



# 2021 OMS DER Survey Results

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OMS Board of Directors

June 10, 2021



Organization of MISO States

# Executive Summary



This is the fourth year of OMS DER Survey



In the past we've only requested information on DER that was NOT registered with MISO (NM)



This was the first year where we requested information on DER that was Registered with MISO (RM)

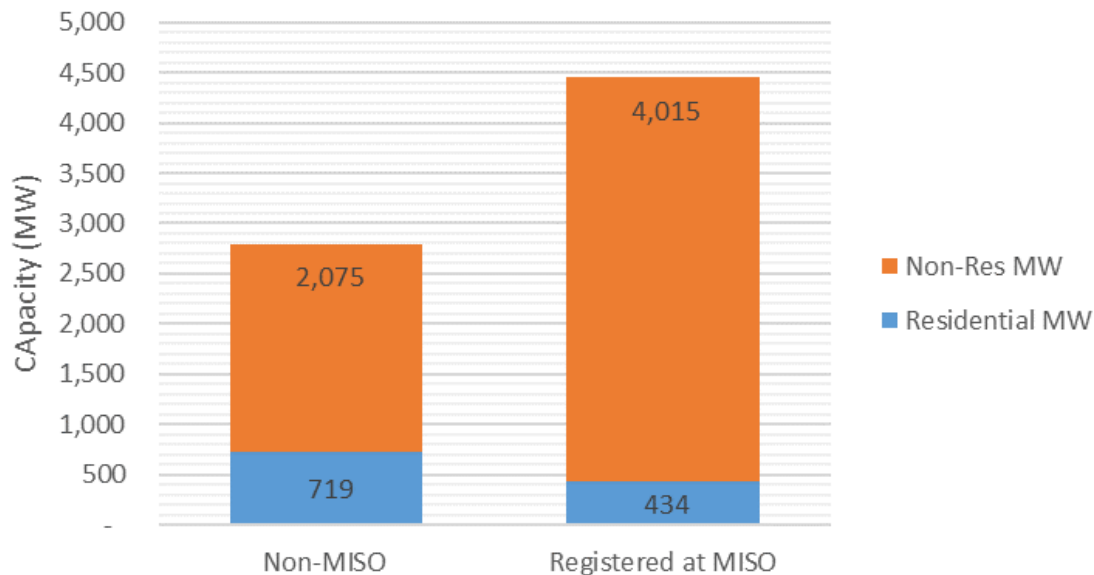


Non-Registered DER is much smaller than previously reported

## 7.2 GW of Total DER Reported

- Over 60% of DER is registered with MISO
- Non-MISO registered DER has a larger portion that is residential
- Results indicate past results included DER that was registered with MISO

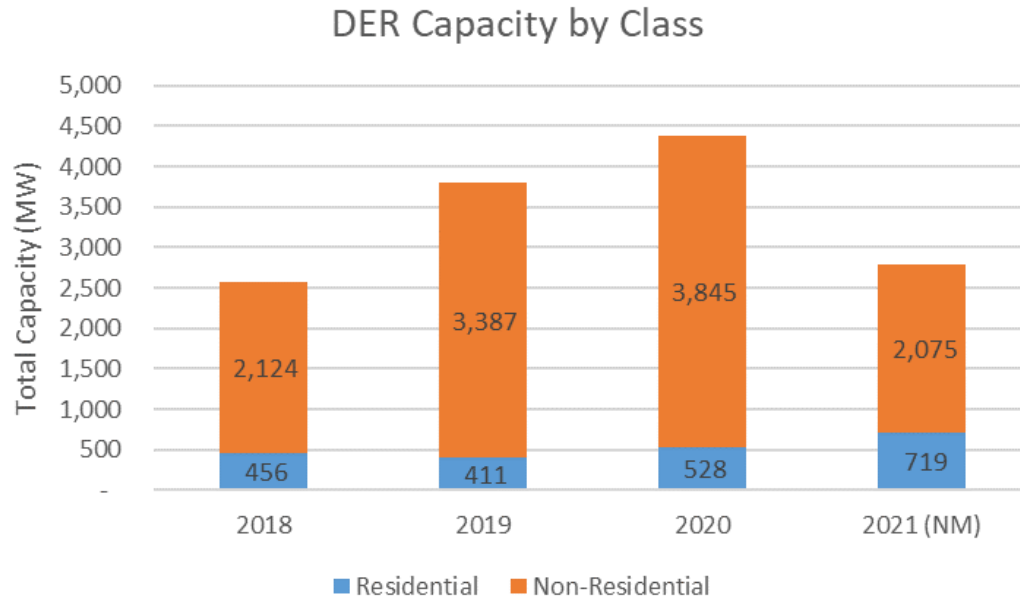
DER by MISO Registration Status



Customer Class	2018	2019	2020	2021 (NM)	2021 (RM)	2021 Total
Residential MW	456	411	528	719	434	1,154
Non-Res MW	2,124	3,387	3,845	2,075	4,015	6,090
Total MW	2,581	3,797	4,373	2,794	4,449	7,243



# Survey results indicate past results included DER registered with MISO

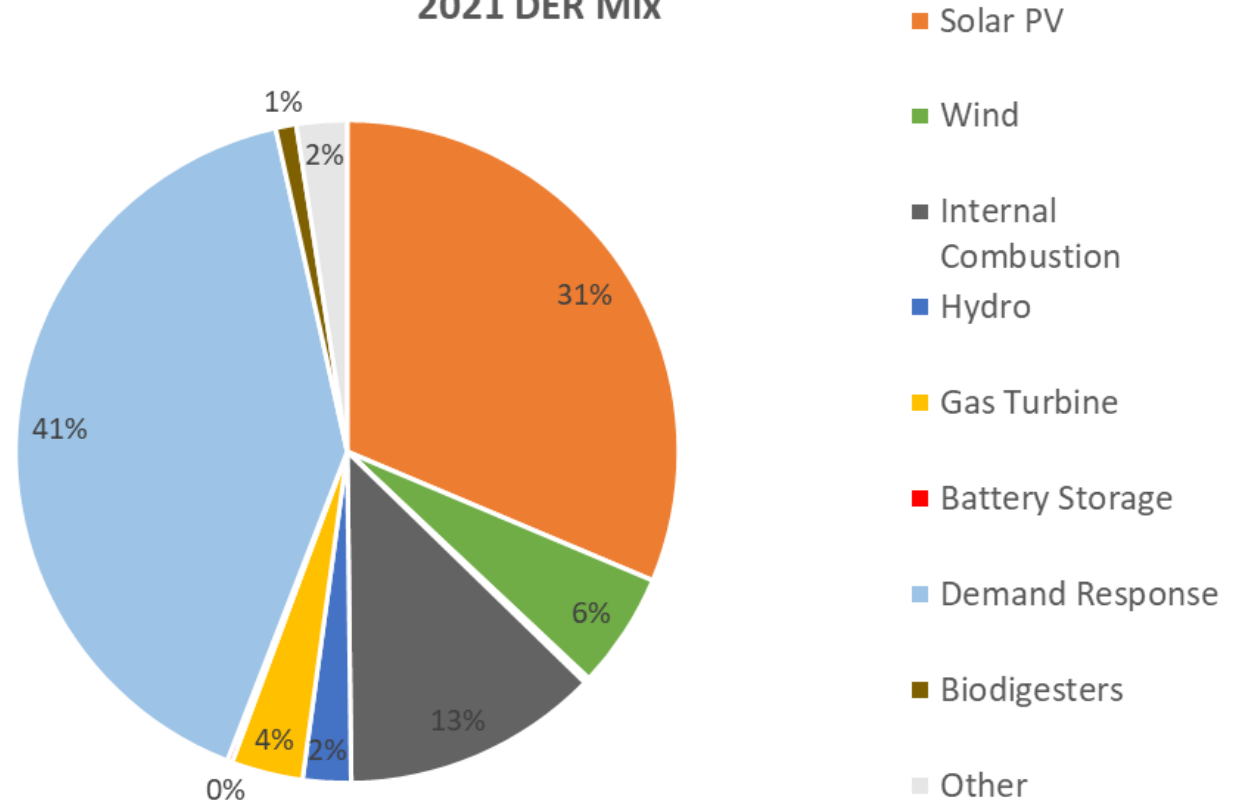


*It was clear some respondents had difficulty separating information or fully understanding the request.*

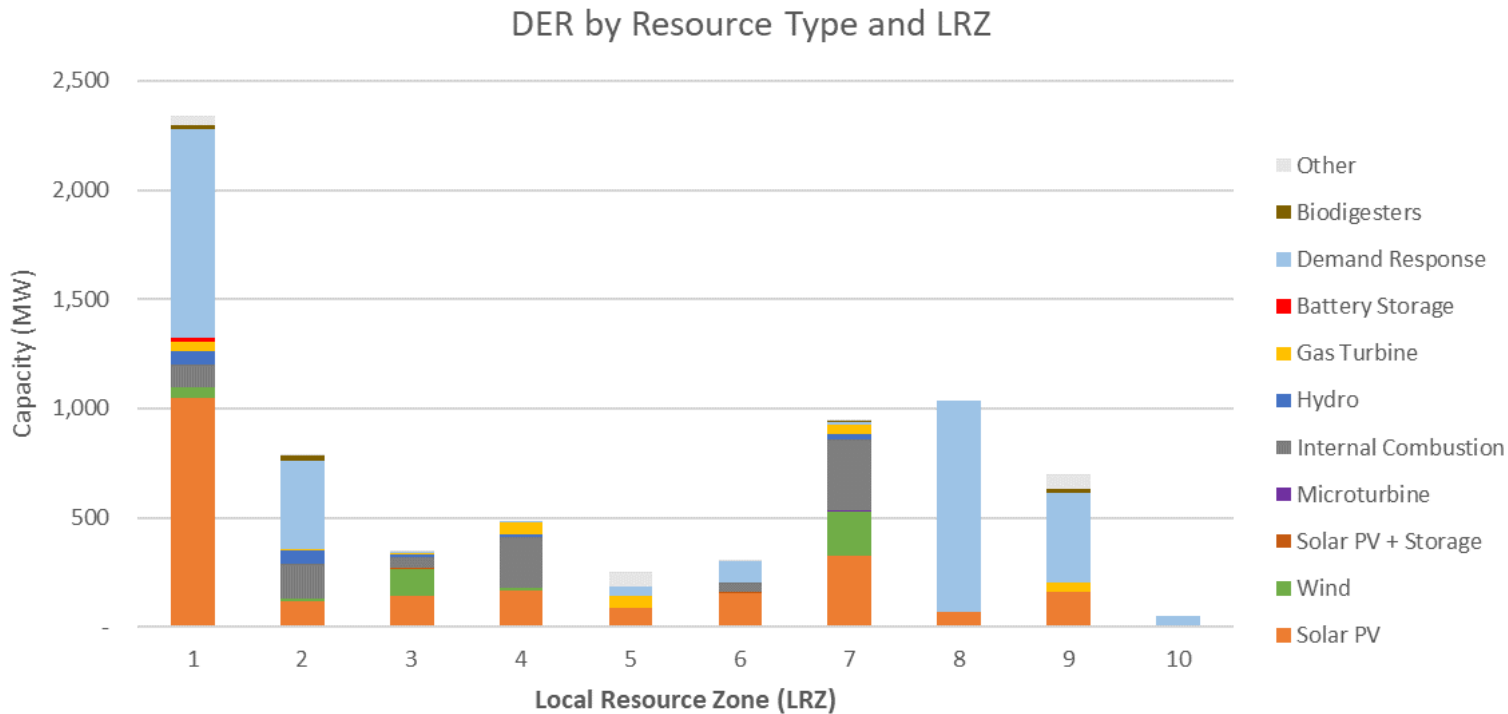
*DER data person is often not familiar with MISO.*

# 7.2 GW of DER by Resource Type

2021 DER Mix



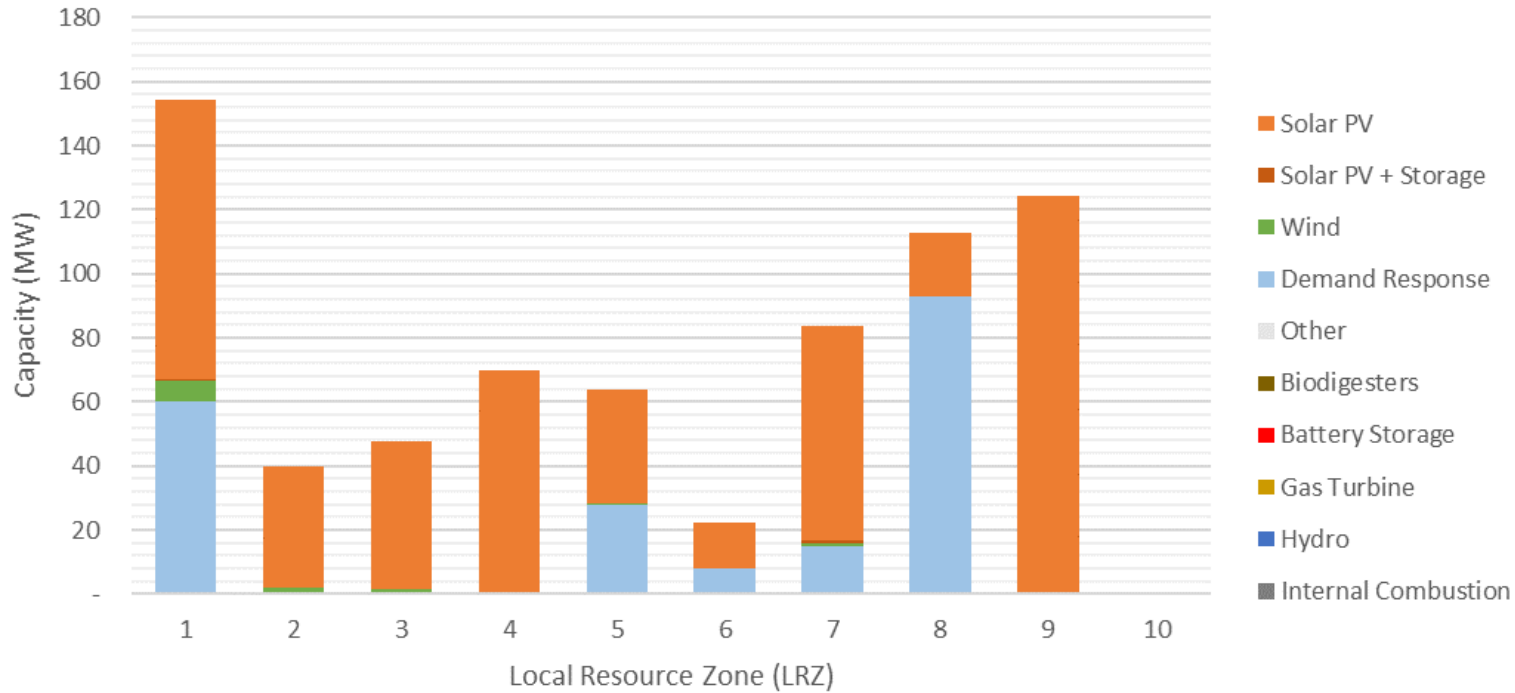
# Solar and Demand Response Present in All Zones



# NON-MISO REGISTERED DER DATA



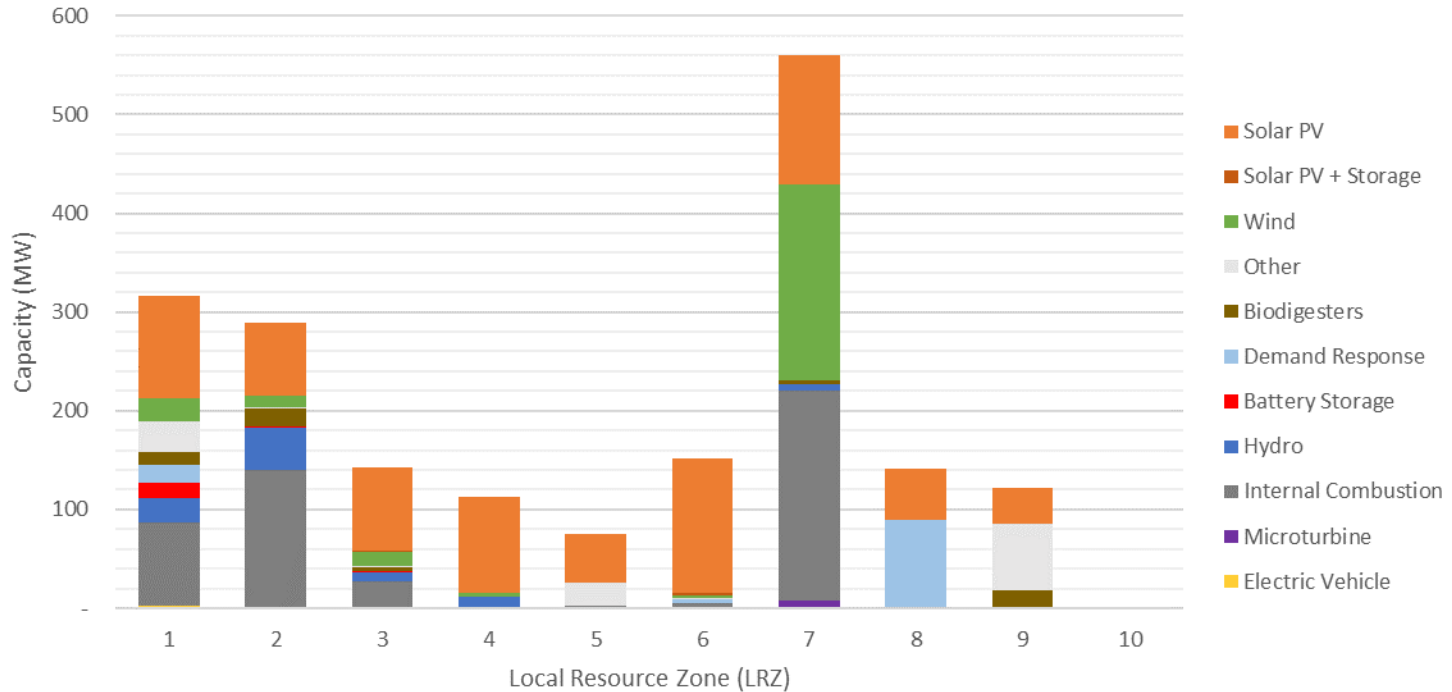
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## Non-MISO Registered DER: Residential

Solar and Demand Response dominate residential DER that is not registered at MISO. Zones 1, 8, and 9 all have over 100 MW of residential DER. Battery and Solar + Storage have begun to show up in several zones, but not in a meaningful way.





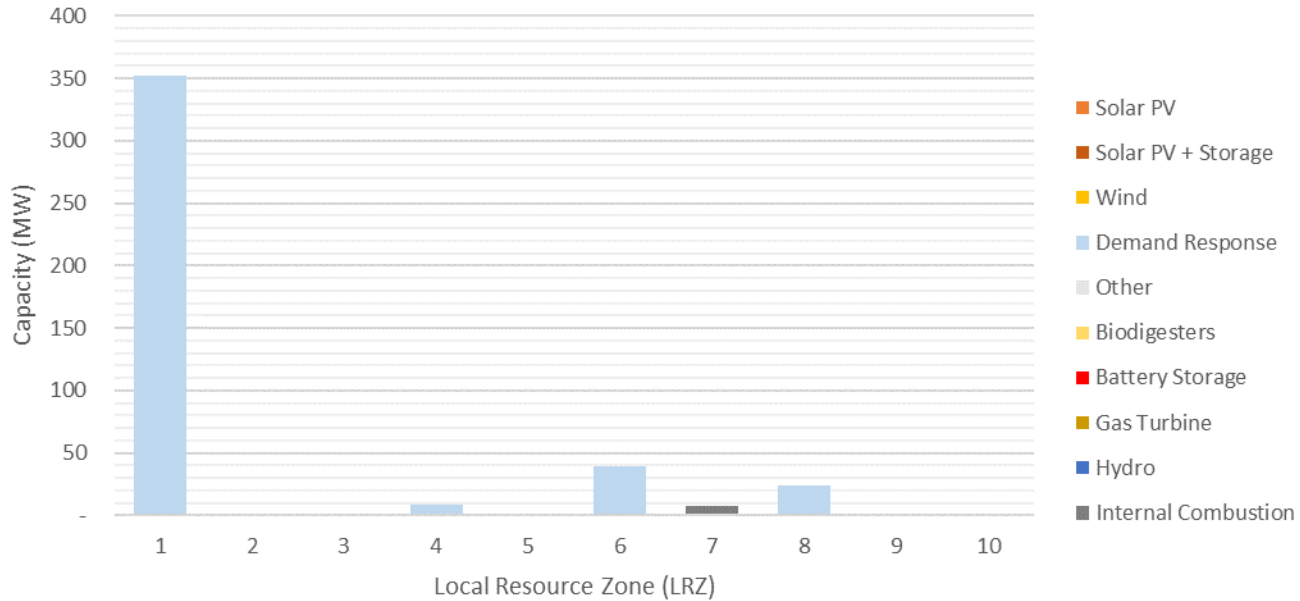
## Non-MISO Registered DER: Non-Residential

There is a much greater variety of resource types in the non-residential customer class. Zone 7 has a large quantity of distributed wind and internal combustion engines that total over 400 MW. Battery storage is present in five LRZs and Storage + PV is present in four.

**REGISTERED WITH MISO**

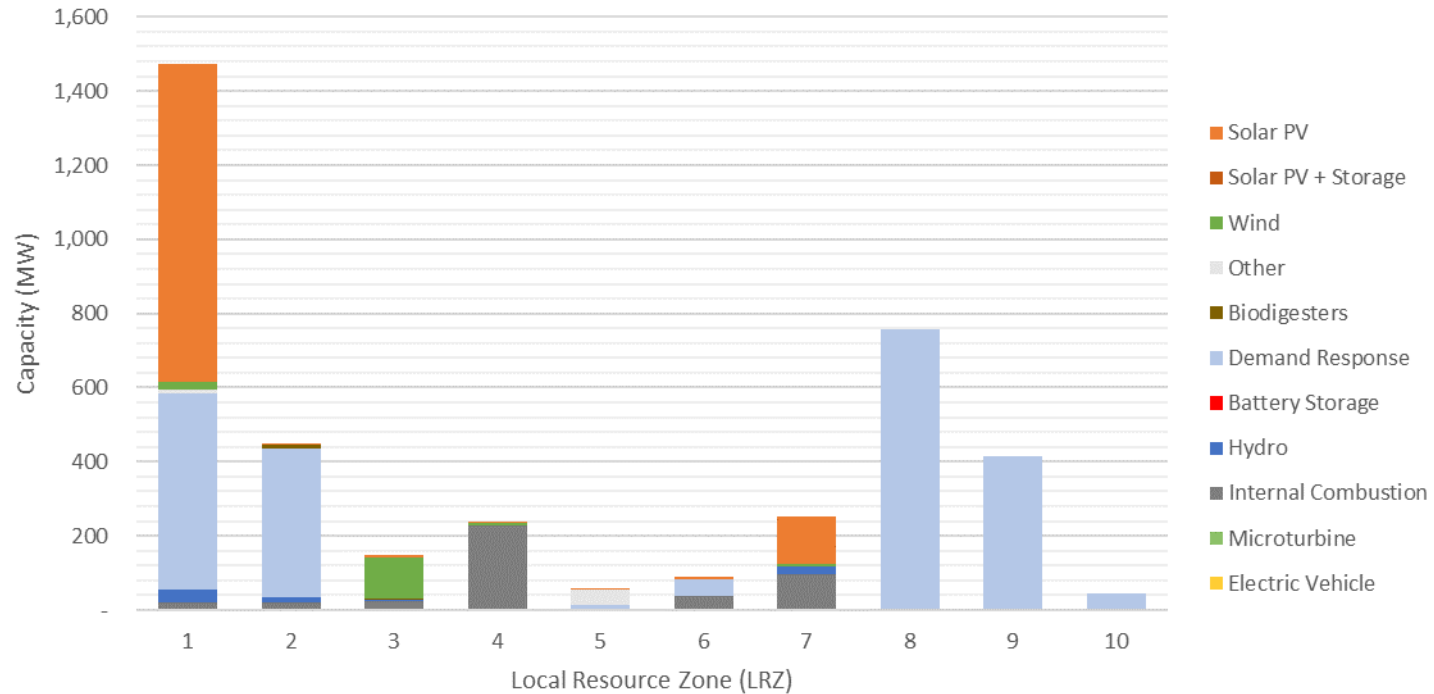


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## Registered with MISO DER: Residential

Almost all MISO-registered, residential DER is demand response.



## Registered with MISO DER: Non-Residential

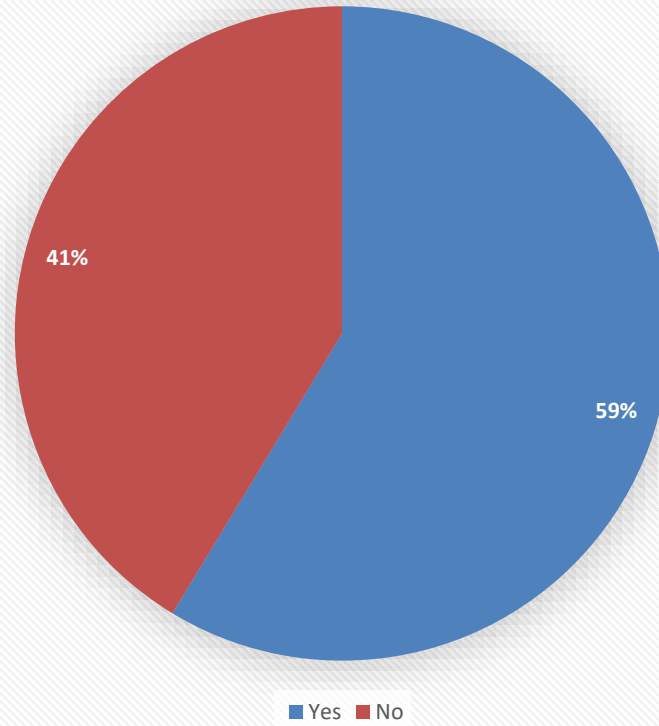
MISO-registered solar makes up a large portion of DER in zones 1 and 7. Demand Response is the largest resource type in the non-residential category as well.

# WRITTEN RESPONSE ANALYSIS

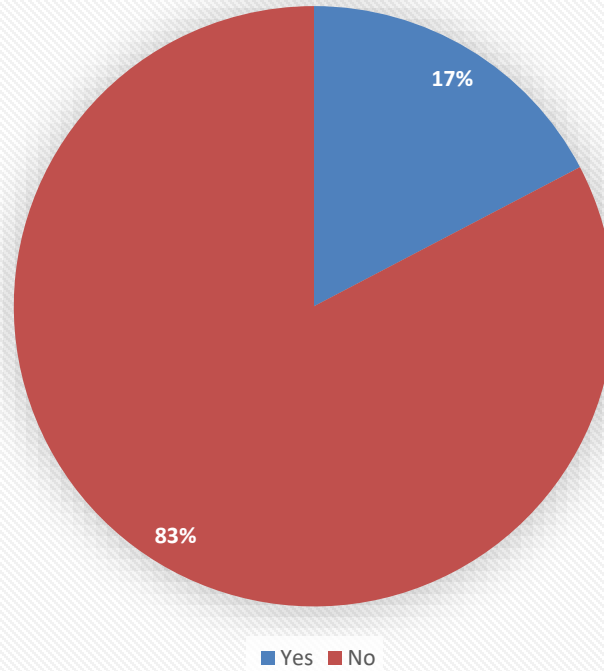


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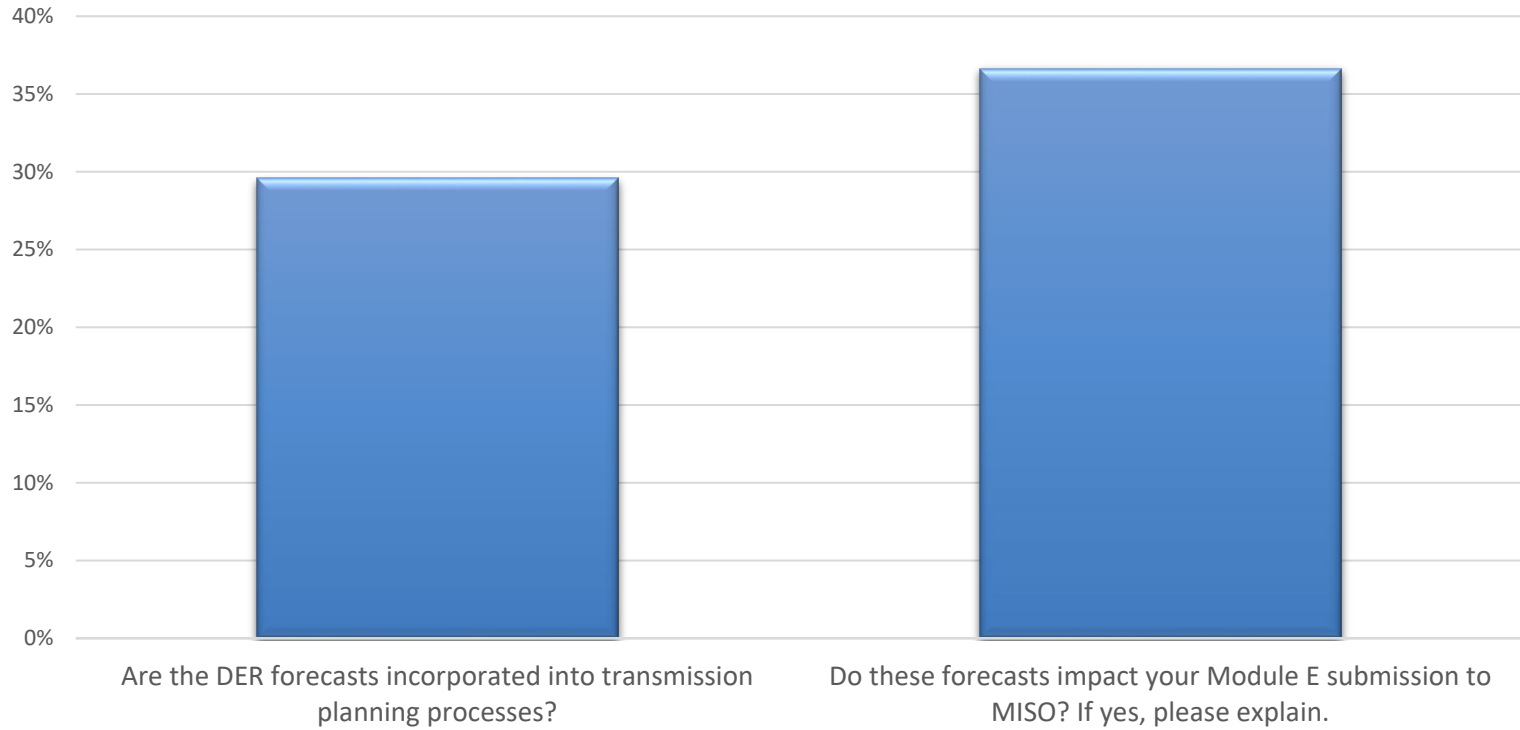
**Q2 - Is your utility considering future investments that will increase awareness or visibility into DER operations?**



**Q7 - Has your utility experienced DER penetration levels that have impacted the transmission system (Bulk Electric System - 100kV+) in some way in the past year?**



## Forecasting DER (% Yes)





# Insights From Survey Process

- Difficulties in contacting “DER People” and connecting them with the RTO/MISO staff at utilities
  - Working through this survey process has highlighted some issues that will need to be addressed for the pending coordinatoin framework for Order 2222 compliance
- Variation of DER data by state
  - What’s required to be reported to state
  - What data (and how) utilities are required to maintain
- Varied ability to collect non-regulated data

# APPENDIX



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