Clearing of DR in RPM Auctions

July 17, 2013

- DR is not modeled in the IRM Study
- IRM Study models all load and generation in PJM and in adjacent systems and determines the reserve margin required for PJM to satisfy a “1 day in 10 years” reliability criterion.
- The required reserve margin (~115%) can then be satisfied with a combination of generation, DR and EE resources.
- In determining the value of DR toward meeting the required reserve margin, it is important to recognize the limitation of DR in terms of the number and duration of interruption calls

DR Reliability Targets

- DR Reliability Targets are established to ensure reliability standards are maintained by recognizing the availability limitations of DR
- Limited DR Reliability Target is maximum quantity of Limited DR to be consistent with maintenance of reliability
- Extended Summer (ES) DR Reliability Target is maximum quantity of combination of Limited DR and ES DR to be consistent with maintenance of reliability
- Reliability Targets established for the RTO and each LDA
- Reliability Target expressed as % of peak load and converted to UCAP terms

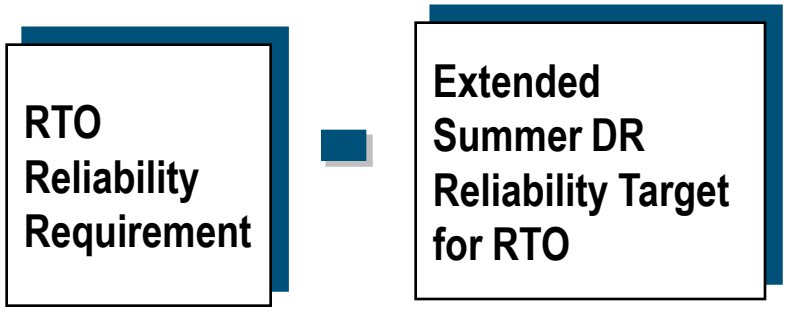
DR Reliability Targets in RPM Auctions

- DR Reliability Targets are implemented in RPM auctions as Minimum Resource Requirements for less limited, better availability products
- Minimum Annual Resource Requirement sets a minimum level of Annual capacity to be procured
- Minimum Extended Summer Resource Requirement sets a minimum level of combined Annual and ES capacity to be procured
- Minimum Resource Requirements are established for the RTO and each LDA
- RPM auction clearing process will select Annual Resources and/or Extended Summer Resources out-of-merit order, if necessary, to satisfy Minimum Resource Requirements

Minimum Annual Resource Requirement

Minimum Annual Resource Requirement = Minimum amount of capacity PJM seeks to procure from Annual Resources (generation, Annual DR, and energy efficiency resources) located in RTO/LDA

RTO Minimum Annual Resource Requirement =



LDA Minimum Annual Resource Requirement =

Minimum Extended Summer Resource Requirement

Minimum Extended Summer Resource Requirement = Minimum amount of capacity PJM seeks to procure from Annual Resources (generation, Annual DR, and energy efficiency resources) and Extended Summer DR located in RTO/LDA

RTO Minimum Extended Summer Resource Requirement =

LDA Minimum Extended Summer Resource Requirement =

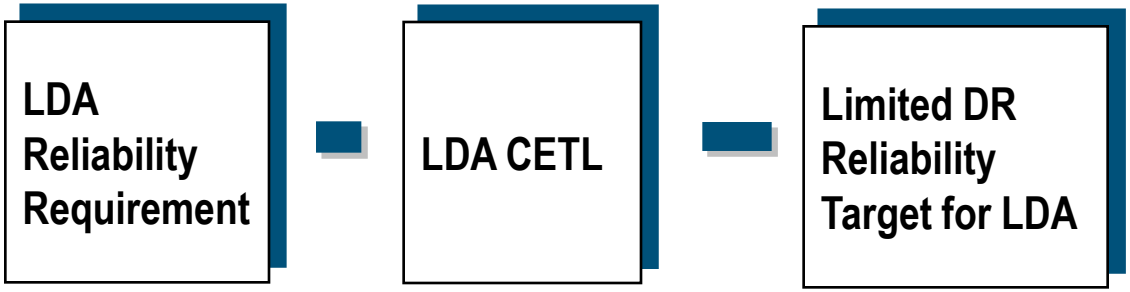
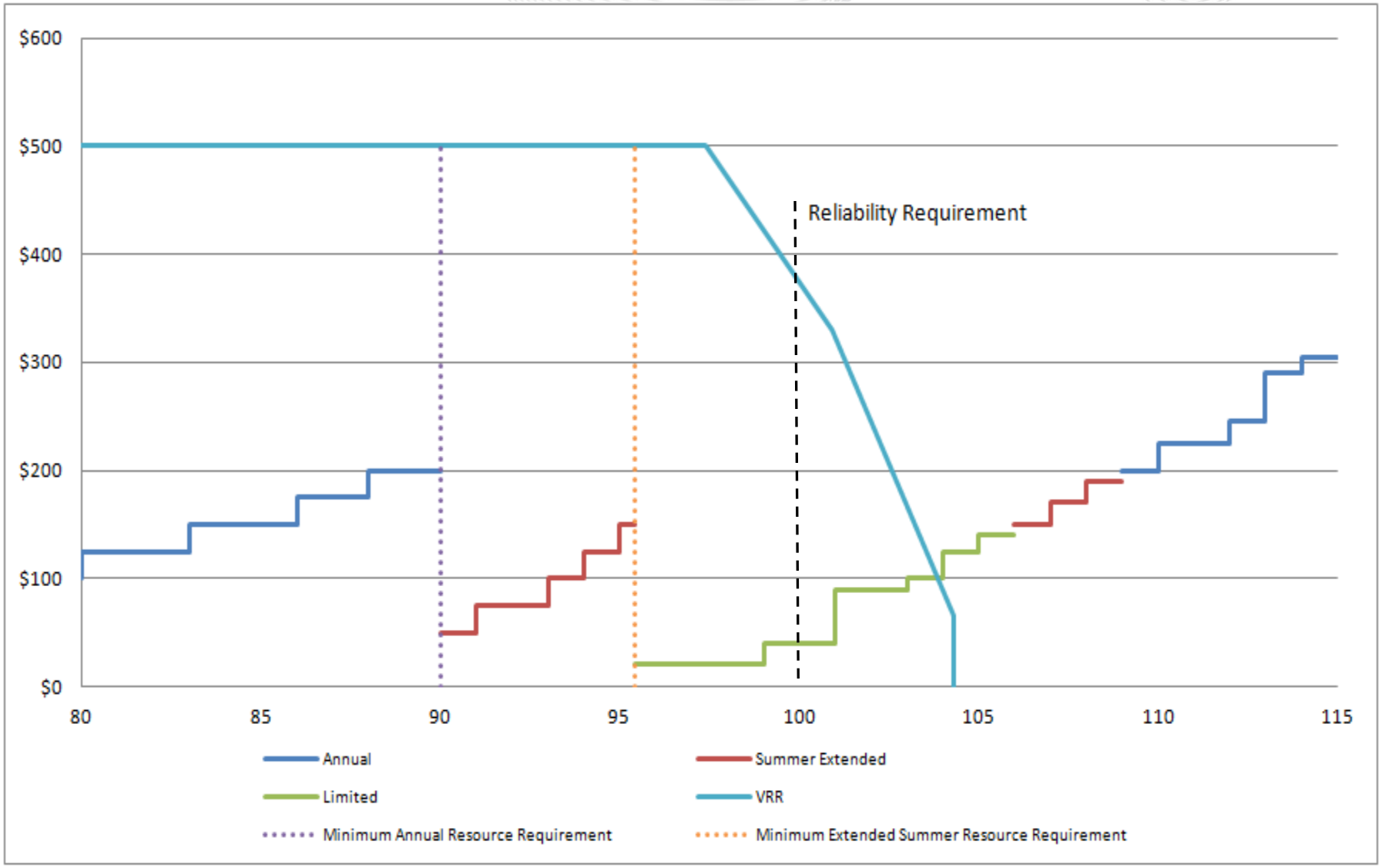


Illustration of Auction Clearing



Price Separation in RPM Between Demand Response Products

	Limited ($/MWday)	Extended Summer ($/MWday)	Annual ($/MWday)
14/15 Delivery Year			
RTO	$ 125.47	$ 125.99	$ 125.99
MAAC	$ 125.47	$ 136.50	$ 136.50
PS-NORTH	$ 213.97	$ 225.00	$ 225.00
15/16 Delivery Year			
RTO	$ 118.54	$ 136.00	$ 136.00
MAAC	$ 150.00	$ 167.64	$ 167.64
ATSI	$ 304.62	$ 322.08	$ 357.00
16/17 Delivery Year			
RTO	$ 59.37	$ 59.37	$ 59.37
MAAC	$ 119.13	$ 119.13	$ 119.13
PS-NORTH	$ 219.00	$ 219.00	$ 219.00
ATSI	$ 94.45	$ 114.23	$ 114.23

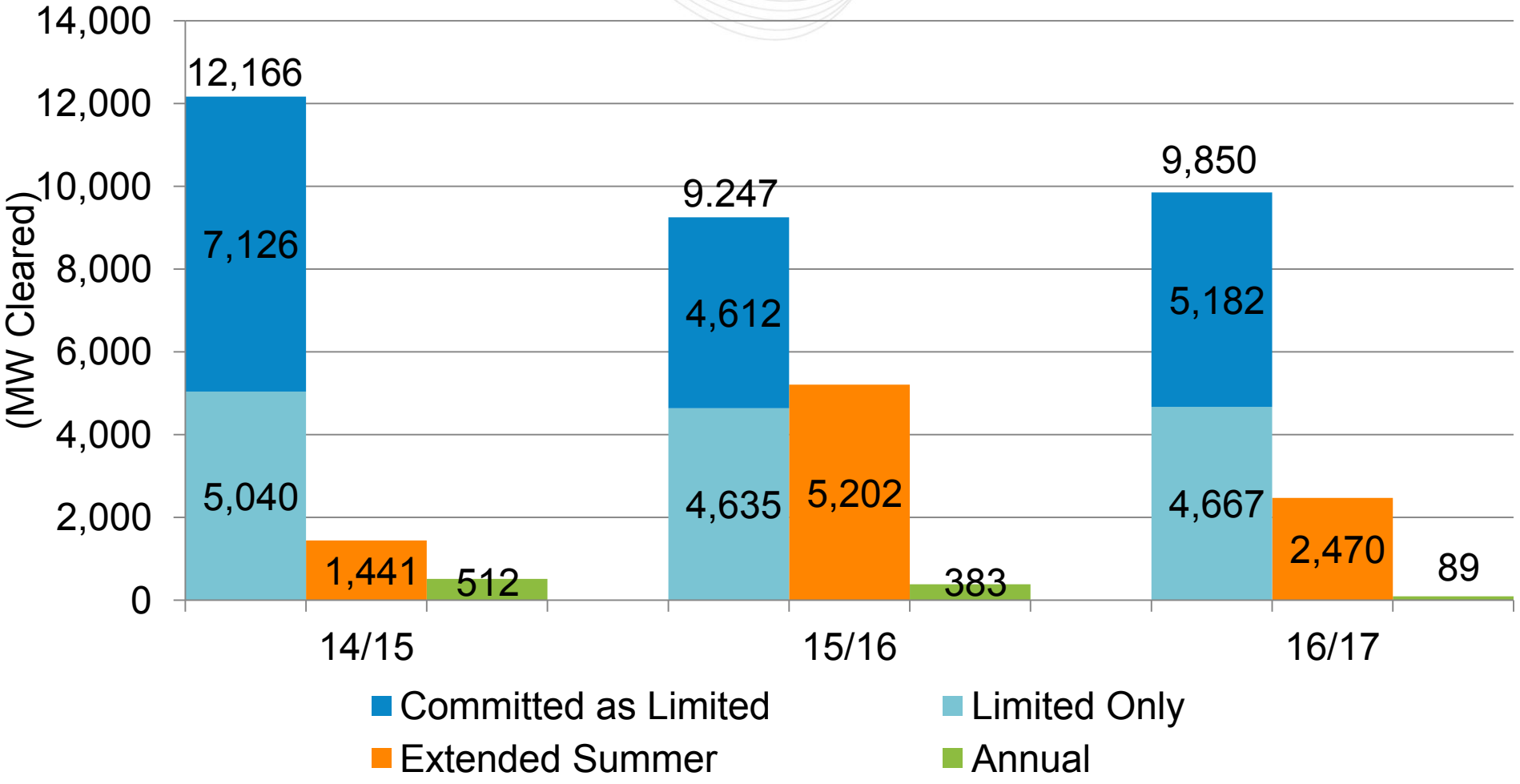
ES / Annual Adder

Range:
RTO: $0.52
LDA's: $11.03

$17.46

Range:
Most of RTO: $0
ATSI: $19.78

Demand Response Products Cleared in RPM



Current Demand Response
Excessive Utilization of Demand Curve