



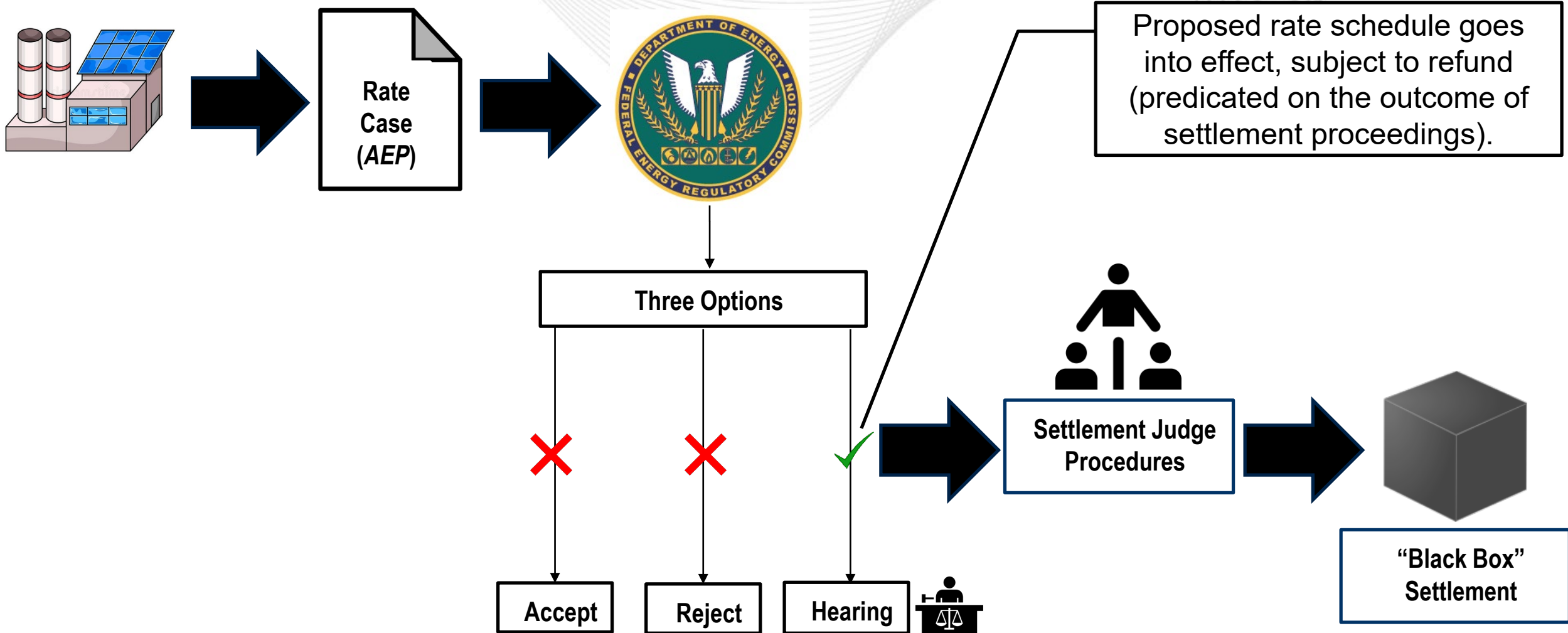
Reactive Supply Compensation Overview

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Market Implementation Committee
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- Reactive power helps support appropriate voltage on the transmission system.
- Reactive Power is a byproduct of “functional unbundling” under Order No. 888 (1996) - one of the original six ancillary services required under a *pro forma* OATT.
 - Functional unbundling required separately stated rates for generation, transmission, and ancillary services (including reactive power).
- All interconnected generators must have a minimum level of reactive capability when interconnecting under FERC jurisdiction.
 - PJM ISA:
 - min PF of 0.95 lead/0.90 lag (synchronous);
 - min PF of 0.95 lead/0.95 lag (non-synchronous).

- In PJM, generators are compensated for reactive power in two ways:
 1. Tariff, Schedule 2 - Reactive Supply & Voltage Control
 - Annual Revenue Requirement must be filed with/accepted by FERC.
 - Credits on monthly PJM invoice (charges allocated to Transmission Customers in zone where generator is located).
 2. Tariff, Att. K-App., section 3.2.3B - Reactive Service
 - Paid as a lost opportunity cost when dispatched down to provide reactive.
 - Allocated through balancing operating reserves.

Current Framework for Reactive Supply



- PJM Legal & Settlement Departments monitor reactive supply rate cases, and implement revenue requirements consistent with legally-binding actions in those proceedings. These include:
 - FERC order accepting proposed rate schedule, subject to refund, and setting for hearing/settlement judge procedures.
 - FERC order approving settlement.
 - Settlement judge granting interim rate relief.
- PJM also intervenes in rate cases to:
 - Ensure the settlements can be implemented.
 - Provide information to the parties during settlement negotiations.

- Schedule 2 (as of 2015) requires that, at least 90 days prior to a unit's deactivation or disposition, the owner must either:
 - File to revise or terminate the revenue requirement; or
 - Submit an informational filing to FERC and provide a copy to PJM.



How Do Other RTOs Compensate for Reactive Supply?

RTO	Construct
MISO	Rate Case
NYISO	Flat Rate
ISO-NE	Flat Rate
SPP	N/A (Variable Payment Only)
CAISO	N/A (Variable Payment Only)

- Open Reactive Supply compensation docket (AD16-17-000)
 - Technical conference held in 2016.
 - Currently dormant.
- Petition for Declaratory Order (EL19-70)
 - Seeking clarity on various cost-of-service issues.
 - Currently in paper hearing on issue of what proxies can be used by merchant generators in place of traditional approach (capital structure and cost-of-capital of the interconnecting utility).

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