

Winter Reliability 2024-2025

Stan Pinegar

President Duke Energy Indiana

Kelley Karn

Vice President Regulatory Affairs and Policy

Bill Luke

Vice President Midwest Generation

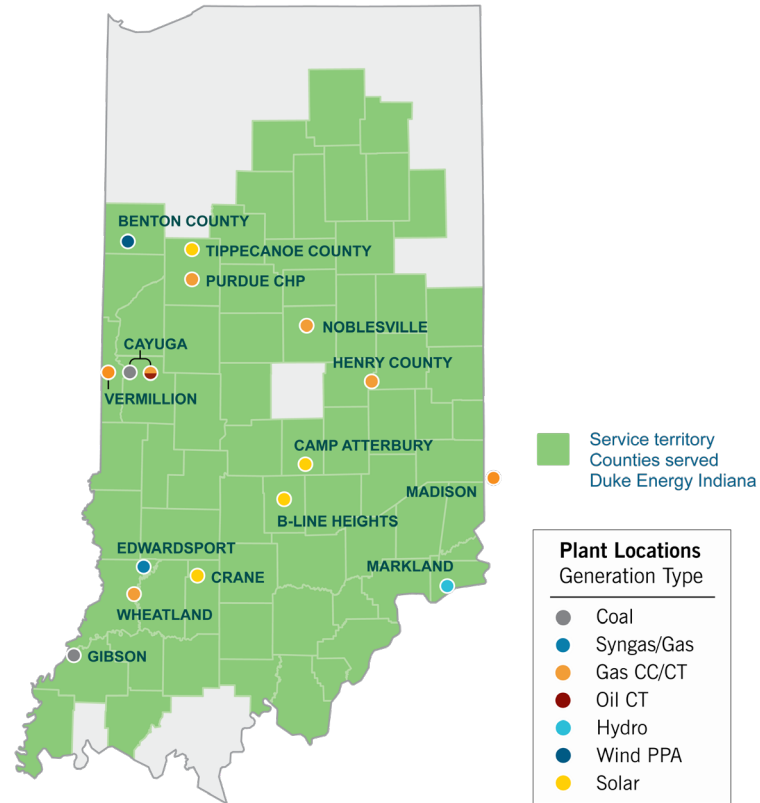
Jim McClay

Managing Director Natural Gas Trading

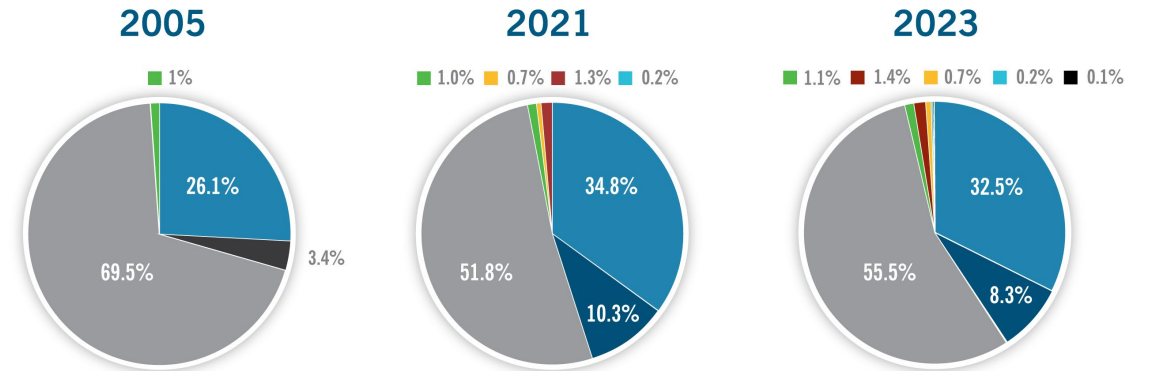
November 22, 2024



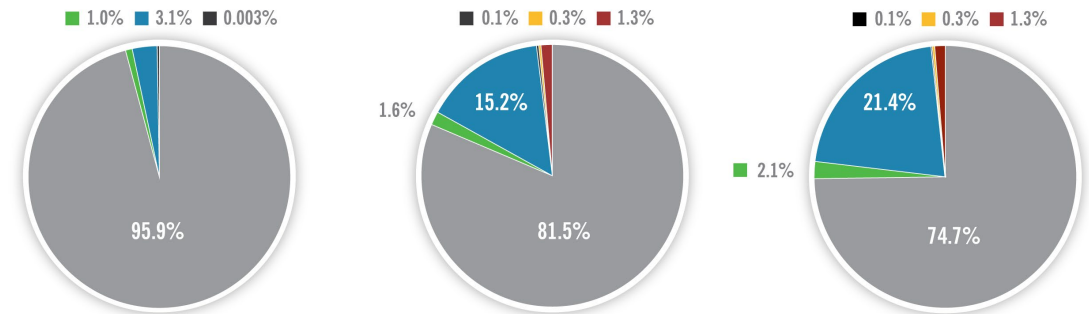
Duke Energy Indiana at a Glance



Capacity Mix by Resource (MW)



Energy Mix by Resource (MWh)



Legend for Energy Mix by Resource (MWh): Coal (Grey), Hydro (Green), Gas (Blue), IGCC (Dark Blue), Oil (Black), Battery (Cyan), Solar (Yellow), Wind (Red).

Note: Energy mix is shown as percent of total megawatt-hours (“MWh”) generation from Duke Energy Indiana portfolio resources. Capacity mix is shown as percent of total installed capacity. IGCC is reflected as coal in the energy mix.

Customer Bills: Projected Rates Into Winter 2024-2025

2024-2025 winter bills projected to about 5% higher than 2023-2024 winter bills

2024-2025 winter rates are projected to remain flat at the beginning of the season with a projected rate increase from the pending rate case expected in March

DEI programs aid customers struggling with higher bills:

- Share the Light Fund - \$300,000 in energy bill assistance
- Partnering with State agencies on weatherization and LIHEAP outreach
- Budget Bill/Pick Your Due Date
- Mid-cycle usage and budget alerts
- Completed 36 low-income events, touching 12,400 customers. Five events remain

Recent Customer Rate Drivers:

- Stable Fuel and Purchased Power Costs
- Pending Rate Case

Duke Energy Indiana

2024-2025 *Winter Bill Projections*

Rate Case Step 1 Proposed



	December	January	February	March
Residential – 1,000 kWh	\$134.07	\$ 137.79	\$ 141.53	\$ 161.77

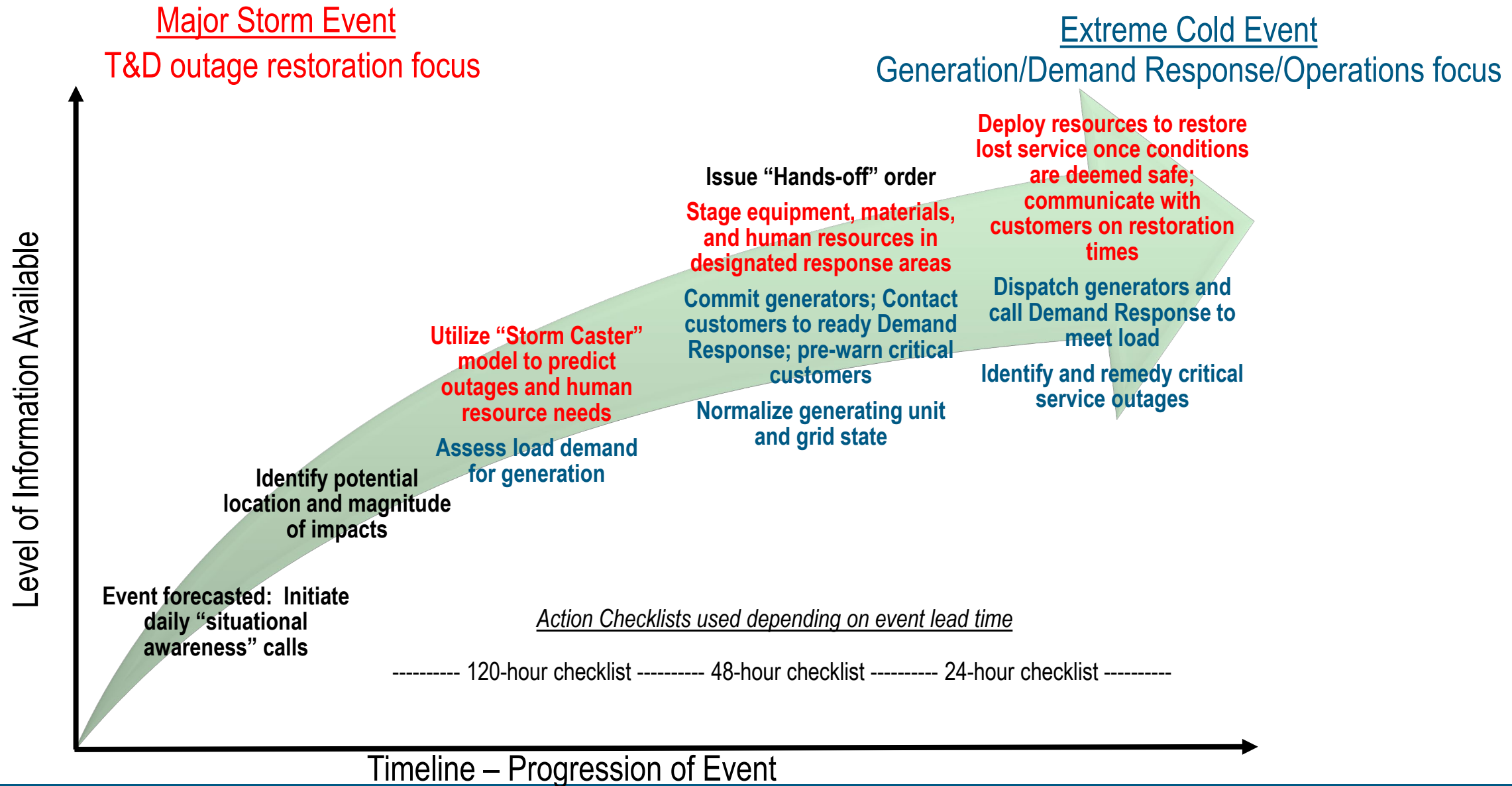
Duke Energy Indiana

2022-2024 *Winter Bill Actuals*

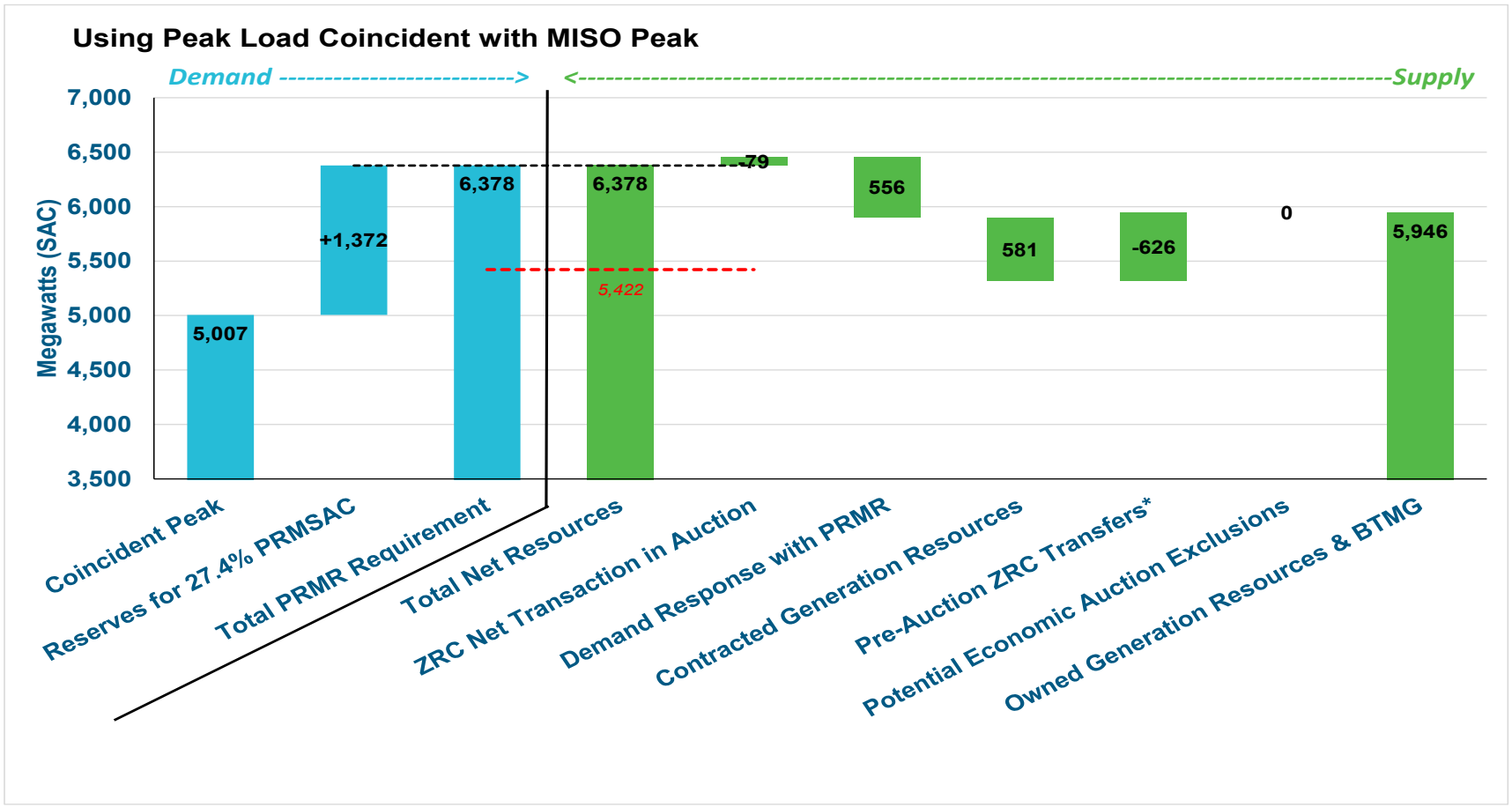


Winter Months	Actual 2022-2023	Actual 2023-2024
December	\$ 175.60	\$ 134.25
January	\$ 167.22	\$ 134.20
February	\$ 167.28	\$ 133.05
March	\$ 167.35	\$ 133.05

System Readiness: Event Identification and Response



Preparation for Winter 2024: Capacity Supply–Demand Balance – As Offered and Cleared



Winter Total Net Position: 79MW (1.2%) Sale

----- Under HEA 1520/1007, the minimum self-supply requirement for DEI going into the auction is 85% * 6,378 MW = 5,422 MW

- Acronyms:**
- MISO** – Midcontinent Independent System Operator
 - PRMSAC** – planning reserve margin/seasonal accredited capacity
 - PRMR** – planning reserve margin requirement
 - ZRC** – zonal resource credit
 - BTMG** – behind the meter generation
 - IMPA** – Indiana Municipal Power Agency
 - WVPA** – Wabash Valley Power Alliance
 - MW** - megawatt
 - STUBNNS** – short term unbundled non-native sales

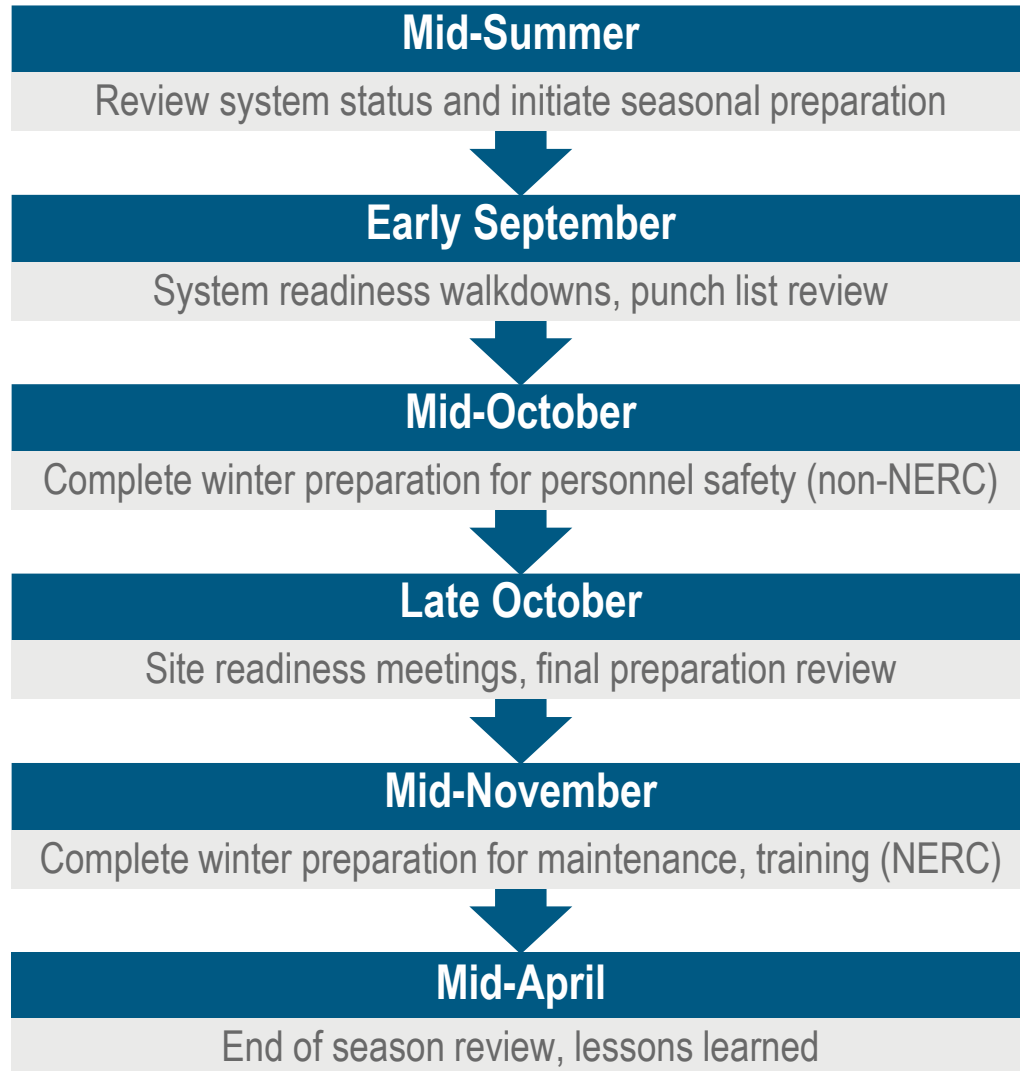
*IMPA ownership share of Gibson 5; WVPA ownership share of Vermillion CT; 310MW STBNS

Note: ZRC Net Transactions: (+) Purchase, (-) Sale

MISO Seasonal Accredited Capacity (SAC): Results and Observations

- **Planning Year 24/25 MISO capacity auction:**
 - **Winter**
 - Net long 79 MW pre-auction
 - 550 MW bilateral purchases
 - All resources cleared the auction
 - **Spring**
 - Net short 531MW to 875MW MW pre-auction
 - 650 MW bilateral purchase
 - 1,260 MW of resources on >31-day planned outage did not clear the auction
 - **Observations:**
 - All four seasons of PY24-25 met the HEA1520/1007 15% market reliance limit
 - Low auction clearing prices drove the DEI resources that did not clear the auction
 - Planned outages are routine and needed to maintain reliability
 - Offer prices determined consistent with Independent Market Monitor methodology resulted in the prudent economic outcome for customers, in lieu of capacity replacement or capacity replacement non-compliance charge exposure
 - **MISO Capacity Construct Changes:**
 - PY 25/26: **Reliability Based Demand Curve:** Load obligation no longer known before the auction, will challenge planning both short-term and long-term
 - PY 28/29: **Direct Loss of Load (DLOL):** Proposal to move from UCAP to DLOL for class accreditation – marginal accreditation approach will reduce accreditation of renewable resources more than thermal
 - PY28/29: **Load Modifying Resources (LMR):** Proposal to transition LMR accreditation to a construct more similar to SAC – may result in losses of customer demand response program participation
- Tightening capacity accreditation further challenges long term planning and the addition of supply side resources, along with stricter environmental rules, supply chain constraints, transmission queue delays, resource cost increases and load growth.

Generation – Actions to Prepare for Winter



- Ensure a safe working environment
- Procure winter PPE supplies to protect personnel
- Identify staffing requirements, inclement weather plan

- Verify operational readiness of critical systems and equipment
- Perform system walkdowns; complete maintenance tickets
- Ensure operation of dampers/louvers/doors, heating equipment
- Verify inventory of supplies and equipment
- Ensure alternate suppliers are identified

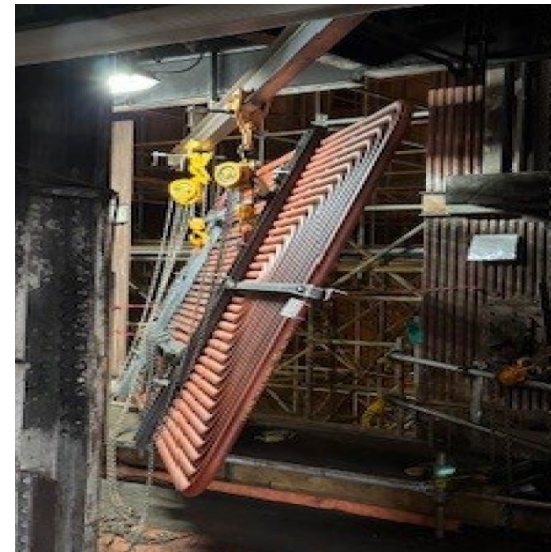


Generation: Maintenance for Winter 2024 - 2025

- Learnings from previous winter season and Emergency Operations Plan-12 (EOP-12) requirements included in preparation planning
- About 20 weeks of base load unit outages and over 45 weeks of combustion turbine outages performed Fall 24
- Execution of capital maintenance plan
- All planned unit outages are scheduled to be complete by Nov 17
- Fuel Flexibility
 - Edwardsport gasification and natural gas capability
 - Cayuga CT4 fuel oil capability
- All MISO capacity resource units available this winter
- Weather related coal pile management for consistent fuel handling

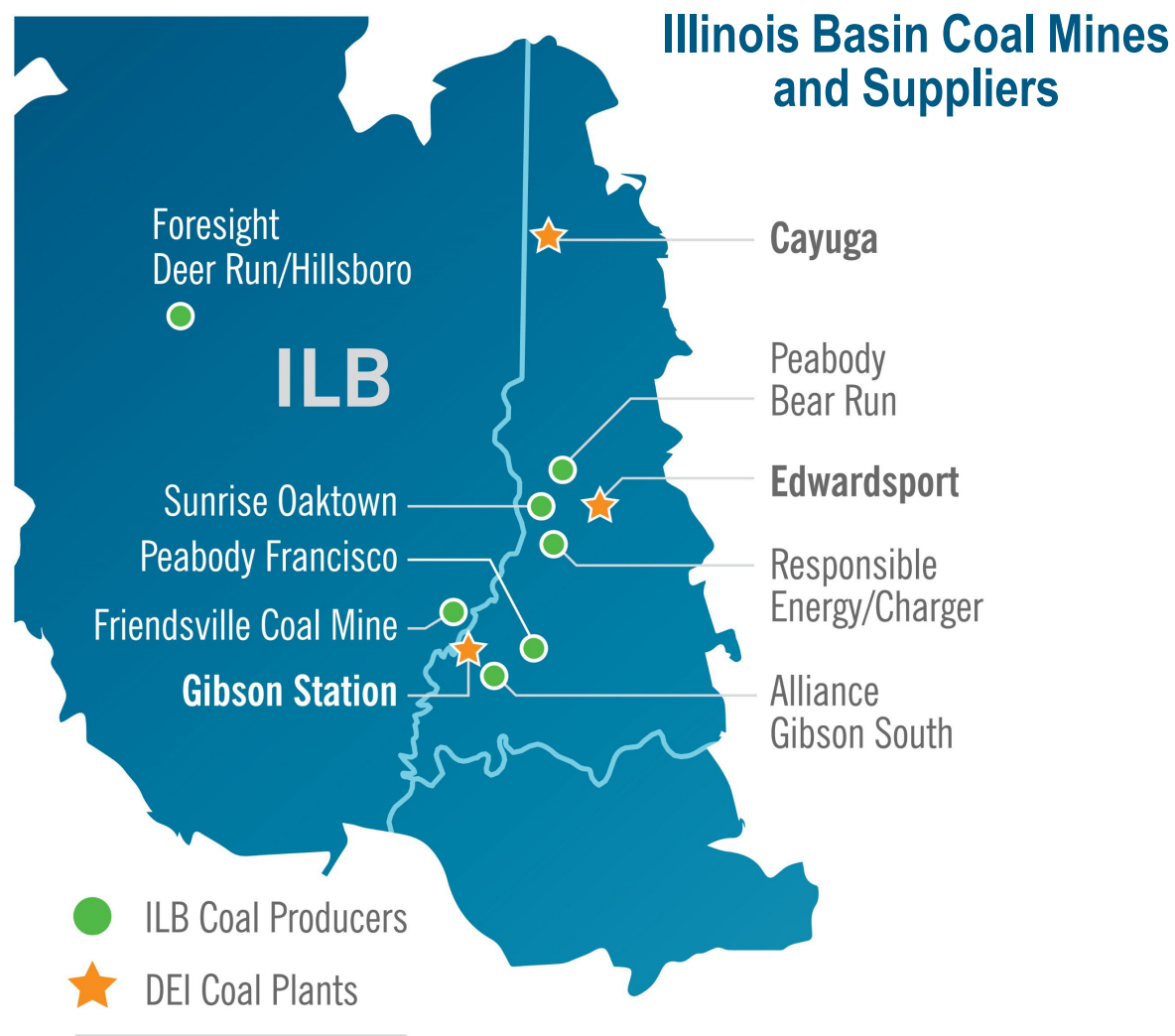


Noblesville
ST1 HP Rotor



Cayuga U1 SH
Platen Panel
Rigged into Boiler

Coal Supply – Winter Preparations



Coal Supply/Transportation

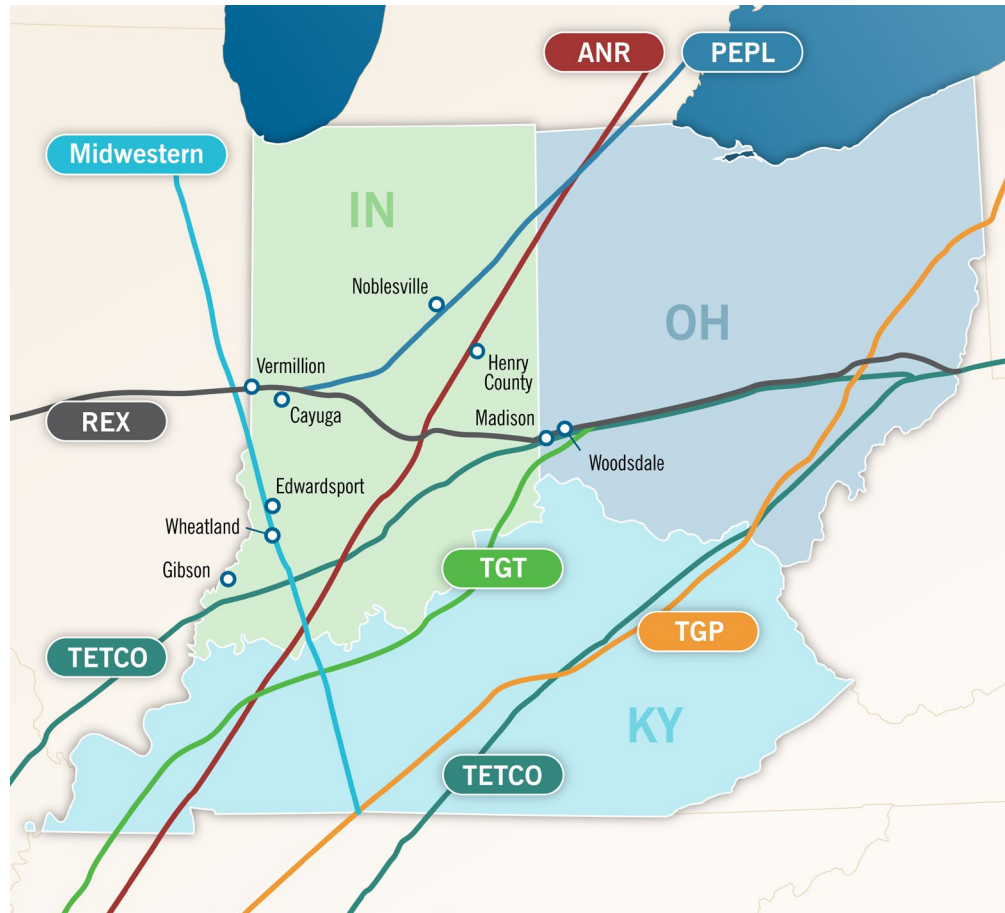
- Supply procured to 100% of projected need for Q4 2024 and Q1 2025 with supplier diversity
- 70% of Duke Energy Indiana generation is supported by onsite coal inventories which are above winter inventory targets
- DEI is not experiencing and does not expect, during this winter, rail transportation delivery constraints like what was experienced in 2021 and 2022.
- Suppliers remain impacted by rising costs and tight upstream supply chains
- Continuing to adjust MISO offer price at Gibson and Cayuga Stations to manage coal supply volatility and maintain reliable transportation and coal supply

Winter Planning and Operations

- Trucking agreements in place should deliveries to Cayuga and Gibson need to quickly ramp up due to rising demand
- Winterization activities for coal handling/rail infrastructure completed
 - Operational tests conducted on loading equipment freeze proofing systems
 - Rail switches and moving rail components lubricated and oiled to prevent freeze ups
 - Beginning November 1, coal shipments may be treated with freeze proofing chemicals as needed due to freezing temperatures
- Continued engagement with railroads and suppliers to ensure delivery performance

Gas Supply – Winter Preparedness

Natural Gas Pipeline Systems – DEI Generators and Gas Transportation



Natural Gas Supply

- Diversified delivered supply from four pipelines
- DEI contracts with an asset manager and the market for firm delivered gas supply
- Asset manager provides fuel security, operational flexibility, 24-hour availability, helps mitigate risk
- Contracted Fixed and Indexed daily pricing to align with gas hedging supply locations

Contracted Firm Capacity

- 32% of Duke Energy Indiana gas generation is supported by contracted firm transportation; the AMA enables remaining firm supply deliverability.
- DEI's contracted firm NG transportation ensures greater gas deliverability during times of high demand and operational restrictions
 - Midwestern – 80,800 dth/day
 - Panhandle – 45,000 dth/day
 - ANR - 15,000 dth/day
 - Rockies Express (REX) – 5,000 dth/day

Winter Planning and Operations

- Monitor gas supply, increase communication
- Reflect the price and availability of natural gas through the MISO cost offers
- Day-Ahead economic: Offer unit(s) as must run and buy corresponding gas
- Real Time: Modify unit offers to account for price and amount of natural gas available

Energy Supply Hedging – Winter Preparations



Coal

- Supply procured to 100% of projected need for Q4 2024 and Q1 2025
- Healthy inventories projected in December to meet winter demand
- Supply offer adjustment remains in place to maintain coal supply reliability



Natural Gas

- Follow approved hedging program using NYMEX hedging targets
- NYMEX Financially Hedged – 48% of monthly forecasted gas burns through March 2025
- Financial products used to mitigate daily price volatility

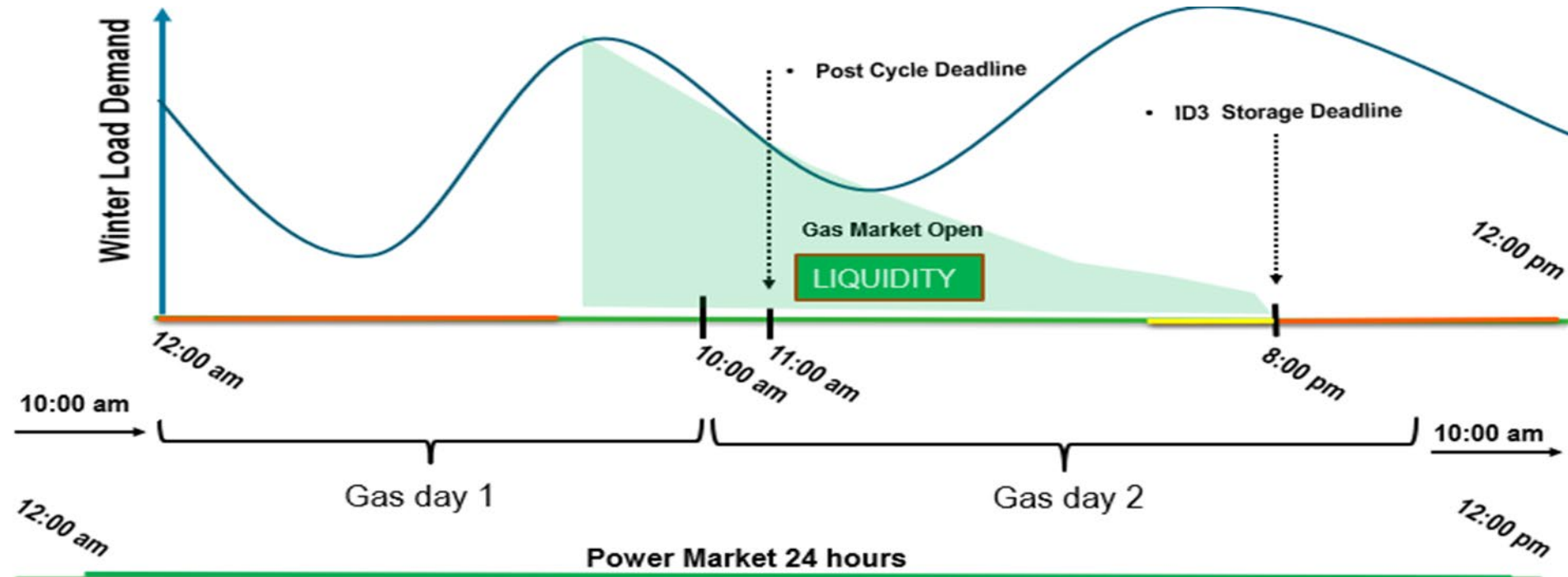


Power

- Execute monthly, weekly, and daily Indiana Hub power hedges based on relationship between gas and power exposures

Gas Supply – Winter Preparedness

Power and Gas Day Illustration



Potential pipeline requirements impacting generation flexibility:

- Ratable Flow: Ratable flow requirements limit flexibility during constrained market conditions
- Operational Flow Orders (“OFOs”): Restricts generator flexibility and enforces compliance with scheduled dispatch
- Low Pressure: Pipelines operating with low pressures may require staggered unit starts and gas supply to be purchased and nominated prior to units starting
- Gas nomination cycles and deadlines: Power Day overlaps 2 gas days, Power market is 7x 24, Gas market closed nights and weekends

Mitigations:

- Contracting for firm transportation or for firm delivered gas supply: Ensures gas supply is highest pipeline priority increasing reliability and reduces some ratable pipeline obligations
- Contracting with Asset Manager: Provides greater access to firm supply and storage in a low liquidity market and increases ability to manage within OFO tolerances
- Maintaining inter-day communication with pipeline gas control: Promotes operational alignment and maximum flexibility during ratable restrictions and low-pressure scenarios
- Maintaining good communication with suppliers, pipelines and generation dispatch: Enables submittal of generation offers to MISO that mitigate risks and promote unit flexibility

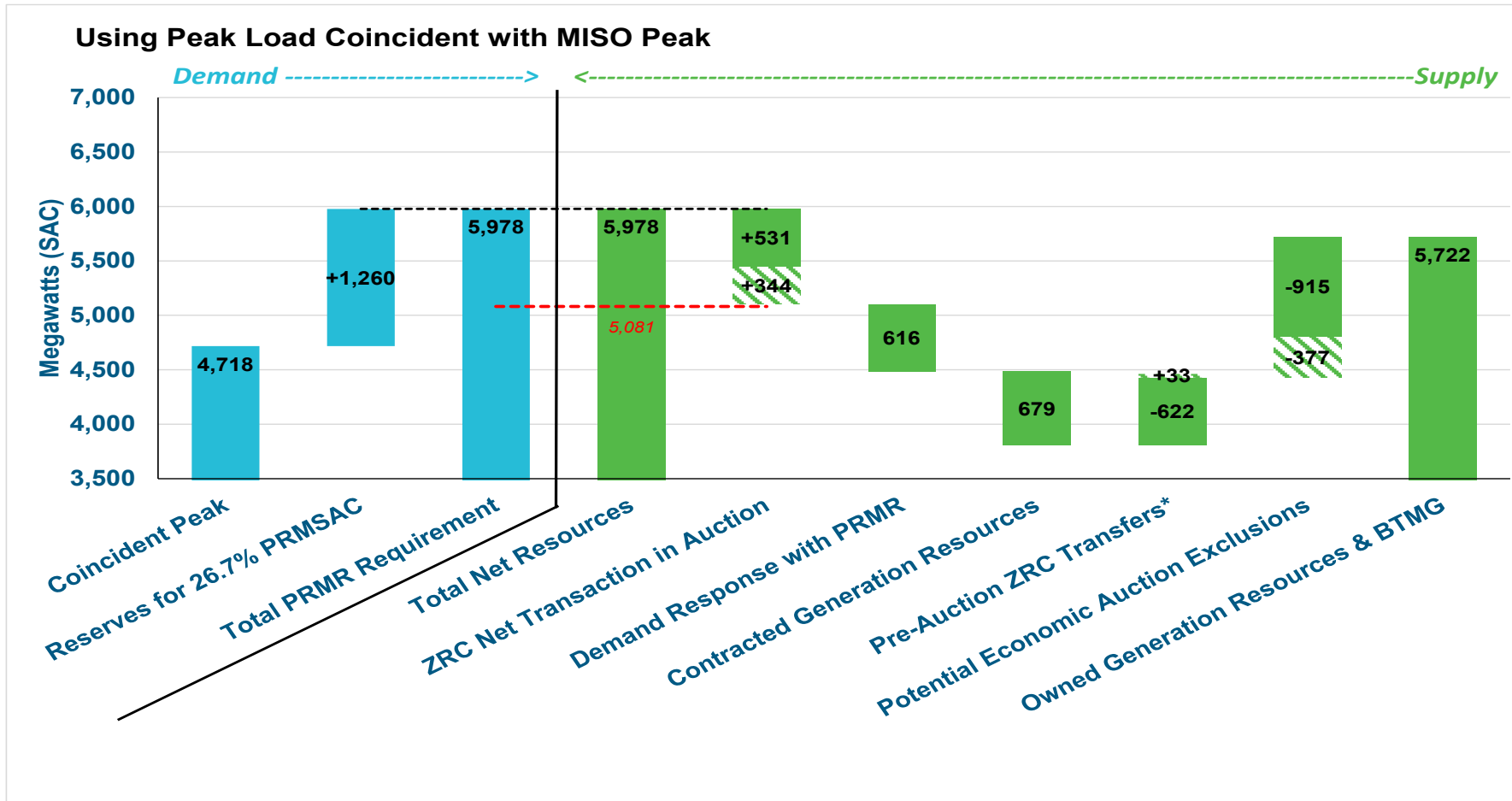
Duke Energy Indiana is Prepared to Reliably Serve our Customers this Winter

QUESTIONS



APPENDIX

Preparation for Spring 2025: Capacity Supply- Demand – As Offered



Acronyms:

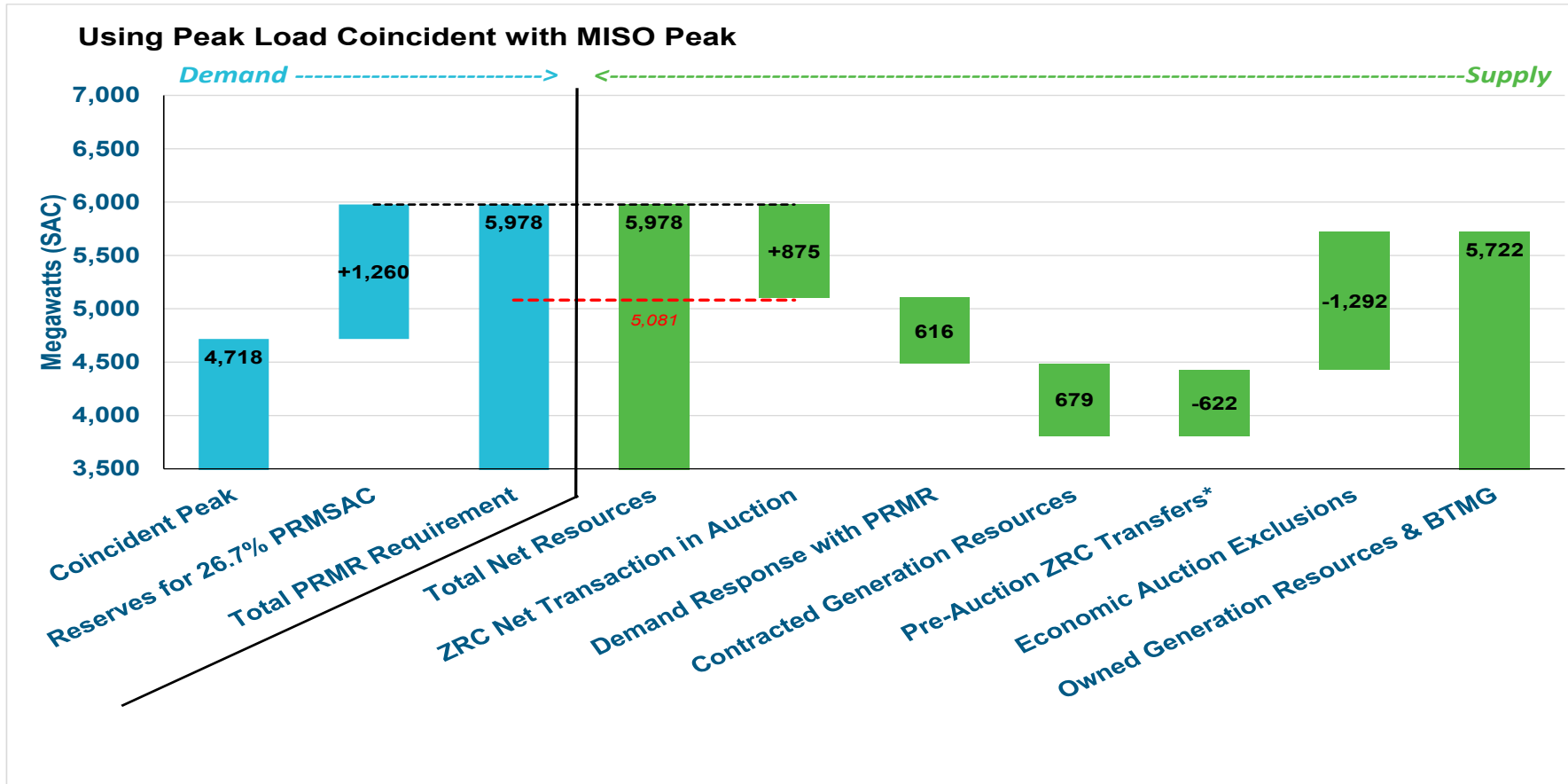
- MISO** – Midcontinent Independent System Operator
- PRMSAC** – planning reserve margin/seasonal accredited capacity
- PRMR** – planning reserve margin requirement
- ZRC** – zonal resource credit
- BTMG** – behind the meter generation
- IMPA** – Indiana Municipal Power Agency
- WVPA** – Wabash Valley Power Alliance
- MW** - megawatt
- STUBNNS** – short term unbundled non-native sales

Spring Total Net Position Between 531MW (8.9%) Purchase and 875MW (14.6%) Purchase

----- Under HEA 1520/1007, the minimum self-supply requirement for DEI going into the auction is 85% * 5,978 MW = 5,081MW

*IMPA ownership share of Gibson 5;
WVPA ownership share of Vermillion CT; 310MW STBNS
Note: ZRC Net Transactions: (+) Purchase, (-) Sale

Preparation for Spring 2025: Capacity Supply- Demand – As Cleared



Spring Total Net Position: 875MW (14.6%) Purchase

----- Under HEA 1520/1007, the minimum self-supply requirement for DEI going into the auction is 85% * 5,978 MW = 5,081MW

Acronyms:

MISO – Midcontinent Independent System Operator

PRMSAC – planning reserve margin/seasonal accredited capacity

PRMR – planning reserve margin requirement

ZRC – zonal resource credit

BTMG – behind the meter generation

IMPA – Indiana Municipal Power Agency

WVPA – Wabash Valley Power Alliance

MW - megawatt

STUBNNS – short term unbundled non-native sales

*IMPA ownership share of Gibson 5; WVPA ownership share of Vermillion CT; 310MW STBNNs

Note: ZRC Net Transactions: (+) Purchase, (-) Sale