

# **Topic 3: Coordination of Demand Response With Planning and RPM Auctions**

**PJM Demand Response Symposium**

**Baltimore**

**May 13, 2008**

## Evolution of PJM Markets Will Affect How We Integrate DR Into Planning and Capacity Markets

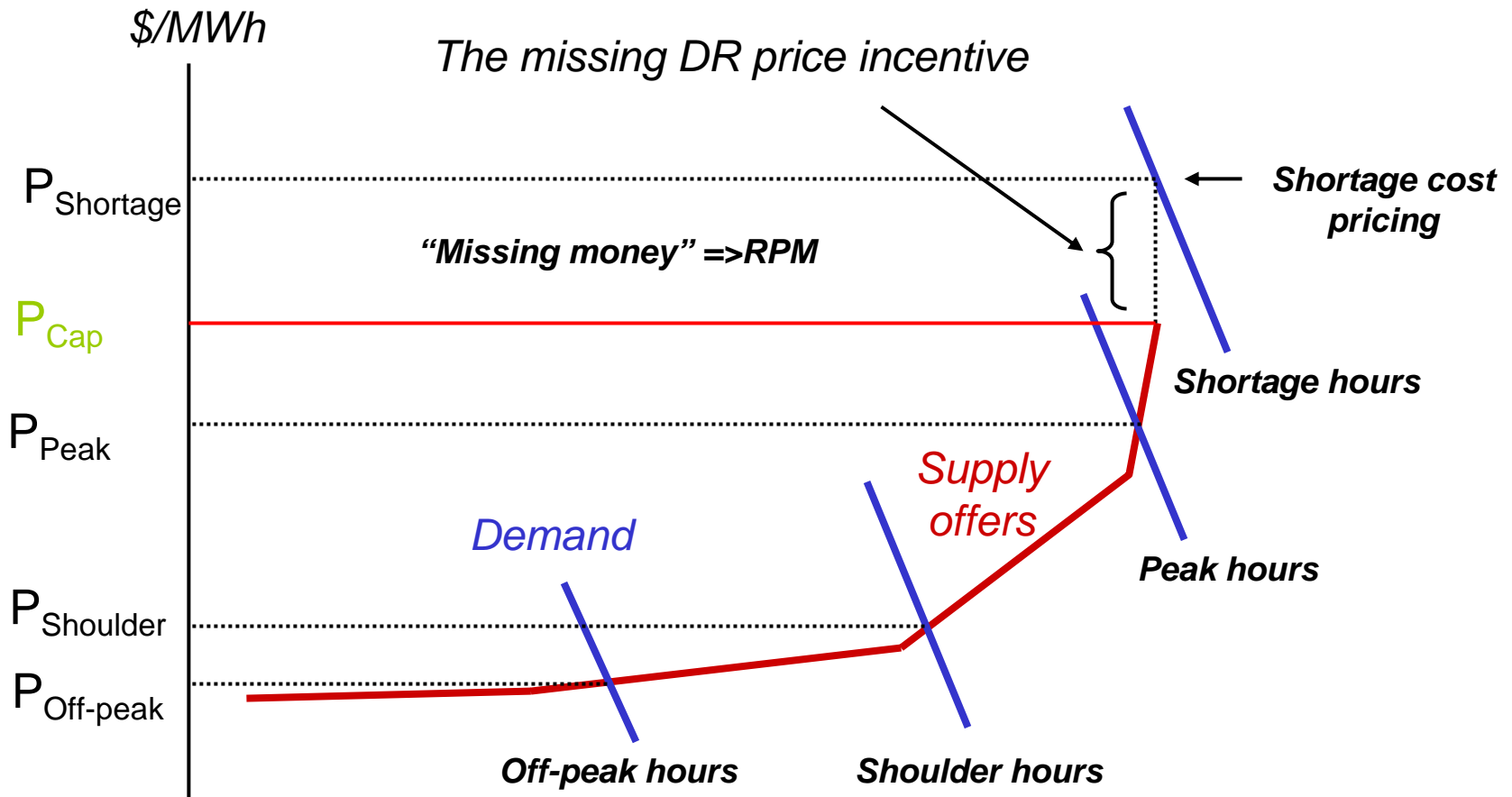
Our planning processes don't yet reflect the economics of demand response to prices.

- We still use engineering, not economic, framework for planning.

1-day in 10-year LOLE = 15-18% reserves

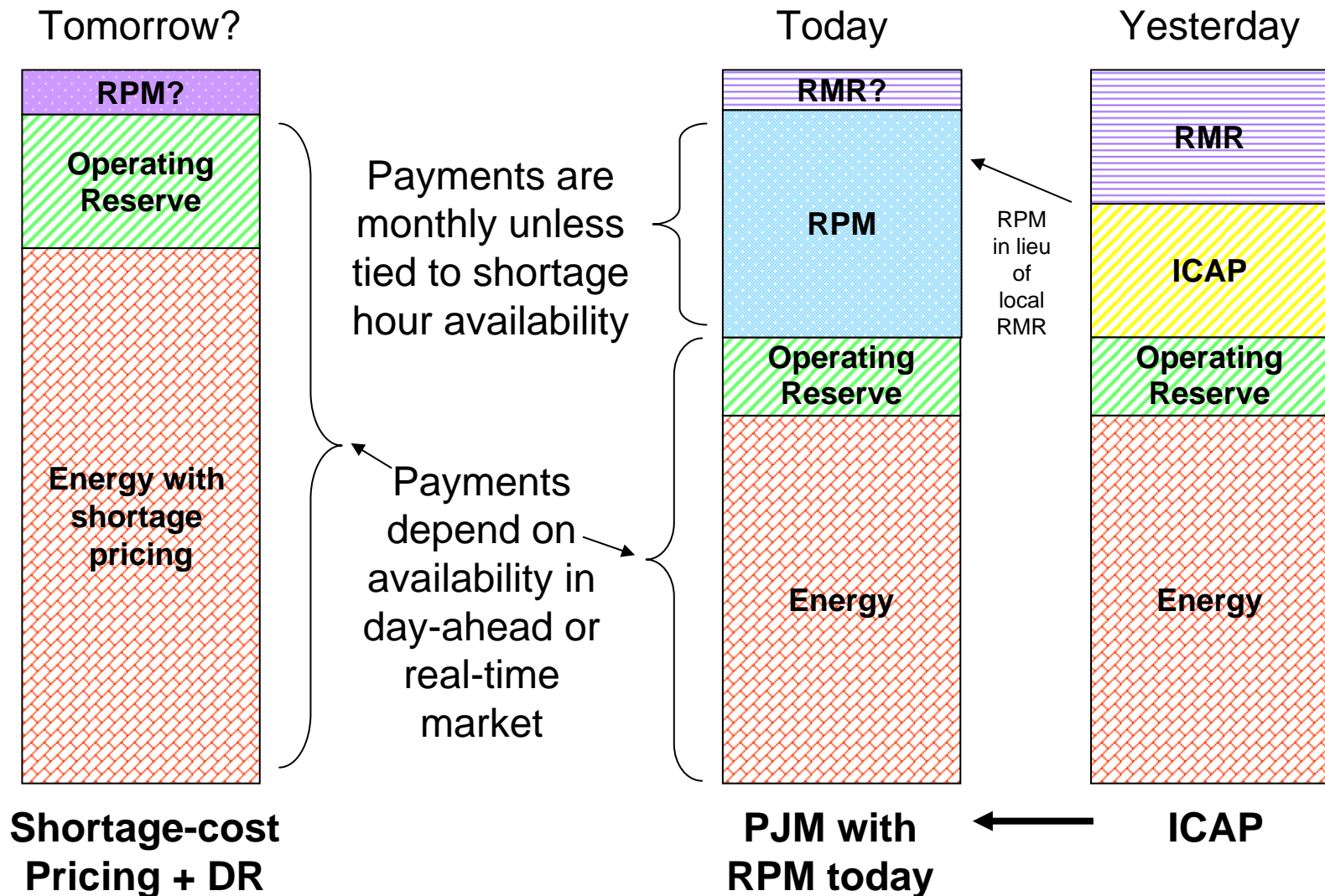
- But we're moving from demand response "programs" towards *customer response to prices*. (Commissioner Lieberman)
- The potential introduction of "shortage-cost pricing" would increase the incentives and opportunities for price-responsive demand and change how it's measured.

# Shortage-cost Pricing Affects Investments But Also Increases Price Incentives for DR



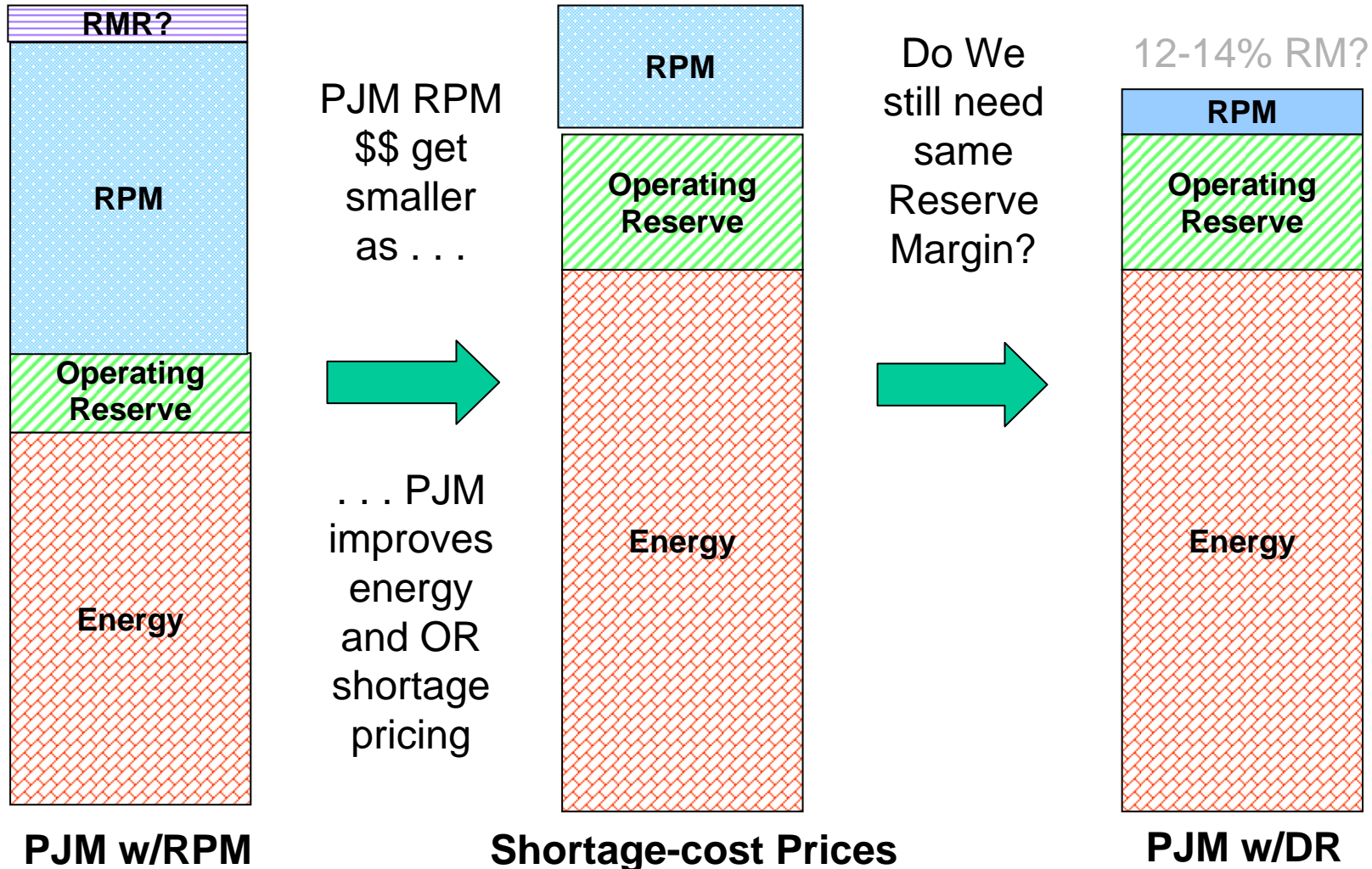
*Implicit "caps" on energy prices significantly reduce the incentives for Demand Response when we most need it.*

# Key DR Opportunities Depend on How PJM Structures Payments For Power



# Resource Adequacy Targets: Engineering or Economic Standard?

15-18% RM Mandated by ERO



# Accounting for DR in the Planning Process

## Accounting for DR in the RPM Auction

- Load procured for in RPM Base Residual Auction is reduced by MWs of Interruptible Load for Reliability (ILR) certified in prior years.
- Plus DR that clears in the Base Residual Auction.

## Reflects how we forecast in short run:

- It's going to be hot = so load will be high.
- *What's needed:* It's going to be hot, *and the price will be very high*, so with DR the expected load will not be as high as without DR.

## But price-responsive demand (PRD) should expand:

- If PJM adds shortage-cost pricing, the incentives for PRD will increase.
- States moving to dynamic pricing in rates.

## How Should We Account for State DR Goals?

### New Jersey

- New Jersey Master Plan includes 5700 MW of DR and alternatives by 2020

### Ohio

- 1.5% peak demand reduction in 2009
- 0.75% additional reduction each year through 2018

BG&E – Smart Energy Saver's Program => 600 MW

Should we reserve a place in PJM planning for these planned DR efforts?

So the question is: Can/should PJM really count this? How much?  
*How can you/we make this credible?*

# DR Roadmap Action Items:

What modifications or enhancements are needed to move forward with coordination of DR with the Planning and RPM Auction Process?

## Actions for the Wholesale Market

1. Publish DR needed as temporary/permanent substitute for transmission enhancements
2. Develop queue for planned DR
3. Include planned DR in annual updates of the Load Forecasts

## Actions for the Retail Market

1. Conduct product tests to measure system impact value and customer acceptance before broad deployment.
2. Update load data that reflects the impact of Demand Resources including DR.
3. Implement resource procurement strategy that includes economically viable DR.
4. Build infrastructure for quick market DR.

# Things to Remember as PJM Markets Evolve

## “Emergency DR” will become “Economic DR”

- More DR resources can be defined as “economic” as we begin to price “shortages” instead of calling them “emergencies.”

## Location matters

- As revenues move from RPM to hourly energy/OR, LMP applies.
- Value of DR will become even more related to LMP . . . so . . .

## Retail rate design is critical (with advance metering/billing)

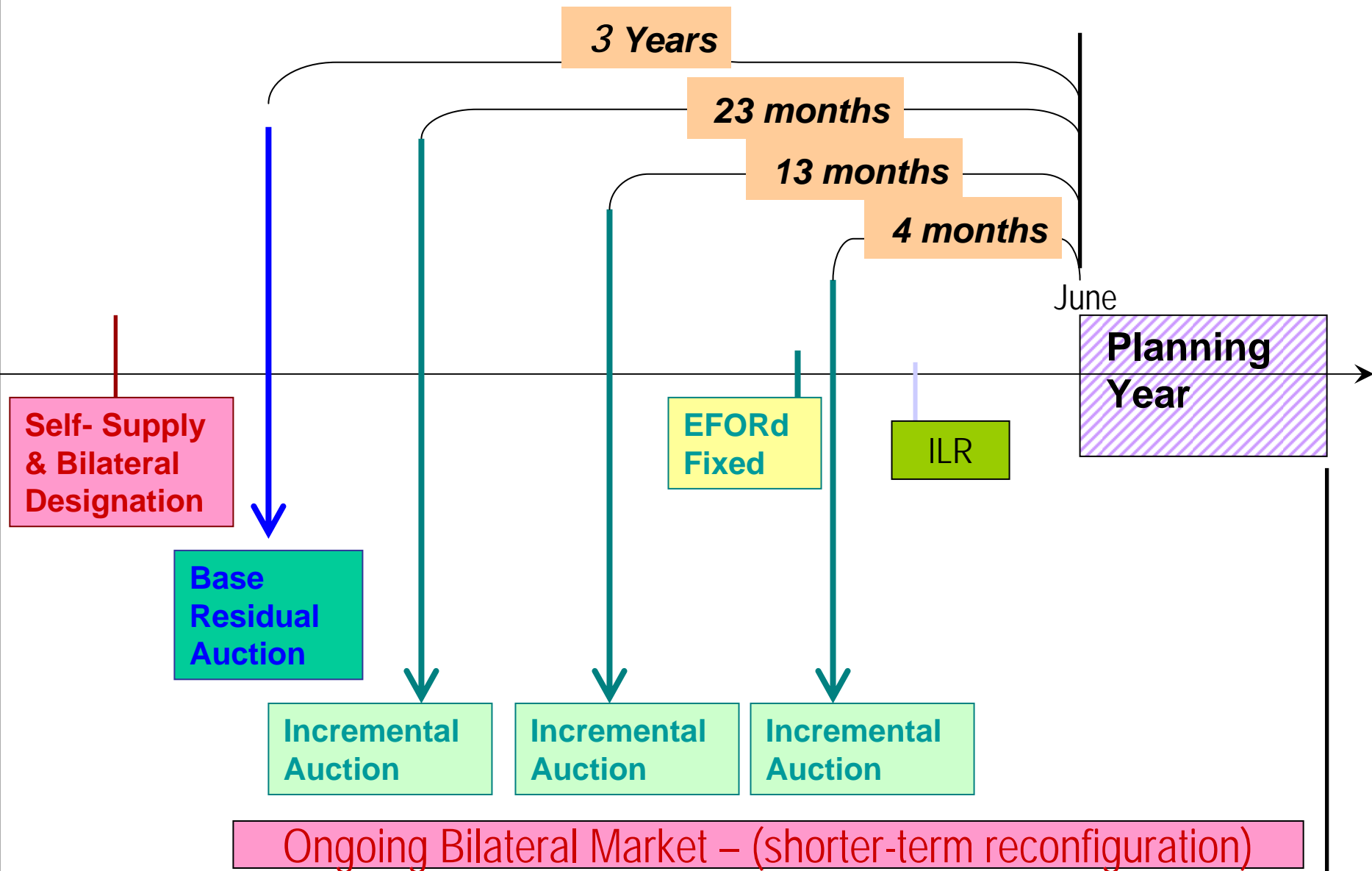
- Default rates should closely track wholesale (LMP) spot prices.

## Timely availability matters

- How does the DR resource function during peak and shortage hours? Because that’s how “availability” may come to be measured.

# Extra Slides

# Timing of RPM Auctions



# PJM Final Demand Curve for Variable Resource Requirement

