



# **RESOURCE ADEQUACY IN ZONE 4: THE ROLE OF DEMAND RESPONSE**

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Advanced Energy Economy

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# AEE Peak Demand Reduction Strategy



# Key Considerations in DR Strategy

- Navigant considered low, medium and high case DR scenarios
  - For Illinois we've limited discussion to the low and medium scenarios based off FERC analysis that shows 7.6% achievable participation in DR
- Assumed that 50% of incremental peak reduction comes from efficiency and 50% from demand response
- Low Case Scenario – DR called when load hits 96% of expected peak; Middle Case Scenario – DR called when load hits 95% of expected peak



# Illinois Demand Response Potential

Year	Actual Peak Load	Mandated Peak Low	Mandated Peak Mid.	Reduction Low Case	Reduction Mid Case
2015	31,700	31,700	31,700	-	-
2016	32,214	31,700	31,620	514	593
2018	33,024	31,700	31,462	1,325	1,562
2020	34,060	31,700	31,305	2,361	2,755
2022	34,905	31,700	31,227	2,778	3,250
2024	35,587	31,700	30,993	3,888	4,594
2025	36,563	31,700	30,916	4,863	5,647

All load numbers are representative of MW.

*Actual peak load is defined as the load actually consumed taking into account existing and mandated energy efficiency.*



# DR Resource in MISO Zone 4 in 2023

ISO	Peak Demand Reduction Target (MW)	ISO Peak Demand Reduction Target (MW)	Cleared DR/EE (MW)	Peak Demand Reduction Less Cleared DR	Adjusted Peak Demand Reduction
MISO	4,350	1,382	455	927	464
PJM	4,350	2,968	1,322	1,646	823

## Notes:

- 1) Incremental DR is split 70/30 between PJM and MISO
- 1) Navigant subtracted the amount of DR expected to clear capacity markets without peak demand reduction scenarios.
- 3) Derated DR participating in capacity markets 50% to account for resources that do not meet ISO criteria or do not want to participate in the market.



# Avoided Capacity Costs Due to Price Suppression

ISO	ISO Area	Base Case ISO Total Cost (\$000)	Base Case ISO Area Total Cost (\$000)	Medium Case ISO Total Cost (\$000)	Medium Case ISO Area Total Cost (\$000)	Avoided Cost (\$000)
MISO	LRZ4	\$10,520,943	\$942,573	\$10,041,270	\$899,599	\$42,974
PJM	COMED	\$22,071,744	\$3,239,211	\$19,712,601	\$2,892,987	\$346,224

## Notes:

1) ISO Annual Capacity Cost = ISO Clearing Prices (MW-Day) X ISO Cleared MW X 365

2) Net present value of price suppression over the study period using a 10% discount rate for each scenario.



# Thank you!

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