



Black Start Annual Revenue Review Education

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- Black Start Service Overview
- Annual Black Start Revenue Requirement Review
- Black Start Credits
- Black Start Charges

What is Black Start Service?

- Black Start Service enables the Transmission Provider to designate specific generators called Black Start Units whose locations and capabilities are required to re-energize the transmission system following a system-wide blackout.
- All Transmission Customers and Network Customers must obtain Black Start Service through the Transmission Provider.

How do units enter Black Start Service?

- The Transmission Provider is responsible for developing a coordinated and efficient system restoration plan that identifies all the locations where Black Start Units are needed.
- Generating resources can offer into either the Five Year RTO Wide Black Start Request For Proposal (RFP) or a Black Start Incremental Request For Proposal.
- PJM and the Transmission Owner work collaboratively to select the optimum Black Start Units.

What does Black Start Service cost?

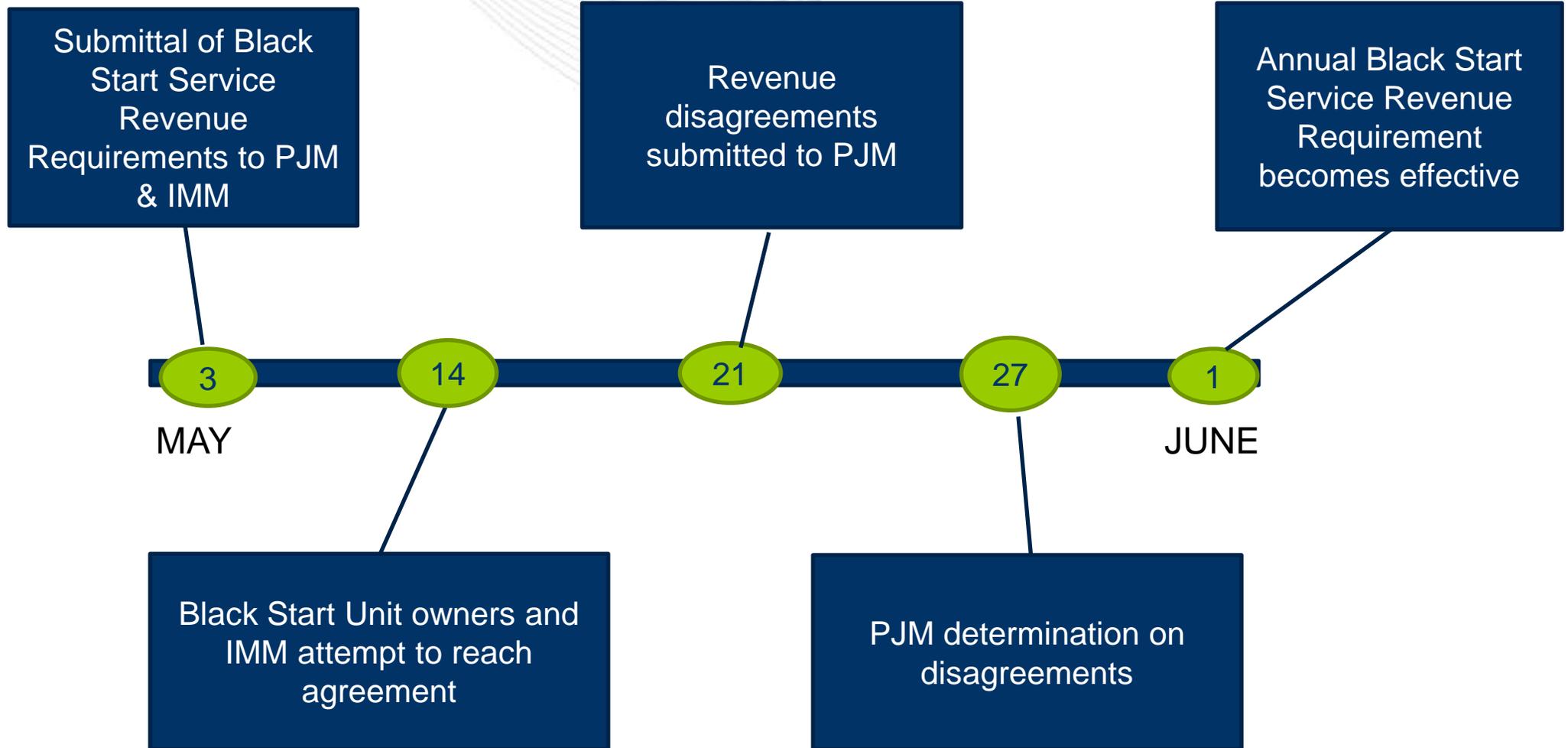
- Black Start Units submit annual Black Start revenue requirements to PJM and the IMM for review and approval. The revenue requirement includes capital, variable, training, and fuel storage costs related to Black Start Service.
- Zonal rates are based on the capability share of the Black Start Unit's annual revenue requirements designated to serve that zone.

Applicable Documents

- OATT Schedule 6A
- Manual 12 Section 4.6
- Manual 14D Section 10
- Manual 27 Section 7.0



Annual Black Start Revenue Requirement Review Timeline



- **May 3**: Annual updates to Black Start Service Revenue Requirements including supporting data and documentation due to IMM and PJM from Black Start Unit owner
 - Submitted to PJM via eDART
 - Submitted to IMM via MIRA
- **May 14**: Black Start Unit owners and IMM attempt to come to agreement on the level of each component in the revenue requirements.
 - IMM provides updated revenue requirements to PJM

- **May 21**: Black Start Unit owner must notify PJM if it agrees or disagrees with the levels of each component in the IMM calculated revenue
 - Black Start unit owner may submit disputed revenue requirements to PJM for review
 - Participated in good faith with IMM review
 - Level requested is no higher than any previous agreement with IMM

- **May 27**: PJM determines whether to accept or reject the disputed revenues.
 - If PJM rejects the disputed revenue requirement, the Unit Owner has the option to file with FERC
 - If PJM accepts the disputed revenue requirement, the IMM has the option to file with FERC
- **June 1**: Annual Black Start Service Revenue Requirement becomes effective

- **Black Start Service Credits**
 - Monthly credits are provided to generators based on the annual revenue requirements (June 1 – May 31)
 - Revenue requirements for jointly owned Black Start Units will be allocated to the owners based on ownership percentage
 - Monthly credit is equal to 1/12 of its annual Black Start Service revenue requirement for eligible critical Black Start Units
 - Credits are only paid if a unit meets all criteria for Black Start Service and is in good standing with the PJM testing requirements for Black Start Units
 - Monthly credits forgone due to non compliance cannot be recovered

- Monthly charges are allocated to PJM customers include:
 - Pool-wide black start revenue based on the annual revenue requirements (June 1 – May 31)
 - Monthly charge is equal to 1/12 of its annual Black Start Service revenue requirement for eligible critical Black Start Units
 - Day-ahead or balancing credits associated with scheduling resources for black start service (if applicable)
 - ALR units
 - Black start testing costs for critical Black Start Units
 - Requirement for testing every 13 months

- **Black Start service charges allocation**
 - Charges are allocated to point-to-point Transmission Customers and network zonal Transmission Customers (NSPL)
 - Ratio share of charges are first calculated for point-to-point customers, remaining charges are allocated to the network customers serving load in a transmission zone

- **Firm and Non-Firm Point-to-Point transmission is compared to total transmission, used to determine the adjustment factor for the ratio share**
 - Usage varies month to month, around 7% of black start charges allocated to non-zone transmission

- Remaining allocation to network customers serving load in that transmission zone based on their monthly network service peak load contributions.
- Network customers are allocated zonal rates are based on Black Start Service capability in that zone
 - Revenue requirements for Black Start units designated in a TO restoration plan as critical will be allocated to that TO zone
 - Shared resources serving multiple zone will have their annual revenues allocated to the TOs by a critical load percentage share