

2015 Year in Review

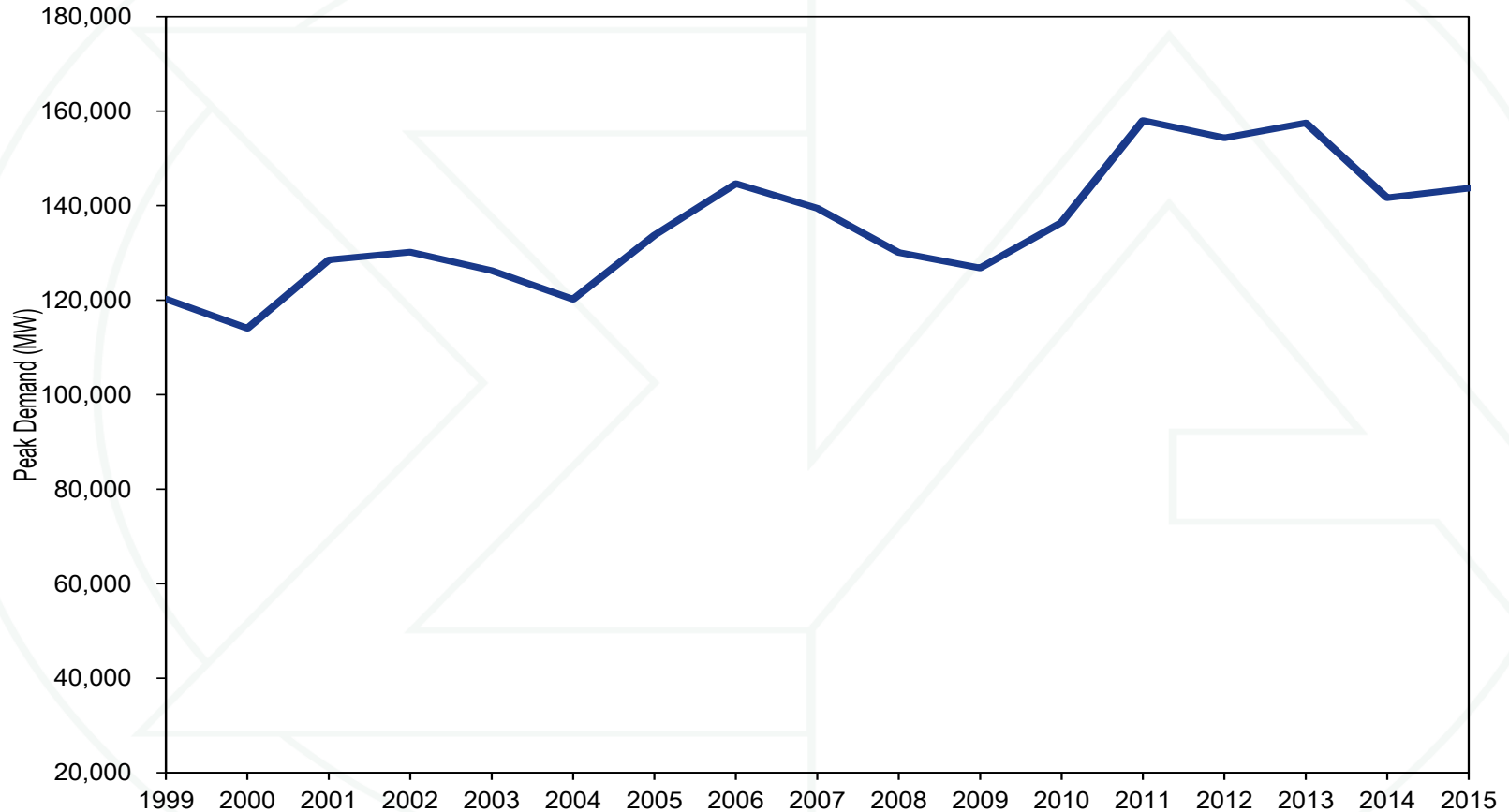
PJM Annual Meeting
May 17, 2016

Joseph Bowring

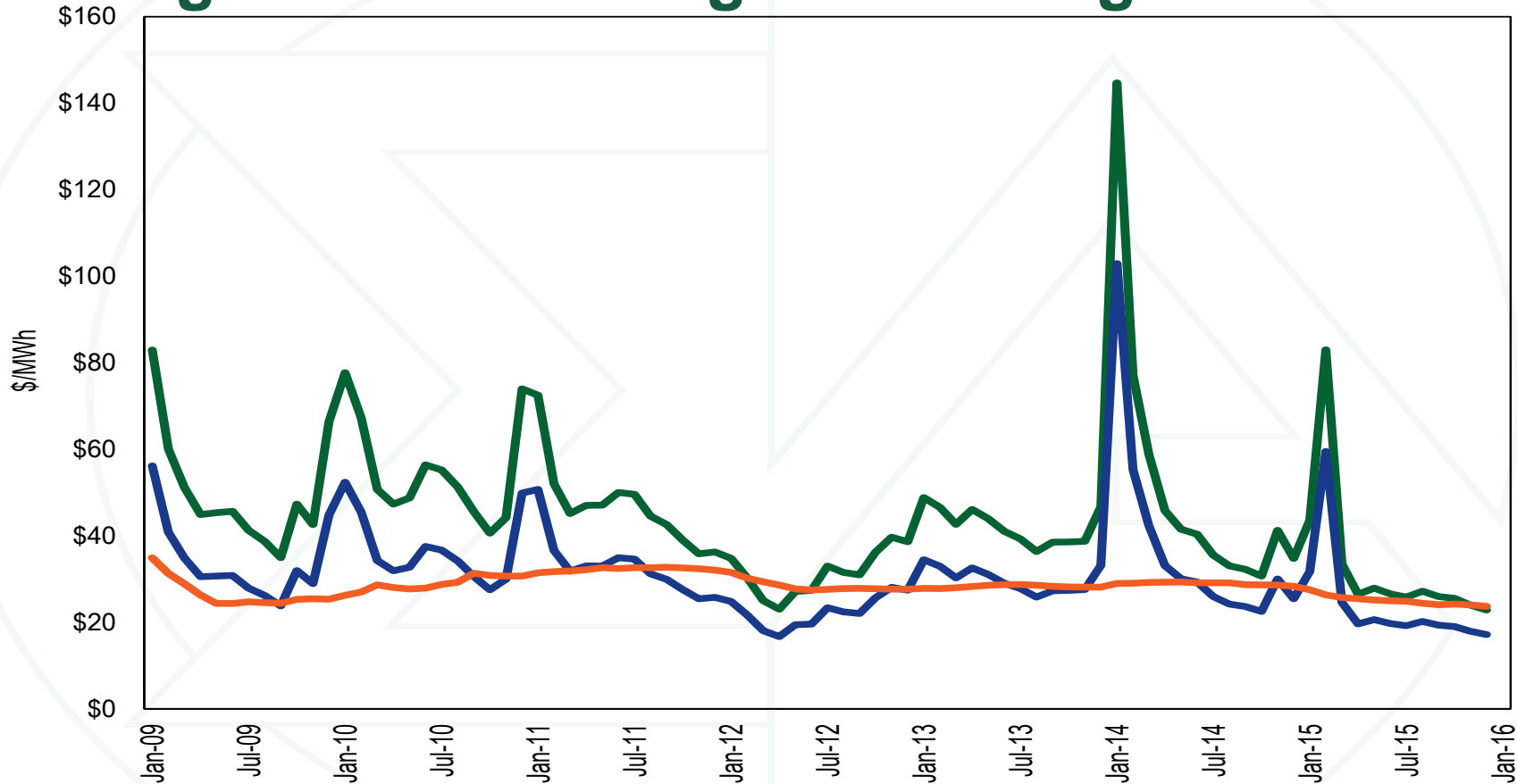


Monitoring Analytics

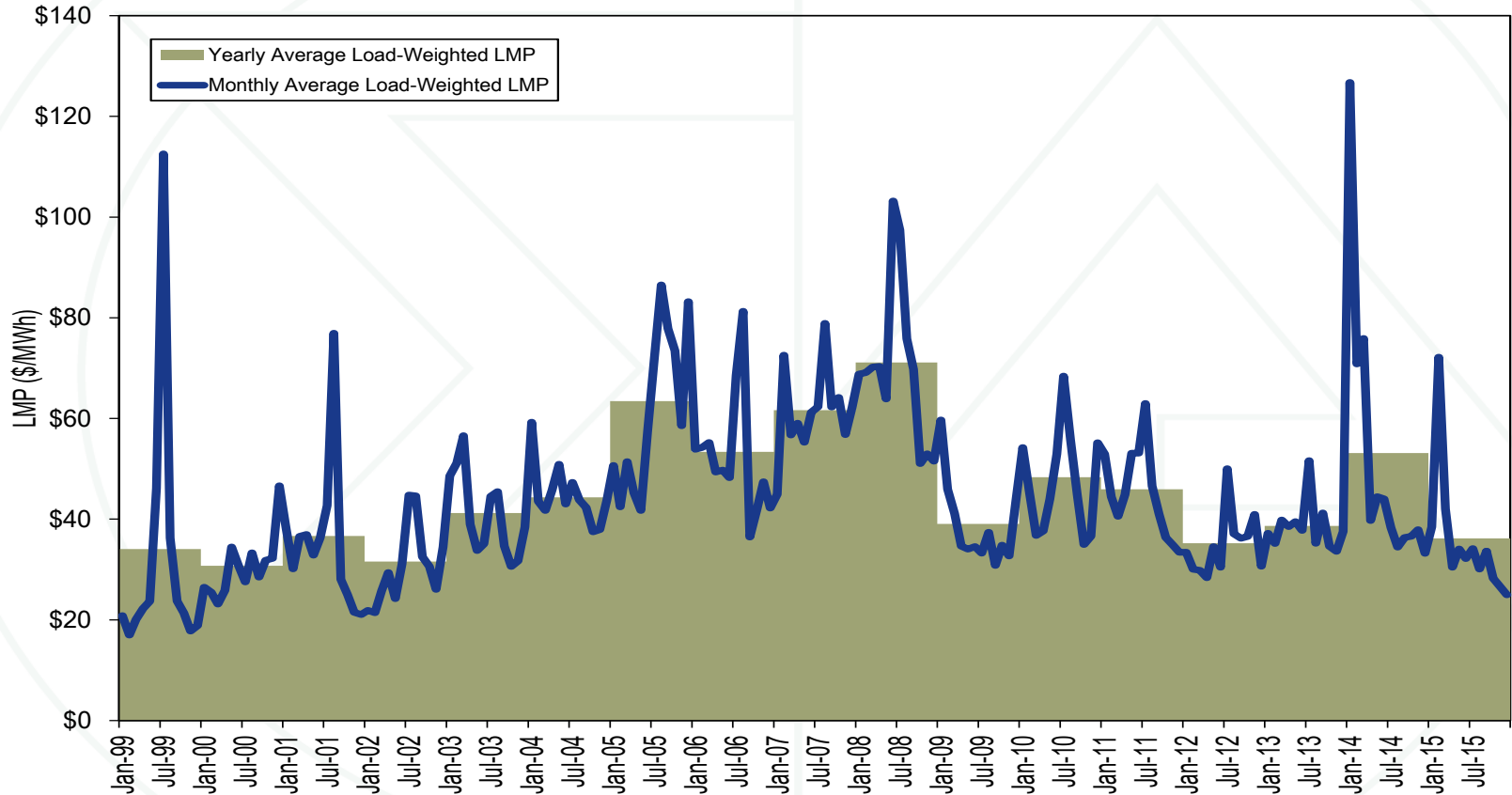
Peak loads: 1999 to 2015



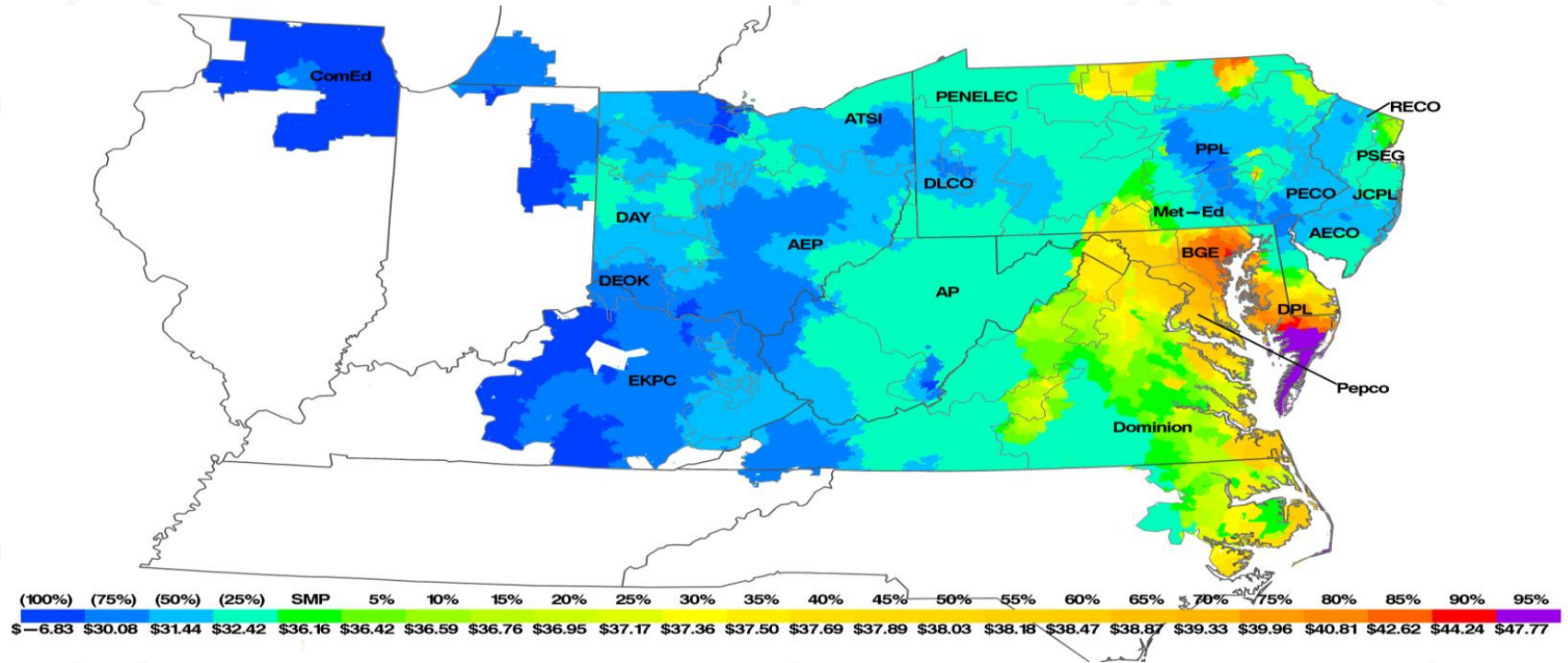
Average short run marginal costs: gas and coal



Real-time load-weighted, average LMP



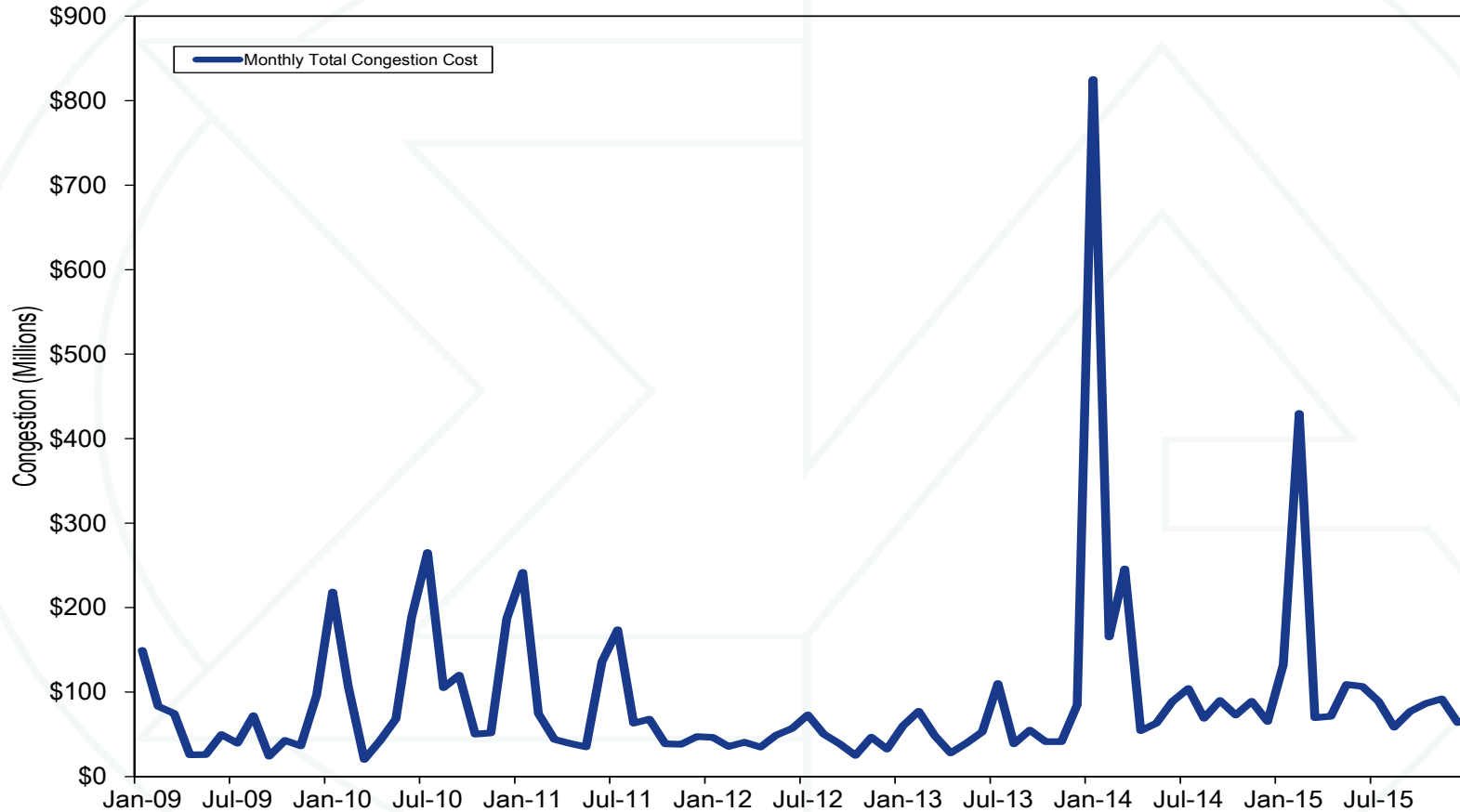
Real-time load-weighted, average LMP: 2015



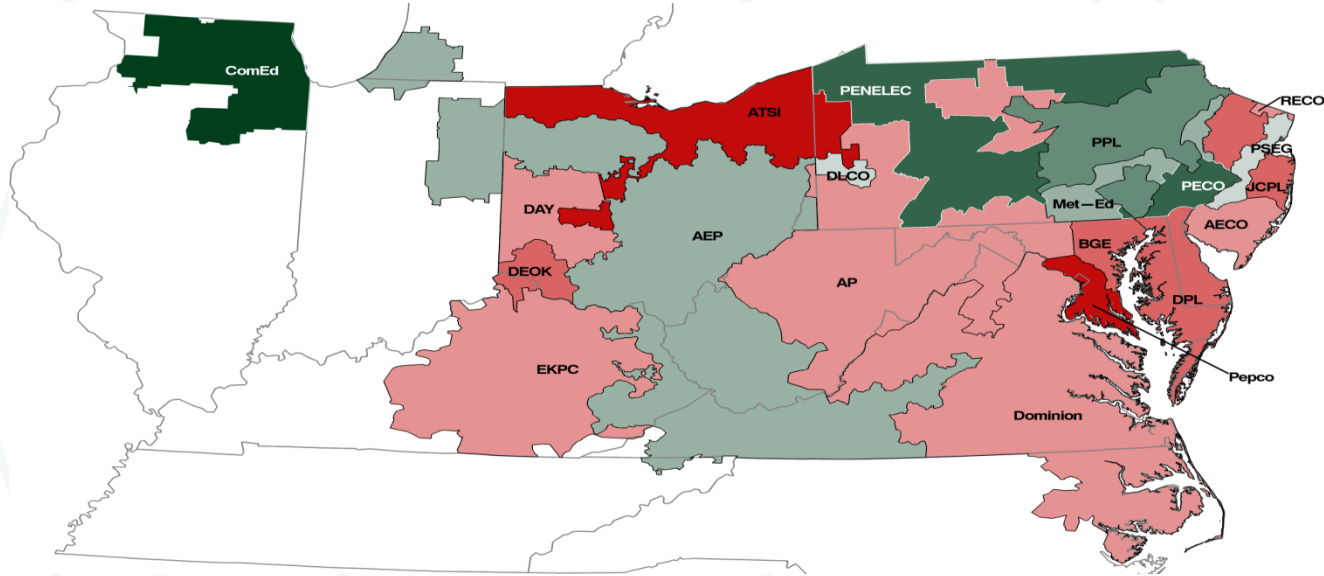
Components of real-time LMP

Element	2014		2015		Change
	Contribution to LMP	Percent	Contribution to LMP	Percent	Percent
Coal	\$17.73	33.4%	\$15.62	43.2%	9.8%
Gas	\$18.71	35.2%	\$9.85	27.2%	(8.0%)
VOM	\$2.65	5.0%	\$2.38	6.6%	1.6%
Markup	\$3.32	6.2%	\$1.75	4.8%	(1.4%)
Ten Percent Adder	\$2.33	4.4%	\$1.40	3.9%	(0.5%)
Oil	\$2.80	5.3%	\$1.25	3.5%	(1.8%)
Ancillary Service Redispatch Cost	\$0.52	1.0%	\$1.06	2.9%	2.0%
LPA Rounding Difference	\$0.07	0.1%	\$0.94	2.6%	2.5%
NA	\$1.56	2.9%	\$0.89	2.4%	(0.5%)
SO2 Cost	\$0.01	0.0%	\$0.35	1.0%	0.9%
NOx Cost	\$0.13	0.2%	\$0.29	0.8%	0.6%
Increase Generation Adder	\$0.69	1.3%	\$0.24	0.7%	(0.6%)
CO2 Cost	\$0.23	0.4%	\$0.21	0.6%	0.1%
Other	\$0.03	0.1%	\$0.15	0.4%	0.4%
Municipal Waste	\$0.02	0.0%	\$0.01	0.0%	(0.0%)
Market-to-Market Adder	(\$0.00)	(0.0%)	\$0.01	0.0%	0.0%
FMU Adder	\$0.62	1.2%	\$0.00	0.0%	(1.2%)
Emergency DR Adder	\$1.83	3.4%	\$0.00	0.0%	(3.4%)
Scarcity Adder	\$0.10	0.2%	\$0.00	0.0%	(0.2%)
Constraint Violation Adder	\$0.00	0.0%	(\$0.00)	(0.0%)	(0.0%)
Uranium	(\$0.01)	(0.0%)	(\$0.00)	(0.0%)	0.0%
Decrease Generation Adder	(\$0.17)	(0.3%)	(\$0.06)	(0.2%)	0.2%
Wind	(\$0.01)	(0.0%)	(\$0.07)	(0.2%)	(0.2%)
LPA-SCED Differential	(\$0.01)	(0.0%)	(\$0.11)	(0.3%)	(0.3%)
Total	\$53.14	100.0%	\$36.16	100.0%	0.0%

Monthly total congestion costs

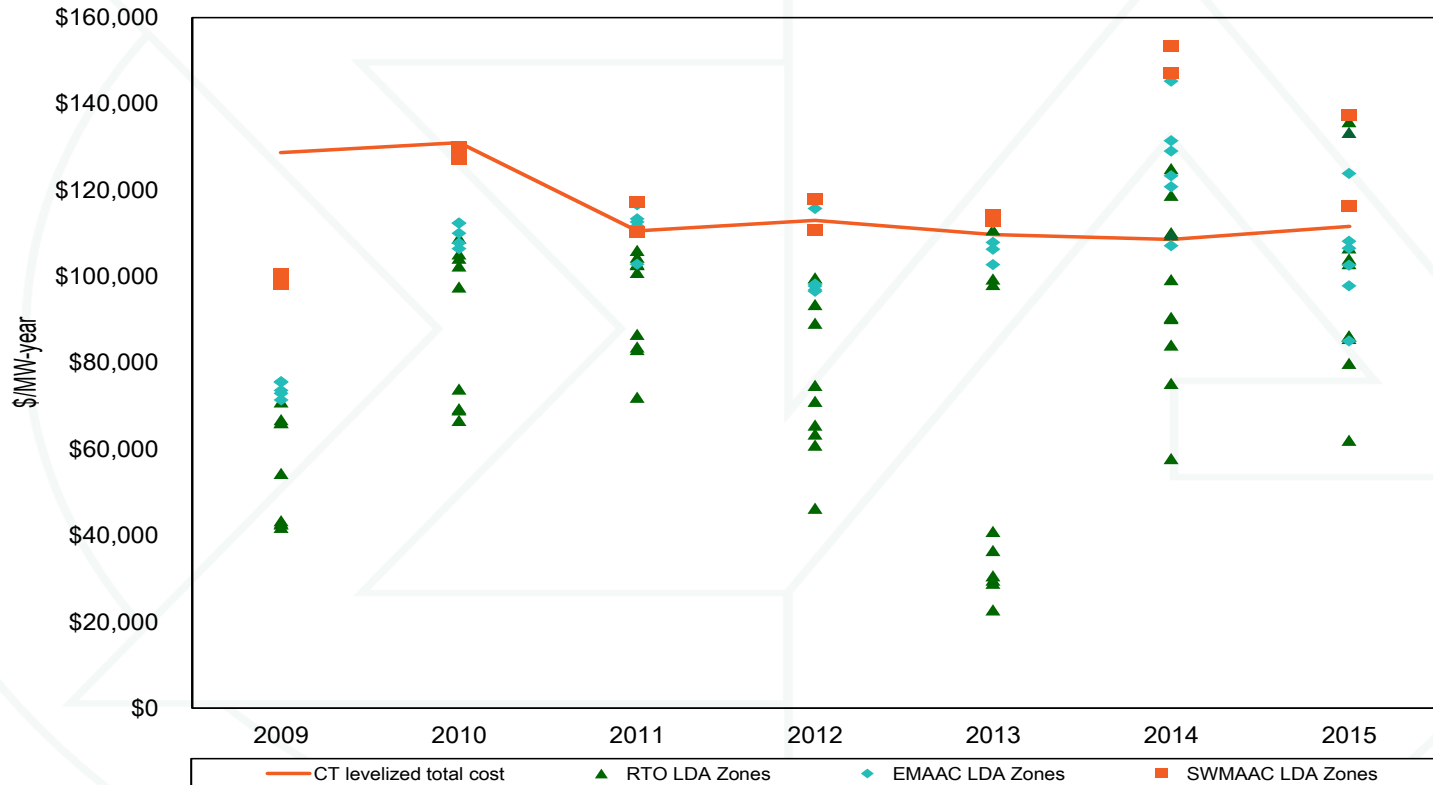


Real-time generation less real-time load by zone: 2015

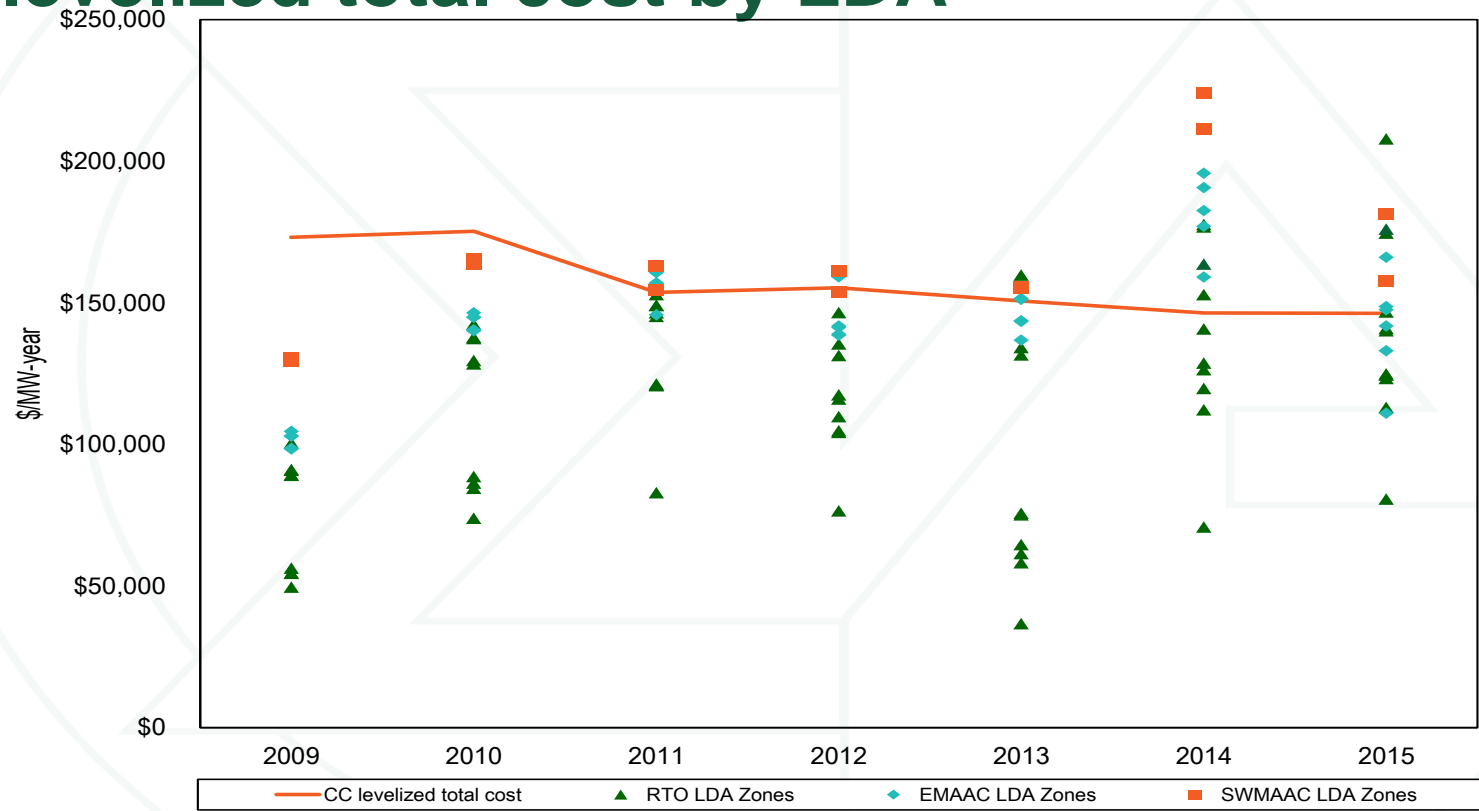


Zone	Net Gen Minus Load (GWh)	Zone	Net Gen Minus Load (GWh)	Zone	Net Gen Minus Load (GWh)	Zone	Net Gen Minus Load (GWh)
AECO	(3,608)	ComEd	21,540	DPL	(8,462)	PENELEC	17,357
AEP	10,612	DAY	(2,977)	EKPC	(2,652)	Peppo	(16,285)
AP	(3,635)	DEOK	(6,684)	JCPL	(7,600)	PPL	9,548
ATSI	(14,301)	DLCO	1,802	Met-Ed	5,405	PSEG	2,189
BGE	(8,009)	Dominion	(6,885)	PECO	14,138	RECO	(1,193)

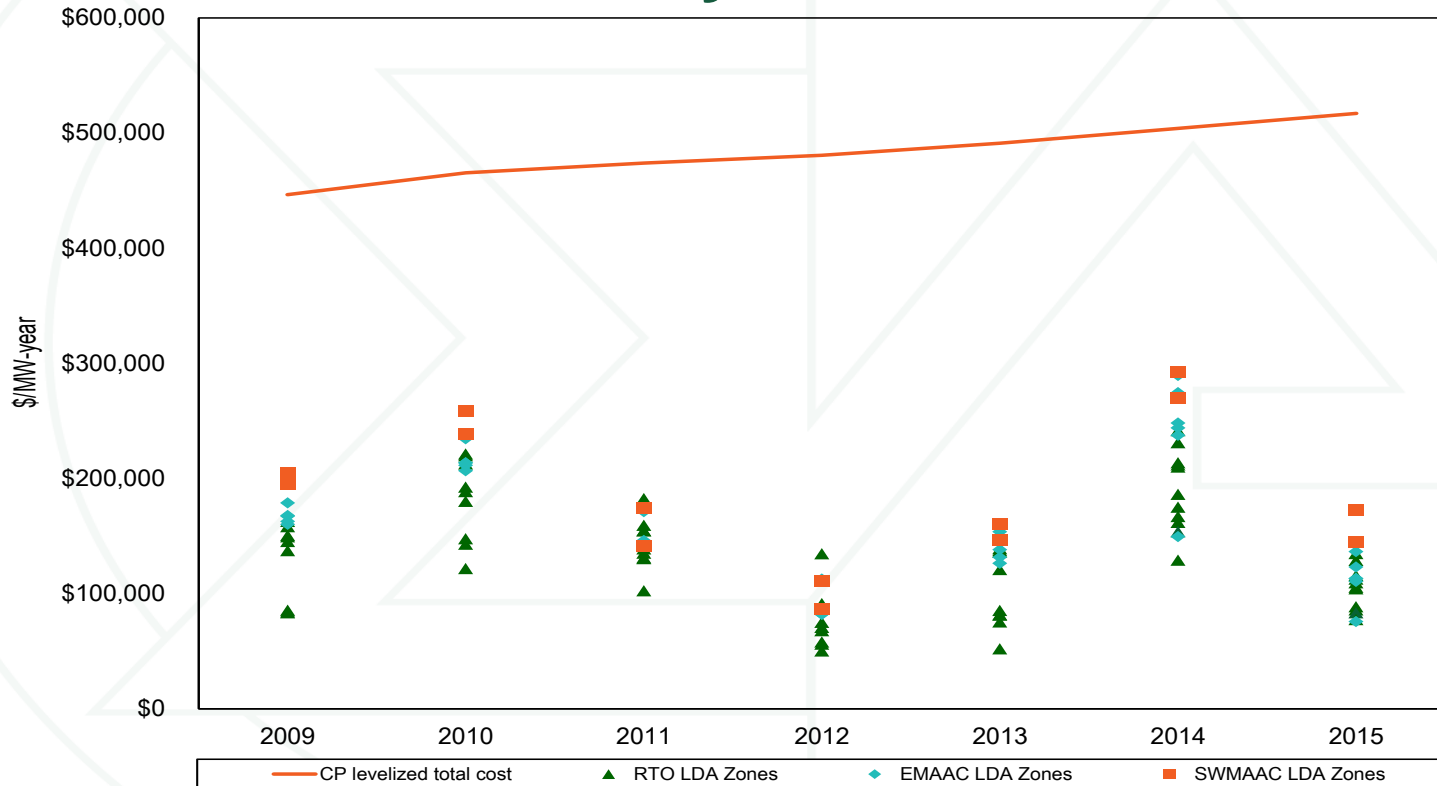
New entrant CT net revenue and 20-year levelized total cost by LDA



New entrant CC net revenue and 20-year levelized total cost by LDA



New entrant CP net revenue and 20-year levelized total cost by LDA



Net changes in internal generation capacity: 2007/2008 through 2014/2015

	ICAP (MW)		
	Net Additions	Net Losses	Net Change
2007/2008	1,767.7	1,007.3	760.4
2008/2009	1,928.1	1,227.4	700.7
2009/2010	571.5	643.6	(72.1)
2010/2011	2,354.5	1,726.1	628.4
2011/2012	3,786.8	3,071.5	715.3
2012/2013	709.9	4,419.7	(3,709.8)
2013/2014	683.5	4,447.7	(3,764.2)
2014/2015	3,516.4	11,663.9	(8,147.5)
Total	15,318.4	28,207.2	(12,888.8)

Expected net change in internal generation capacity: 2015/2016 through 2018/2019

	ICAP (MW)				Total
	2015/2016	2016/2017	2017/2018	2018/2019	
Expected new generation (not yet in service)	1,460.1	4,050.8	4,035.5	1,922.6	11,469.0
Deactivations	(1,447.5)	(34.0)	(452.6)	(2,142.2)	(4,076.3)
Total	12.6	4,016.8	3,582.9	(219.6)	7,392.7

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