



Gas Electric Coordination National Conference for Regulatory Attorneys

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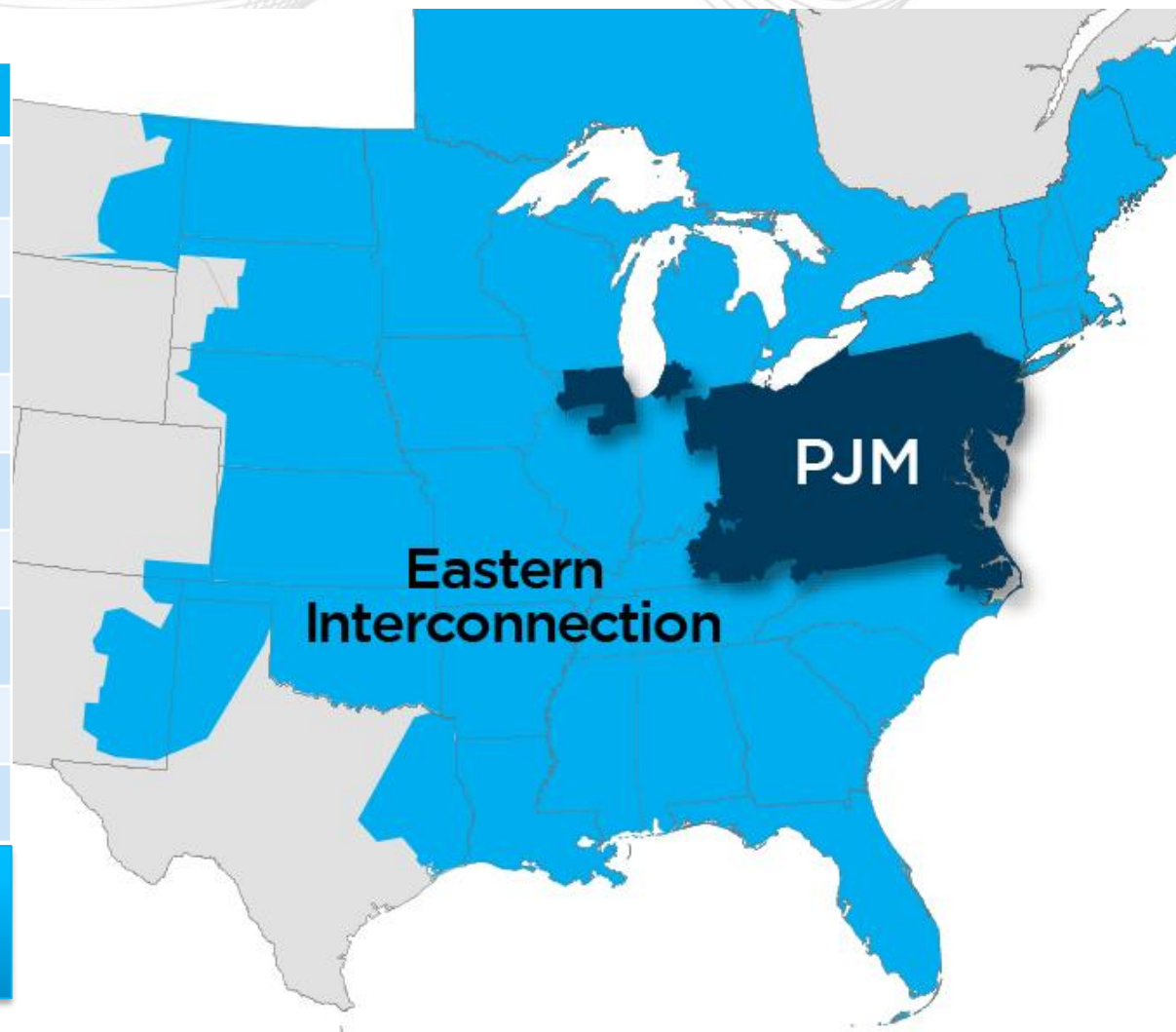
Principal Fuel Supply Strategist

May 14, 2025

Key Statistics

Member companies	1,110
Millions of people served	67+
Peak load in megawatts	165,563
Megawatts of generating capacity	182,036
Miles of transmission lines (BES)	88,333
Gigawatt hours of annual energy	800,004
Generation sources	1,486
Square miles of territory	369,054
States served	13 + DC

- 27% of generation in Eastern Interconnection
- 24% of load in Eastern Interconnection



As of 2/2025

CAPACITY

- A commitment of a resource to provide energy, particularly during PJM emergencies
- Capacity revenues paid to committed resource whether or not energy is produced by resource.

Product:

Daily

ENERGY

- Generation of electrical power over a period of time
- Energy revenues paid to resource based on participation in PJM's Day-Ahead & Real-Time Energy markets

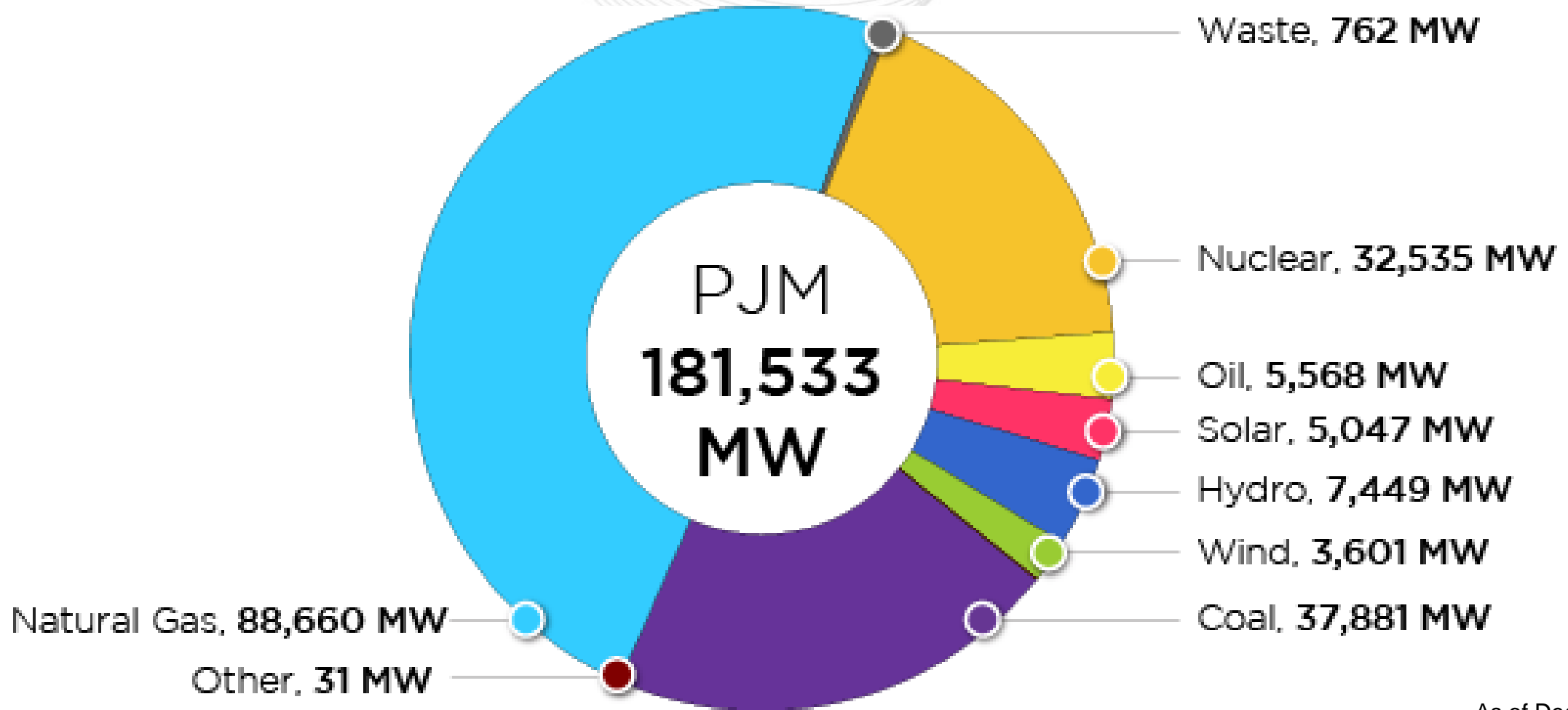
Hourly



Think of capacity like a parking lot. A business includes enough parking to accommodate customers at its busiest times, but on a typical day, many spaces remain empty.

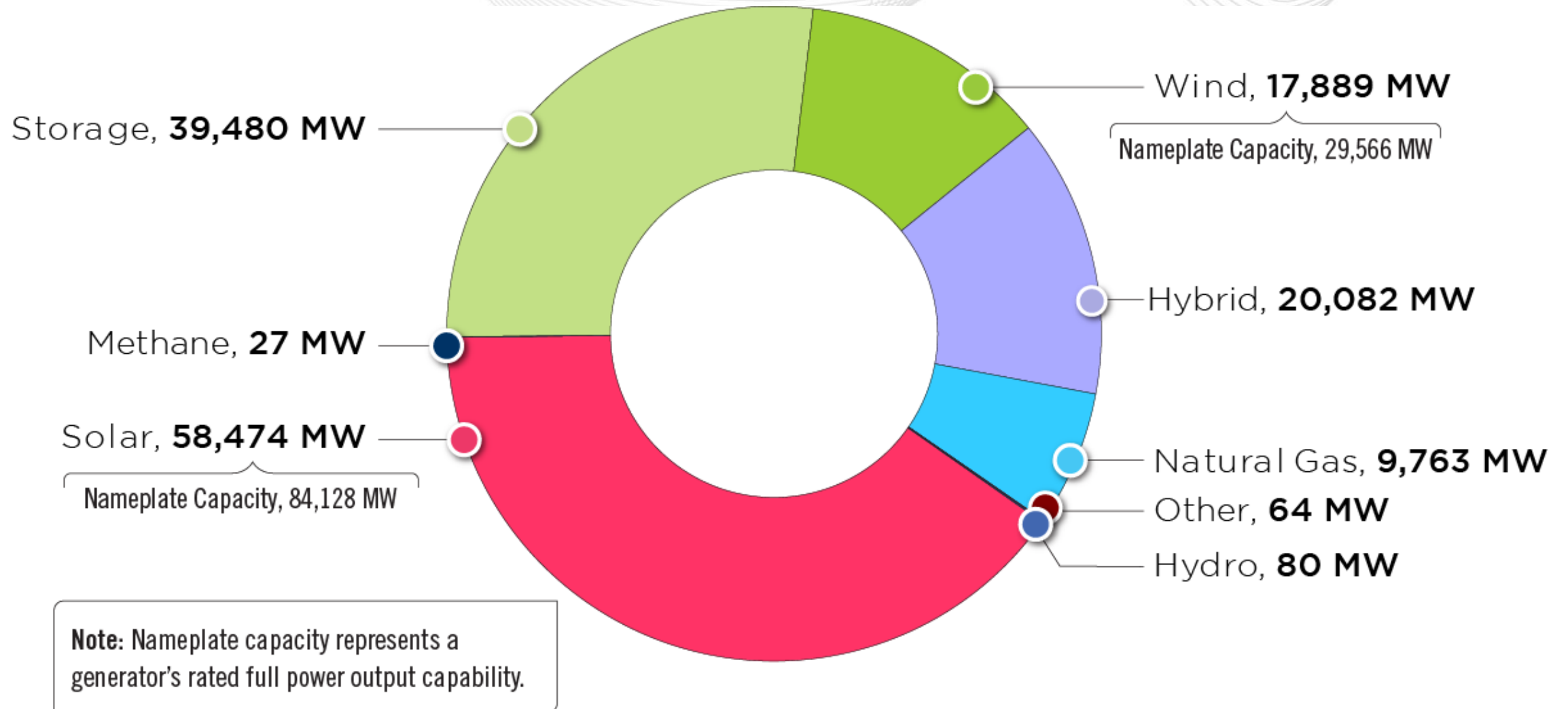
Capacity, energy & ancillary services revenues are expected, in the long term, to provide generation resources with the opportunity to recover fixed and variable costs to ensure that adequate generation is maintained for reliability of the electric grid.

PJM Existing Installed Capacity Mix (Capacity Interconnection Rights)



As of Dec 31, 2024

Queued Generation Fuel Mix – Requested Capacity Interconnection Rights



As of Dec. 31, 2024

Load (MW)

225,000

205,000

185,000

165,000

145,000

PJM RTO Summer Peak Demand Forecast

2025

2024

2023

2022

2021

2022

2024

2026

2028

2030

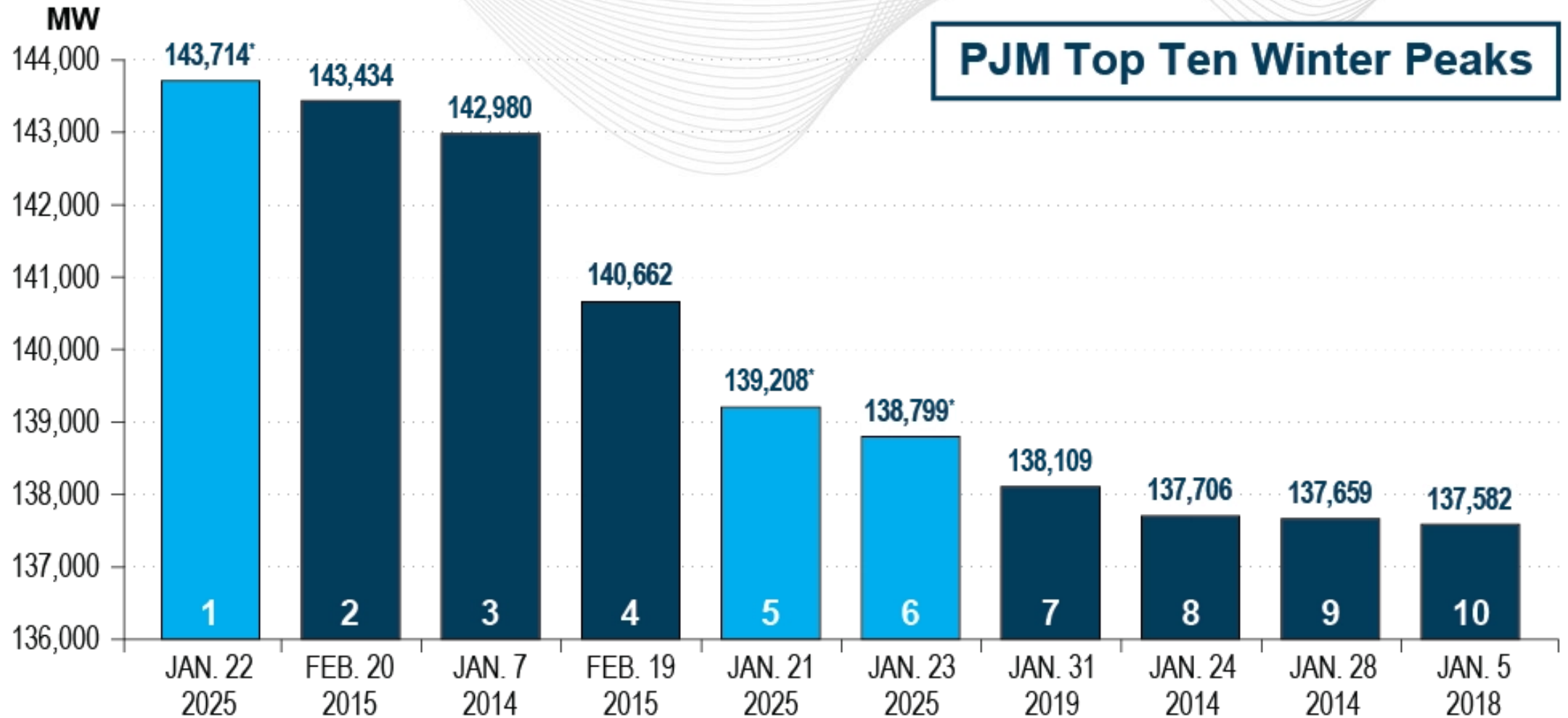
2032

2034

2036

2038

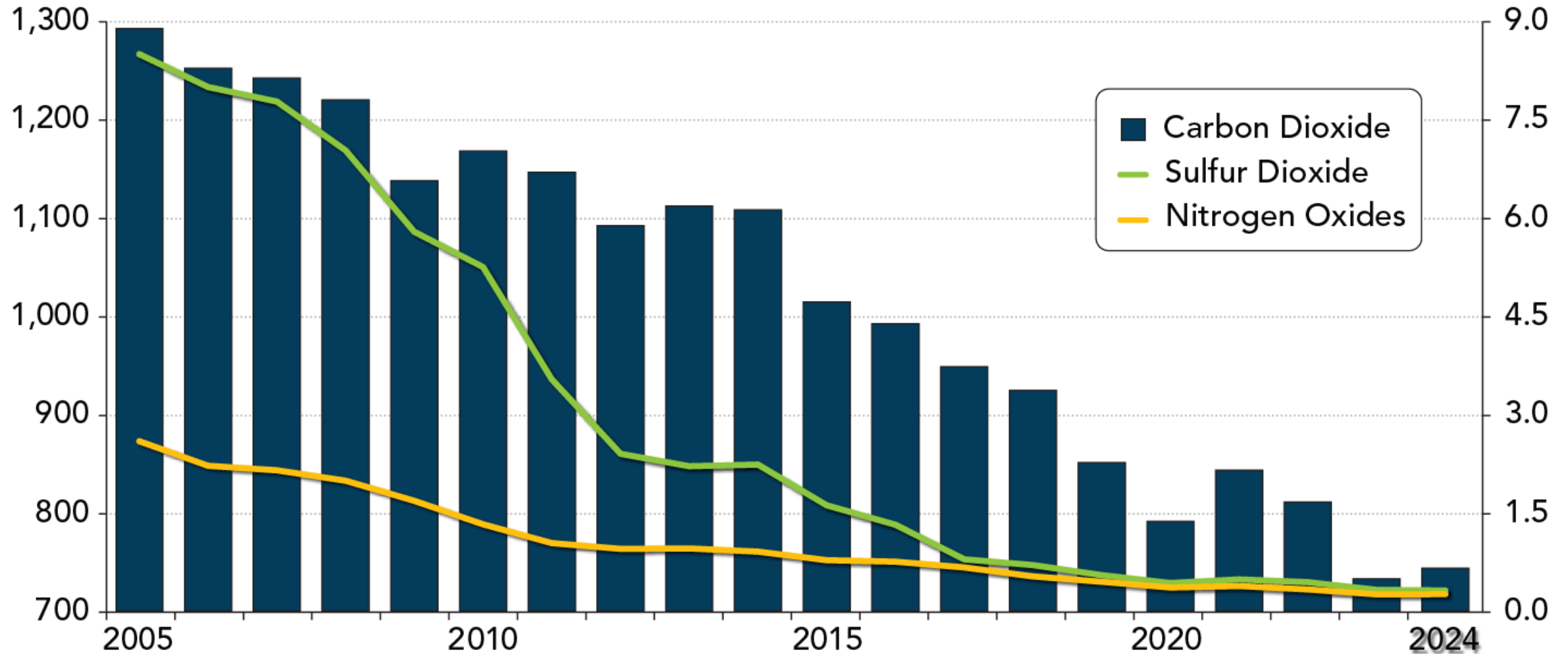
2040



*This data is preliminary should not be used as the basis for decision-making.
As of Jan. 27, 2025.

CO₂ lbs/MWh

SO₂ and NO_x lbs/MWh



- 1 Weekend (Holiday) Gas Market**
- 2 Electric and Gas Day Misalignment**
- 3 Lack of Available Firm Flexible Pipeline Capacity and Storage**
- 4 Costs Associated with Unburned Gas**

PJM Gas Generation Delivery Sources

~ 88 GW
of installed gas
generation

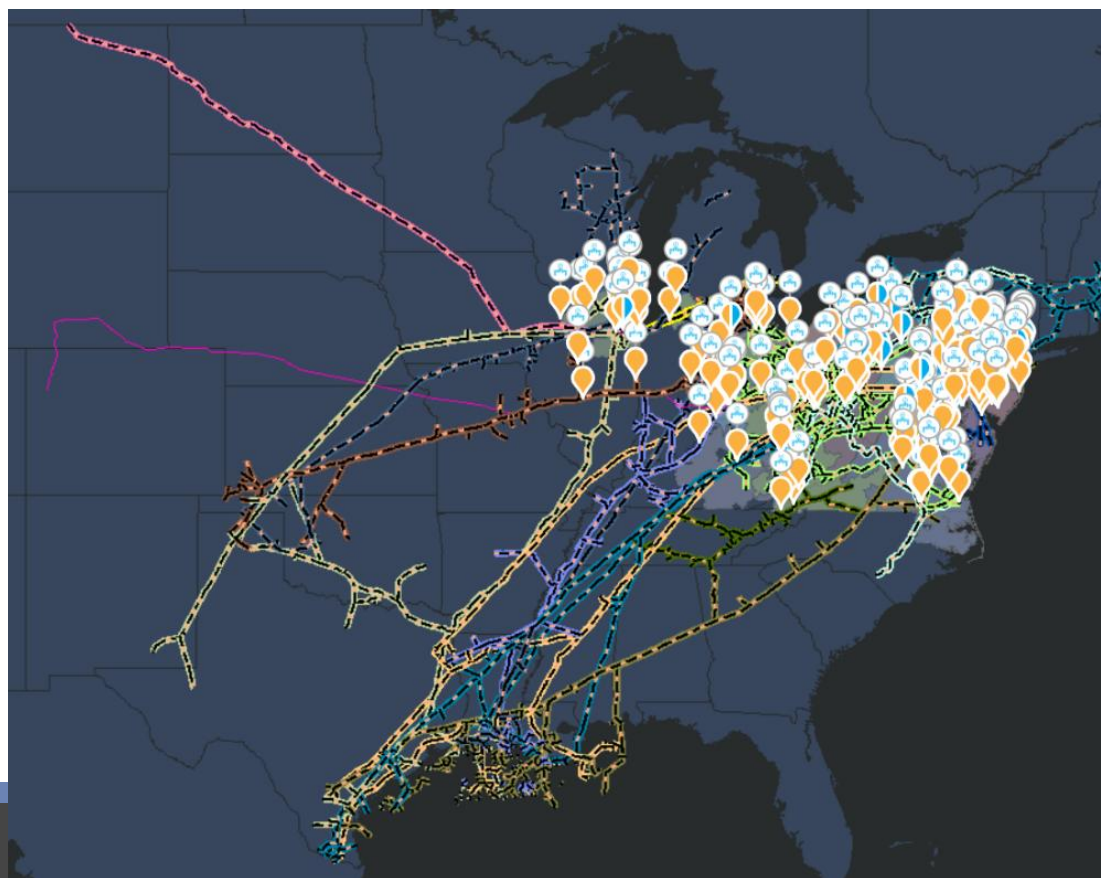
80%
served directly by
interstate pipelines

19.8%
served by local
distribution companies

0.2%
served via gas
gathering systems

29%
dual
fuel

51%
firm delivery –
gas only



25
**interstate
pipelines**
serving the PJM
system

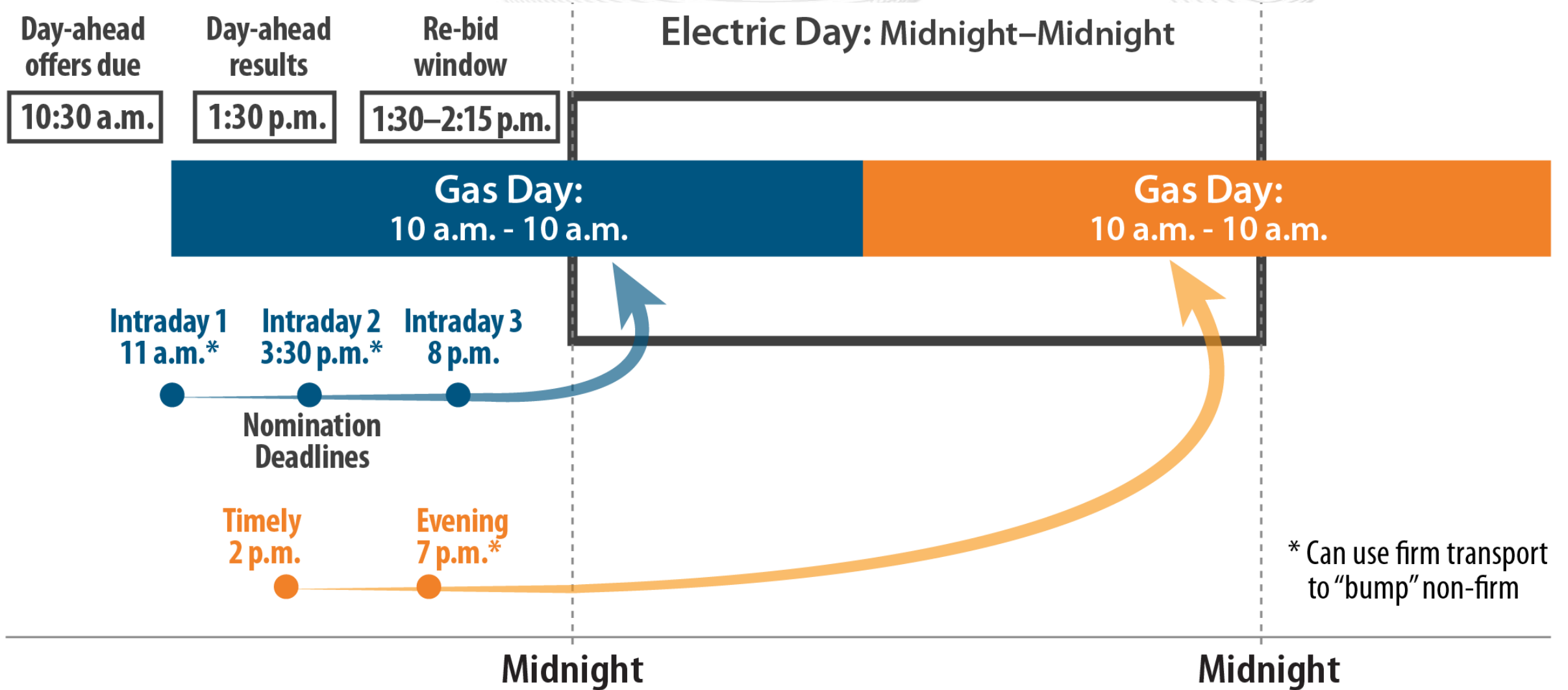
32
**local
distribution
companies** across
the footprint

Cycle	Nomination Deadline	Confirmed by Pipeline	Scheduled by Pipeline	Gas Flow Starts	Flow Duration
Timely	2:00 pm	5:30 pm	6:00 pm	10:00 am	24 hours
Evening	7:00 pm	9:30 pm	10:00 pm	10:00 am	24 hours
Intraday 1	11:00 am	1:30 pm	2:00 pm	3:00 pm	19 hours
Intraday 2	3:30 pm	6:00 pm	6:30 pm	7:00 pm	15 hours
Intraday 3	8:00 pm	10:30 pm	11:00 pm	11:00 pm	11 hours

Gas Day: 10 a.m.–10 a.m.

- Nominated volume expected to be delivered on a uniform 24-hour basis
- Timely and Evening cycles for next gas day – higher priority
- Intraday cycles for current gas day – lower priority
- Interruptible nominations can be bumped by Firm nominations except for the Intraday 3 cycle

Electric and Gas Day Overlap – Scheduling Implications



4-Day Weekend Gas Package (10am Saturday – 10am Wednesday)

Friday

- NextDay Spot Gas trades between 9am and 12pm
- NextDay on Friday means the period 10am Saturday – 10am Wednesday

Saturday (103 GW)

- Typically limited intraday trading activity
- ICE may have custom single or multi-day packages with bids and offers

Sunday (117 GW)

- Typically limited intraday trading activity
- ICE may have custom single or multi-day packages with bids and offers

Monday (133 GW)

- Typically limited intraday trading activity
- ICE may have custom single or multi-day packages with bids and offers

Tuesday (140 GW)

- Typically limited intraday trading activity
- NextDay Spot Gas trades between 9am and 12pm
- NextDay on Tuesday refers to the period 10am Wednesday – 10am Thursday

Wednesday (144 GW)

- 10am represents the end of the 4 day weekend gas package

- Majority of weekend gas requirements purchased Friday morning
- Many gas generators pushing for earliest possible notification in order to procure gas
- January 2025 MLK weekend exacerbated by very warm start/very cold finish



APPENDIX

Internal Efforts

Electric Gas Coordination Subcommittee

- Quarterly meetings commenced March 2025
- Maintain dialogue with PJM stakeholders on gas electric coordination topics

Reserve Certainty Senior Task Force

- Ensuring that gas units that are being relied on to meet reserve requirements can be counted on based on fuel contracts and pipeline operating conditions

Capacity Accreditation

- Properly valuing generating resource fuel assurance and availability
- Gas generator dual fuel capability and firmness of gas deliveries

Winter Storm Elliott Recommendations

- Lessons learned identification
- Closing internal critical gaps in operations and markets
- Addressing issues external to PJM with federal, state and industry resources

IRC Electric Gas Coordination Task Force

- Consists of ISO/RTO reps from US and Canada
- Meets monthly to review natural gas and electric industry issues and regulatory requirements
- Larger pre-winter meeting with the natural gas industry (INGAA/NGSA/Pipelines)
- Focus is on sharing of best practices and electric gas related initiatives

EIPC Electric Gas Task Force

- Eastern Interconnect Planning region representation
- Focus on gas-electric coordination issues from the longer-term planning perspective

NERC Electric Gas Working Group

- Established in January 2019
- Consists of electric and gas industry subject matter experts
- Focused on the development of a NERC guideline that industry participants can use for effective gas-electric coordination practices and when performing gas-electric studies

External Collaboration

Joint RTO Gas-Electric Whitepaper

- Released February 2024
- PJM-ISONE-MISO-SPP collaboration
- Identified key issues that require further dialog and investigation between the industries

NERC

- Electric Gas Working Group
- Energy Reliability Assessment Task Force
- Winterization Standards
- Critical Gas Infrastructure

NARUC GEAR *

- Kicked off November 2023
- Cross Industry group along with state utility commissioners examining opportunities for improvements to gas electric coordination issues
- Final report expected Q425

Natural Gas Industry

- Robust Communication with Interstate Pipelines and Local Distribution Companies
- Industry Trade Organizations: INGAA (Pipelines), NGSA (Gas Supply), API (Gas/Oil industries), AGA (LDCs)

Improve Liquidity in Gas Commodity Markets

Creation of Flexible Reserve Products in RTO Markets

Increased Transparency in the Secondary Markets*

Incenting Development of Firm Transportation and Storage

Examine LDC Capacity Release Activities and Greater Incentives/Requirements for Capacity Release by LDCs

Reforming Force Majeure Provisions in the Standard NAESB Contract**

 PJM market changes

 Both PJM/electric and gas changes

 Gas changes only

**Posting of prices and availability and establishing transparent platform for purchasing released capacity. **Requiring steps to winterize and otherwise mitigate extended outages.*

Review
reliability of
electric service to
gas production
and processing
facilities

Work with states
to discuss refining
the human needs
definition for
critical gas
generators

Re-examine
gas curtailment
priorities at the
federal level

Potential
additional and
more uniform
alignment
of gas/electric
days?

Is there a need for
a gas reliability
organization or
gas RTO?