

# Draft DERA Use Cases

DIRS

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# Purpose of Use Cases

Stress test the DERA model

Build understanding by filling in details

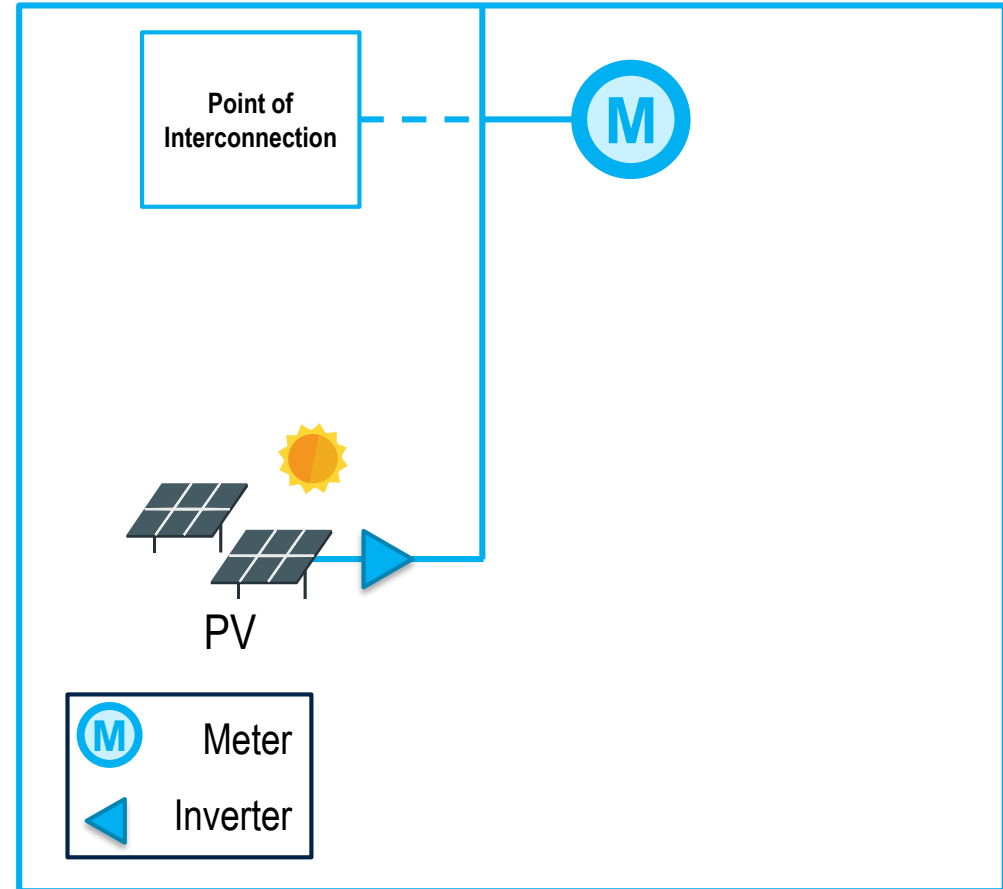
Cohesive examples to use throughout compliance process

Highlight resource-type specifics, where needed

Ability to iterate and introduce alternatives

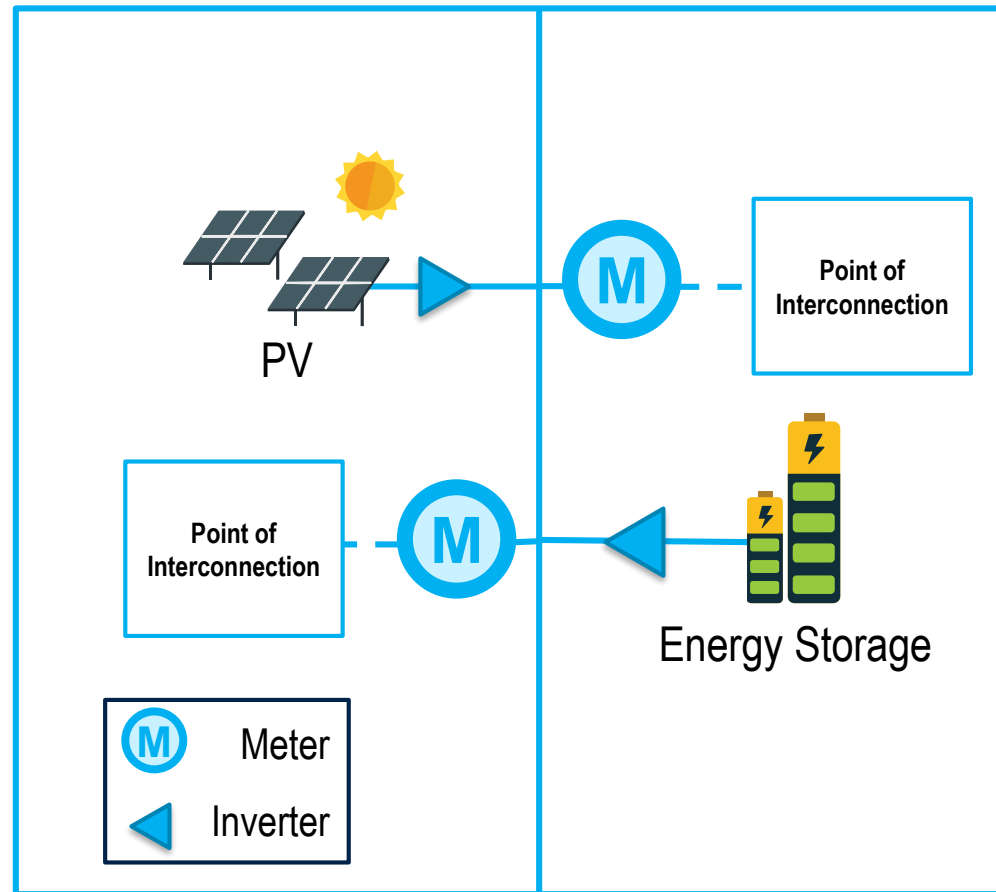
- Composition: resource types
  - Homogenous: all same resource type
  - Heterogeneous: different resource types
- Configuration: physical connection of resources
  - Front of the meter: not co-located with retail load
  - Behind the meter: co-located with retail load
- Resource Type: specifies market participation resource type, usually aligned with technology
- Market Participation: denotes all market services the DERA is technically capable of providing
- Site: physical location of DER
- Location: electrical location at which PJM will model the DERA

Composition	Homogeneous
	Heterogeneous
Configuration	Front of the meter
	Behind the meter
Resource type	Any (except DR)
Market Participation	Capacity
	Energy
	Ancillary Services
Site	One
	> 1
Location	Single (primary) transmission node



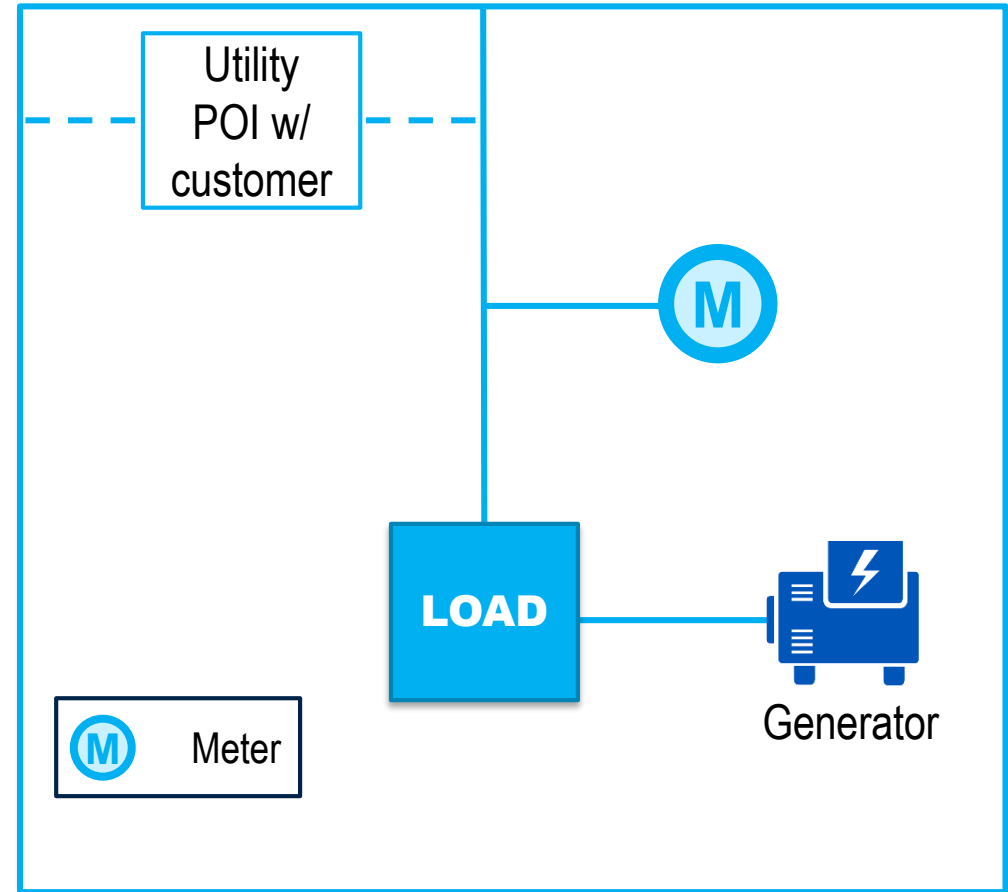
- Simplest use case – starting point for filling in DERA details
- Considered a DER Aggregation, but does not aggregate multiple resources across different physical location
- Could operate as a DERA...or not. Option to enter the PJM queue, obtain a WMPA and local IA, and operate as a PJM generation resource.

Composition	Homogeneous
	Heterogeneous
Configuration	Front of the meter
	Behind the meter
Resource type	Any generator or energy storage resource
Market Participation	Capacity
	Energy
	Ancillary Services
Site	One
	> 1
Location	Single (primary) transmission node



- Aggregation of multiple sites and multiple resource types
- Could involve multiple distribution feeders
  - May be important for assessing different aspects of the utility review process
- Demonstrates information exchange on an aggregate basis, and an individual DER basis (where necessary)

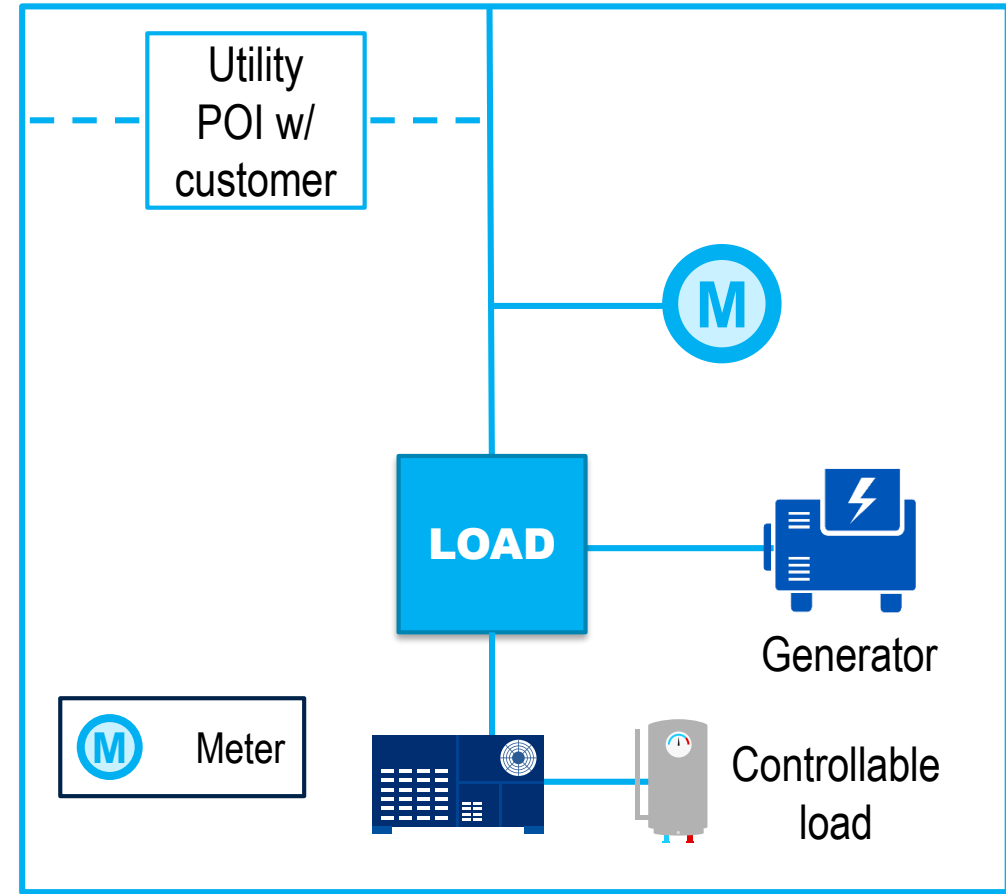
Composition	Homogeneous
	Heterogeneous
Configuration	Front of the meter
	Behind the meter
Resource type	Any generator or energy storage resource Does not include demand response
Market Participation	Capacity
	Energy
	Ancillary Services
Site	One
	> 1
Location	Single (primary) transmission node





- Relatively simple example of DER co-sited with load
  - Will include customer-level information in utility review process
- DER nets customer load with the ability to provide excess power to the wholesale market
  - Interacts with PJM business rules for BTMG regarding the amount of MW offered in the DERA

Composition	Homogeneous
	Heterogeneous
Configuration	Front of the meter
	Behind the meter
Resource type	Any, includes DR
Market Participation	Capacity
	Energy
	Ancillary Services
Site	One
	> 1
Location	Single (primary) transmission node



- Adds demand response interactions to Use Case 3
- Will provide useful details on how DER and DR can aggregate within a heterogeneous DERA

- What are we missing?
- Have we captured reasonable 'real-world' use cases?
- Incorporate 'multi-use' – retail and wholesale services?



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## **DERA Use Case Development**



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