

Potential impact of MOPR order on DR resources

DRS
3/9/2020

- Overview of MOPR order impact to DR
- Subsidies
- MOPR existing resource
- MOPR price structure
- DR process and MOPR order

This is a work in progress which will evolve for PJM compliance filing

- 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

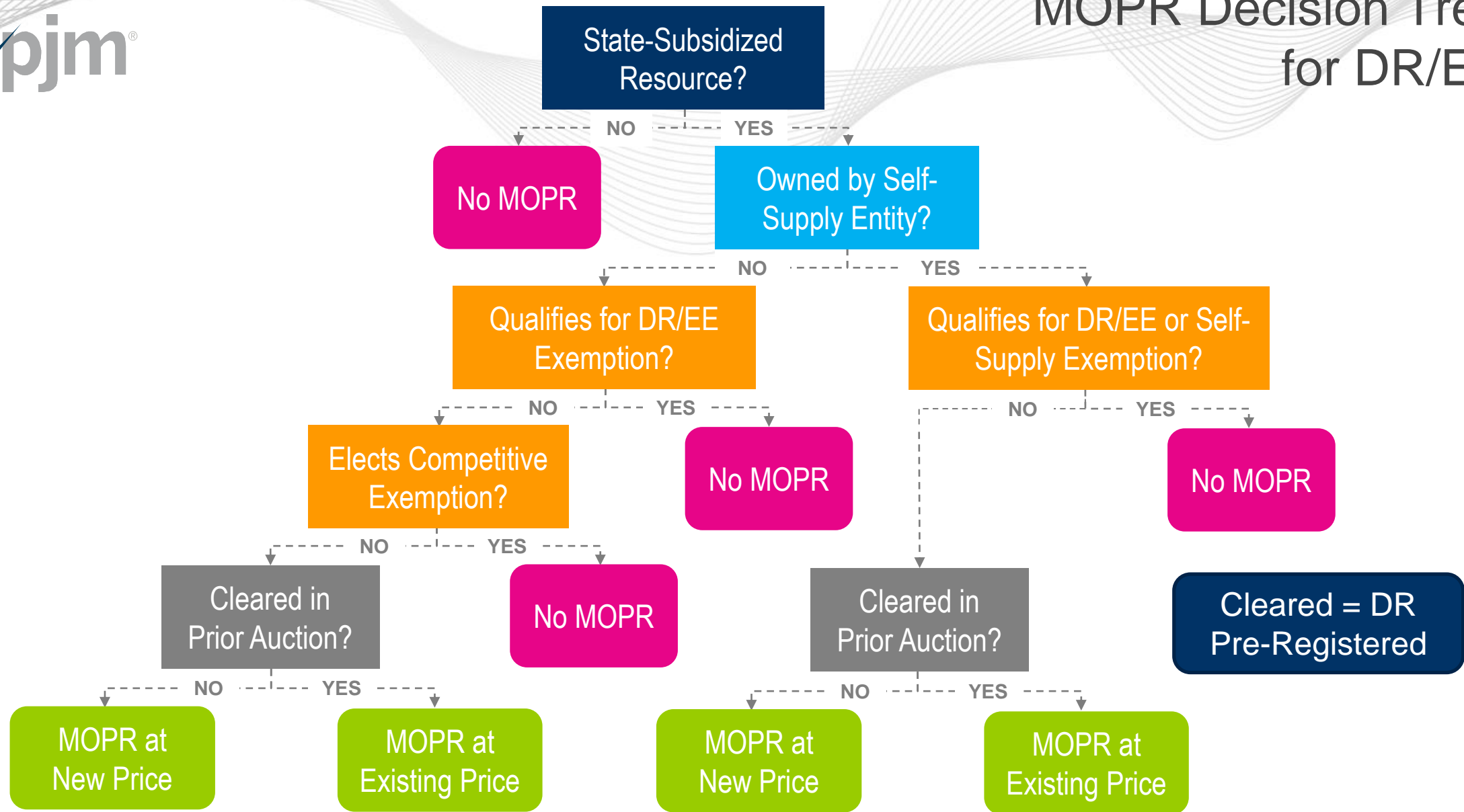
Pre-Registration
Auction
FRR plan

Registration DR
Mods

Dispatch/Events
Tests

Settlements
Penalties

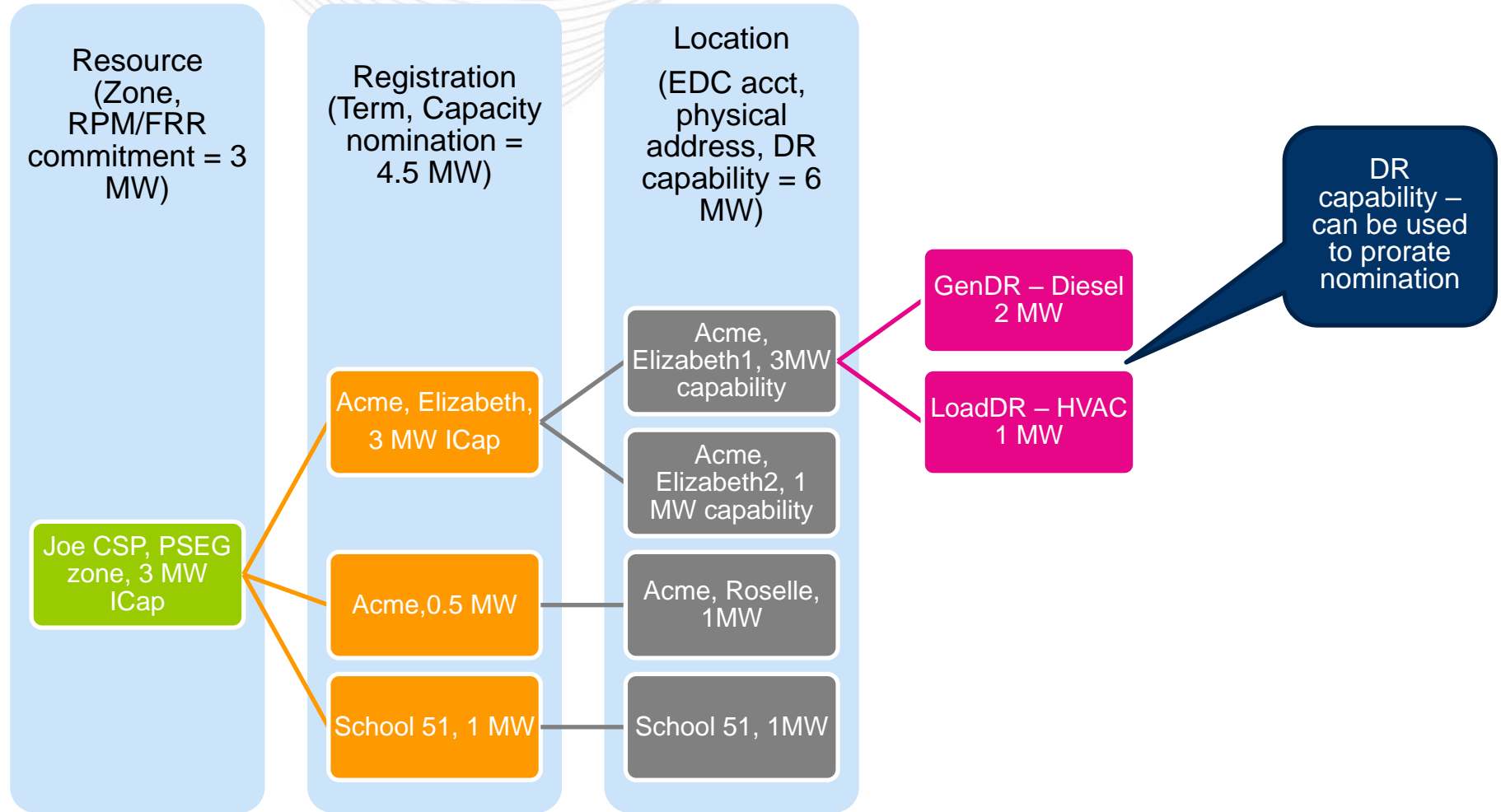
This process determines the Daily Deficiency charges (penalty)



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.

- No later than **X** days prior to the auction, the owner of any resource must identify in Capacity Exchange if it is eligible or ineligible to receive a state-subsidy for the relevant delivery year.
- By this same deadline, the owner of a State-Subsidized Resource may certify in Capacity Exchange that it will forgo the state-subsidy for the relevant delivery year (i.e., competitive exemption)
- The identification of a resource as a state-subsidized resource will carry across delivery years.
- An existing resource that is not eligible for a state-subsidy at the time of the certification process that subsequently elects to accept a state-subsidy for any part of the relevant delivery year will forgo capacity market revenues for that delivery year (subject to retroactive unit exception review)

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

Key MOPR order “existing” parameters – PJM believes we can maintain current DR “existing” process for MOPR

Updated
slide

- **(Existing_Exempt)** Existing Resource qualified for exemption
 - PJM plans to define as all 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
- **(New)** New customers are treated similar to Generator uprate/repower
 - Customers Pre-Registered for first time in 22/23 or later DY
- **(Existing)** Existing Resources not qualified for exemption
 - New customers that are Pre-Registered in subsequent DY and is linked to a resource that cleared the auction.
- PJM will make Location status (Existing_Exempt, New, Existing) transparent to CSP for Pre-Registration process

** 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.*

“Existing” for exemption is different from “Existing” for future MOPR price

- Competitive exemption allows a resource/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”)

- 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 expects to file language that will allow flexibility to justify only the cost associated with wholesale capacity market participation.
 - We may still pursue new offset “benefit” categories (e.g.: avoided retail cost) but need to be careful with how this coordinates with focus on wholesale capacity market only cost.
- For example – if CSP can justify that unit does not have any additional cost to participate in the wholesale market (built and maintained for reliability) then MOPR price = \$0

- Work in progress
 - Potentially use weighted average for two different resources
 - For example – Wind and DR

GenDR

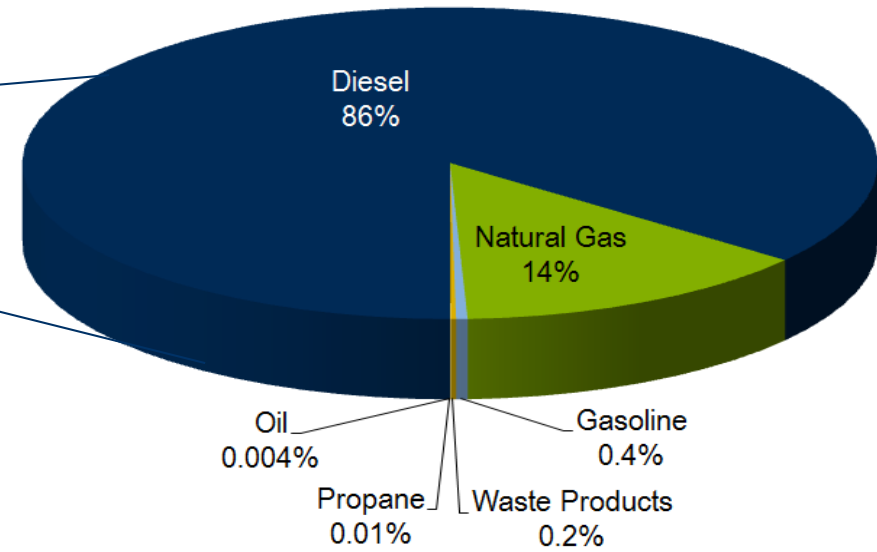
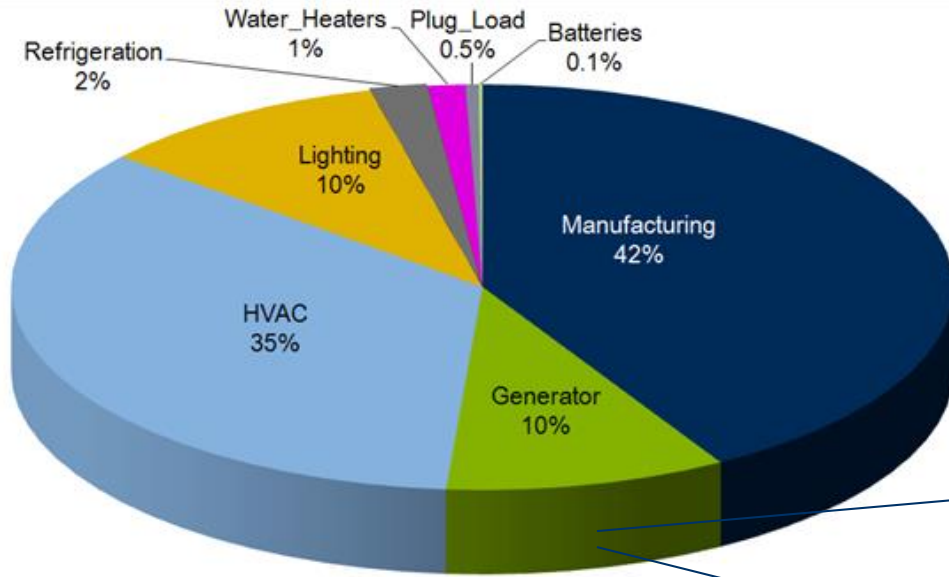
- Diesel
- Gas
- Etc.

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	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	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_NonExempt (netACR)
 - RICE
 - Other will 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_NonExempt – PJM expect to file \$0 which is consistent with our original filing

Updated slide

Capacity

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