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EVP – Power Supply

IURC Winter Reliability Forum
November 17th 2022

Discussion Topics

- Trend in Wholesale Power Cost
- Winterizing Actions
- Fuel Availability
- MISO Seasonal Construct



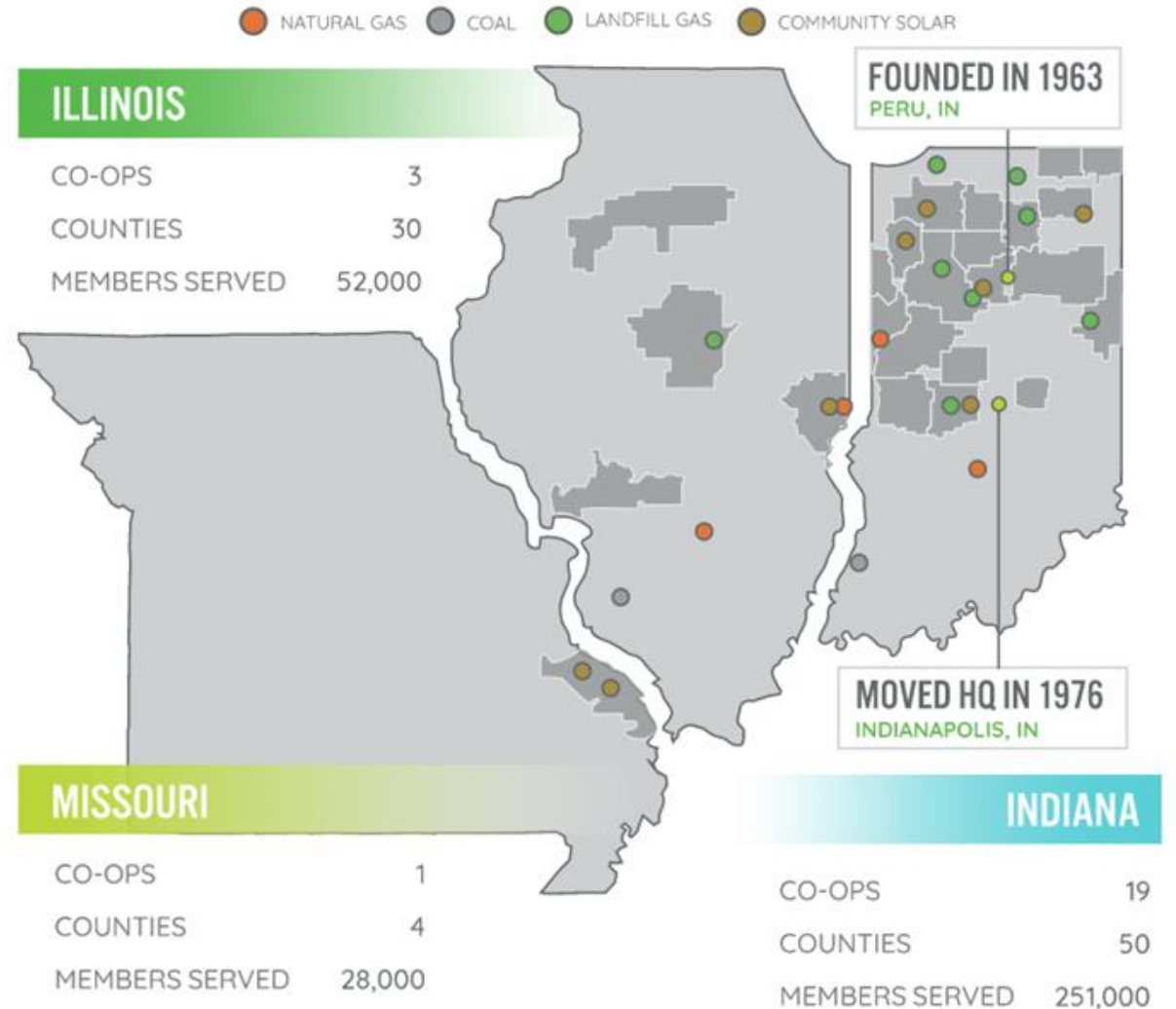
Trend in Wholesale Power Cost

- Wabash Valley Power Alliance provides wholesale power to 23-member distribution cooperatives.
- On a year over year basis, power supply cost have increased approximately 5%.
- Increases are a result of increases in natural gas and wholesale power markets and coal delivery issues.
- Our diversified portfolio has muted the impacts of unprecedented challenges in our industry.



- Serve 23 locally-owned distribution cooperatives in 3 states with 331,000 members
- Peak load ~1,500 MW
- 6 transmission zones
- Diverse portfolio of jointly owned and solely owned resources & contracts

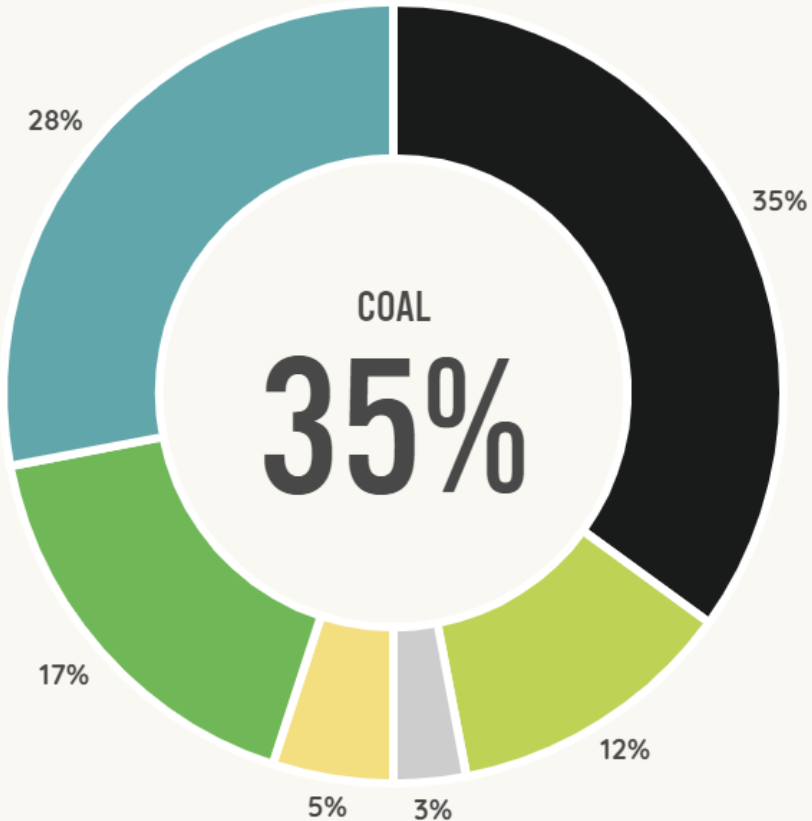
17TH LARGEST GENERATION AND TRANSMISSION COOPERATIVE IN AMERICA



WVPA Portfolio

OUR FUEL MIX

2022
2021
2020
2019
2018
2017



- Coal
- Natural Gas
- Market Purchases**
- Nuclear
- Renewables**
- Fixed Price Contracts*

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 were scheduled to be completed by November 6th.
- Details around winterization actions can be found in the appendix.



Before and During Winter Weather Events

Before

- **Communicate with local authorities on prioritizing road treatment for common routes to facilities**
- **Communicate with natural gas suppliers on pipeline operations/conditions**
- **Check food supplies/cots**
- **Coordinate site snow removal contractors**
- **Assure adequate staffing and readiness**
- **Walk down facilities and revisit winterization plans and checklists**

During

- **Closely monitor critical instrumentation for freezing**
- **Snow removal and deicing of pathways and equipment**

Fuel – Inventories

Jointly Owned Coal - Indiana

- **Continuous collaboration with partners**
- **Weekly meetings**
- **Forecasting**
 - **Rail deliveries by month**
 - **Coal burn**
- **Target 42 days by January 1st**
- **Manage coal pile objective through market offer strategy**
- **Coal inventory is currently at the winter target level**

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**

Natural Gas

- **Natural gas can not be stored in inventory on site**
- **Contract with larger suppliers that own natural gas transportation**
- **Historically, WVPA has not had issues with physical delivery of natural gas**

Supply Chain Issues

- Railroads have been challenged to hire and maintain staff.
- Coal mines have had similar issues, but performance has increased during the year.
- Staffing issues at both the mines and railroads have created less certainty around scheduled deliveries.
- Actual deliveries have slowly improved, but still short of scheduled deliveries.



MISO Seasonal Construct

- Historically – WVPA has owned or contracted for enough capacity to comply with peak summer needs.
- WVPA recognizes the changing energy landscape and supports MISO's goal to manage resource adequacy on a seasonal basis.
- Capacity accreditation is still uncertain, but WVPA's portfolio would be long capacity in the summer and nearly flat in the winter.
- Planning for winter and all seasons going forward has become considerably more complicated.
- Implementing the change for next year (23/24 planning year) has created challenges with adapting to significant market rule changes.



Appendix - Winterization Actions

All Plants

- Turn on and test heat trace circuits, strip heaters and space heaters
- Inspect exterior piping, valves and sensing lines including associated heat tracing, wiring and insulation (especially on steam, water, instrument air systems)
- Inspect and test building/enclosure heating systems, including louvers and vent fan operation.
- Check instrument air dryers and blowing down lines
- Drain water lines as necessary
- Check salt, sand, and ice/snow melt supply inventories
- Check inventory on tarps, heat lamps, supplement heater fuels (kerosene, propane, etc.)
- Check PPE inventories (gloves, ice spikes, etc.)
- Build scaffold weather enclosures around outside equipment prone to freezing in the winter.
- Contract for snow and ice removal



Appendix - Winterization Actions

Coal Plants

- **Inspect coal conveyor antifreeze systems**
- **Inspect environmental reagents freeze protection systems**
- **Rent asphalt grinder to break up frozen coal**
- **Train set deicer/thaw shed enclosure heaters**
- **Turn trains around as quick as possible (don't leave idle)**
- **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**