2020 OMS DER Survey Results

OMS Board of Directors
August 13, 2020
Executive Summary

• This was the third iteration of the OMS DER Survey
  – only comprehensive look at DER within MISO

• Over 4.4 GW of DER reported
  – 2020 survey uses end of year 2019 data
  – 2019 survey results revised down

• Robust participation throughout entire footprint
  – 83% of load
Majority of MISO Load Responded

- 43 LSEs responded to the survey
- Respondents represent 83% of MISO load
- Similar participation rate to 2019 Survey
2020 SURVEY RESULTS
Approximately 4.4 GW of DER in Footprint

~530 MW of Residential

~3.85 GW of Non-Residential
Reported DER grew in almost every zone

- Zones 1, 7, 8, and 9 showed largest increases
- Two zones showed a decrease
  - **LRZ 5**: Less respondents
  - **LRZ 6**: Removed resources that are registered with MISO
Two installation sizes are most common

Solar PV Capacity by Size and Class

- Residential
- Non-Residential

- 0-20 kW
- >20 – 200 kW
- >200kW – 1MW
- >1 – 5 MW
- >5 MW

Total MW
4.4 GW of DER Reported
(2019 Data Corrected)

Customer Class | 2018 | 2019 | 2020
---|---|---|---
Residential MW | 456 | 411 | 528
Non-Res MW | 2,124 | 3,387 | 3,845
Total MW | 2,581 | 3,797 | 4,373

- This year marks the first opportunity for meaningful year-over-year comparisons
- Growth from ‘18-’19 dominated by increased participation
- 2020 results show a 15% increase in total capacity
- This year’s responses helped reveal errors in 2019 data
  - 1 GW decrease from original results
  - 500 MW already registered with MISO
  - 500 MW reported incorrectly
WRITTEN RESPONSE ANALYSIS
Visibility into DER operations

• 22 Respondents are considering future investments to increase visibility into DER operations (compared with 25 in 2019 survey)

• Most respondents noted there was no active or real-time DER interoperability or management by the utility (or didn’t answer)
# DER Growth Drivers and Barriers

## 2020 Drivers

<table>
<thead>
<tr>
<th>Driver</th>
<th># of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate Design</td>
<td>14</td>
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<tr>
<td>Tax Incentives</td>
<td>11</td>
</tr>
<tr>
<td>Declining Costs</td>
<td>8</td>
</tr>
<tr>
<td>Customer Preference</td>
<td>8</td>
</tr>
<tr>
<td>Net Metering</td>
<td>7</td>
</tr>
<tr>
<td>State Policy</td>
<td>5</td>
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<tr>
<td>Demand Response</td>
<td>4</td>
</tr>
<tr>
<td>Rebates</td>
<td>3</td>
</tr>
<tr>
<td>Financing</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>Interconnection Process</td>
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<tr>
<td>Resource Availability</td>
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<tr>
<td>RECs</td>
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<tr>
<td>Corporate Goals</td>
<td>2</td>
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</table>

## 2020 Barriers

<table>
<thead>
<tr>
<th>Barrier</th>
<th># of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>6</td>
</tr>
<tr>
<td>Infrastructure (EV)</td>
<td>4</td>
</tr>
<tr>
<td>None</td>
<td>4</td>
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<tr>
<td>Oversaturation of Infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>Program Caps/Market Saturation</td>
<td>3</td>
</tr>
<tr>
<td>Infrastructure Upgrade Costs</td>
<td>2</td>
</tr>
<tr>
<td>Resource Availability</td>
<td>2</td>
</tr>
</tbody>
</table>
DER and the Transmission System

Has DER impacted transmission system?

- 4 have seen DER “impacts”
- 3 have observed backflows, not problematic for the transmission system
- 20 respondents do not foresee near-term issues from DER