PJM Capacity Construct: Reliability Pricing Model Basics and Process Update

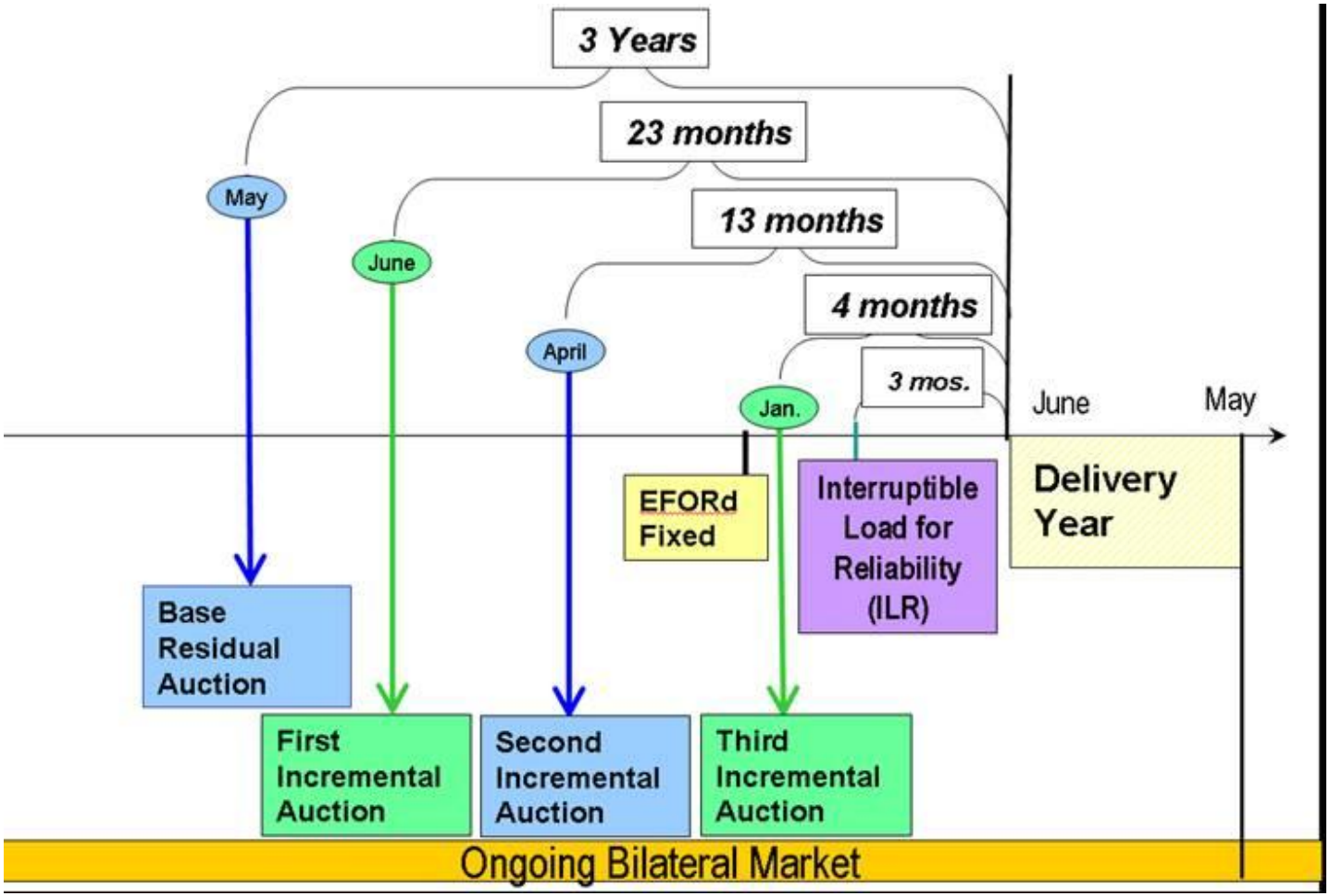
JCM Joint Stakeholder Meeting

November 14, 2008

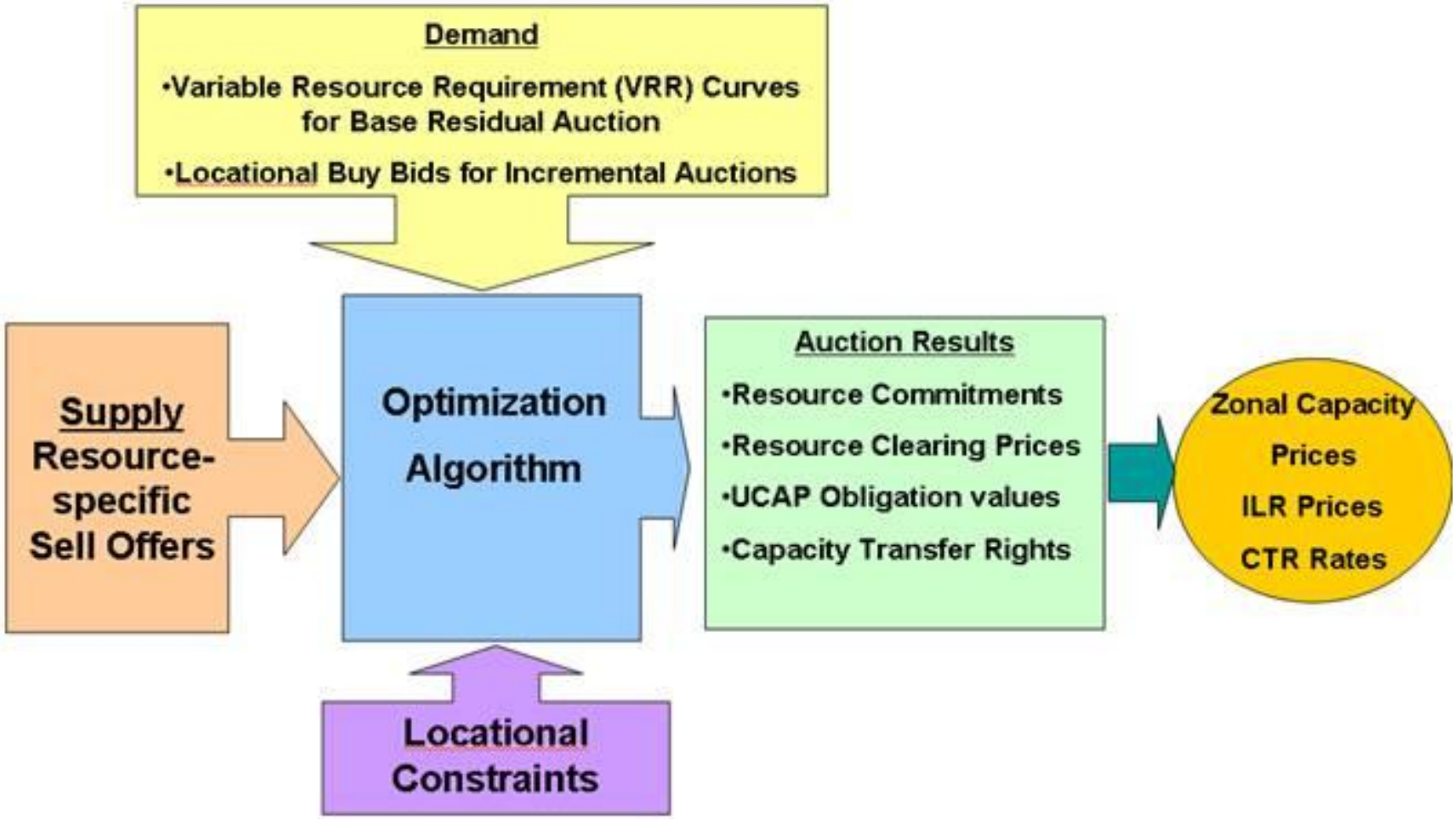
pjm

MidwestISO
Energizing the Heartland

- Reliability Pricing Model (RPM) is PJM's resource adequacy construct
- RPM is part of an integrated approach to ensuring long-term resource adequacy and competitively priced delivered energy
- RPM aligns the price paid for capacity with overall system reliability requirements
- RPM includes locational capacity pricing to recognize and quantify the locational value of capacity
- RPM provides forward investment signals

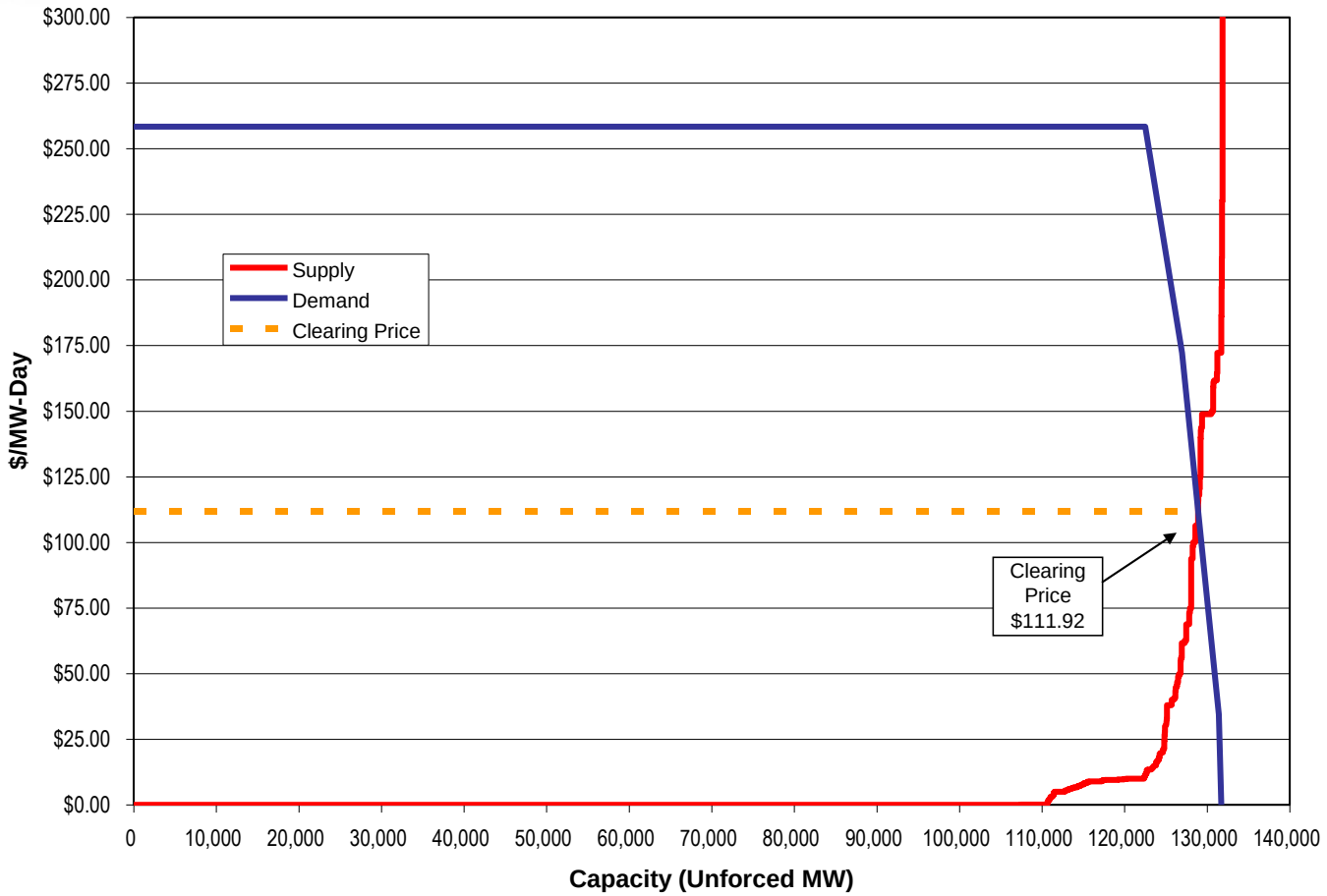

3 Years
23 months
13 months
4 months
3 mos.
May
June
April
Jan.
June
May
EFORd Fixed
Interruptible Load for Reliability (ILR)
Delivery Year
Base Residual Auction
First Incremental Auction
Second Incremental Auction
Third Incremental Auction
Ongoing Bilateral Market

Activity	Purpose	Cost of Procurement
Base Residual Auction	Procurement of RTO Obligation less an amount reserved for ILR, less FRR Obligation	Allocated to LSEs through Locational Reliability Charge
1st Incremental Auction	For resource providers to adjust resource positions	Buyers pay suppliers
2nd Incremental Auction	Considered only if there is an increase in the load forecast	Allocated to LSEs through Locational Reliability Charge
3rd Incremental Auction	For resource providers to adjust resource positions	Buyers pay suppliers
Interruptible Load for Reliability (ILR)	Portion of RTO Obligation is reserved to be served by load management resources certified three months prior to DY	Allocated to LSEs through Locational Reliability Charge


Demand
•Variable Resource Requirement (VRR) Curves for Base Residual Auction
•Locational Buy Bids for Incremental Auctions
Supply
Resource-specific Sell Offers
Optimization Algorithm
Auction Results
•Resource Commitments
•Resource Clearing Prices
•UCAP Obligation values
•Capacity Transfer Rights
Zonal Capacity Prices
ILR Prices
CTR Rates
Locational Constraints

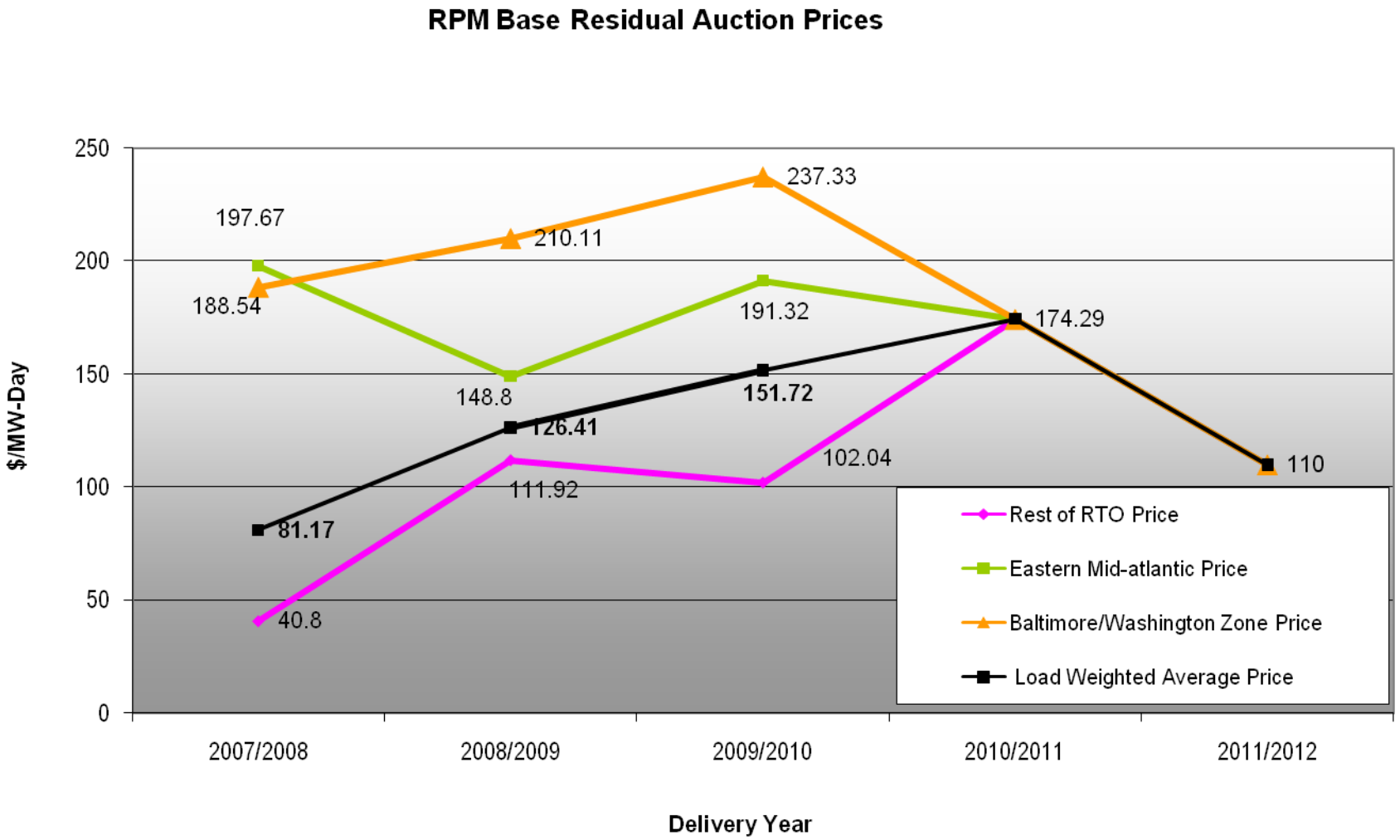
- RPM Auctions use an optimization-based market clearing algorithm.
- This algorithm has the objective of minimizing capacity procurement costs given
  - Supply Offers
  - Demand Curves
  - Locational Constraints
- The clearing price for each Locational Deliverability Area (LDA) is determined by the optimization algorithm.

Graphical Illustration of Auction Clearing 2008/09 BRA



Clearing determined by the intersection of the supply and the demand curves.

Capacity Prices in RPM Auctions



- Following the independent Brattle Group evaluation of RPM's effectiveness, PJM has initiated a stakeholder process to examine enhancements to the RPM construct
- In addition, on September 19, 2008, FERC issued an order on RPM Buyers Motion for Technical conference listing issues to be analyzed
- The goal of the process is to have changes filed with FERC relative to the May 2009 auction for the 2012/2013 Delivery Year by mid-December

FERC Issues Compared to CMEC Short Term Action Plan

Issue highlighted in FERC order	CMEC Action plan
use of historical averages of energy and ancillary services revenue offsets to determine Net CONE	Yes
rules for the participation of energy efficiency and demand-side resources in the RPM auctions	Yes
market power and mitigation rules	Partial
Reliability requirements/criteria and defining Locational Delivery Areas	No, Longer term issue
must-offer rules relating to the exclusion of capacity due to (i) the sales cap imposed on Fixed Resource Requirement entities and (ii) partial-year ownership and availability	Yes
performance penalties	Yes
incremental auctions	Yes
length of forward commitment for new capacity resources	No, Longer term issue

Primary CMEC Issues as of October 30, 2008 Meeting

- Cost of New Entry (CONE) update
- Energy and Ancillary Service Offset
- Incorporation of energy efficiency
- Market power mitigation
- LDA modeling
- Increasing resource eligibility
- Incremental auction redesign
- Interruptible Load for Reliability (ILR)
- Penalties
- Day-Ahead Market offer obligations