Potential impact of MOPR order on DR resources
(Updated for FERC April Rehearing Order)

DRS
5/18/2020
• Overview of MOPR order impact to DR
• MOPR Rehearing order impact to compliance filing
• Subsidies
• MOPR existing resource
• MOPR price structure
• DR process and MOPR order

This is a work in progress which will evolve and needs to be approved by FERC
MOPR order impact on DR

• Assume all approaches discussed at DRS must comply with FERC order (whether you agree with the order or not)

• MOPR order impact
  – If resource receives “subsidy” then MOPR is applied
  – Resource that do not receive a “subsidy” may still need to change existing offer process to facilitate the calculation of MOPR prices for other resources
  – DR resources used as part of FRR plan are exempt

This is a work in progress and specifics may change for compliance filing
This process determines the Daily Deficiency charges (penalty)
MOPR Decision Tree for DR/EE

State-Subsidized Resource?

- NO
- YES

Owned by Self-Supply Entity?

- NO
- YES

Qualifies for DR/EE Exemption?

- NO
- YES

Elects Competitive Exemption?

- NO
- YES

Cleared in Prior Auction?

- NO
- YES

MOPR at New Price

MOPR at Existing Price

MOPR at New Price

Cleared = DR Pre-Registered

Qualifies for DR/EE or Self-Supply Exemption?

- NO
- YES

No MOPR
• (No Change) 265 Track MOPR by location not by “resource”.
• (Change) 172, 398 Track MOPR status by Location by MW, as needed
  – Uprate MW = Nominated MW in excess of Existing MW (exempt or nonexempt)
  – Subsidized Uprate MW will be subject to MOPR if location made investment to increase the load reduction capability to participate in the PJM capacity market
    • For example, a location invests in new BTMG in order to participate in Capacity Market with additional MWs.
  – PJM intends to only allow 1 location on a registration to be able to administer nominated MW.
• (Change) Existing location that is not Pre-Registered with cleared RPM resource for 1 DY will go back to New status with netCONE price (NOT remain existing)
• (Change) 400 Bilateral transaction impact (discussed at MIC)
• (No change) 259 DR can use Competitive Exemption
• (No change) 187-189, 193 Gen DR – BTMG that is used to reduce load.
  – MOPR price is same as front of the meter generator and does not include avoided cost
  – Avoided cost may be included in unit specific review
• (No change) 266 – DR is not required to know all customers prior to offering into the auction.

(A) A Capacity Resource with State Subsidy that is Demand Resource or an Energy Efficiency Resource shall be exempt from the Minimum Offer Price Rule if such Capacity Resource satisfies at least one of the following criteria:

(i) has successfully cleared an RPM Auction prior to December 19, 2019. For purposes of this subsection (a), individual customer location registrations (or for utility-based residential load curtailment program, based on the total number of participating customers) that participated as Demand Resource and cleared in an RPM Auction prior to December 19, 2019, and were submitted to PJM no later than 45 days prior to the BRA for the 2022/2023 Delivery Year shall be deemed eligible for the Demand Resource and Energy Efficiency Resource Exemption; or

(ii) has completed registration on or before December 19, 2019; or

(iii) is supported by a post-installation measurement and verification report for Energy Efficiency Resources approved by PJM on or before December 19, 2019 calculated for each installation period, Zone and Sub-Zone by using the greater of the latest approved post-installation measurement and verification report prior to December 19, 2019 or the maximum MW cleared for a Delivery Year across all auctions conducted prior to December 19, 2019).

(B) All registered locations that qualify for the Demand Resource and Energy Efficiency Resource exemption shall continue to remain exempt even if the MW of nominated capacity increases between RPM Auctions unless any MWs increase in the nominated capacity is due to an investment made for the sole purpose of increasing the curtailment capability of the location in RPM. In such case, the MWs of increased capability will not be qualify for the Demand Resource and Energy Efficiency Resource exemption.
A direct or indirect payment, concession, rebate, subsidy, non-bypassable consumer charge, or other financial benefit that is (1) a result of any action, mandated process, or sponsored process of a state government, a political subdivision or agency of a state, or an electric cooperative formed pursuant to state law, and that (2) is derived from or connected to the procurement of (a) electricity or electric generation capacity sold at wholesale in interstate commerce, or (b) an attribute of the generation process for electricity or electric generation capacity sold at wholesale in interstate commerce, or (3) will support the construction, development, or operation of a new or existing capacity resource, or (4) could have the effect of allowing a resource to clear in any PJM capacity auction.
Existing Process - Resource => Registration => Location

Resource (Zone, RPM/FRR commitment = 3 MW)

- Joe CSP, PSEG zone, 3 MW ICap
- Acme, Elizabeth, 3 MW ICap
- Acme, 0.5 MW
- School 51, 1 MW

Registration (Term, Capacity nomination = 4.5 MW)

- Acme, Elizabeth1, 3MW capability
- Acme, Elizabeth2, 1 MW capability
- Acme, Roselle, 1MW
- School 51, 1MW

Location (EDC acct, physical address, DR capability = 6 MW)

- GenDR – Diesel 2 MW
- LoadDR – HVAC 1 MW

DR capability – can be used to prorate nomination
Current DR Existing vs Planned process for CREDIT

- CSP submits DR plan for “new” and “existing” resources
  - Existing resources criteria (currently registered and expect to be registered for future DY):
    - BRA (may) – Newer CSP (greater of DY and DY+1 MW)
    - 1rst IA (sep) – current DY CSP (greater of DY and DY-1 MW)
    - 2nd IA (jul) – current DY CSP (greater of DY and DY-1 MW)
    - 3rd IA (feb) – Newer CSP (newer of DY and DY+1 MW)
  - Planned/New resource – Load reduction capability currently not registered
- CSP offers DR MWs into auction for typically 1 resource for each zone/LDA
  - When we had multiple products, a resource was created for each product
    - CSP would have multiple resources per zone
Exemption status administration

- **(Exempt) Existing Resource kW qualified for exemption**
  - PJM plans to define as max nominated Icap for any location* that was registered for at least 1 DY:
    - 14/15 DY through 19/20 DY, or
    - 20/21 to support MWs cleared in BRA/1rstIA/2ndIA, or
    - 21/22 to support MWs cleared in BRA/1rstIA
      - PJM may need to develop an interim process to allow CSPs to register for 21/22 early depending on timing of BRA.
    - Aggregate registrations - Registration nominated Icap will be prorated to location based on proportion of Locations load reduction capability, as reported by the CSP.
  - *PJM will track by EDC account number, CSP to report any EDC account number changes. Mass market utility programs expected to be based on number of locations since they are registered in aggregate.*
  
- kW increase from DY (eg: DY1) to next DY (eg: DY2) will be considered exempt if CSP verifies no investment was made to increase the load reduction capability in the capacity market
  - PLC increase, expanded load at facility but same process to reduce, more aggressive curtailment plan, etc.

"Existing" for credit will be different than Existing for MOPR
• (New)
  – Location Pre-Registered for DY and associated with cleared RPM resource which was not Pre-Registered (and associated with cleared RPM resource) in DY-1.
  – Nominated kW in DY > Nominated kW in DY-1 and CSP made investment to increase load reduction capability to participate in capacity market
    • Only subject to MOPR if there is a subsidy
• (Existing)
  – Location Pre-registered for DY and associated with cleared RPM resource which was New in DY-1.
• PJM will make Location status (Exempt, New, Existing) transparent to CSP for Pre-Registration process
Subsidy Status administration

• Manage during Pre-Registration process for each auction
  – No Subsidy
  – Subsidy
  – Subsidy – Competitive Exemption
• Manage ~120 days before the auction
  – Subsidy – Unit Specific Exemption
• When subsidy is identified
  – Banned
Competitive Exemption

- Competitive exemption allows a location that receives a subsidy to forgo the subsidy and therefore not be subject to MOPR
- Track by Location during Pre-Registration process & compare to status during registration to support cleared Resource
  - If location elects Competitive exemption (forgo subsidy) OR indicates that location is NOT eligible for subsidy and then subsequently receives a subsidy then:
    - Existing location is not allowed to receive capacity revenue for entire DY
      - Unless it could demonstrate under the Unit-Specific Exemption that it would have cleared in the relevant auction
    - New location is banned from market for default asset life (“20 years”)
- Process tbd
Ban for Life example

- Pre-Registered: Location A, New – No subsidy – clears in DY1
- Registered: Location A – **Subsidy** – DY1, Banned for 20 years, forfeit revenue
- Pre-Registered: Location B, New – Subsidy w Competitive Exemption – clears DY1
- Registered: Location B – **Subsidy** – DY1, Banned for 20 years, forfeit revenue
  - Same alternative outcomes as above

Same logic for Existing except not banned for 20 years
• PJM filed language that will allow flexibility to include avoided cost.
  – retail electricity cost, tbd.
• Process tbd
• Weighted average price
We do not have GenDR and LoadDR offers, registrations or capacity nominations today.
GenDR breakdown (19/20 registrations) based on CSP reported capability
GenDR breakdown (19/20 registrations) based on CSP reported capability

### Count of LOCATION_ID

<table>
<thead>
<tr>
<th>Row Labels</th>
<th>Column Labels</th>
<th>Diesel</th>
<th>Gasoline</th>
<th>Natural Gas</th>
<th>None</th>
<th>Oil</th>
<th>Propane</th>
<th>Waste Products</th>
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<th>Grand Total</th>
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<td></td>
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<tr>
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<td>9</td>
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<td>Steam Engines and Cogeneration Units</td>
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<td>4</td>
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<td>2</td>
<td></td>
<td></td>
<td>7</td>
<td></td>
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<td>51</td>
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<td>9</td>
<td>16</td>
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2,033 units are Gas or Diesel engines

### Sum of MAX_OUTPUT KW

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<thead>
<tr>
<th>Row Labels</th>
<th>Column Labels</th>
<th>Diesel</th>
<th>Gasoline</th>
<th>Natural Gas</th>
<th>None</th>
<th>Oil</th>
<th>Propane</th>
<th>Waste Products</th>
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<td>Steam Engines and Cogeneration Units</td>
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<td>302</td>
<td>28,695</td>
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<td>1,923,687</td>
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Priorities: 1) RICE – Diesel, 2) RICE – Gas, 3) CT – Gas, 4) Cogen/Steam - Gas
• GenDR
  – New (netCONE)
    • RICE
  – Existing (netACR)
    • RICE
  – Other may go through unit specific exemption process
• LoadDR
  – New – weighted average offer from last 3 BRAs by LDA.
    • PJM to use Load DR amount from Pre-registrations tied to offers for calculation.
  – Existing – PJM expect to file $0 which is consistent with our original filing
GenDR vs LoadDR – CSP to allocate on registration (expect only 1 location per registration)

- PJM to provide registration default allocation based on CSP reported GenDR vs LoadDR location load reduction method %.
- CSP can adjust default allocation to improve accuracy, as needed
- Allocation will be used for MOPR amount and LoadDR MOPR price calculation

<table>
<thead>
<tr>
<th></th>
<th>LoadDR %</th>
<th>GenDR%</th>
<th>LoadDR kW</th>
<th>GenDR kW</th>
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</thead>
<tbody>
<tr>
<td>Summer kW</td>
<td>2,757</td>
<td>75%</td>
<td>25%</td>
<td>2,068</td>
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<td>Winter kW</td>
<td>365</td>
<td>75%</td>
<td>25%</td>
<td>274</td>
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DR offers and impact of MOPR prices

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<tr>
<th>Class</th>
<th>Subsidy</th>
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<th>Existing_Nonexempt</th>
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<td>-</td>
<td>-</td>
<td>$0</td>
<td>3yr Avg</td>
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<tr>
<td>LoadDR</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GenDR</td>
<td>yes</td>
<td>gas</td>
<td>-</td>
<td>net ACR</td>
<td>net CONE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>diesel</td>
<td>-</td>
<td>net ACR</td>
<td>net CONE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>etc...</td>
<td>-</td>
<td>net ACR</td>
<td>net CONE</td>
</tr>
<tr>
<td>GenDR</td>
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<td>gas</td>
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<td>-</td>
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<td></td>
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<td>diesel</td>
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<td></td>
<td></td>
<td>etc...</td>
<td>-</td>
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</tbody>
</table>

Expect CSPs to offer individual resource for all categories that do not receive MOPR but separate resources when MOPR is applicable.