

EDC review process and Order 2222

DIRS

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Process will continue to change based on details and stakeholder input

- DR process - continue with current process
- DER review process – items added to existing DR EDC review process
 - DR with injection (DRwl) that does not go through PJM queue
 - Front of the meter (FtmDER) - Generator/Storage connected to distribution that does not go through PJM queue
 - This also include BTMG that nets load and does not participate in the wholesale market as DR but has been approved to inject power on the distribution system for wholesale market participation

Wholesale Market Participation

Utility
Interconnection

Registration

Market
Offer/Dispatch

Settlement &
Compliance

Near term Operational
Coordination

DRwl or FtmDER goes through utility interconnection before wholesale market registration



- Electric distribution company
- Registration review use cases
- Registration review time line
- Settlements/Compliance

- electric distribution company
 - PJM member (or their designated agent that is a PJM member) that manages the distribution system.
 - Used for DR registration and settlement review process
- “Electric Distributor” shall mean a Member that 1) owns or leases with rights equivalent to ownership of electric distribution facilities that are used to provide electric distribution service to electric load within the PJM Region; or 2) is a generation and transmission cooperative or a joint municipal agency that has a member that owns electric distribution facilities used to provide electric distribution service to electric load within the PJM Region.
- Fully Metered EDC
 - Electric distributor that reports hourly net energy flows and net generator output plus additional tariff responsibilities.

- Review and approve DERA participation in the wholesale market
 - ensure wholesale market participation does not create safety and reliability issues on the distribution system
 - PJM assumes many safety and reliability issues associated with DER are addressed in the utility interconnection agreement, including things like inverter-based resource reliability standards, ability for utility to disconnect a resource for safety, etc.
 - Participation complies with RERRA
 - Assist with the review and collection of certain data
 - Settlements – tbd, (net load vs wholesale market revenue)



- Electric distribution company
- **Registration review use cases**
- Registration review time line
- Settlements/Compliance



Use Case 1: Solar attached to distribution system approved through Utility interconnection process

NEM, PURPA or other retail agreement that impacts participation

Registration								Resource/Location									
DER Provider	StartDate	EndDate	Resource Type	Markets	EDC	Zone	Status	EDC Acct Number	Name	Address, city, state, zip	Pricing Point	EDC Interconnection Number	Agreements	Type	Max Load	Max Injection (kW)	Max Offer (kW)
DER King	6/1/2021	5/31/2022	FtMDER	Capacity, energy, SR, Reg	PECO	PECO	Pending	012345	Ridge solar	12 Maple, Smithville, PA, 19809				Solar	0	500	500

Need to figure out – some EDCs mentioned it is issue to identify. Maybe PJM assigns a default based on zip code when size < X kW.

Legend - background color
 White - DER Provider provides the data in the registration
 Yellow - EDC reviews and approves/denies the data submitted by DER Provider
 Green - EDC provides the data
 System - Grey



Use Case 2: Aggregate solar attached to distribution system approved through Utility interconnection process

Registration								Resource/Location									
DER Provider	StartDate	EndDate	Resource Type	Markets	EDC	Zone	Status	EDC Acct Number	Name	Address, city, state, zip	Pricing Point	EDC Interconnection Number	Agreements	Type	Max Load	Max Injection (kW)	Max Offer (kW)
DER King	6/1/2021	5/31/2022	FtMDER	Capacity, energy, SR, Reg	PECO	PECO	Pending	012345	Ridge solar	12 Maple, Smithville, PA, 19809		89-02-1a		Solar	0	500	500
								34251	valley solar	9 Oaks, Jonestown, PA, 19814		67-09-2b		Solar	0	300	300
														Total	0	800	800

Legend - background color
 White - DER Provider provides the data in the registration
 Yellow - EDC reviews and approves/denies the data submitted by DER Provider
 Green - EDC provides the data
 System - Grey

Max offer amount in the markets

Registration aggregation – still need to work out the specifics on types of resources that go on same registration



Use Case 3: Battery attached to distribution system approved through Utility interconnection process

Registration								Resource/Location									
DER Provider	StartDate	EndDate	Resource Type	Markets	EDC	Zone	Status	EDC Acct Number	Name	Address, city, state, zip	Pricing Point	EDC Interconnection Number	Agreements	Type	Max Load	Max Injection (kW)	Max Offer (kW)
DER King	6/1/2021	5/31/2022	FtMDER	Reg	PECO	PECO	Pending	656589	Ash Storage	2 farm rd, ashville, PA, 19912		89-02-1a		Battery	400	400	400

Will only participate in the Regulation market

Legend - background color
 White - DER Provider provides the data in the registration
 Yellow - EDC reviews and approves/denies the data submitted by DER Provider
 Green - EDC provides the data
 System - Grey

Registration will indicate market eligibility



Use Case 4: Industrial customer with load reduction capability and generation approved through Utility interconnection process

Registration								Resource/Location									
DER Provider	StartDate	EndDate	Resource Type	Markets	EDC	Zone	Status	EDC Acct Number	Name	Address, city, state, zip	Pricing Point	EDC Interconnection Number	Agreements	Type	Max Load	Max Injection (kW)	Max Offer (kW)
DER Queen	6/1/2021	5/31/2022	DRwl	Capacity, energy, SR, Reg	PECO	PECO	Pending	656589	Metal Fabrication	2 farm rd, ashville, PA, 19912		89-02-1a		Industrial Process 300kW Gen: 200 kw	300	200	500

Assume additional DR information based on status quo is included in the Registration & Resource/Location information.

Legend - background color

White - DER Provider provides the data in the registration

Yellow - EDC reviews and approves/denies the data submitted by DER Provider

Green - EDC provides the data

System - Grey

EDC visibility for injection reason

Illustration – still need to work out whether to model as one or two resources, locational requirement, and specifics for each market



Use Case 5: Home with solar and battery approved through Utility interconnection process

Registration								Resource/Location									
DER Provider	StartDate	EndDate	Resource Type	Markets	EDC	Zone	Status	EDC Acct Number	Name	Address, city, state, zip	Pricing Point	EDC Interconnection Number	Agreements	Type	Max Load	Max Injection (kW)	Max Offer (kW)
DER Queen	6/1/2021	5/31/2022	DRwl	Reg	PECO	PECO	Pending	656589	Joe's house	2 main st, pottstown, PA, 19912		89-02-1a		Gen: solar 5 kw, battery 2 kw	7	5	2

Assume

Additional DR information based on status quo is included in the Registration & Resource/Location information.

Solar used to offset load not eligible for wholesale revenue

Only battery participates in wholesale regulation market

Legend - background color

White - DER Provider provides the data in the registration

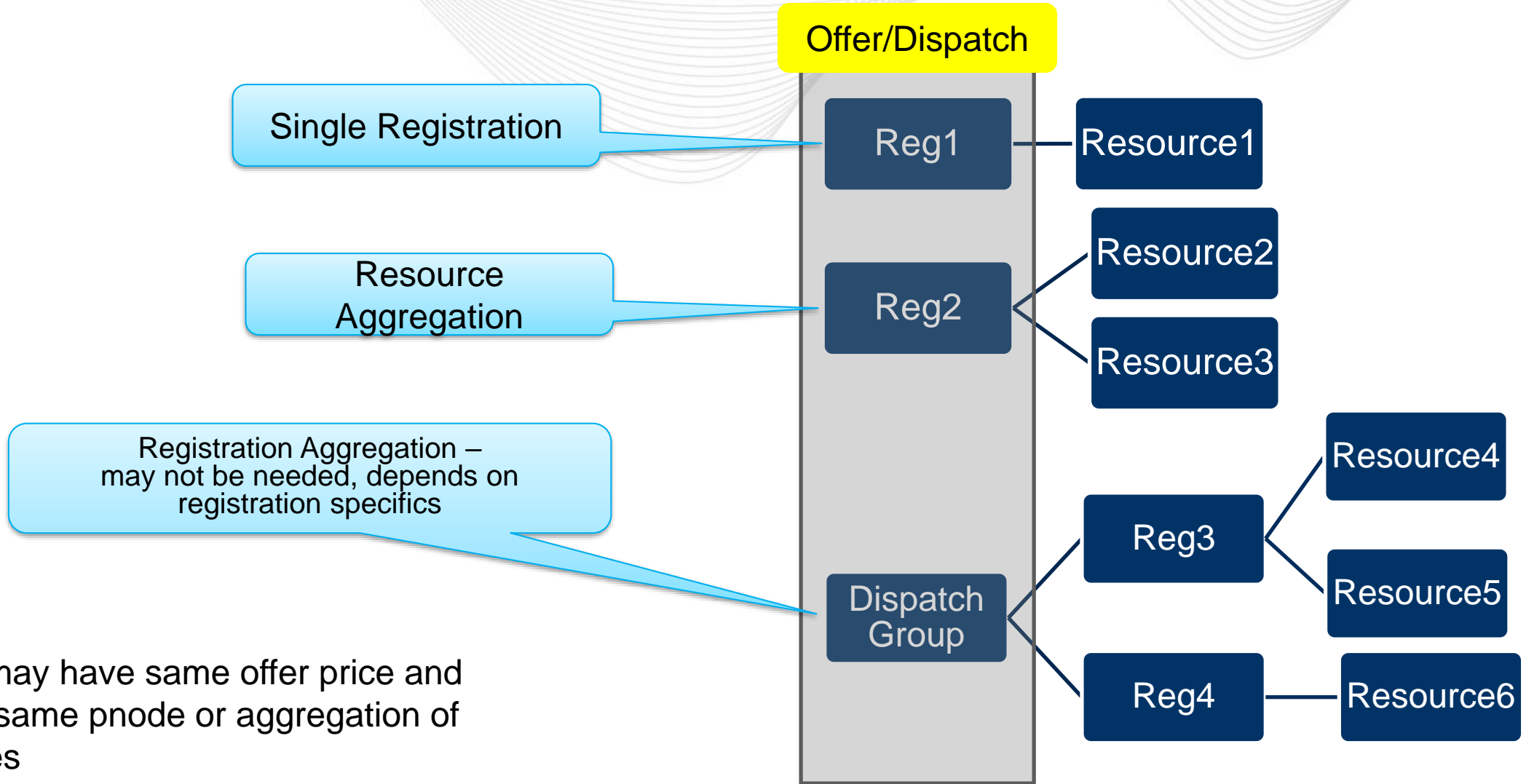
Yellow - EDC reviews and approves/denies the data submitted by DER Provider

Green - EDC provides the data

System - Grey

Agreement type may impact wholesale market participation options

Potential Aggregation Approach



All 3 may have same offer price and be at same pnode or aggregation of pnodes

- Specifics of registration and offer management may help determine whether there is a need for dispatch group (registration aggregation)
- May need to consider aggregation rules for mass market (high volume of locations, small capability per location) vs C&I.
- Need to work out timing of pnode determination for registrations with multiple resources/locations
 - Try to minimize aggregation admin (location on registration needs to be assigned to different registration because it is at different pnode)
- Is it more important to have visibility into potential offer amount by location than explicit EDC approval of aggregation?



- Electric distribution company
- Registration review use cases
- **Registration review time line**
- Settlements/Compliance

- FERC indicated it may take up to 60 days
- Registrations will not occur until after resource goes through Utility interconnection process
- Current DR time line is 10 business day where
 - If there is a data error, registration is denied and DR Provider resubmits which triggers another 10 business days to review
 - If EDC denies and DR Provider disputes then there is 60 days to resolve between PJM, EDC and DR Provider.
 - If some cases, the LSE is in the approval process (3 party review, where LSE and EDC process run in parallel)
- DER review process includes additional new work for EDC
 - Avoid a time crunch for new process that involves more coordination for the EDC



- Electric distribution company
- Registration review use cases
- Registration review time line
- **Settlements/Compliance**

- Need to work out how settlements will work
 - Today – front of the meter generation output is added back to fully metered load to determine load for energy interchange accounting.

- DR EDC reference material

- EDCs designation by small (opt in) and large (opt out)
 - <https://pjm.com/-/media/etools/dr-hub/elrs-large-and-small-edcs.ashx>
- RERRA evidence to opt in or opt out or to qualify DR participation
 - <https://pjm.com/-/media/etools/dr-hub/opt-in-opt-out-rerra-evidence-for-dsr.ashx>

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