Wabash Valley POWER ALLIANCE

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2023 IURC Winter Reliability Forum

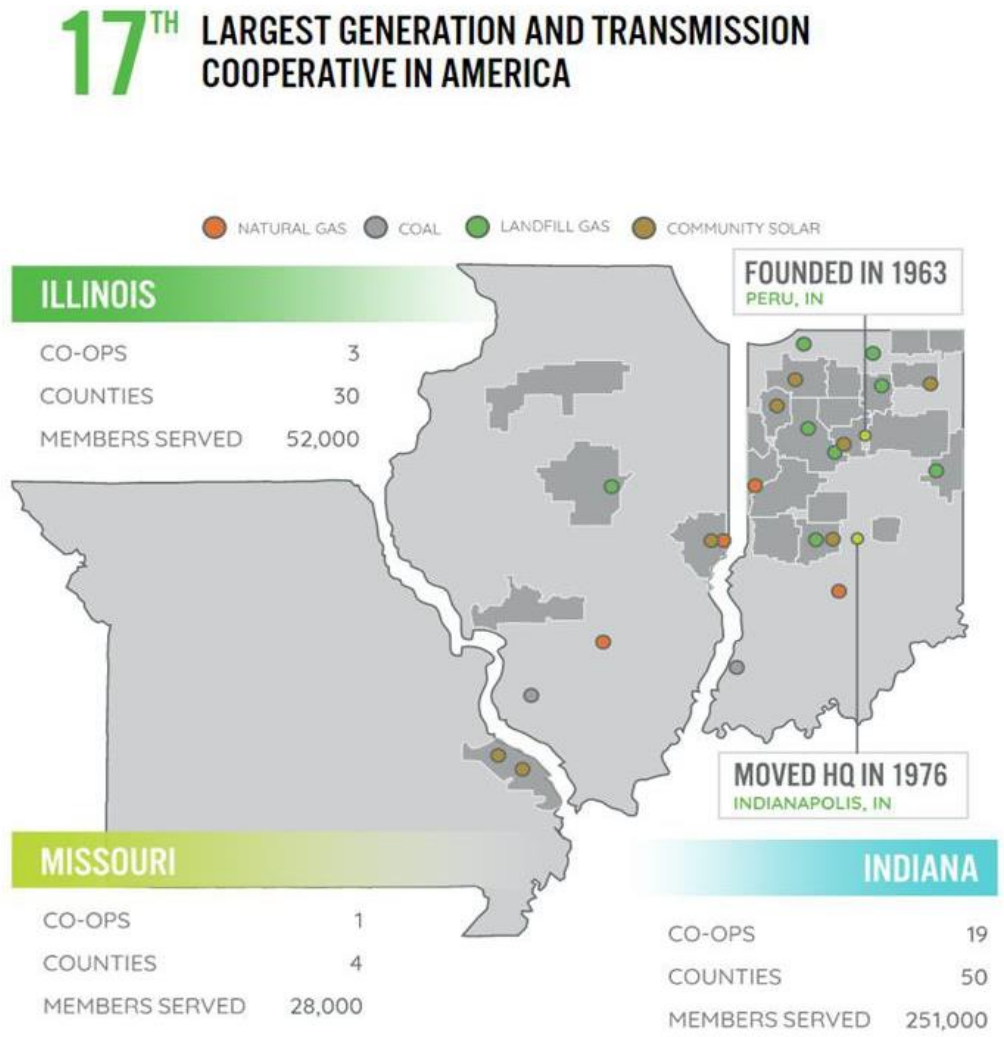
November 27. 2023

1 - WVPA at a Glance
2 - Trend in Wholesale Power Cost
3 - Fuel Availability and Managing Extreme Weather Events
4 – MISO Observations
5 - Winterization Plans

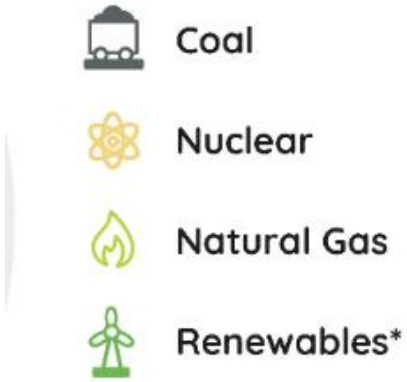
Discussion Topics

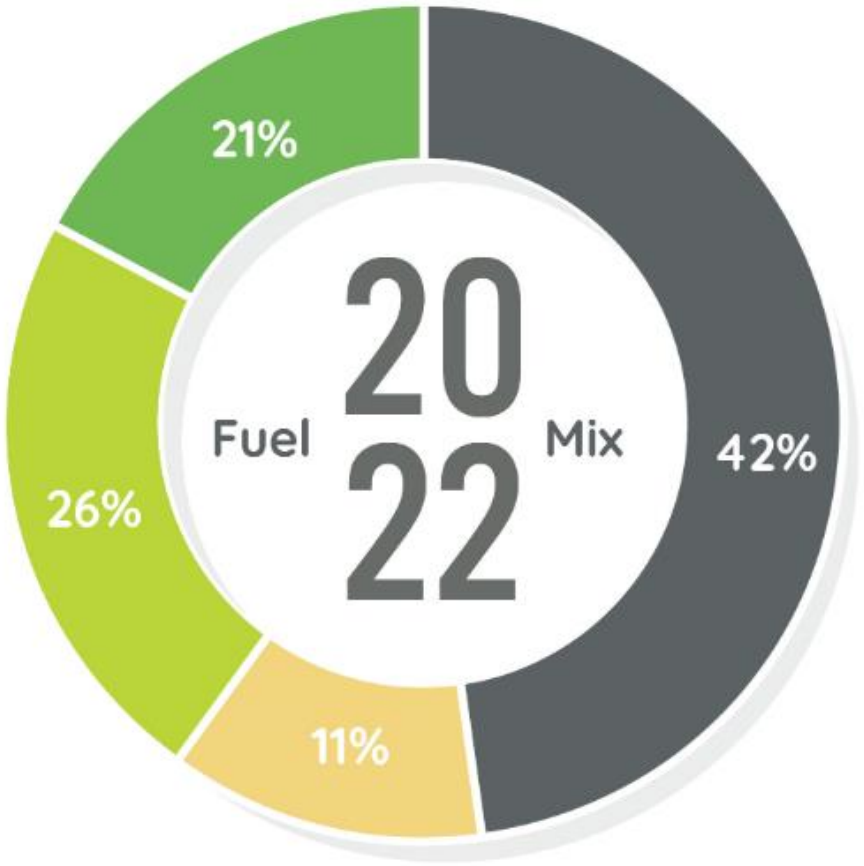
WVPA at a Glance

- → Serves **23** locally-owned distribution cooperatives in **3** states with **331,000** members
- → Peak load ~**1,700** MW
- → **6** transmission zones
- → Diverse portfolio of jointly owned and solely owned resources and contracts



Diverse Portfolio



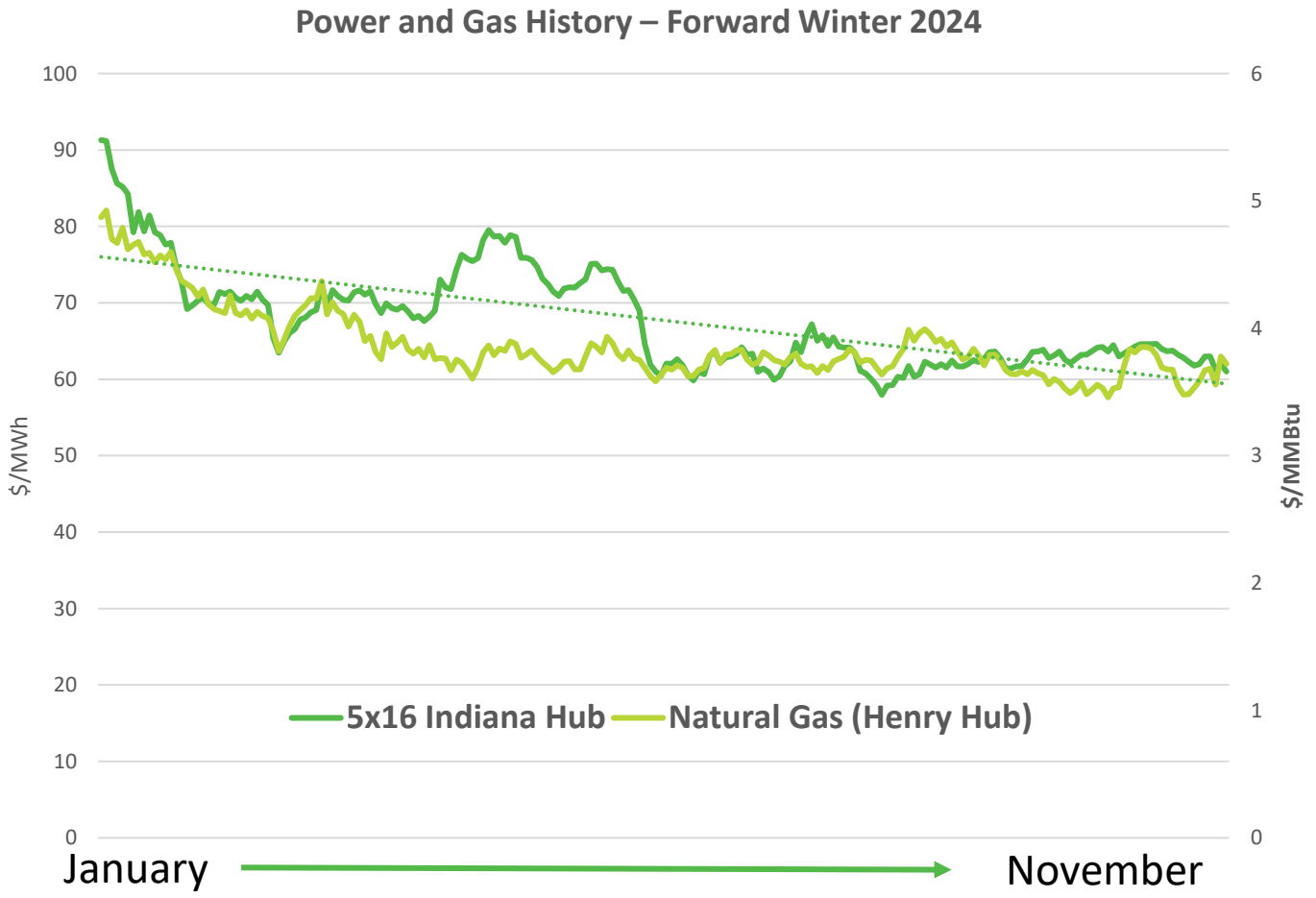


* Wabash Valley Power supports renewable energy by owning landfill gas and solar generation as well as purchasing the output from wind and solar facilities. Rather than incorporating these renewables into our own portfolio, we sell the environmental attributes, facilitating others' ability to achieve their environmental goals. While this doesn't allow us to claim this generation as renewable in our own portfolio, it is one more way we are supporting the growth of renewables in the marketplace.

Trend in Wholesale Power Cost

Trend – 2023/2024 Winter Season

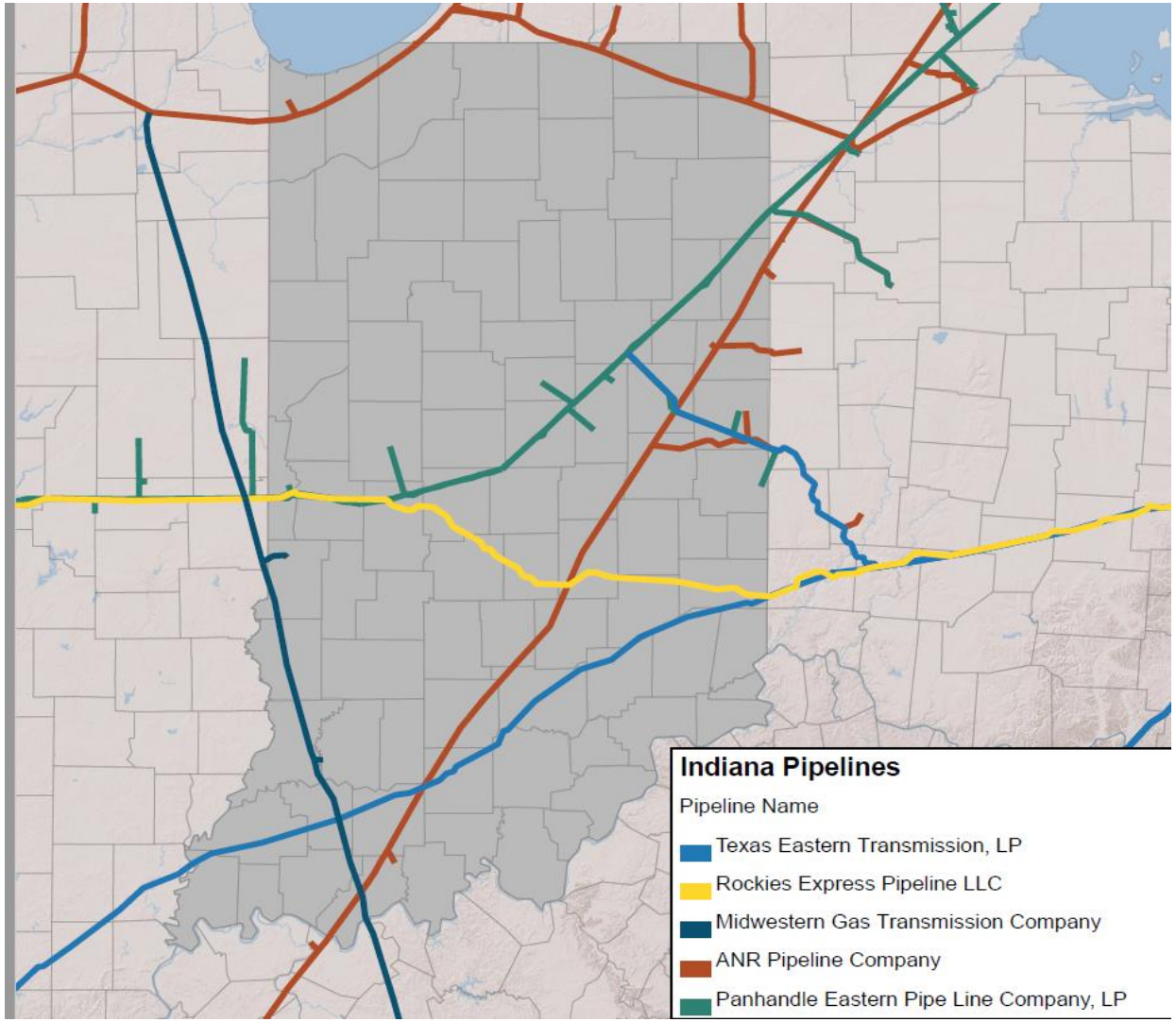
- WVPA provides cost of service rates to our members through a Formula Rate Tariff under FERC Regulation.
- Over collections or under collections are trued-up annually.
- Through a disciplined energy hedging plan, Members exposure to volatility in spot power markets is minimal.
- Natural gas and power forward markets have trended lower since the beginning of 2023.
  - Power ~$90/MWh - ~$60/MWh
  - NG ~$4.90/MMBtu - ~$3.70/MMBtu



Fuel Availability and Managing Extreme Weather Events

Natural Gas – Pipeline Nominations

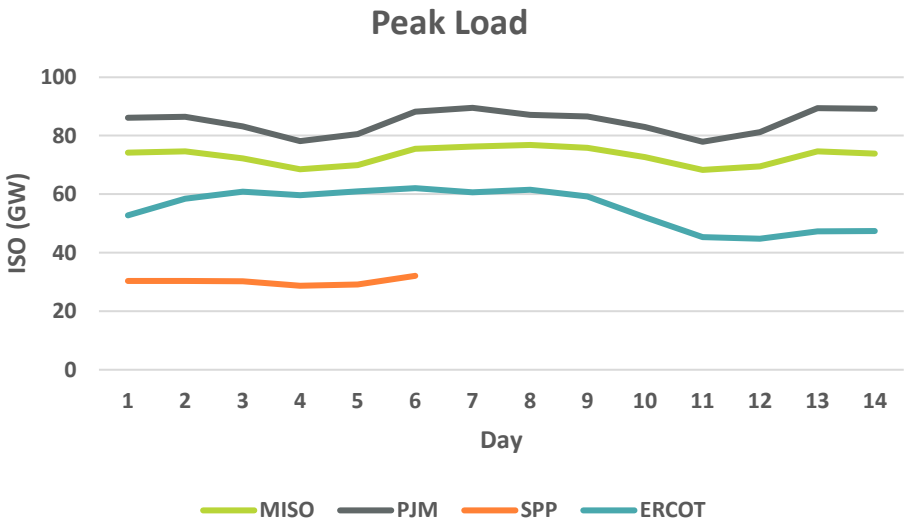
- WVPA has ownership in combined cycle and combustion turbine resources.
- Interconnected pipelines include ANR, NGPL, and Midwestern Gas.
- Natural gas nomination cycles under normal conditions typically do not create issues with offering natural gas resources into the MISO Day-Ahead and Real-Time markets.
- Challenges are created during extreme cold weather events.
  - Resources are committed on a day-ahead basis vs. days in advance of severe weather.
  - Natural gas pricing can be extremely volatile, especially for real-time spot purchases.
  - Natural gas and power markets are not aligned.
  - Power markets clear daily (HE 1 to HE 24) and pipelines schedule flows to begin @ 10 am.
  - Power plants scheduled in the real-time stress pipeline conditions and create challenges to manage line pack.

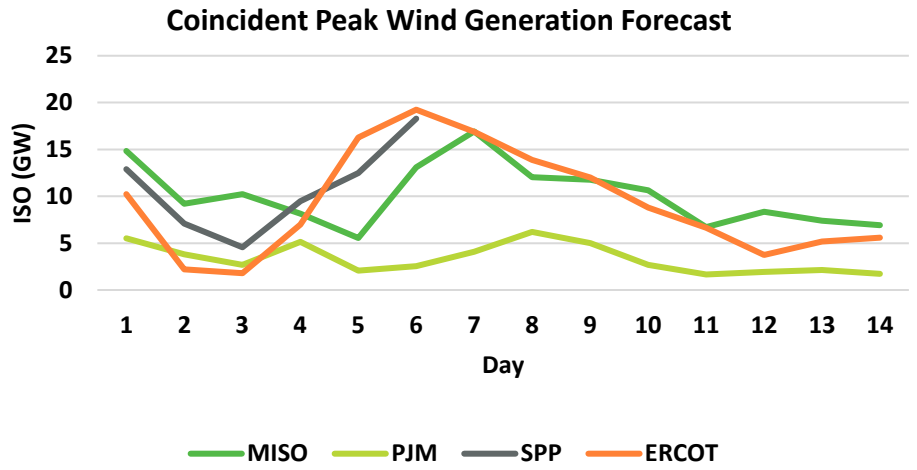


Fuel Inventories

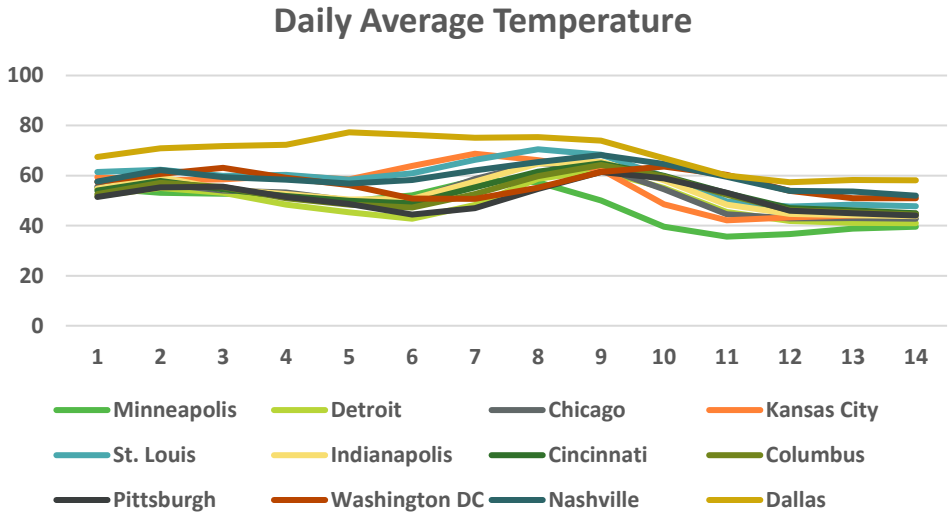
01	Jointly Owned Coal Indiana	• Continuous collaboration with partners • Forecasting rail deliveries by month and coal burn • 65 days of full load burn of inventory • Manage coal pile objective through market offer strategy • Coal inventory is currently at the winter target level
02	Jointly Owned Coal Illinois	• Coal mine is directly adjacent to coal plant • Maintain 30 days of inventory • Inventory is to manage potential issues with the coal mine
03	Natural Gas	• Natural gas can’t be stored in inventory on site • Contract with larger suppliers that own natural gas transportation and storage • Historically, WVPA has not had issues with physical delivery of natural gas

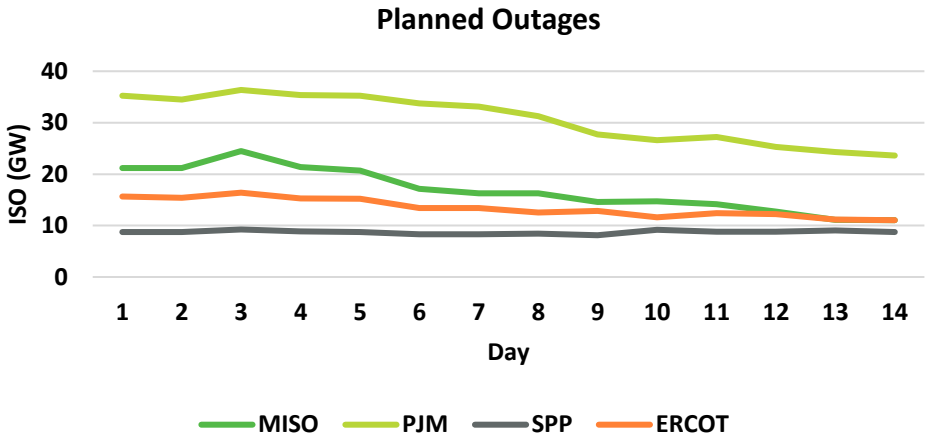
Extreme Weather Event





- Increased monitoring of multiple markets
- Should we must run natural gas units? (Reliability)
- Should we purchase power well in advance? (Affordability)

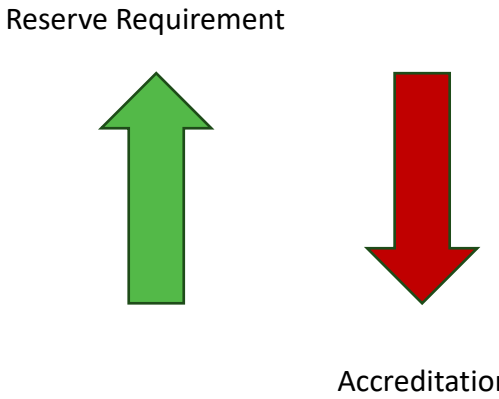




MISO Observations

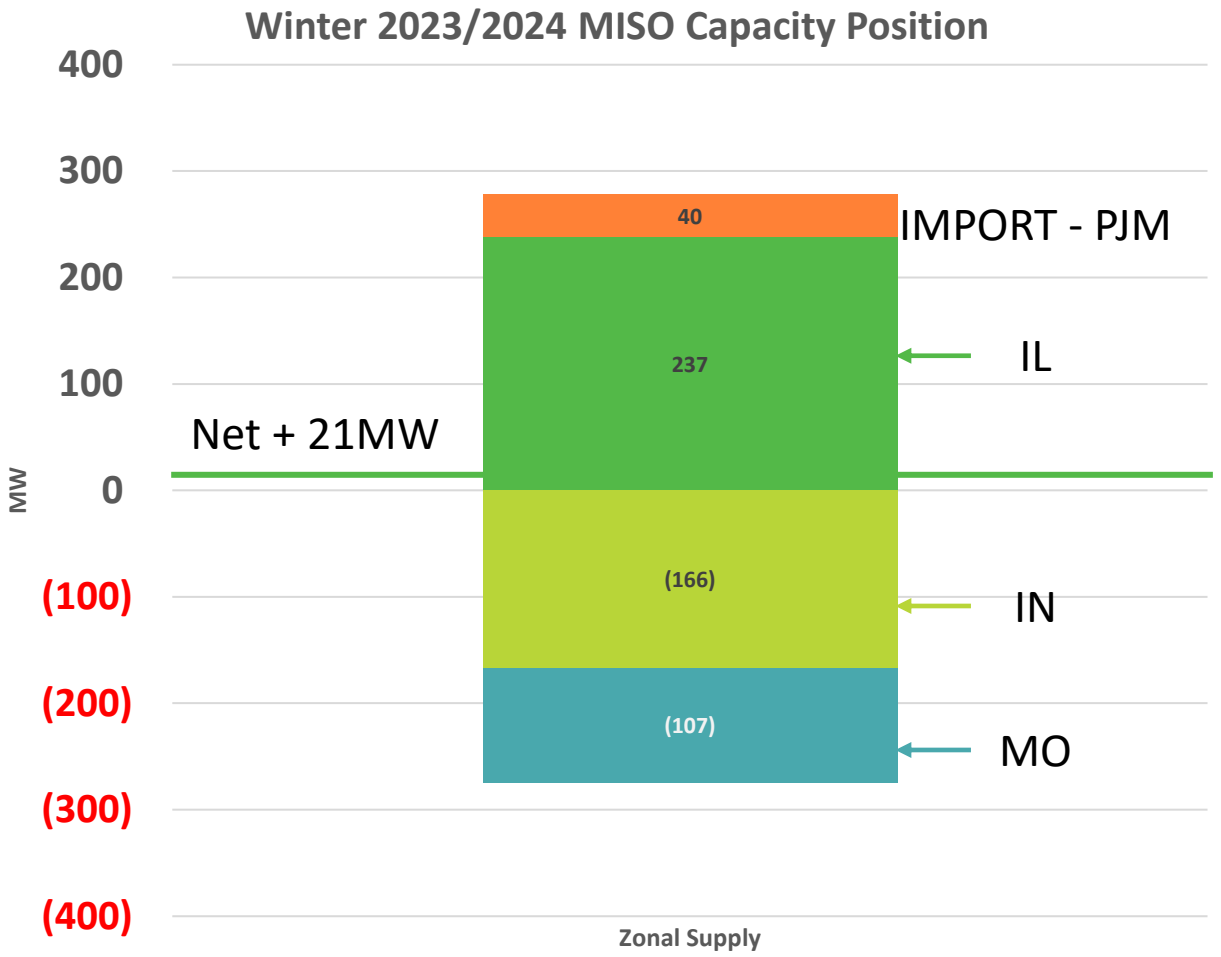
MISO Seasonal Accreditation Construct

- Planning reserve margins (PRM) for Winter season compared to the previous annual PRM.
  - Winter: 25.5% for PY 23/24 and 27.4% for PY 24/25
- Solar accreditation is virtually zero in the winter.
- Management of unit outages that are scheduled for more than 31 days
- Load Modifying Resources (LMRs) utilization is challenging since traditional Summer focused programs are misaligned with new seasonal requirements. Significant enhancements are underway to replace lost capacity value
- Ability to respond to significant market rule changes.
  - Lack of liquidity in bilateral capacity market.
  - Long build cycles.
- Future changes to accreditation methodology prompt uncertainty.



WVPA Winter Capacity

- WVPA owns and contracts for enough capacity to meet our total obligations (peak demand + reserves).
- WVPA serves member load across three states (IN, IL, MO)
- WVPA's resources are primarily in IN and IL.
- The majority of WVPA's load responsibilities are in the MISO footprint.
- Forward planning has become increasingly more complex.
- Under current accreditation methodology and reserve margin requirements, WVPA will have sufficient capacity for several years.
- Approximately 10% of WVPA's member load is within the PJM footprint.
    - Served via full requirements contract



Winterization Plans

Winterization Plans

- All of the operating companies for WVPA owned generation have formal winterization plans and procedures in place, including adhering to NERC's Extreme Cold Weather Preparedness and Operations standard.
- Prior to the start of the winter season each year (late summer/early fall), meetings are held with operating staff to review the winterization plans, associated Preventative Maintenance ("PM") activities, and the need for any necessary changes or lessons learned from the prior season.
- These plans and PM procedures are reviewed again immediately prior to the arrival of each potential winter weather event.
- All planned fall outages are scheduled to be completed by December 15th.

Winterization Actions

All Plants

1. Turn on and test heat trace circuits, strip heaters and space heaters
2. Inspect exterior piping, valves and sensing lines including associated heat tracing, wiring and insulation (especially on steam, water, instrument air systems)
3. Inspect and test building/enclosure heating systems, including louvers and vent fan operations
4. Check instrument air dryers and blow down lines
5. Drain water lines as necessary
6. Check salt, sand, and ice/snow melt supply inventories
7. Check inventory on tarps, heat lamps, supplement heater fuels
8. Check PPE inventories (gloves, ice spikes, etc.)
9. Build scaffold-supported weather enclosures around outside equipment prone to freezing
10. Contract for snow and ice removal

Winterization Actions

Coal Plants

Inspect coal conveyor antifreeze systems

Inspect environmental reagents freeze protection systems

Rent asphalt grinder to break up frozen coal

Inspect train car deicer/thaw shed enclosure heaters

Park mobile equipment indoors or leave in operation

Natural Gas Plants

Inspect and test bus duct heaters

Inspect vaporizer on ammonia system

For combined cycles, keep auxiliary boilers in good condition, sparge HRSG's, and keep water moving in cooling towers and piping

Drain HRSG's as a last resort and/or install duct balloons in stack in case of a hard trip

Before / During Event

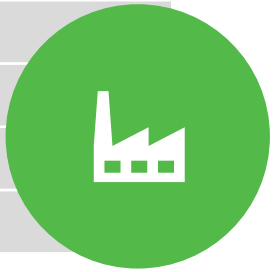
BEFORE

01 Communicate with local authorities on prioritizing road treatment for common routes to facilities.

02 Communicate with natural gas suppliers on pipeline operations/conditions.

03 Walk down facilities and revisit winterization plans and checklists.

04 Assure adequate staffing and readiness Check food supplies/cots - Coordinate site snow removal contractors



During

01 Closely monitor critical instrumentation and equipment for freezing

02 Snow removal and deicing of pathways and equipment

03 Increased communication with fuel suppliers, ACES, plant personnel and RTOs

04 Implement Emergency Power Supply Plan as necessary to respond to grid conditions

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