



# Demand Response PJM Update GovEnergy

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- Price Responsive Demand
  - Integrating the load side of the wholesale and retail markets
  - DR 3.0 = theme for region wide demand response event  
November 9 and 10
- Compensation for Economic Load Response
- Mid-Atlantic Distributed Resources Initiative (MADRI) 2009  
focus on the Smart Grid
- Very recently rolled out new eLRS application
- DR and Energy Efficiency participation in the Reliability Pricing Model auction for 2012/2013

- Provide the opportunity for consumers, including residential and small commercial customers, to voluntarily reduce their consumption when prices rise in the wholesale electric market
- Enabled through AMI and dynamic retail rate structures
- Aggregate response of many small customers
- Not directly dispatchable, but response to price can be measured and deployed through intelligent load forecast
- Benefit achieved through reduction in energy use and capacity obligation

- Dynamic or time-based retail rate
- Advanced Metering Infrastructure
- Wholesale/retail coordination in setting scarcity price/curtailment price triggers
- Develop intelligent load forecast in short term grid operations
- Recognize price responsive load forecast in transmission planning
- Recognize price responsive load reduction in capacity obligation

- PJM Board of Managers expresses the long term vision as Price Responsive Demand
- PJM Board of Managers' short term vision includes tariff filing to:
  - Revise compensation paid to Curtailment Service Providers for Economic Load Response (ELR)
  - Restore temporarily an incentive payment for ELR until an additional 1,000 MW of Price Responsive Demand is achieved
  - Clarify notification requirements for self scheduled load response
  - Revise the settlement calculation to reduce the payment when the site uses more energy than its baseline (CBL) or the LMP is less than applicable charges for generation

- Focused effort in 2009 on the Smart Grid: transmission and distribution, metering, pricing and demand response, technology and policy facilitation, and standards and interoperability
- PJM provided planning primer and results of capacity market Base Residual Auction for 2012/2013
- Members include: State commissions of New Jersey, Maryland, Delaware, Pennsylvania, Illinois, Ohio and the District of Columbia, Federal Energy Regulatory Commission, Environmental Protection Agency, Department of Energy and PJM

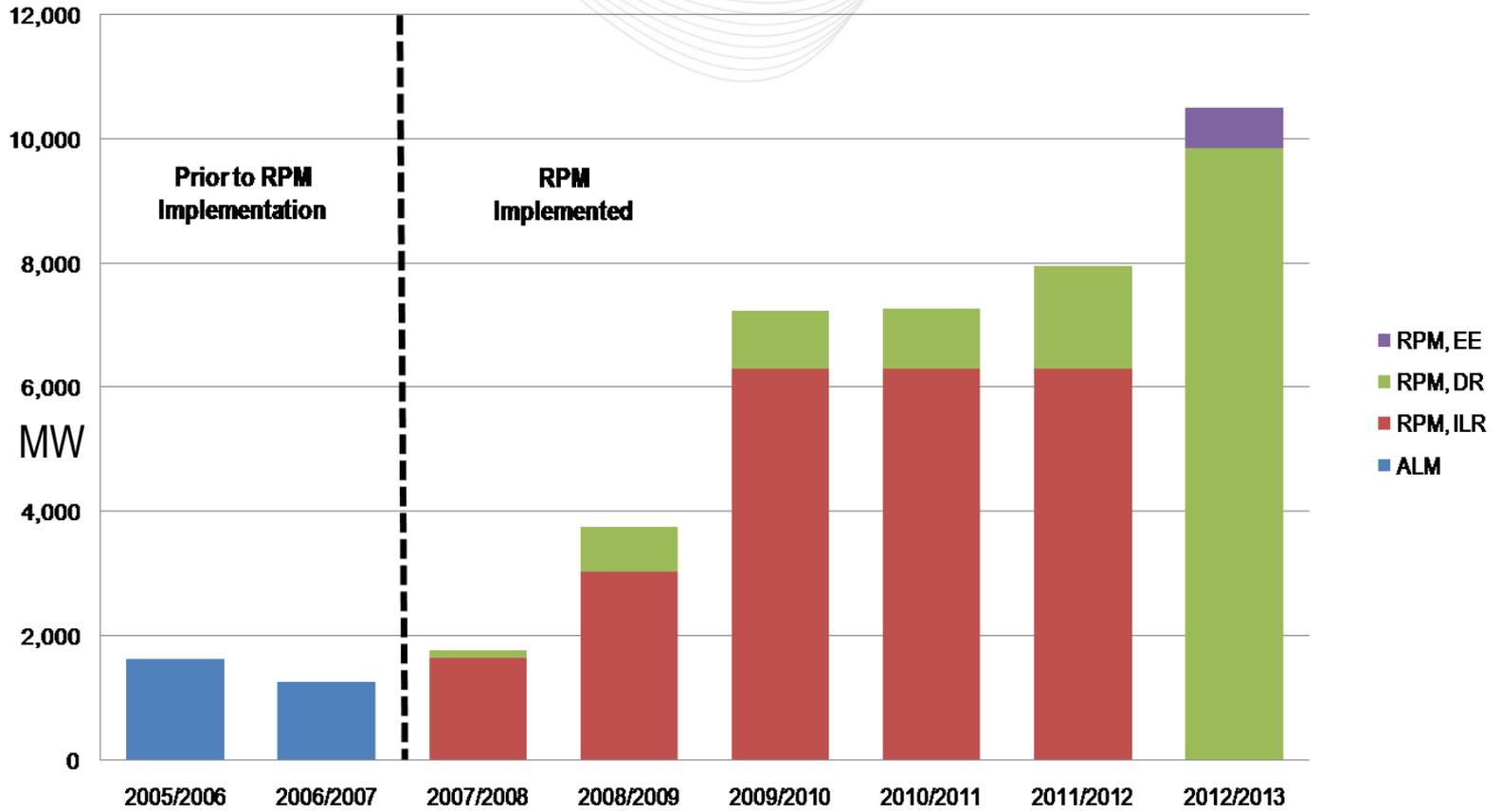
- eLRS deployed June 30, 2009
  - More flexibility for market rule/tariff changes
  - Improved user interface ergonomics
    - Eliminate redundancy
    - Enhance field level QA
    - Allow management of multiple resources at one time
  - More flexible and robust workflow
    - Review/approval with associated escalation (multiple records at one time)
    - Allow more updates/edits with appropriate approval
  - Implement user driven reporting to make information more transparent & available
  - Enhanced and expanded interfaces

- DR participation in the auction increased by >8000 MW over the 2011/2012 participation level
- Elimination of the ILR option was the major contributing factor to this increase
- ILR registered for 2009/2010 that was offered into the auction was subject to a \$0 offer cap
- 652.7 MW of Energy Efficiency was offered, with 568.9 MW clearing in the auction.

Zone	Offered MW*			Cleared MW*		
	Demand	EE	Total	Demand	EE	Total
AECO	78.9	1.9	80.8	75.1	1.2	76.3
AEP	1352.7	2.6	1355.3	710.8	0	710.8
APS	582.4	0	582.4	272.9	0	272.9
BGE	1370.6	105.8	1476.4	1312.9	103.2	1416.1
COMED	1049	386.4	1435.4	658	386.4	1044.4
DAY	405.6	0	405.6	112.3	0	112.3
DOM	1237.9	76.6	1314.5	494.7	2.4	497.1
DPL	289.6	12.7	302.3	283	12.2	295.2
DUQ	190.8	0.2	191	74.8	0.2	75
JCPL	362.7	2.8	365.5	321.9	1.8	323.7
METED	267.2	0	267.2	252	0	252
PECO	581.2	2.9	584.1	496.4	1.9	498.3
PENELEC	286.1	0.2	286.3	276.3	0.2	276.5
PEPCO	485.1	56.5	541.6	460.8	56.5	517.3
PPL	832.9	0	832.9	783.3	0	783.3
PSEG	472.9	4.1	477	460.1	2.9	463
RECO	2	0	2	2	0	2
<b>Total</b>	<b>9847.6</b>	<b>652.7</b>	<b>10500.3</b>	<b>7047.3</b>	<b>568.9</b>	<b>7616.2</b>

\*All MW Values are in UCAP Terms

# Demand Side Participation in Capacity Market



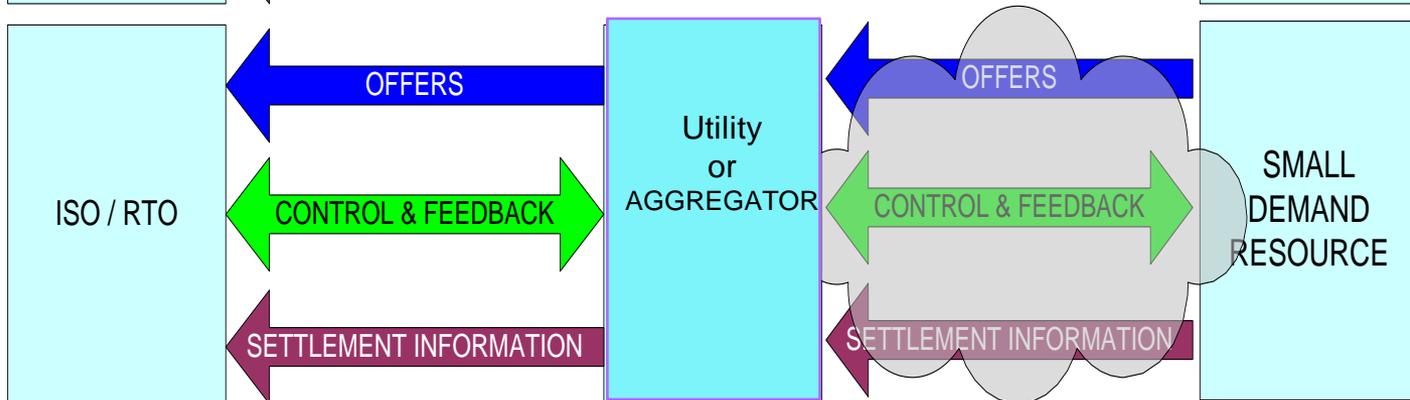
ILR certified in 2009/2010 assumed to be the same for 2010/2011 and 2011/2012.

# Categories of Demand Response Interactions

Direct Wholesale Resource Participation



Aggregated Resource Participation



Price Responsive Demand

