

## Winter Preparedness 2022/2023

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November 17, 2022

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### **Executive Summary**

- Prepared with adequate resources and infrastructure to meet customer needs during Winter 2022/2023
- Proactively reaching out to communicate and engage customers





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### Indiana Michigan Power Resource Diversity

#### **Diverse set of Generation Resources and PPAs:**

- 2,278 MW Cook Nuclear Plant
- 2,223 MW Rockport Coal Plant
- 22 MW of Hydroelectric Power
- 35 MW of Universal Solar
- 187 MW OVEC ICPA
- 450 MW of Wind Power under PPA;

# 80+%

Carbon-free System-wide Generation In 2021

- 100 MW from the Fowler Ridge I Wind Farm in Benton County, IN
- 50 MW from the Fowler Ridge II Wind Farm in Benton County, IN
- 100 MW from the Wildcat Wind Farm in Madison County, IN
- 200 MW from Headwaters Wind Farm in Randolph County, IN

#### **I&M Demand-Side Resources:**

- Energy Efficiency Programs
- ~ 300 MW of Interruptible and Demand Response Load





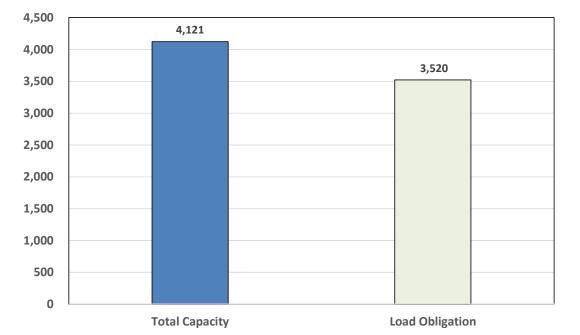


### Winter Energy Outlook PJM Unforced Capacity (UCAP)

I&M has sufficient capacity to meet its load obligations for Winter 2022/2023 with adequate reserve margin

Description	2022 Capacity (MW)
Fossil and Nuclear	3,696
Demand Response	340
Intermittent (wind, solar, hydro)	85
Total Capacity	4,121

\* Fossil and Nuclear value reflects capacity after Rockport Unit 2 lease expires on 12/7/22



Estimated I&M Winter 2022/2023 Capacity Position



### PJM-2022 Watch List

- I&M does not anticipate RTO changes to impact the ability to meet 2022/2023 winter load obligations.
- I&M is monitoring ongoing activities in PJM related to:
  - Comprehensive review of capacity market
  - Timeline for interconnection of new generation resources
  - Integration of DERs into capacity, energy, and ancillary service markets



## Winter Preparation: Fossil Generation

### **Fossil Generation**

- Fuel Supply: I&M anticipates having adequate fuel supply on hand for Winter Operation
  - Projecting 38 days of Full Load Burn (Dec. 1<sup>st</sup>)
- Winterization Cold Weather Preparedness & Operation Plan Execution
  - Started Sept. 1<sup>st</sup> and attestation of plan execution is scheduled for Nov. 15th
- Planned Fall Outages: Addressing known liabilities
  - Release Dates: U1-Nov. 5<sup>th</sup> and U2- Nov. 21<sup>st</sup>





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#### Weeks Ahead

- Address notable known liabilities during planned Fall Outages.
- Verify coal, chemical and reagent inventories and delivery schedules align with anticipated operating plan.
- Lessons learned review from previous Winter Operation and action plan initiation for identified opportunities.
- Cold Weather Preparedness & Operation Plan Review & Execution - November 15th

## Generation: Proactive Management of Extreme Cold Weather (Winter)

#### **Days Ahead**

- Ensure availability of needed staffing, setting up overtime and staffing augmentation as needed well in advance.
- •Update and communicate "Stop Light Notification" system on daily basis to correspond with weather conditions.
- •Complete readiness activities according to Winterization Policy/Procedure and anticipated temperature and duration.
- •Stage additional portable heating equipment and place in service; monitor & refuel as required.
- Monitor ambient temps on O/S unit(s).

#### **Day Ahead**

- Increase operations rounds on critical equipment, monitoring of key trends in the Plant Information System
- Work scope review with respect to unit trip potential (risk), and limit tasks as necessary
- Monitor ambient conditions on units and outbuildings. Add additional portable heating as needed.
- Communicate with Production Optimization to schedule appropriate load points to manage reliability of units ( cooling tower basin temps).
- Evaluate need to start up Auxiliary Boiler or out of service unit(s) as need for additional heat loading.



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### Winter Preparation: Nuclear Generation

### **Nuclear Generation**

- Fuel suppliers
  - Adequate fuel supply for 4 years (through 2025)
  - No direct dependence on Russia
- Planned/maintenance outages
  - None
- Severe Weather
  - Winterization procedure
  - Severe weather procedure
  - Extreme cold, high winds, rough lake, blizzard





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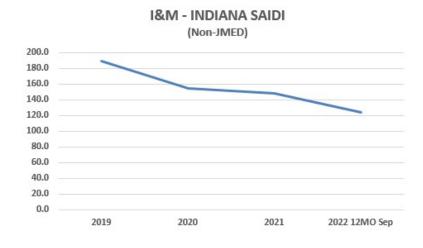
### Winter Preparation: Indiana Resiliency/Reliability

### Resiliency Comparitive

	2012 Derecho	2022 Derecho
Peak Wind Speed	91 MPH	98 MPH
Circuit Level Outages	75	30
Customers Affected	105,800	40,700
<b>Restoration Duration</b>	8 days	3.5 days

#### Improvements:

- Storm hardening standards
- Grid Modernization investments
- ICS
- Mutual Assistance



#### 2022 vs. 2021 YTD % Improvement (Non-JMED)

Contributing Cause	SAIDI	SAIFI
Vegetation	43%	38%
Equipment Failures/Lightning	16%	3%
Station/T-Line	40%	49%
Overall	21%	13%



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## Distribution Operations: Extreme Weather Preparations and Response

#### **Annual Preparedness**

- Weekly meeting with AEP Storm Coord. team to review general storm preparation business
- I&M Incident Command System (ICS) is regularly updated with back-ups to ensure coverage
- ICS General Training has been completed, down to the "Unit Leader" level
- One "mock event" has been completed and an additional one is scheduled to test I&M storm response
  - Load Shed event has occurred
  - A "significant ice event" is planned before year end

#### **Days Ahead**

- Weather alert is received from AEP Meteorology with prediction model data for a forecasted weather event
- AEP Mutual Assistance schedules a meeting to review
- I&M Leadership reviews forecast
- Based on severity of forecast, internal and base load resources are put on alert
- AEP Mutual Assistance is contacted with projected needs
- ICS Logistics and Planning sections set up structure for strategic interface and situational analysis to prepare for resource mobilization

#### **Event Response**

- Incident Command System begins managing restoration efforts
- Begin hazard assessment and damage assessment as a first response
- Operations Section, which has been engaged, initiates active restoration based on Planning Section data
- Customers are updated via social media and mobile alert application
- IURC receives regular updates during event restoration
- Severe cold weather events include:
  - Identification of warming stations
  - Staging crews 24/7
  - Pairing Servicers days and nights



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