



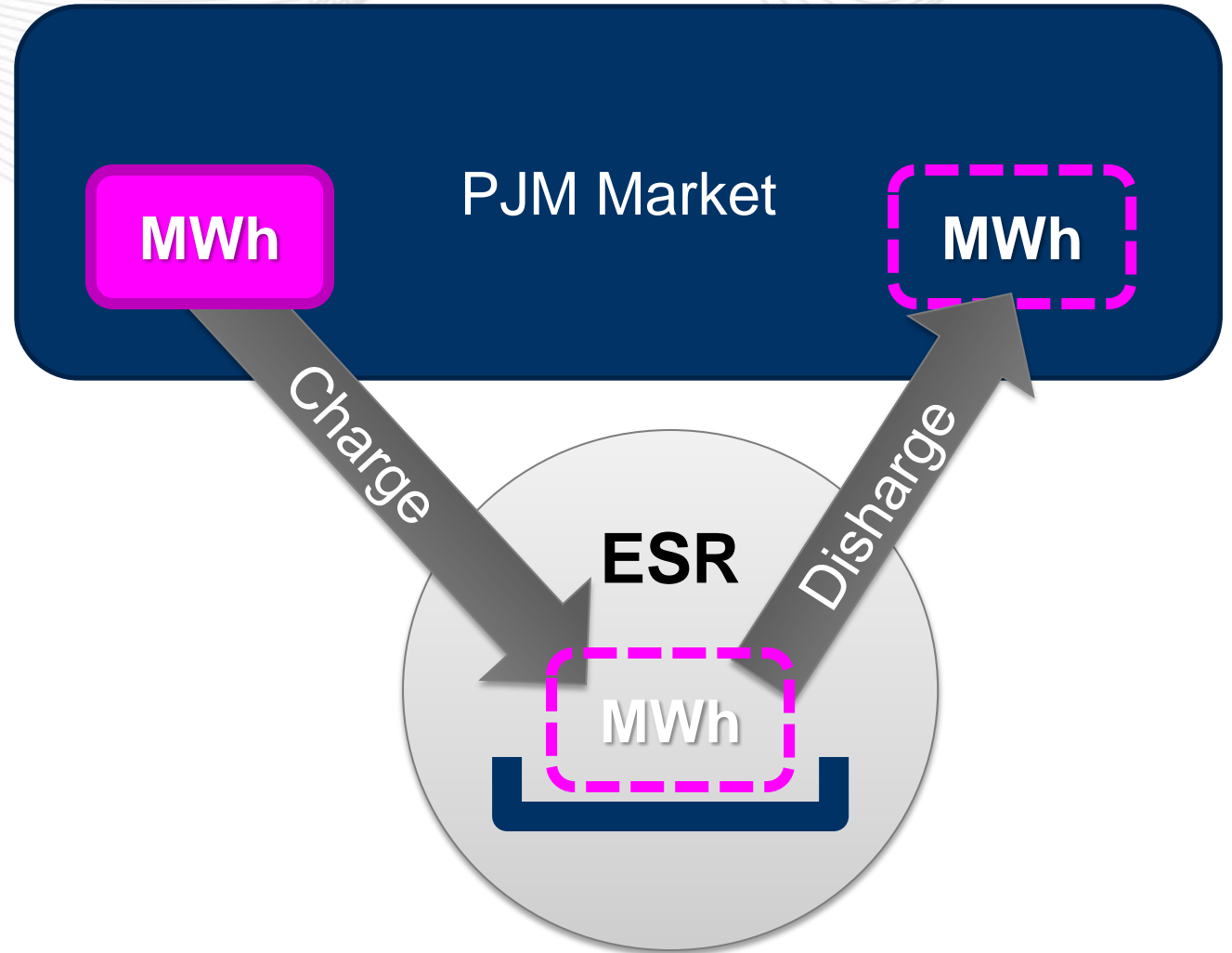
# Settlement of Dispatched and Non-Dispatched Charging Energy for Energy Storage Resources under Order 841

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May 22 Market Settlements  
Subcommittee

# Energy Storage Resource Definition

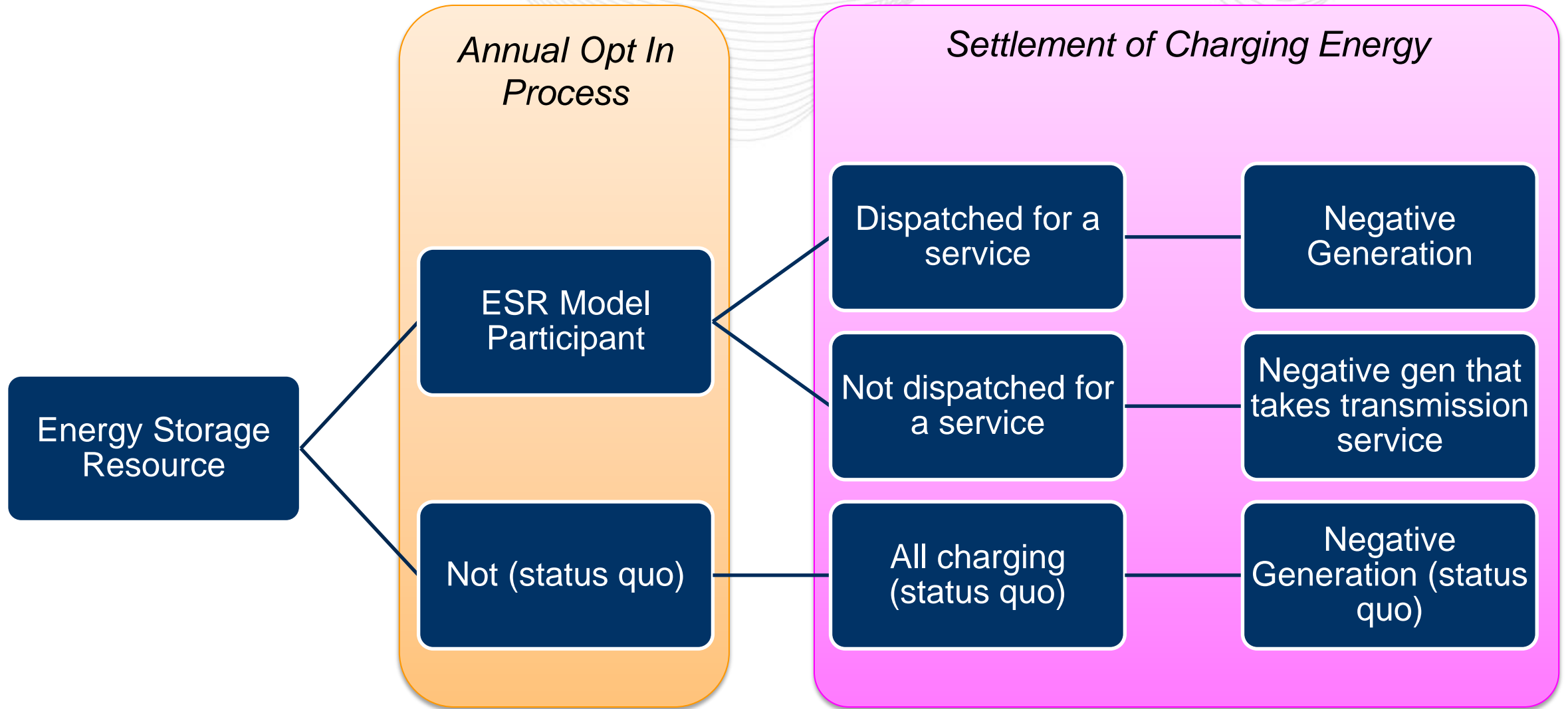
*“Energy Storage Resource” shall mean a resource capable of receiving electric energy from the grid and storing it for later injection to the grid that participates in the PJM Energy, Capacity and/or Ancillary Services markets as a Market Participant.*

(PJM Order 841 Compliance filing ER19-462 and current Tariff)



- Energy Storage Resource Notice of Proposed Rulemaking in November 2016
- Order 841 Final Rule on Electric Storage Participation in Regional Markets issued February, 2018
- PJM Compliance Filing Dec 3, 2018 targeting **Dec 3, 2019 implementation**
- FERC acceptance of new Energy Storage Resource and Capacity Storage Resource definitions on Feb 3, 2019 (all of ER19-462)
- PJM submitted additional clarifying Tariff language May 1, 2019 in response to FERC Request for Clarification
- FERC acceptance of PJM compliance filing still pending (ER19-469)

# Summary of Charging Energy Settlement Categories





# Energy Storage Resource Model Participant Definition

*“Energy Storage Resource Model Participant” shall mean an Energy Storage Resource utilizing the Energy Storage Resource Participation Model. (PJM Order 841 Compliance filing ER19-469)*

- Feb 28 for upcoming delivery year
- Also one-time opt-in opportunity for new ESR in the PJM queue
- ESR stay in current status if no notification
- Need a NITSA to become ESR Model Participant (new Attachment F-2 for this purpose)

***“Direct Charging Energy” shall mean the energy that an Energy Storage Resource purchases from the PJM Interchange Energy Market and (i) later resells to the PJM Interchange Energy Market; or (ii) is lost to conversion inefficiencies, provided that such inefficiencies are an unavoidable component of the conversion, storage, and discharge process that is used to resell energy back to the PJM Interchange Energy Market. (PJM Order 841 Compliance filing ER19-469)***

Direct Charging Energy is settled as “negative generation”

- All ESR (opt in or otherwise) may purchase Direct Charging Energy.



# Dispatched vs. Non-Dispatched Charging Energy

***“Dispatched Charging Energy”*** shall mean *Direct Charging Energy that an Energy Storage Resource Model Participant receives from the electric grid pursuant to PJM dispatch while providing a service in the PJM markets.* (PJM Order 841 Compliance filing ER19-469)

Detailed definition of “pursuant to PJM dispatch while providing a service” to be determined prior to June 20 MSS

***“Non-Dispatched Charging Energy”*** shall mean *all Direct Charging Energy that an Energy Storage Resource Model Participant receives from the electric grid that is not otherwise Dispatched Charging Energy.*” (PJM Order 841 Compliance filing ER19-469)

Only ESR that opt in to the Participation Model purchase Non-Dispatched Charging Energy.

Per Order 841, Non-Dispatched Charging Energy must pay applicable transmission charges.



Non-Dispatched Charging Energy (NDCE) is negative generation that takes transmission service. As such, it pays these charges in addition to LMP:

- Schedule 1A, Schedule 9-3 & 9-MMU as Transmission Customer, & Schedule 10's
- Eligible for NSPL, but not PLC
  - Pays NSPL charges like transmission, Reactive Supply, Black Start, etc.
- Per PJM compliance filing, exempt from certain load-side charges and credits:
  - Non-deviation uplift costs and Reactive Services costs
  - Certain administrative rates (Schedule 9-1)
  - Billing adjustments (Inadvertent Interchange & zonal load Meter Error Correction)
  - LMP surplus (from marginal transmission losses and balancing congestion)
  - ARRs



# ESR NDCE Reporting for Electric Distribution Companies

- Non-Dispatched Charging Energy (NDCE) that takes Network Transmission Service is eligible for a Network Service Peak Load ticket.
- PJM will therefore report NDCE by interval to the relevant EDC for calculating the ESR Model Participant's NSPL.
- Note that Non-Dispatched Charging Energy (NDCE) is **not** end-use load, and so it is not eligible for a Peak Load Contribution ticket under the RAA.