



2023 RTO Wide Black Start RFP Process

for New Black Start Service and Fuel Assurance

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Issue RTO-Wide Black Start RFP

- Jun 20, 2023

RFP Market Window

- Jun 20, 2023 – Nov 1, 2023

RFP Proposal Evaluation and Award

- Nov 1, 2023 – April 30, 2024

Full details of the PJM RFP process can be found in Manual 14D Section 10.1.2

Black Start RFP Solution Implementation

- May 1, 2024 – Dec 1, 2025

Level 1 Proposal: Interested parties submit non-binding initial proposal in format provided by PJM for one or more proposed black start units

- Only basic information required
- Unit name, location / interconnection point, MW, fuel type, basic Black Start Fuel Assurance information

Level 2 Proposal: Bidders provide full non-binding RFP proposal in format provided by PJM with detailed responses completed for identified units

- Black Start Unit details, generator operation details, BS Fuel Assurance details, min load, environmental and BS testing restrictions, project schedule and procurement plan, estimated capital costs, contact information



RTO Wide Black Start RFP Milestone Schedule

Milestone	Date
PJM Posts RFP	6/20/2023
OC Special Session Meeting	6/27/2023
Deadline for Level 1 Proposals	7/25/2023
Deadline for PJM Level 1 Response	8/22/2023
Deadline for Selected Level 2 Proposals	11/01/2023
PJM Evaluation and Award of Black Start Solutions	11/02/2023 – 4/30/2024
In-Service Target Date for New BS Units and Fuel Assurance Upgrades	12/01/2025

- Open Access Transmission Tariff and PJM Manual revisions
 - RFP includes new Fuel Assurance business rules developed in Fuel Requirements for Black Start Resources stakeholder process and filed with FERC on 5/12/2023
 - FERC Docket: https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20230512-5135&optimized=false

Black Start Resource Proposal Type

(pick one only)

Existing PJM Black Start Resource

Existing Resource Not Providing PJM Black Start Service

Future Resource in PJM Interconnection Queue



Black Start Fuel Assurance Proposal Type

(pick one or more)

Black Start Fuel Assured – No Capital Investments Required

Black Start Fuel Assured – Capital Investments Required

Non-Fuel Assured Black Start Service

- Both Black Start Service and Fuel Assured Black Start Service will be compensated through one annual revenue requirement per PJM's Open Access Transmission Tariff Schedule 6A Section 18

$$\{(\text{Fixed BSSC}) + (\text{Variable BSSC}) + (\text{Training Costs}) + (\text{Fuel Storage Costs})\} * (1 + Z)$$

- Units selected for Black Start Service or Fuel Assured Black Start Service recover capital cost via one of three Fixed Black Start Service Cost Rates
 - Base Formula Rate
 - $Net\ CONE * Black\ Start\ Unit\ Capacity * X$
 - Capital Cost Recovery Rate – NERC-CIP Specific Recovery
 - $(Net\ Cone * Black\ Start\ NERC-CIP\ Unit\ Capacity * X) + (Incremental\ Black\ Start\ NERC-CIP\ Capital\ Costs * CRF) + (Fuel\ Assurance\ Capital\ Costs * CRF)$
 - Capital Cost Recovery Rate
 - $(FERC-approved\ rate) + (Incremental\ Black\ Start\ Capital\ Costs * CRF) + (Fuel\ Assurance\ Capital\ Costs * CRF)$



For Units on the Base Formula Rate

	Thermal, Pumped Storage Hydro, Energy Storage, and DER / DR Resources		Run of River Hydro, Intermittent Resources, and Hybrid Resources	
	Non-Fuel Assured (Status Quo)	Fuel Assured	Non-Fuel Assured (Status Quo)	Fuel Assured
Revenue Black Start MW	ICAP	ICAP	ICAP	Monthly MW amount based on 90% confidence level (calculated by PJM every five years)
Restoration Plan MW	ICAP	ICAP	ICAP * % of year unit can provide ICAP for the 16 hours	Annual MW amount based on 90% confidence level (calculated by PJM every five years)
Run Hour Requirement	Thermal: 16 Hours PSH / ESR: Determined by TO Restoration Plan	16 Hours at ICAP	Determined by TO Restoration Plan	16 Hours at 90% Confidence MW
X Factor	Thermal: 0.02 PSH / ESR: 0.01	0.02	0.01	0.02 (Same as CT)
Z Factor	10%	20%	10%	20%
Fuel Assurance Penalties	None	Monthly revenues forgone in months where onsite fuel, water level, stored energy, etc. is not maintained for run hour requirements	None	No penalties because Revenue Calculation MW is determined by PJM calculation of confidence level



For Units on the NERC-CIP Specific Recovery Rate

	Thermal, Pumped Storage Hydro, Energy Storage, and DER / DR Resources		Run of River Hydro, Intermittent Resources, and Hybrid Resources	
	Non-Fuel Assured (Status Quo)	Fuel Assured	Non-Fuel Assured (Status Quo)	Fuel Assured
Revenue Black Start MW	ICAP	ICAP	ICAP	Monthly MW amount based on 90% confidence level (calculated by PJM every five years)
Restoration Plan MW	ICAP	ICAP	ICAP * % of year unit can provide ICAP for the 16 hours	Annual MW amount based on 90% confidence level (calculated by PJM every five years)
Run Hour Requirement	Thermal: 16 Hours PSH / ESR: Determined by TO Restoration Plan	16 Hours at ICAP	Determined by TO Restoration Plan	16 Hours at 90% Confidence MW
X Factor	Thermal: 0.02 PSH / ESR: 0.01	0.02	0.01	0.02 (Same as CT)
Z Factor	0%	0%	0%	0%
Fuel Assurance Penalties	None	Monthly revenues forgone in months where onsite fuel, water level, stored energy, etc. is not maintained for run hour requirements	None	No penalties because Revenue Calculation MW is determined by PJM calculation of confidence level



For Units on a Capital Cost Recovery Rate

	Thermal, Pumped Storage Hydro, Energy Storage, and DER / DR Resources		Run of River Hydro, Intermittent Resources, and Hybrid Resources	
	Non-Fuel Assured (Status Quo)	Fuel Assured	Non-Fuel Assured (Status Quo)	Fuel Assured
Revenue Black Start MW	N/A	N/A	N/A	N/A
Restoration Plan MW	ICAP	ICAP	ICAP * % of year unit can provide ICAP for the 16 hours	Annual MW amount based on 90% confidence level (calculated by PJM every five years)
Run Hour Requirement	Thermal: 16 Hours PSH / ESR: Determined by TO Restoration Plan	16 Hours at ICAP	Determined by TO Restoration Plan	16 Hours at 90% Confidence MW
X Factor	N/A	N/A	N/A	N/A
Z Factor	0%	0%	0%	0%
Fuel Assurance Penalties	None	Monthly revenues forgone in months where onsite fuel, water level, stored energy, etc. is not maintained for run hour requirements	None	No penalties because Revenue Calculation MW is determined by PJM calculation of confidence level

- Units selected in this RFP to provide Black Start Service or Fuel Assured Black Start Service using one of the two capital recovery rates will have a lifetime commitment for Black Start Service. They will transition to the Base Formula Rate upon the completion of the capital recovery period.
- The Black Start Capital Recovery Factor (CRF) for units selected in this RFP will be updated annually in March and effective June 1 through May 31 of the following year.
- Capital recovery periods are based on the age of the unit and vary from 5 to 20 years. The minimum recovery period for Fuel Assurance Capital Costs is 10 years.
- Black Start monthly revenues will be foregone for Fuel Assured resources when onsite fuel, water level, stored energy, etc. is not maintained for the 16 hour run requirement.

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↳ Markets & Operations

↳ Ancillary Services

<https://www.pjm.com/markets-and-operations/ancillary-services>

Black Start Service

Revenue Requirements

▼ Active Requests for Proposals

	Date
2023 RTO-Wide Five-Year Selection Process Request for Proposal for Black Start Service and Black Start Fuel Assurance PDF	6.20.2023
PJM 2023 RTO Wide Black Start RFP Level 1 Response Form PDF	6.20.2023
PJM 2023 RTO Wide Black Start RFP Level 2 Proposal Data Collection Form XLS	6.20.2023

▶ Expired Requests for Proposals

▶ Test & Cost Submittal Forms

▶ PJM Calculated Annual Capital Recovery Factor (CRF)

For questions,
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