Potential impact of MOPR order on DR resources

DRS

2/3/20

- Overview of MOPR order impact to DR

- Subsidies

- MOPR existing resource

- MOPR price structure

- Impact of MOPR order on current DR process

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

MOPR Decision Tree for DR/EE flowchart:

- **State-Subsidized Resource?**
  - NO → **No MOPR**
  - YES → **Owned by Self-Supply Entity?**
    - NO → **Qualifies for DR/EE Exemption?**
      - NO → **Elects Competitive Exemption?**
        - NO → **Cleared in Prior Auction?**
          - NO → **MOPR at New Price**
          - YES → **MOPR at Existing Price**
        - YES → **No MOPR**
      - YES → **No MOPR**
    - YES → **Qualifies for DR/EE or Self-Supply Exemption?**
      - NO → **Cleared in Prior Auction?**
        - NO → **MOPR at New Price**
        - YES → **MOPR at Existing Price**
   - YES → **No MOPR**
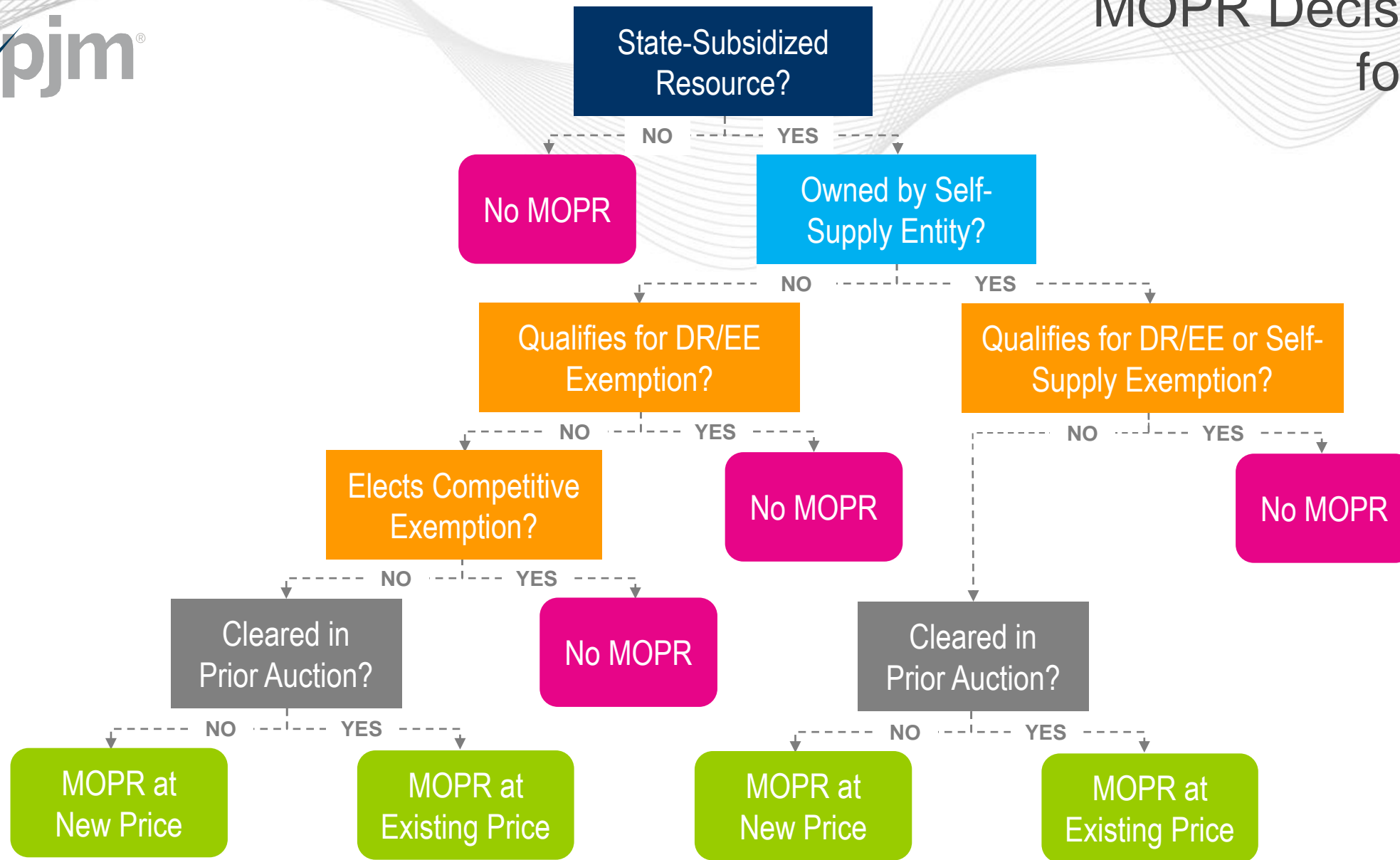
A direct or indirect payment, concession, rebate, subsidy, non-bypassable consumer charge, or other financial benefit that is (1) a result of any action, mandated process, or sponsored process of a state government, a political subdivision or agency of a state, or an electric cooperative formed pursuant 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.

- PJM will likely have CSP certify what resource/registration qualifies as a subsidy

  – Better position to understand all the state and local detail

- Potential subsidies

  – RPM self supply areas

  – Customers that reduce load under a utility tariff

    • emPower MD?

    • See FERC response to AEP/Duke comments in order

  – PA Act 129?

  – Other..

- No later than 30 days prior to the auction, the owner of any resource that is eligible to receive a state-subsidy for the relevant delivery year must self-identify such resource in Capacity Exchange as a State-Subsidized Resource

- 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)
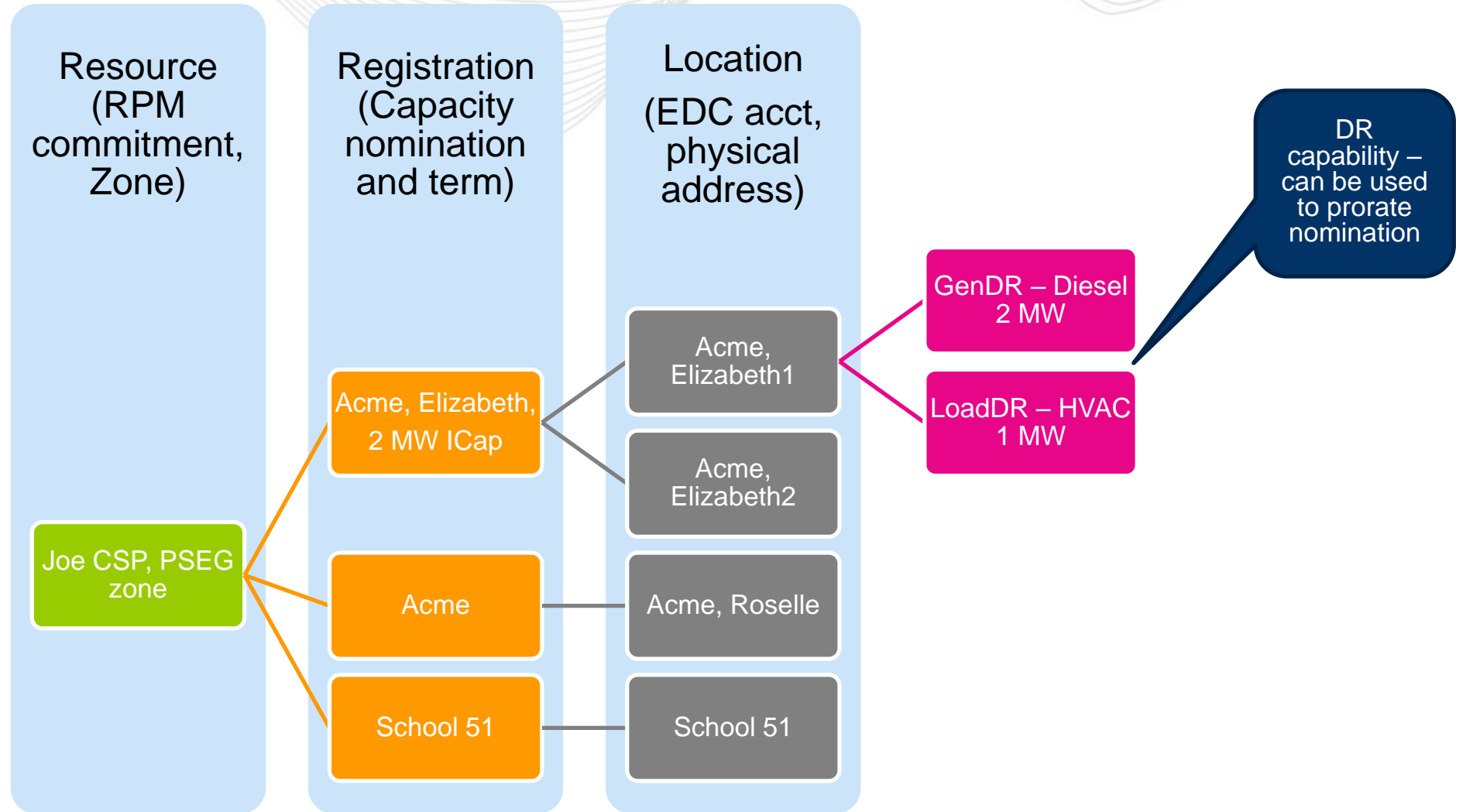
- CSP submits DR plan for "new" and "existing" resources
  - Existing resources criteria (currently registered and expect to be registered for future DY:
    - BRA (may) – Newer CSP (greater of DY and DY+1 MW)
    - 1rst IA (sep) – current DY CSP (greater of DY and DY-1 MW)
    - 2nd IA (jul) – current 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

- Existing Resource qualified for exemption (Existing_Exempt)
  - All customers previously registered or cleared for an auction prior to the order date.
    - Plan to look at Max registered value for location over last few years
      - Order is not clear on how to handle but believe this is consistent with renewables
    - PJM intends to allow CSP to identify any locations under contract prior to the order date that were not Pre-Registered but resource did clear in 21/22 DY to qualify for exemption.
- Existing Resources not qualified for exemption (Existing_NonExempt)
  - New resources/registrations/MWs that participate in subsequent DY
- New resources are treated similar to Generator uprate/repower (New)
  - New resource/registration/MW are considered Existing_NonExempt in subsequent DY.
- FERC indicated PJM may need to consider if CSP are required to have contracts with customers prior to auction

| Existing Exempt = Max < order date				12				Auction input						
	Registrations				Pre-Registrations			Credit		MOPR				
CSP	Registration	Location	DY	NomMW	Auction	DY	MW	MW	Status	MW	Status	MW	Status	
JackCo	1	A	16/17	7										
JoanCo	2	A	17/18	12										
			18/19											
JimCo	3	A	19/20	10	BRA	22/23	12	10	Existing	12	Existing_Exempt			
MaryCo	4	A	21/22	15	BRA	23/24	15	15	Existing	12	Existing_Exempt	3	New	
		A	22/23	NOT registered		24/25								
JoeCo	5	A	23/24	15	BRA	25/26	15	15	Existing	12	Existing_Exempt	3	New	
SueCo	6	A	24/25	15	BRA	26/27	15	15	Existing	12	Existing_Exempt	3	Existing_NonExempt	
GlenCo	7	A	25/26	11	BRA	27/28	10	11	Existing	11	Existing_NonExempt			

GenDR

- Diesel
- Gas
- Etc.

Gen "behind the meter" is normally built to reduce retail energy cost and power disruptions

LoadDR

- 3 year average offer prices

Average is based on LoadDR offers that did not clear
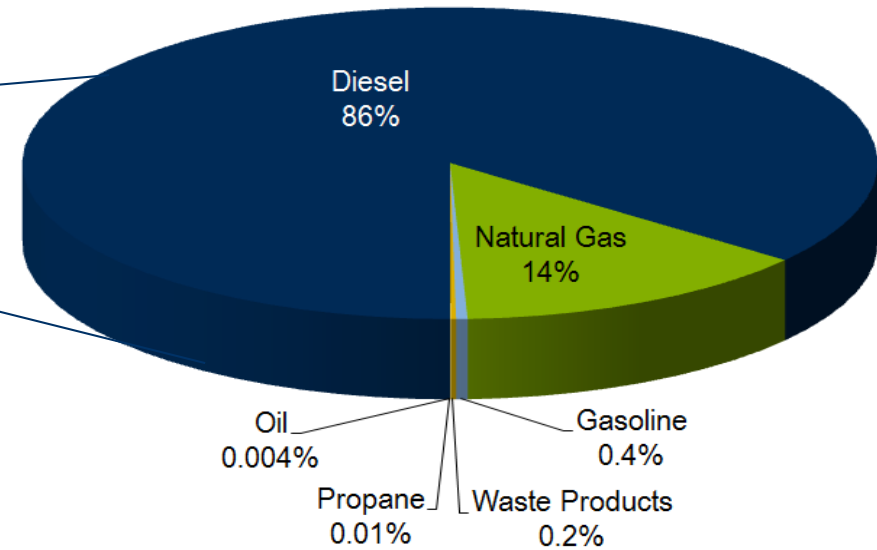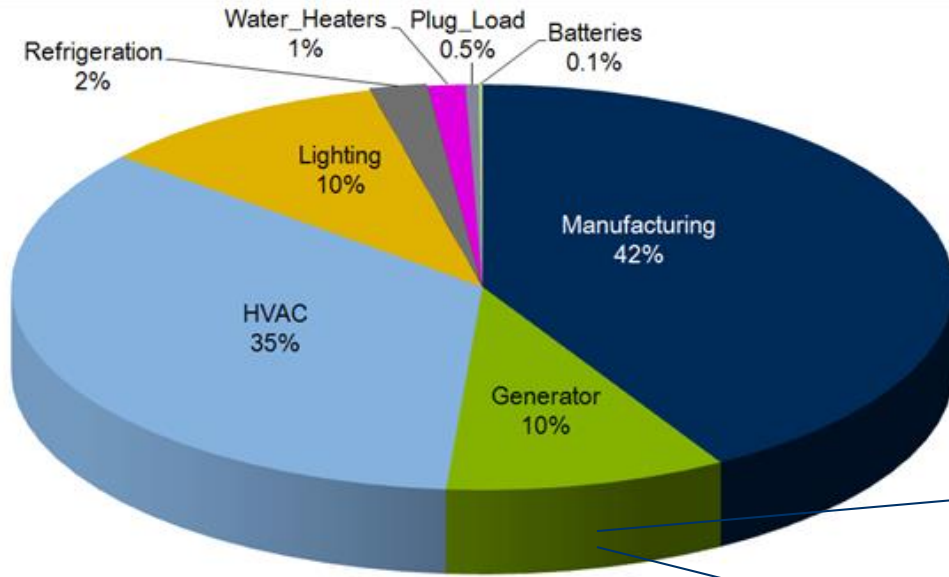
- GenDR
  - New
    - Diesel (Gross CONE minus unit specific offset)
    - Gas (Gross CONE minus unit specific offset)
    - Other (tbd) – can we come up with one price.
  - Existing_NonExempt (Gross ACR minus unit specific offset)
    - Diesel (Gross CONE minus unit specific offset)
    - Gas (Gross CONE minus unit specific offset)
    - Other (tbd) – can we come up with one price
- GenDR offset – different than front of the meter generation and may include reliability value (avoided LOLE cost) and retail cost saving in addition to any wholesale market Energy and Ancillary Service benefit.
- LoadDR
  - New – based on LoadDR 3 year average uncleared offers
  - Existing_NonExempt – tbd (order does not stipulate) ? Maybe this is $0?

Will need transition plan to develop 3 year average and potentially develop additional default GenDR MOPR prices

Class	Subsidy	Type	Existing_Exempt	Existing_Nonexempt	New
LoadDR	Yes	-	-	?	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…	-		-

If CSP locations receive no subsidies, they will still need to break out offer by LoadDR and GenDR

- GenDR vs LoadDR based on DR capability

  – We do not know nominated MWs by load reduction method, we need to estimate

- The economics to install/build/maintain GenDR is fundamentally different from front of the meter generator.

- Nothing in the order contemplates changing the current compliance aggregation rules (e.g. – event performance aggregated across dispatched registrations in EAA)

- The current registration process is an effective mechanism to manage customer/location switching.

Registration cycle – Jan through May for DY+1

Current Rules to determine Existing for Credit	Proposed MOPR rules
· BRA (may) – Newer CSP (greater of DY and DY+1 MW)	Existing_Exempt - Historic Max registered MW
· 1rst IA (sep) – current DY CSP (greater of DY and DY-1 MW)	If Registered MWs > Existing Exempt then:
· 2nd IA (jul) – current DY CSP (greater of DY and DY-1 MW)	If incremental MWs not registered in most current registration then = New
· 3rd IA (feb)– Newer CSP (newer of DY and DY+1 MW)	If incremental MWs registered in most current registration then = Existing_NonExempt

Need to breakout from Existing_Exempt to calculate overall MOPR price (LoadDR only)

No need to breakout further but need separate from LoadDR for future MOPR calcs

Author: All gen types need to be broken out if they receive a subsidy by New vs Existing Nonexempt

Auction Offer

22/23 BRA		Existing_Exempt_MOPR	Existing_Credit	**GenDR+LoadDR** Existing_Exempt		**Load DR** Existing_NonExempt + New (no Sub)		Existing_NonExempt (Sub)		New (Sub)		**GenDR** Existing_NonExempt + New (no sub)		Existing_NonExempt Diesel (sub)		Exisiting_NonExempt Gas (sub)		New_Diesel (sub)		New_Gas (sub)	
Org	Zone	MW	$/mwh	MW	$/mwh	MW	$/mwh	MW	$/mwh	MW	$/mwh	MW	$/mwh	MW	$/mwh	MW	$/mwh	MW	$/mwh	MW	$/mwh
CSP1	PECO	100	90	100	$30.00			1	$70.00			3	60	1	$45.00					1	$45.00
CSP1	DOM	50	60	50	$20.00	1	$60.00			1	$40.00									1	

Apply MOPR

1. Existing_Exempt (LoadDR+GenDR)
2. LoadDR No subsidy (Existing_NonExempt + New)
3. Load DR Subsidy (Existing_NonExempt)
4. Load DR Subsidy (New)
5. GenDR, No subsidy (Existing_NonExempt + New)
6. GenDR, Subsidy (Existing_NonExempt), Diesel
7. GenDR, Subsidy (Existing_NonExempt), Gas
8. GenDR, Subsidy (New), Diesel
9. GenDR, Subsidy (New), Gas

For each additional Gen class we add 2 additional resource types (list could increase to 15?)

- 1 zonal resource with 9+ segments
- 9+ resources
- Hybrid, Other ways to manage?
  - Existing_Exempt
  - LoadDR
    - No Subsidy
    - Subsidy, Existing_NonExempt
    - Subsidy, New
  - GenDR (no subsidy
  - GenDR (subsidy, Existing_NonExempt)
    - Diesel
    - Gas
    - etc
  - GenDR (subsidy, New)
    - Diesel
    - Gas
    - etc

5 resources, X segments

Don't shoot the messenger