

FERC Order 841 ISO/RTO Directives:

1. Establish an ESR Participation Model
 - a. "Establish a participation model for electric storage resources ("ESRs") consisting of market rules that facilitate their participation in ISO/RTO markets (18 C.F.R. Section 35.28(g)(9)(i))"
2. Sale for Resale to ISO at LMP
 - a. "Specify that the sale of electric energy from the RTO/ISO markets to an ESR that the ESR then resells back to those markets must be at wholesale LMP."
3. If ISOs want to do more: fine, do through 205
 - a. "To the extent an RTO/ISO seeks to include in its tariff additional market rules that accommodate ESRs with specific physical and operational characteristics, it may propose such revisions through a separate FPA Section 205 filing"
4. Define criteria for participation model
 - a. "Define in the tariff the criteria that a resource must meet to use the ESR participation model (i.e., qualification criteria)"
5. Propose changes to say (1) ESRs qualify under existing or new market rules and (2) which rules apply to ESRs in participation model
 - a. "Propose any necessary additions or modifications to existing tariff provisions to specify (1) whether resources that qualify to use the ESR participation model will participate in the RTO/ISO markets through existing or new market participation agreements and (2) whether particular existing market rules apply to resources participating under the ESR participation model"
6. Establish rules for ESRs participation in capacity, energy, and ancillary services that it is technically capable of providing (including non-market services)
 - a. "Establish market rules so that a resource using the ESR participation model is eligible to provide all capacity, energy, and ancillary services that it is technically capable of providing, including services that the RTO does not procure through an organized
7. Allow ESRs to derate their capacity to meet capacity market requirements
 - a. "Revise the tariff to allow ESRs to de-rate their capacity to meet minimum run-time requirements"
8. Consider the fast ESRs and whether they need an energy schedule (moot for PJM)
 - a. "Consider whether fast-responding ESRs may be able to provide certain ancillary services in the markets without an energy schedule"
9. Allow ESRs to be dispatched and set price as supply and demand/ wholesale seller/buyer
 - a. "Revise the tariff to ensure that resources using ESR participation model can be dispatched as supply and demand and can set the wholesale market clearing price as both a wholesale seller and wholesale buyer"
10. No conflicting simultaneous supply offers and demand bids
 - a. "Regarding conflicting dispatch instructions, either (1) demonstrate that market design will not allow for conflicting supply offers and demand bids from the same resource for

the same market interval or (2) modify market rules to prevent conflicting supply offers and demand bids from the same resource for the same market interval”

11. Manual dispatch eligible for make-whole payments
 - a. “Revise the tariff to ensure that resources available for manual dispatch as a wholesale buyer and wholesale seller under the ESR participation model are held harmless for manual dispatch by being eligible for make-whole payments”
12. Account for physical and operational characteristics through bidding parameters or other
 - a. “Include tariff provisions in the ESR participation model that account for the physical and operational characteristics of ESRs through bidding parameters or other means”
13. Account for Parameters specific Commission-defined ESR operational characteristics
 - a. “Account for the following physical and operational characteristics of ESRs: State of Charge, Minimum State of Charge, Maximum State of Charge, Minimum Charge Limit, Maximum Charge Limit, Minimum Charge Time, Maximum Charge Time, Minimum Run Time, Maximum Run Time, Minimum Discharge Limit, Maximum Discharge Limit, Discharge Ramp Rate, and Charge Ramp Rate”
14. Allow ESRs to self-manage state of charge
 - a. “Allow resources using the ESR participation model to self-manage their state of charge”
15. Min size no greater than 100kw
 - a. “Revise the tariff to include a participation model for ESRs that establishes a minimum size requirement for participation in the markets that does not exceed 100 Kw”