

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

- 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

DY-3 (BRA) to DY-1 3IA)

Jan – May prior to DY

Delivery Year

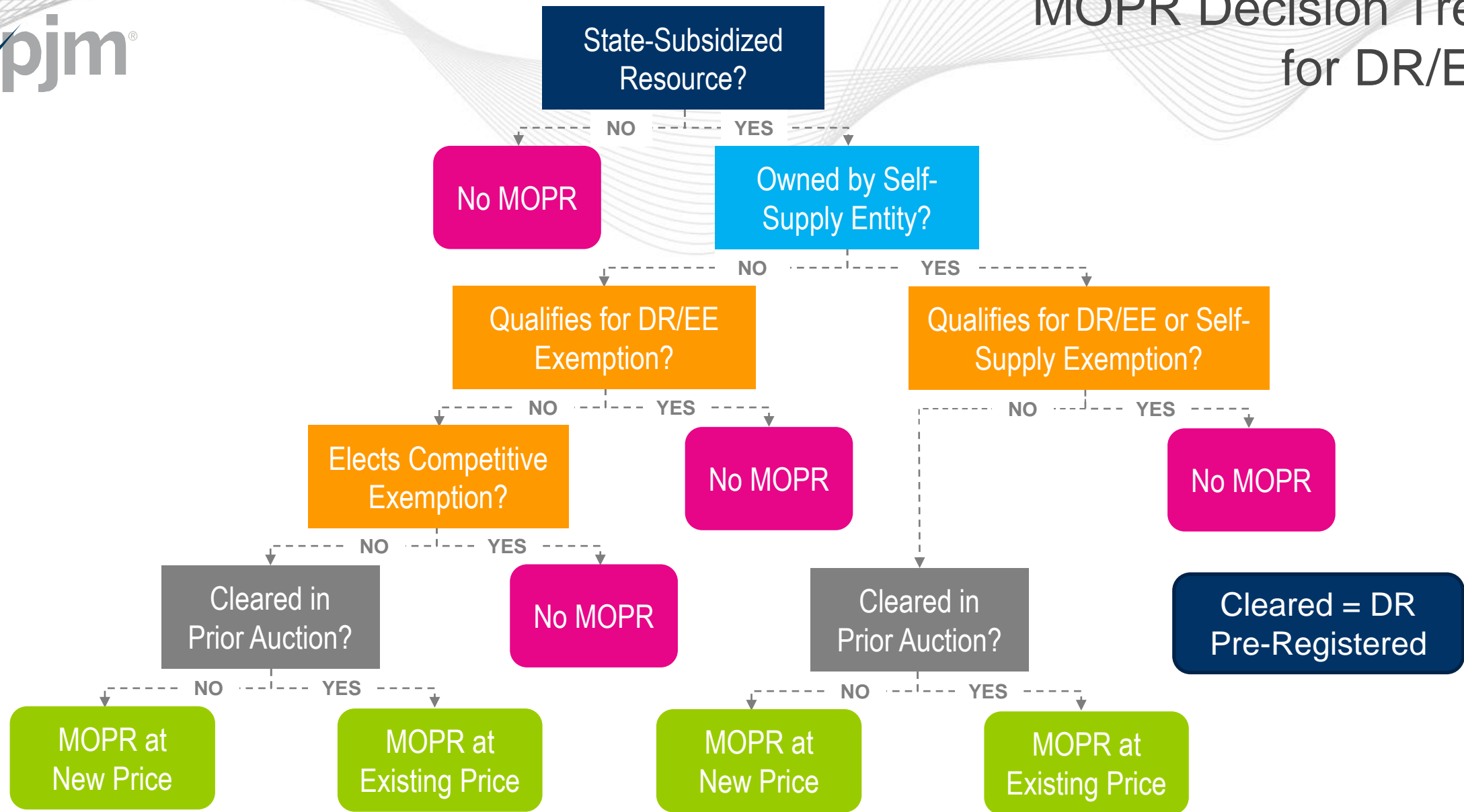
Pre-Registration
Auction
FRR plan

Registration DR
Mods

Dispatch/Events
Tests

Settlements
Penalties

This process determines the Daily Deficiency charges (penalty)



New slide

- (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)

New slide

- (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.

New slide

(7) *Demand Resource and Energy Efficiency Resource Exemption.*

(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*

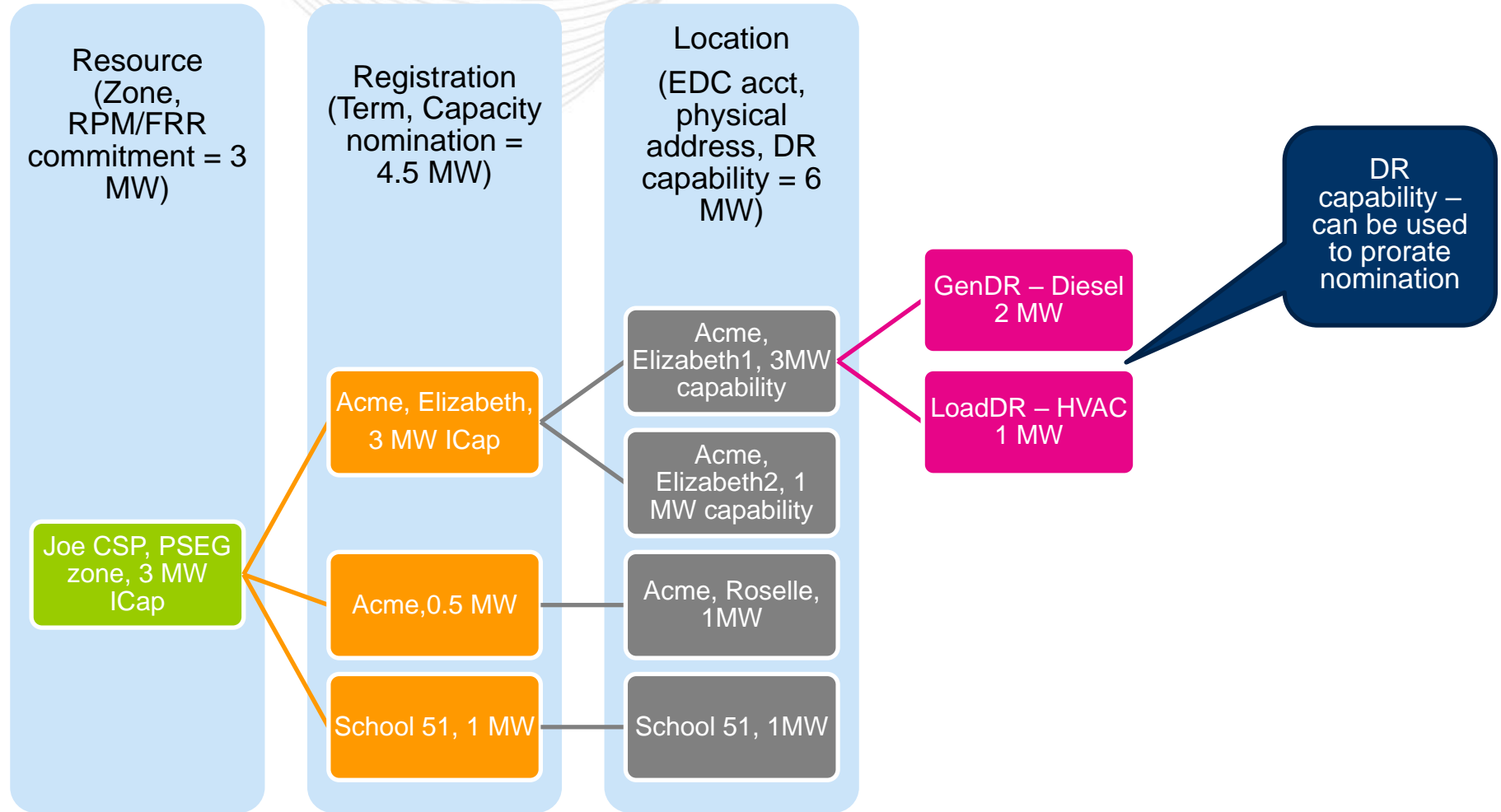
(ii) *has completed registration on or before December 19, 2019; or*

(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



- 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)
 - 1st 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

Updated slide

- **(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

Updated
slide

- **(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

- 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 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

- 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

GenDR

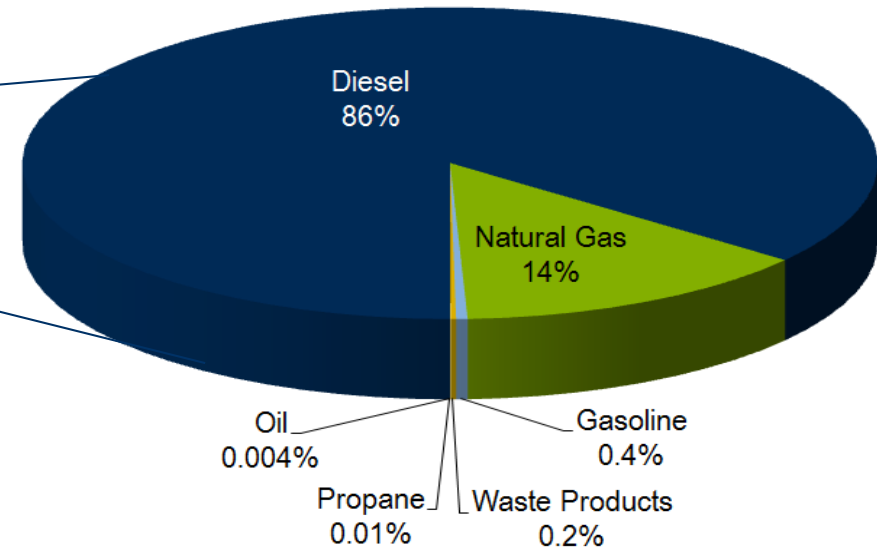
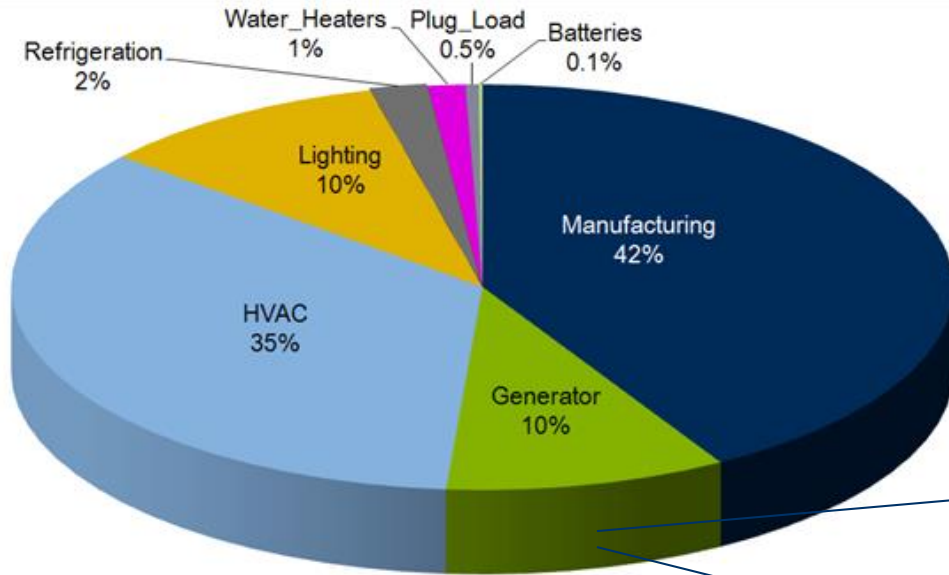
- Diesel
- Gas
- Etc.

LoadDR

- 3 year average offer prices

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	Column Labels								
Row Labels	Diesel	Gasoline	Natural Gas	None	Oil	Propane	Waste Products	#N/A	Grand Total
Combustion Turbines	11	6	19				5		41
Internal Combustion Engine	1,622	1	339		1	9	4		1,976
Steam Engines and Cogeneration Units	4		38	2			7		51
#N/A								48	48
Grand Total	1,637	7	396	2	1	9	16	48	2,116

2,033 units are Gas or Diesel engines

Sum of MAX_OUTPUT KW	Column Labels								
Row Labels	Diesel	Gasoline	Natural Gas	None	Oil	Propane	Waste Products	#N/A	Grand Total
Combustion Turbines	61,918	3,986	36,895				700		103,498
Internal Combustion Engine	1,585,129	68	142,529		35	302	812		1,728,875
Steam Engines and Cogeneration Units	7,804		49,326	7,000			27,183		91,313
#N/A								-	-
Grand Total	1,654,851	4,054	228,750	7,000	35	302	28,695	-	1,923,687

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)

Capacity

Peak Load Contribution (kW)	3207.082	Winter Peak Load (kW)	555	Resource Type	Pre-Emergency
Measurement Method	Firm Service Level	Winter Managed Load (kW)	200.000	Product	Capacity Performance DR
Summer Managed Load (kW)	433.000	Winter Weather Adj. Factor	0.993	RPM DR Resource	ENOC PECO DR
Capacity Loss Factor	1.0397	Winter Nominated ICAP (kW)	365.054	Lead Time	Quick_30
Summer Nominated ICAP (kW)	2756.892				

Summer Only

		LoadDR %	GenDR%	LoadDR kW	GenDR kW
Summer kW	2,757	75%	25%	2,068	689
Winter kW	365	75%	25%	274	91

- 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

Class	Subsidy	Type	Existing_Exempt	Existing_Nonexempt	New
LoadDR	Yes	-	-	\$0	3yr Avg
LoadDR	No	-	-	-	-
GenDR	yes	gas	-	net ACR	net CONE
		diesel	-	net ACR	net CONE
		etc...	-	net ACR	net CONE
GenDR	no	gas	-	-	-
		diesel	-	-	-
		etc...	-	-	-

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