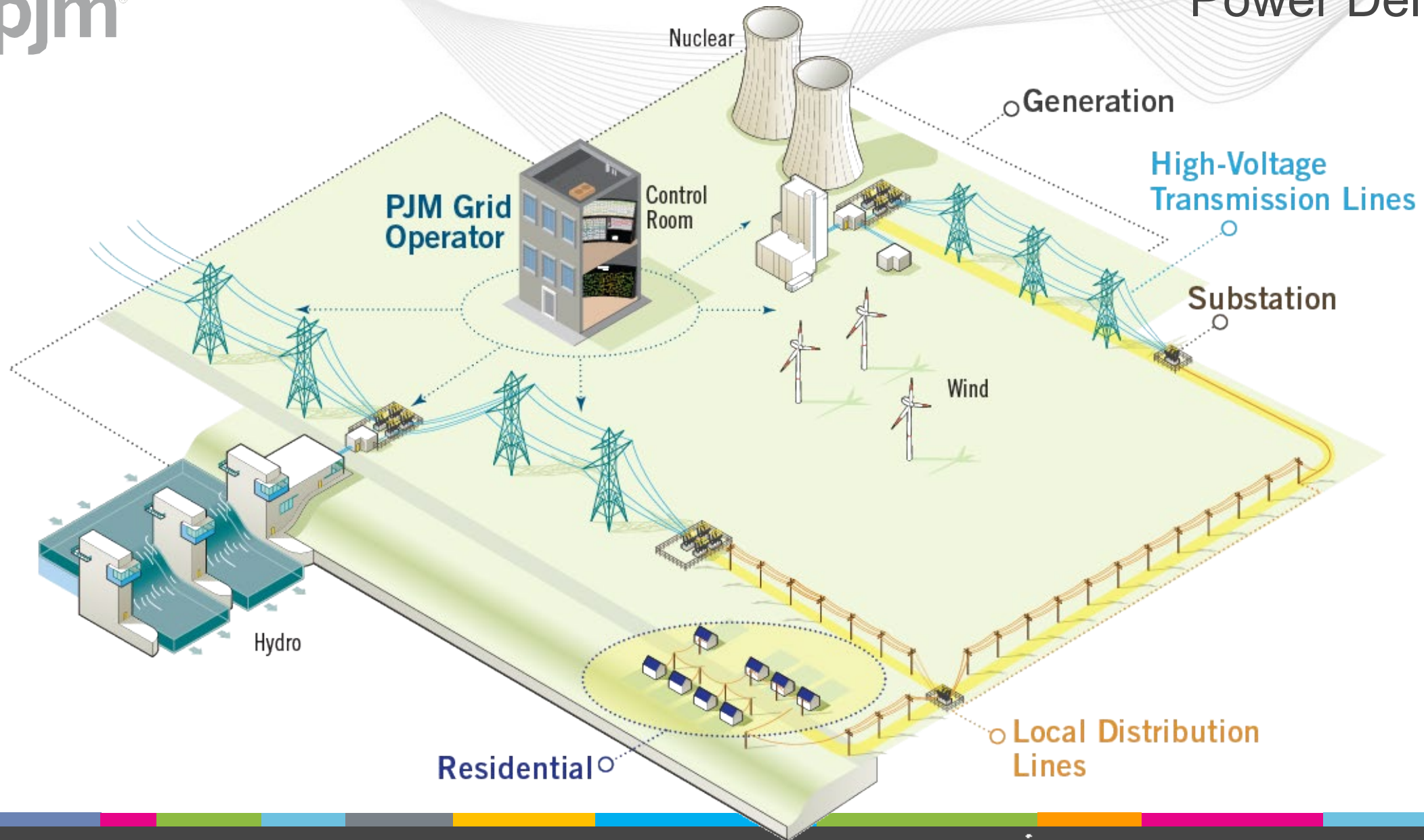
## Key Statistics

Member companies	1,090
Millions of people served	65+
Peak load in megawatts	165,563
Megawatts of generating capacity	183,254
Miles of transmission lines	88,185
Gigawatt hours of annual energy	770
Generation sources	1,419
Square miles of territory	368,906
States served	13 + DC

- 26% of generation in Eastern Interconnection
- 25% of load in Eastern Interconnection
- 20% of transmission assets in Eastern Interconnection



As of 2/2024





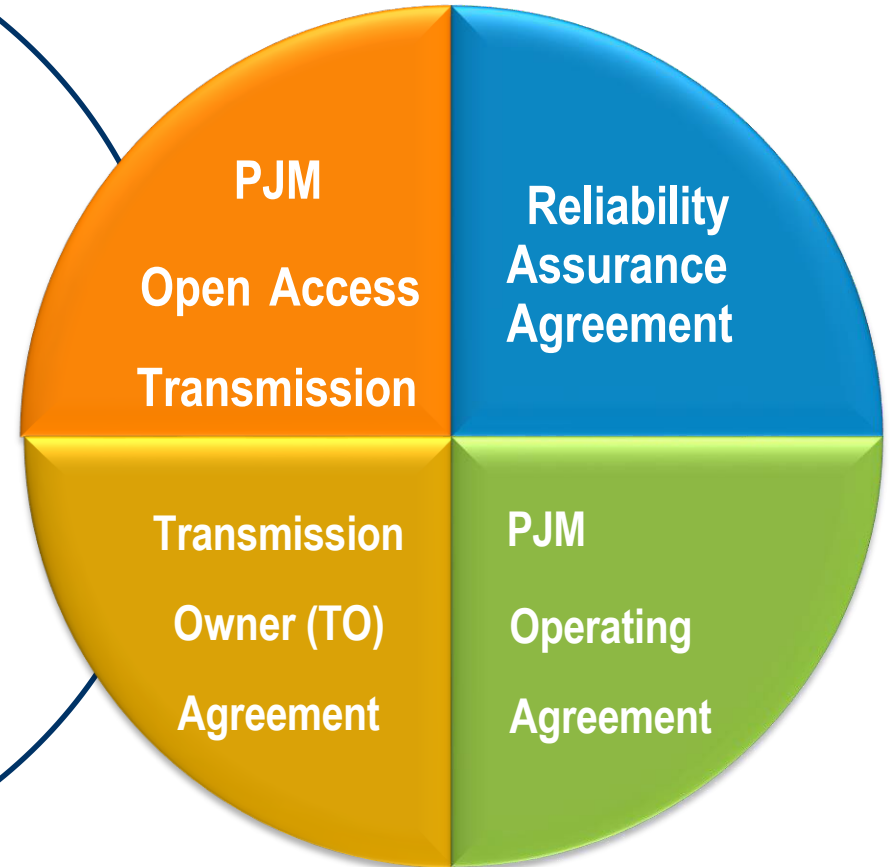
# How Is PJM Different from Other Utility Companies?

## PJM Does:

- Direct operation of the transmission system
- Remain profit-neutral
- Maintain independence from PJM members

## PJM Does *NOT*:

- Own any transmission or generation assets
- Function as a publicly traded company with shareholders and concerns around “earnings”
- Perform maintenance on generators or transmission systems (e.g., repair power lines)
- Serve or direct any end-use customers (retail)



# RELIABILITY

A large green gear-shaped icon with a white rounded rectangle in the center containing the text for the Markets section.

## Markets

- Energy
- Capacity
- Ancillary services

A large orange gear-shaped icon with a white rounded rectangle in the center containing the text for the Operations section.

## Operations

- Grid operations
- Supply/demand balance
- Transmission monitoring

A large dark blue gear-shaped icon with a white rounded rectangle in the center containing the text for the Regional Planning section.

## Regional Planning

- 15-year outlook

## PLANNING



Planning for the future like...



## OPERATIONS



Matches supply with demand like...

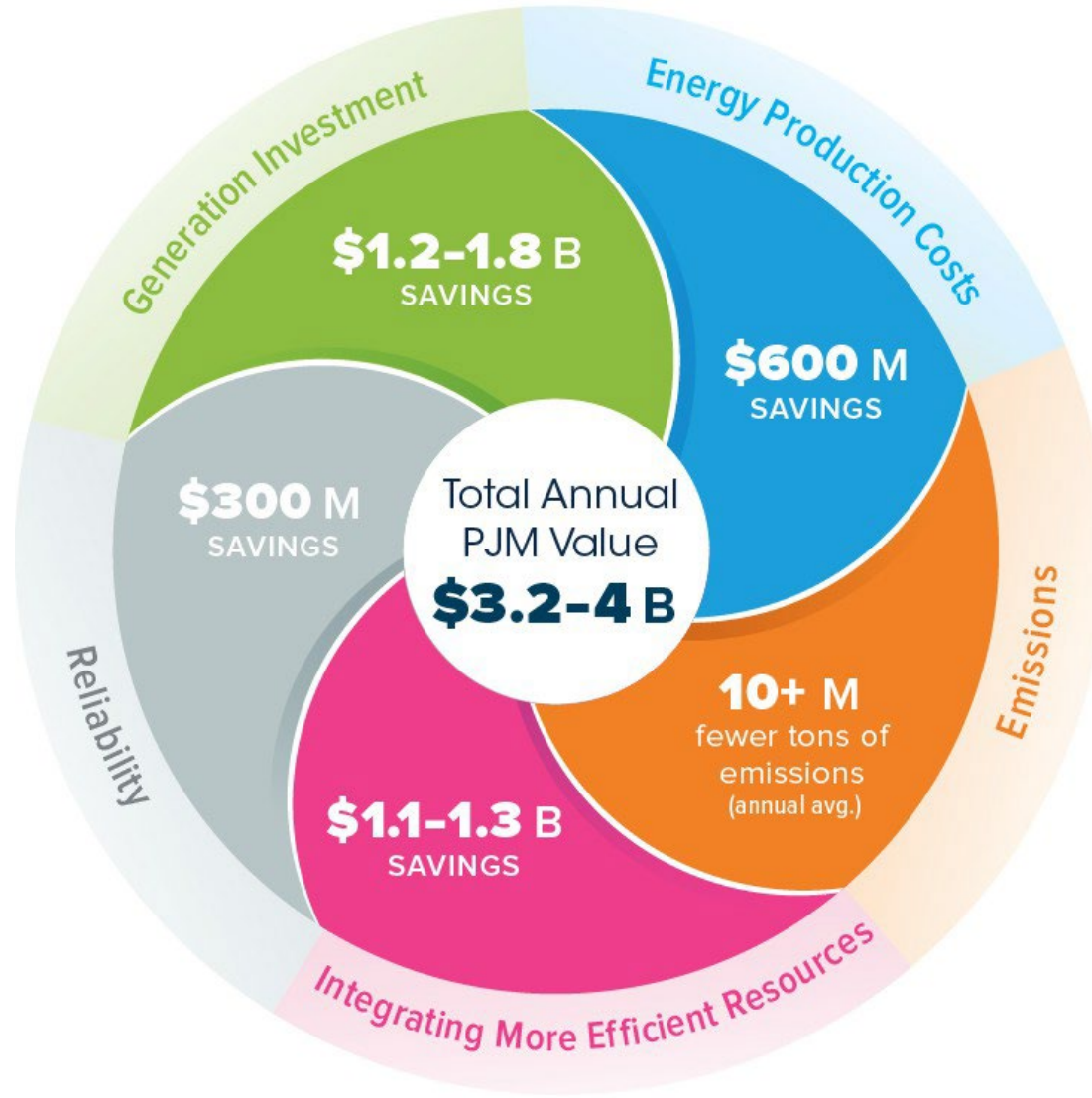


## MARKETS



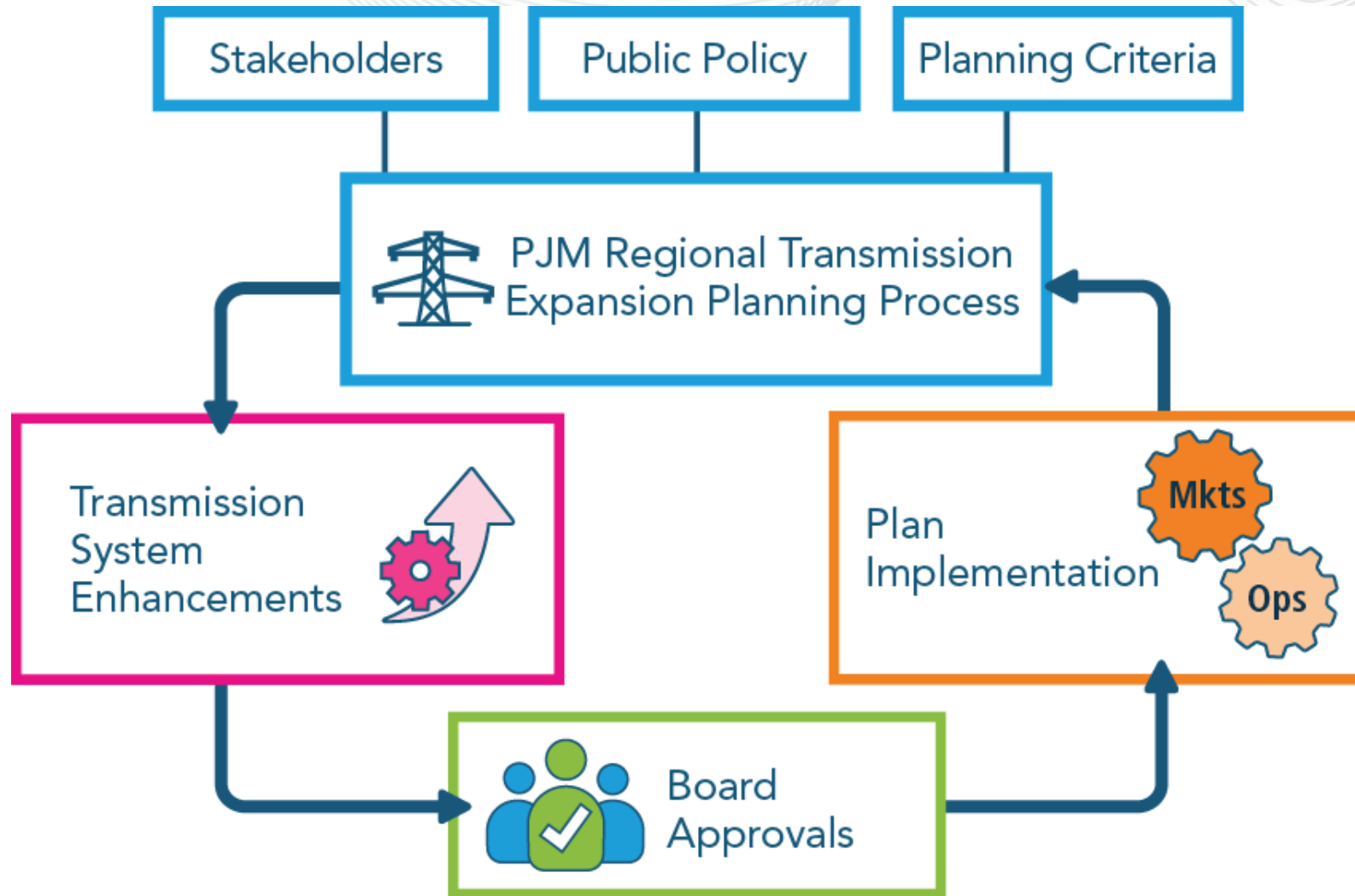
Energy Market Pricing like...





— All numbers are estimates. —





## RTEP DEVELOPMENT

### Reliability & Resilience

Delivering  
Generation



Improving  
Market  
Efficiency



Replacing  
Aging  
Facilities



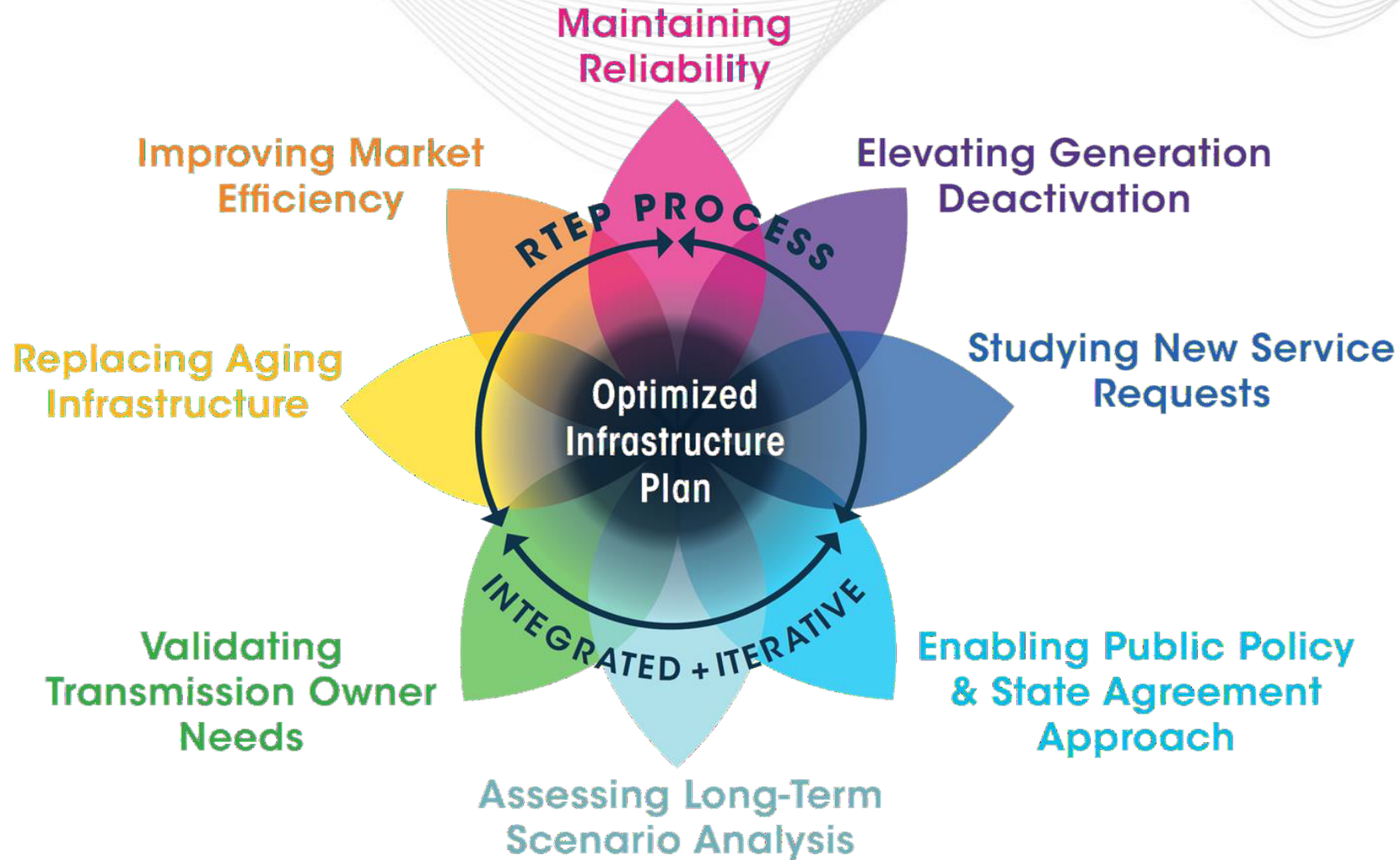
Enhancing  
Operational  
Performance



Evaluating  
Demand-Side  
Trends



State & Federal Public Policy





## Decarbonization Electrification



*Scenarios*

## Reliability & Economic Analysis

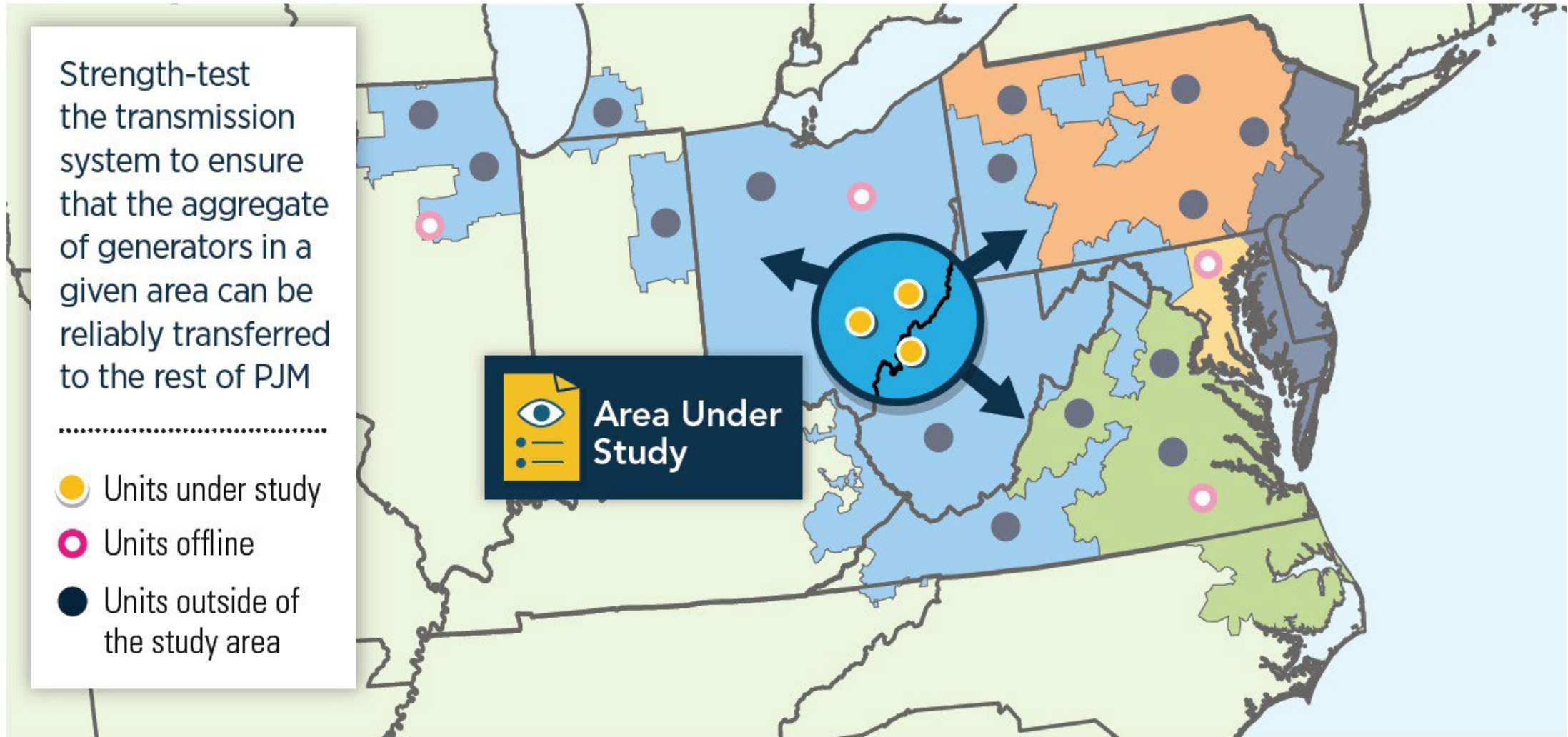


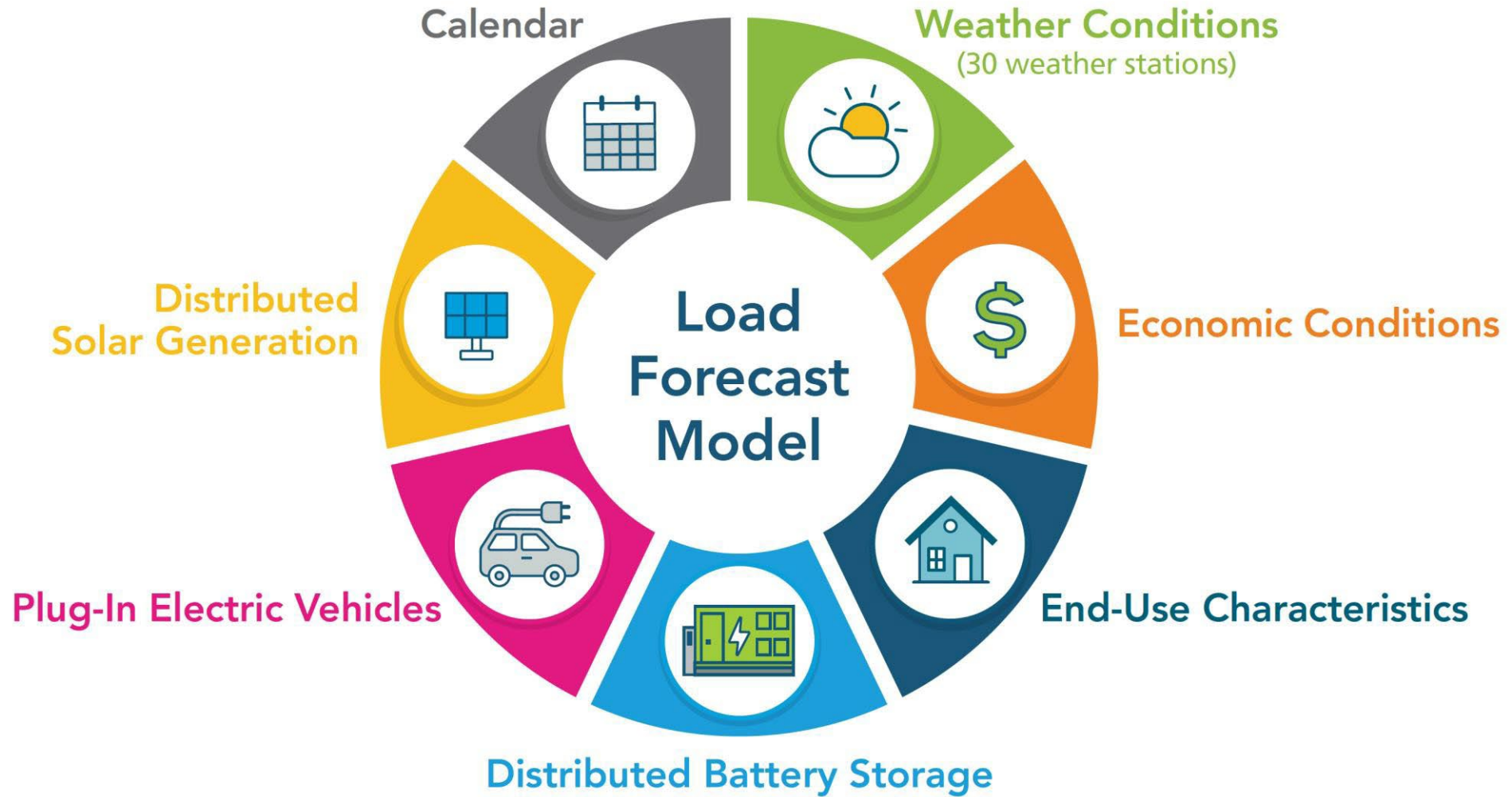
*Needs*

## Reliable, Beneficial & Proactive Solutions











# PJM Electricity Demand Growth

Load (MW)

195,000

185,000

175,000

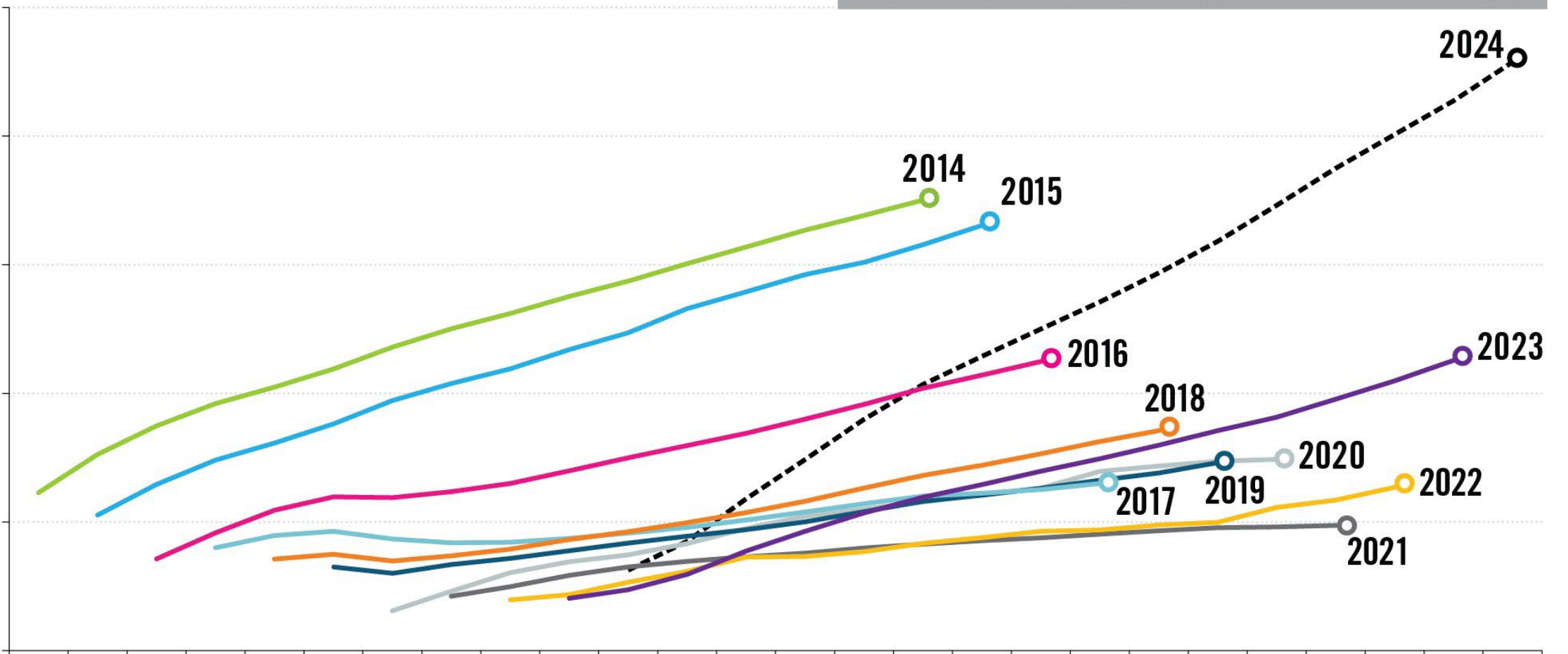
165,000

155,000

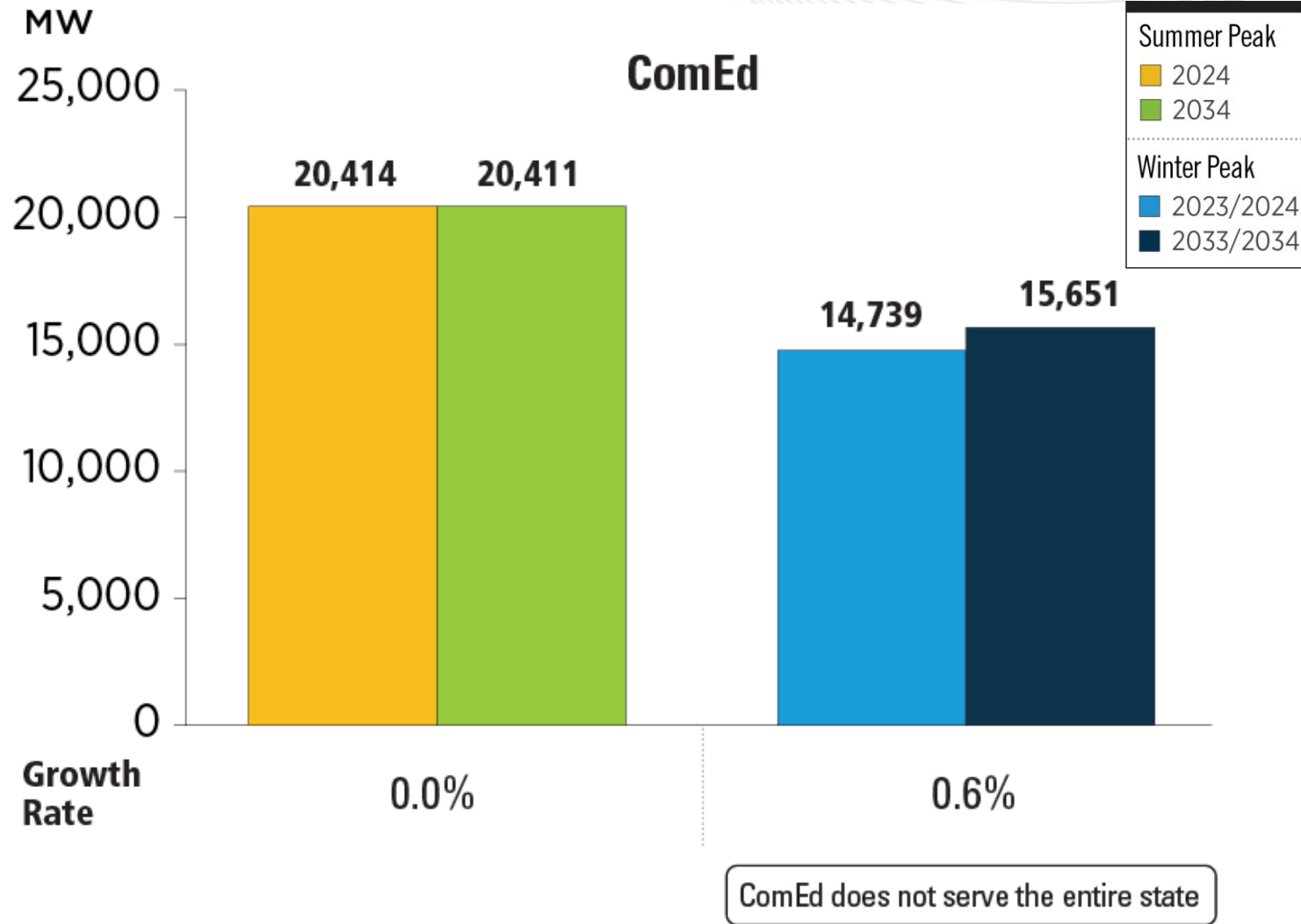
145,000

PJM RTO Summer Peak Demand Forecast

2015 2017 2019 2021 2023 2025 2027 2029 2031 2033 2035 2037 2039







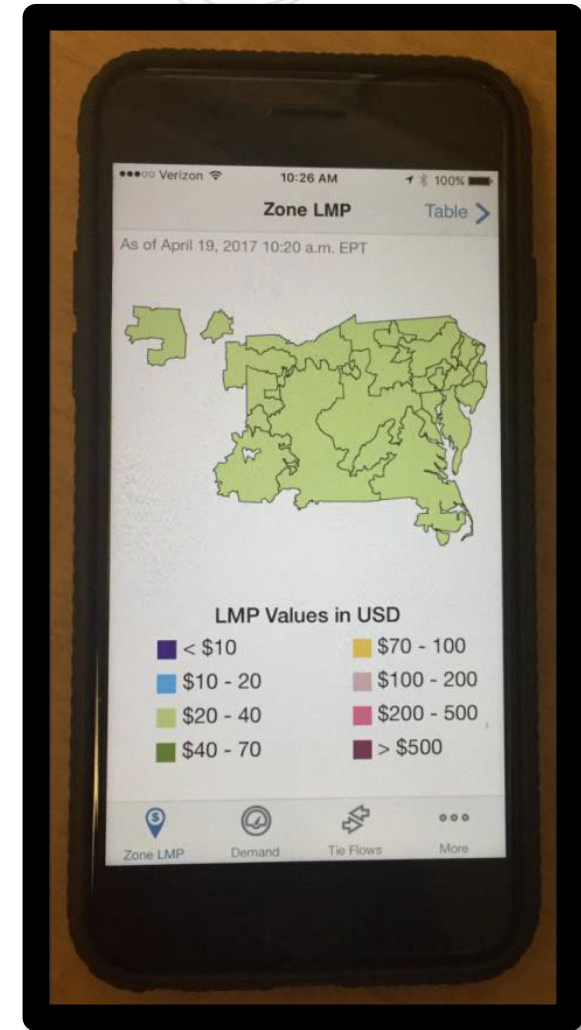
PJM RTO Summer Peak		PJM RTO Winter Peak	
2024	2034	2023/2024	2033/2034
151,247 MW	176,822 MW	134,659 MW	163,069 MW
Growth Rate 1.6%		Growth Rate 1.9%	

The summer and winter peak megawatt values reflect the estimated amount of forecast load to be served by each transmission owner in the noted state/district. Estimated amounts were calculated based on the average share of each transmission owner’s real-time summer and winter peak load in those areas over the past five years.



## Power Up with the **PJM Now** App!

- See real-time demand
- Track power prices
- Get notifications



**Presenter:**

Jason Stanek

[jason.stanek@pjm.com](mailto:jason.stanek@pjm.com)

**Illinois Power Agency – Power Hour**




**Member Hotline**

(610) 666-8980

(866) 400-8980

[custsvc@pjm.com](mailto:custsvc@pjm.com)



# FERC & Transmission Reform

Mary Yang | July 2024

*\*Views are my own\**

# FERC 101

- Independent federal administrative agency with ~1500 employees in DC and around the country
- Five Commissioners (three of which started in the last month or so) who vote on orders, opinions, and other actions
- Jurisdiction directed by Congress under the Federal Power Act (transmission planning, electric rates, wholesale markets, and more), Natural Gas Act (gas pipeline rates and certificates), Interstate Commerce Act (oil rates), and other statutes.
- Today, I will focus on FERC's role in transmission planning and interconnection reform under the Federal Power Act



# FERC Order No. 1920: “Building for the Future”

- Transmission planning and cost allocation: identifying needs, considering benefits, selecting projects, who pays for the project (cost causation / beneficiary pays)
- FERC transmission planning reforms since 1996: Order No. 888, Order No. 890, Order No. 1000.
- The “new wave” of transmission planning orders began in 2021 with an “advanced notice of proposed rulemaking” and culminated in Order Nos. 2023 and 1920. More to come?
- Broad stakeholder input, including the Federal-State Joint Task Force on Electric Transmission
- The context in which FERC is taking action: rapidly changing resource mix, new demand growth (data centers, AI, crypto, etc.), extreme weather, evolving cyber and physical security challenges

# What does Order No. 1920 try to accomplish?

- Address existing deficiencies in long-term regional planning that led to piecemeal transmission expansion that was costly and inefficient.
- Some of Order No. 1920's themes:
  - Look far enough ahead.
  - Consider a wide range of factors impacting needs.
  - Consider a wide range of benefits.
  - Consider the cheaper stuff first (alternative transmission technologies/GETs).
  - Work together with states to find a way to pay for the selected projects.

# Order No. 1920 Reforms in a Nutshell

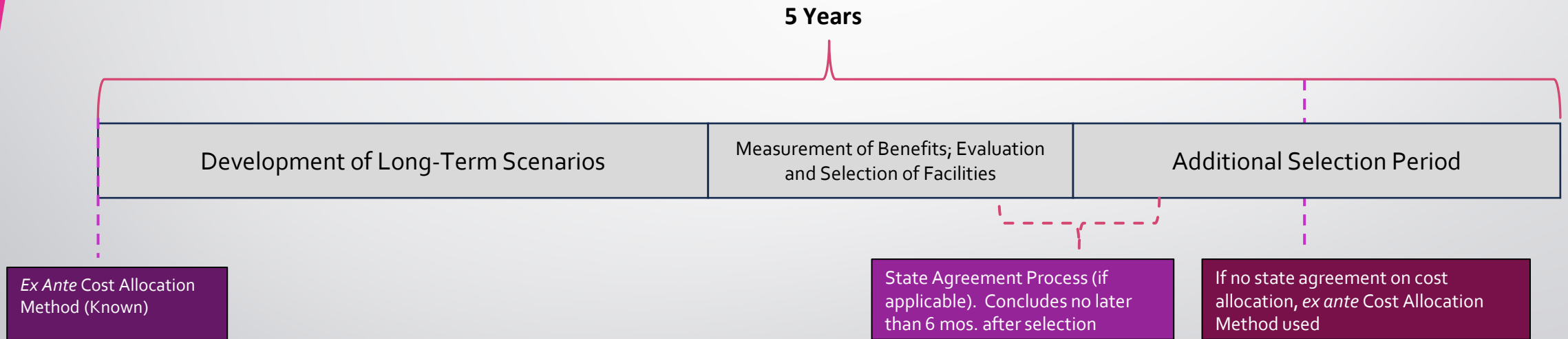
- **Long-Term Regional Transmission Planning** (5-year cycles, 20-year horizon, evaluation of seven categories of factors to develop at least three scenarios and sensitivities)
- **Evaluation of Benefits** (measure and use at least 7 benefits, including one that focuses on extreme weather contingencies (#6), with flexibility on how to measure)
- **Evaluation Process and Selection Criteria** (process to identify/evaluate facilities to be selected, including consulting with and seeking support from state entities, but no selection mandate)
- **Consideration of Interconnection-related Transmission Needs and Alternative Transmission Technologies**
- **Enhanced Transparency for local planning processes**
- **Right-Sizing Replacement Transmission Facilities**
- **Long-Term Regional Cost Allocation** (negotiation of one or more ex ante long-term regional transmission cost allocation methods, optional state agreement process) with the same standard as always: “roughly commensurate” with estimated benefits
- **Interregional Transmission Coordination**

# State Roles

- State input on development of long-term scenarios (e.g., state policy impact on long-term needs)
- Transmission providers must consult with and seek the support of state entities on evaluation and selection
- Transmission providers must include a process to provide relevant state entities with the opportunity to voluntarily fund the cost of, or a portion of the cost of, a long-term regional transmission facility.
- Cost Allocation
  - Transmission providers must hold an engagement period during which relevant state entities may participate in a forum for negotiating an *ex ante* cost allocation method or methods for selected long-term regional transmission facilities
  - Permits transmission providers to adopt, if agreed to by relevant state entities, a state agreement process for allocating the costs of all, or a subset of, long-term regional transmission facilities



# Long-term Regional Cost Allocation



# Long road ahead

- Effective date 60 days from publication in Federal Register
- Compliance
  - Compliance filings within 10 months of effective date (12 for certain interregional requirements)
- Implementation
  - Must start first cycle no later than one year after due date of compliance filing
- Rehearing
- Takeaway: there is a long road ahead before these reforms will result in projects that are selected and built under Order No. 1920's reforms

# Upcoming FERC transmission actions?

- FERC agenda set by the Chairman
- Possibilities:
  - Interregional Reform
  - Grid-Enhancing Technologies (DLR ANOPR)
  - Deeper Interconnection Reform (September workshops)
  - Cost Management / Transmission Incentives



**IPA POWER HOUR PRESENTATION**

# **Transmission: State Initiatives**

**Brian P. Granahan**  
**Director, Illinois Power Agency**

July 26, 2024



## How does a state like Illinois play a role in transmission planning and transmission policy development?

- Participation in Regional State Committees for each RTO
  - Organization of MISO States (OMS) – ICC Commissioner Mike Carrigan
  - Organization of PJM States, Inc. (OPSI) – ICC Commissioner Ann McCabe
- Litigation before FERC – ensuring just/reasonable rates, reliability
  - Office of Attorney General
  - Illinois Commerce Commission
- NARUC/FERC Joint Task Force
- ICC Siting Authority
  - Transmission Siting and Economic Development (TSED) Grant Program – ICC receipt of siting and permitting grant!
  - “Streamline and improve the transmission siting process for certain MISO Long Range Transmission Planning Tranche 1 Projects traversing the state”

# Transmission Planning: ICC & REAP



- ICC Docket No. 22-0749: “forward-looking plan for this State's electric transmission infrastructure” and “comprehensive power and environmental policy planning process to identify transmission infrastructure needs” (220 ILCS 8-512)
- Five strategic elements of Renewable Energy Access Plan:
  - Strategic Element 1: Tracking Progress Toward Illinois’ Policy Goal
    - Scope: Decarbonization of Illinois’ economy as supported by the RPS and phase out of fossil fuel generation.
  - Strategic Element 2: Transitioning to 100% Clean Electricity Mix
    - Scope: Sets out in detail the facts and issues which must be addressed to meet the goal of 100% economy-wide decarbonization by 2050.
  - Strategic Element 3: Managing Land Use in Renewable Deployment
    - Scope: Designate renewable energy access zones (“REAP Zones”) which consider resource potential of specific geographic locations that could be used for renewable energy development and coordination with transmission development.
  - Strategic Element 4: Effective Transmission Planning & Utilization
    - Scope: Proactively plan in MISO and PJM’s interconnection and transmission planning processes to achieve transmission capacity necessary to deliver the electric output from renewable energy technologies in the REAP zones.
  - Strategic Element 5: Leveraging Regional Electricity Markets & Trade
    - Scope: Identify opportunities for leveraging regional electricity markets and trade to access the most efficient resources, avoid emissions leakage, and maintain reliability.

**RPS goal 40% by 2030 with a further target to reach 50% by 2040**

- **Retail customer load in Illinois is ~120 million MWH annually**
  - **40% would be 48 million MWH/RECs**

**Specific targets include:**

- **45 million RECs annually by 2030 from new wind or solar**
  - **45% from wind, 55% from solar**
    - **By 2030: 20+ million RECs delivered annually from new utility-scale wind**
      - **~7000 MW of new utility-scale wind by 2030**
    - **By 2030: 11.6 million RECs delivered annually from new utility-scale solar**
      - **~7500 MW of new utility-scale solar by 2030**
    - **By 2030: 12.4 million RECs delivered annual through programs**
      - **~8000 MW of new DG and community solar**

# State Decarbonization Requirements

- **100% “clean energy” by 2050**
  - **50% RPS by 2040**
  - **Private coal and gas plants must cease operating by 2045 and reduce emissions by 45 percent by the year 2035 (different requirements for munis/co-ops)**
  - **Most coal plants must retire by 2030**
- **Nuclear power meets definition of “clean energy”**
- **RPS vs Non-RPS**
  - **Differences in totals**
  - **Merchant wind projects**



# Reliability & Resource Adequacy Study



- **P.A. 102-0662 added Section 9.15(o) to the Illinois Environmental Protection Agency Act for report examining**
  - RPS progress examination
  - CO<sub>2</sub>e and copollutant emissions reductions
  - green hydrogen technologies implementation
  - resource adequacy and reliability throughout the State, and
  - proposed solutions for any findings
- **First report by December 15, 2025**
  - IEPA/ICC/IPA consult with RTOs
  - If shortfall or reliability violation forecast, then IPA/IEPA can consider reduction of emissions reduction requirements (or alternative means) through a plan filed with ICC
- **Transmission Planning Inputs**
- **Climate Pollution Reduction Grant funding**
  - Used for proposed solutions or planning otherwise?
- **Process from here**

# State Legislative Proposals from 2024



## HB 5514



- Financial support via HVDC REC delivery contract award
- One-time procurement event/contract award for “not less than” 12,500,000 RECs delivered annually
- RECs used to meet percentage-based RPS goals (but not quantitative targets)
- Funding to support HVDC line development
- HVDC line must be underground line with at least 100 miles in Illinois
- Generation can be photovoltaics or wind, or other qualifying technologies if necessary, from new/repowered project
- 25-40 year HVDC REC contract
- New, non-RPS funding source (new tariffed charges)
- Max possible price determined in part by Capital Development Board
- Planning via one-time HVDC REC Procurement Plan (within 120 days after effective date)

## SB 3949



- Financial support via HVDC REC delivery contract award
- Progressive procurement events (tiered structure) up to 9 million RECs delivered annually
- RECs used to meet percentage-based RPS goals (but not quantitative targets)
- Funding to support renewable generators
- RECs must qualify as HVDC RECs under Illinois law
- Generation can be utility-scale wind or utility-scale solar from new/repowered project
- 25 year HVDC REC contracts
- New, non-RPS funding source (new tariffed charges)
- Max possible price determined through confidential benchmarks
- Planning woven into existing Long-Term Renewable Resources Procurement Plan

# Policy Study Findings re: SOO Green?



- **P.A. 103-0580 -- study 3 proposals based on: What we were asked to study – three proposals from the 2023 Legislative Session**
  - support for Illinois' decarbonization goals; the environment;
  - carbon and other pollutant emissions;
  - grid reliability; resource adequacy; long-term and short-term electric rates;
  - environmental justice communities; jobs; and the economy.
- **SOO Green draft bill policy study analysis findings:**
  - Positive reliability impacts, environmental impacts, emissions benefits
  - Positive economic impacts, though higher in IA than IL
  - Estimated strike price of \$115.39/MWh
    - \$430.7 million per year annually through HVDC REC purchases
- **<https://ipa.illinois.gov/ipa-policy-study.html>**

# Legislative Initiatives: Process? Timeline?



- **Legislative Proposals Introduced in 2024**
  - **Comprehensive Storage Legislation**
    - Multiple bills introduced
    - Support for medium-duration projects, long-duration projects, behind the meter projects, and storage paired with community solar
  - **Two Bills Seeking to Facilitate New Transmission Projects**
  - **Off-Shore Wind Legislation**
  - **Additional Renewable Energy Procurement Process Reforms**
  - **Changes to Capacity Procurement Processes**
  - **Self-Direct Program Changes**
  - **Other initiatives**
- **Process for Negotiations?**
  - **Working Group Process?**
  - **Omnibus Bill?**
- **ILGA Meets Nov 12-14, Nov 19-21**
  - **“Lame Duck” Session days thereafter?**





**Questions? Comments?**

**Brian Granahan**  
**Director, Illinois Power Agency**  
**[Brian.Granahan@Illinois.gov](mailto:Brian.Granahan@Illinois.gov)**

**[www.Illinois.gov/IPA](http://www.Illinois.gov/IPA)**



# Q&A

# Contact

---



**Jason Stanek**  
**Executive Director of Government Services,**  
**PJM Interconnection, LLC**  
**[jason.stanek@pjm.com](mailto:jason.stanek@pjm.com)**

**Qingliu (Mary) Yang**  
**Attorney-Adviser,**  
**Federal Energy Regulatory Commission**  
**[qingliu.yang@ferc.gov](mailto:qingliu.yang@ferc.gov)**

**Brian Granahan**  
**Director, Illinois Power Agency**  
**[brian.granahan@illinois.gov](mailto:brian.granahan@illinois.gov)**