

2014 Demand Response Operations Markets Activity Report: June 2014

James McAnany

PJM Demand Side Response Operations

June 18, 2014



This page is intentionally left blank

Figure 1: Delivery Year 14/15 Active Participants in PJM Economic and Load Management DR Programs

State	Zone	EDC	Economic Program		Emergency Energy Only		Load Management DR		Emergency Energy Only and Load Management DR Total	Unique	
			Locations	MW	Locations	MW	Locations	MW	MW	Locations	MW
DC	PEPCO	PEPCO	15	20.2			216	83.0	83.0	221	84.0
DE	DPL	DEMEC	12	7.1			25	11.3	11.3	35	11.8
DE	DPL	DOVDE					7	3.1	3.1	7	3.1
DE	DPL	DPL	8	103.9			254	144.3	144.3	257	173.6
DE	DPL	ODEC					10	1.6	1.6	10	1.6
IL	COMED	COMED	1,915	305.5			2008	1081.5	1,081.5	3888	1312.4
IL	COMED	IMEAA1					2	49.6	49.6	2	49.6
IN	AEP	AEPSCT	7	283.5			100	322.5	322.5	100	322.5
IN	AEP	HEREC					1	20.8	20.8	1	20.8
IN	AEP	WVSDI					1	47.0	47.0	1	47.0
KY	DEOK	DEK					72	30.8	30.8	72	30.8
KY	EKPC	EKPC					11	123.2	123.2	11	123.2
MD	APS	AETSAP	45	16.5			179	94.4	94.4	179	94.4
MD	APS	AETSHG					3	0.5	0.5	3	0.5
MD	APS	AETSTH					2	0.1	0.1	2	0.1
MD	APS	AETSWP					1	0.1	0.1	1	0.1
MD	BGE	BC	63	602.7			894	767.2	767.2	904	842.1
MD	DPL	BRLNMD					2	0.1	0.1	2	0.1
MD	DPL	DPL	1	28.0			226	76.0	76.0	226	76.0
MD	DPL	EASTON					8	2.8	2.8	8	2.8
MD	DPL	ODEC	1	1.5			35	11.5	11.5	35	11.5
MD	PEPCO	PEPCO	9	273.1			403	406.5	406.5	403	406.5
MD	PEPCO	SMECO	5	0.4			120	58.7	58.7	120	58.7
NC	DOM	DOMEDC	1	37.0						1	37.0
NJ	AECO	AE	2	41.9			244	94.4	94.4	244	94.4
NJ	AECO	VMEU	1	0.2			23	5.6	5.6	24	5.8
NJ	JCPL	AECI					1	0.2	0.2	1	0.2
NJ	JCPL	JCBGS	16	55.5			432	146.8	146.8	433	191.8
NJ	PSEG	PSEG	48	61.5			1079	352.2	352.2	1085	392.4
NJ	RECO	RECO					14	4.6	4.6	14	4.6



State	Zone	EDC	Economic Program		Emergency Energy Only		Load Management DR		Emergency Energy Only and Load Management DR Total	Unique	
			Locations	MW	Locations	MW	Locations	MW	MW	Locations	MW
NY	PENELEC	PaElec					2	1.3	1.3	2	1.3
OH	AEP	AEPCCCL					12	12.6	12.6	12	12.6
OH	AEP	AEPSCT	18	173.7			921	626.2	626.2	927	640.9
OH	AEP	AMPO					28	72.5	72.5	28	72.5
OH	AEP	BUCK					2	19.9	19.9	2	19.9
OH	ATSI	AMPO					25	84.0	84.0	25	84.0
OH	ATSI	BUCK					2	5.5	5.5	2	5.5
OH	ATSI	CPP					16	48.7	48.7	16	48.7
OH	ATSI	OEEDC	11	89.0			879	570.4	570.4	881	628.4
OH	DAY	AMPO					9	34.5	34.5	9	34.5
OH	DAY	BUCK					2	4.1	4.1	2	4.1
OH	DAY	DAYEDC	7	6.1			162	108.7	108.7	162	108.7
OH	DEOK	AMPO					1	11.6	11.6	1	11.6
OH	DEOK	BUCK					2	2.1	2.1	2	2.1
OH	DEOK	DEOHIO	8	78.5			361	234.3	234.3	363	285.3
PA	APS	AECI					7	1.3	1.3	7	1.3
PA	APS	AETSAP	11	29.1			644	370.7	370.7	646	380.2
PA	APS	CHBDTE					1	0.4	0.4	1	0.4
PA	ATSI	PAPWR	1	0.5			78	68.2	68.2	78	68.2
PA	DUQ	DLCO	5	19.0	1	2.0	345	97.6	99.6	348	116.4
PA	METED	AECI					1	1.7	1.7	1	1.7
PA	METED	MetEd	36	37.3			536	235.7	235.7	537	238.7
PA	PECO	PE	125	136.3			1444	404.7	404.7	1453	472.7
PA	PENELEC	AECI					30	13.6	13.6	30	13.6
PA	PENELEC	PaElec	4	11.8			649	282.2	282.2	650	290.2
PA	PENELEC	WELLSB					1	1.2	1.2	1	1.2
PA	PPL	AMPO					11	1.3	1.3	11	1.3
PA	PPL	CTZECL					6	2.4	2.4	6	2.4
PA	PPL	PPL	180	181.0			1509	611.0	611.0	1520	738.3
PA	PPL	UGI-UI					18	6.3	6.3	18	6.3
TN	AEP	AEPSCT	1	30.0			10	5.8	5.8	11	35.8
VA	AEP	AEPSCT	3	3.2			205	218.3	218.3	205	218.3



State	Zone	EDC	Economic Program		Emergency Energy Only		Load Management DR		Emergency Energy Only and Load Management DR Total	Unique	
			Locations	MW	Locations	MW	Locations	MW	MW	Locations	MW
VA	AEP	AMPO					9	12.1	12.1	9	12.1
VA	APS	ODEC					49	23.7	23.7	49	23.7
VA	DOM	CVEC					5	4.4	4.4	5	4.4
VA	DOM	DOMEDC	42	67.9			861	663.3	663.3	870	692.8
VA	DOM	DOMVME					25	80.7	80.7	25	80.7
VA	DOM	NVEC	2	14.6			33	21.0	21.0	35	35.6
VA	DOM	ODEC	2	21.0			46	93.3	93.3	46	93.3
VA	DPL	ODEC					18	1.8	1.8	18	1.8
WV	AEP	AEPSCT	3	71.8			297	212.0	212.0	298	216.0
WV	AEP	APWVP	0	0.0			4	0.5	0.5	4	0.5
WV	APS	AETSAP	4	47.2			285	147.9	147.9	287	172.9
Total			2,612	2,857	1	2	15,924	9,360	9,362	17,893	10,280

Figure 2: Delivery Year 14/15 MWs in PJM Load Management DR by Resource, Product, and Lead Times

Zone	Resource	DR Product			Lead Times (Minutes)			Total DR MW
		Limited	Extended	Annual	30	60	120	
AECO								
	Pre-Emergency	49.6	49.4	0.0	0.0	0.1	98.8	99.0
	Emergency	1.0	0.0	0.0	0.0	0.0	1.0	1.0
	Total	50.6	49.4	0.0	0.0	0.1	99.9	100.0
AEP								
	Pre-Emergency	1347.3	47.7	0.0	41.7	347.7	1005.5	1394.9
	Emergency	166.8	8.4	0.0	0.0	0.0	175.2	175.2
	Total	1514.1	56.1	0.0	41.7	347.7	1180.7	1570.1
APS								
	Pre-Emergency	445.2	104.0	0.4	0.4	0.5	548.7	549.6
	Emergency	83.4	6.0	0.0	0.0	0.0	89.5	89.5
	Total	528.7	110.1	0.4	0.4	0.5	638.2	639.1
ATSI								
	Pre-Emergency	486.1	39.3	0.0	0.0	5.5	519.9	525.4
	Emergency	246.3	5.0	0.0	0.0	0.0	251.3	251.3
	Total	732.5	44.3	0.0	0.0	5.5	771.3	776.8
BGE								
	Pre-Emergency	655.9	26.4	5.1	509.9	0.0	177.5	687.4
	Emergency	69.8	10.0	0.0	0.0	0.0	79.8	79.8
	Total	725.7	36.4	5.1	509.9	0.0	257.3	767.2
COMED								
	Pre-Emergency	686.8	121.0	0.0	0.0	43.1	764.6	807.8
	Emergency	293.6	29.8	0.0	0.0	0.0	323.4	323.4
	Total	980.4	150.8	0.0	0.0	43.1	1088.0	1131.2
DAY								
	Pre-Emergency	118.7	2.3	0.0	0.0	28.8	92.2	121.0
	Emergency	26.1	0.1	0.0	0.0	0.0	26.2	26.2
	Total	144.8	2.4	0.0	0.0	28.8	118.4	147.2
DEOK								
	Pre-Emergency	242.2	2.8	0.0	0.0	13.7	231.4	245.0
	Emergency	33.6	0.0	0.0	0.0	0.0	33.6	33.6
	Total	275.9	2.8	0.0	0.0	13.7	265.0	278.7
DOM								
	Pre-Emergency	476.0	24.9	27.5	0.0	14.2	514.1	528.3
	Emergency	334.4	0.0	0.0	0.0	0.0	334.4	334.4
	Total	810.4	24.9	27.5	0.0	14.2	848.5	862.7



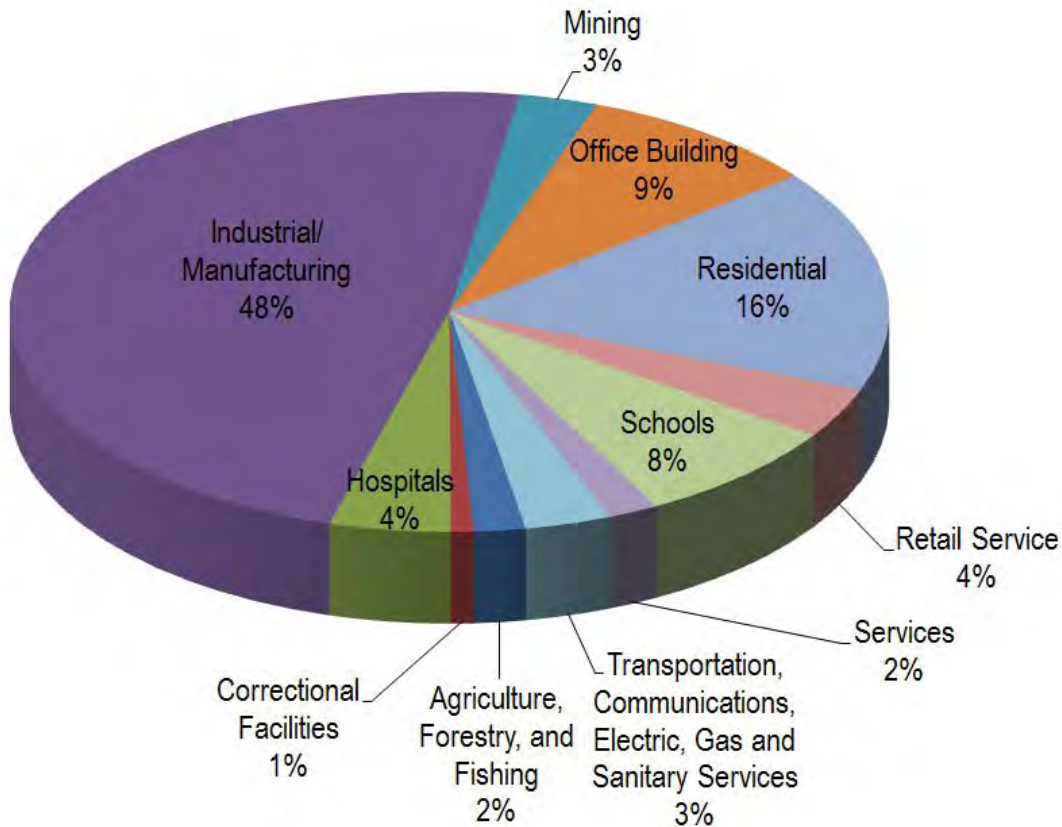
Zone	Resource	DR Product			Lead Times (Minutes)			Total DR
		Limited	Extended	Annual	30	60	120	MW
DPL								
	Pre-Emergency	117.2	116.8	0.0	0.0	0.0	234.0	234.0
	Emergency	17.6	0.9	0.0	0.0	0.0	18.5	18.5
	Total	134.8	117.7	0.0	0.0	0.0	252.5	252.5
DUQ								
	Pre-Emergency	81.4	5.5	0.0	0.0	0.0	86.9	86.9
	Emergency	10.6	0.1	0.0	0.0	0.0	10.7	10.7
	Total	92.0	5.6	0.0	0.0	0.0	97.6	97.6
EKPC								
	Pre-Emergency	123.2	0.0	0.0	0.0	0.0	123.2	123.2
	Emergency	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	123.2	0.0	0.0	0.0	0.0	123.2	123.2
JCPL								
	Pre-Emergency	120.5	13.0	0.0	0.0	21.4	112.0	133.5
	Emergency	13.6	0.0	0.0	0.0	0.0	13.6	13.6
	Total	134.1	13.0	0.0	0.0	21.4	125.6	147.1
METED								
	Pre-Emergency	177.9	10.6	0.0	0.0	2.3	186.2	188.5
	Emergency	39.2	9.7	0.0	0.0	0.0	48.9	48.9
	Total	217.1	20.3	0.0	0.0	2.3	235.1	237.4
PECO								
	Pre-Emergency	270.0	12.5	0.0	0.0	0.3	282.1	282.4
	Emergency	108.2	14.0	0.0	0.0	0.1	122.1	122.2
	Total	378.1	26.5	0.0	0.0	0.5	404.2	404.7
PENELEC								
	Pre-Emergency	222.3	24.8	0.0	0.0	6.8	240.3	247.1
	Emergency	47.8	3.4	0.0	0.0	0.0	51.2	51.2
	Total	270.1	28.2	0.0	0.0	6.8	291.5	298.3
PEPCO								
	Pre-Emergency	154.0	333.6	0.0	0.0	0.0	487.7	487.7
	Emergency	52.0	8.5	0.0	0.0	0.0	60.6	60.6
	Total	206.0	342.2	0.0	0.0	0.0	548.2	548.2
PPL								
	Pre-Emergency	494.9	39.1	0.0	56.1	0.4	477.5	534.0
	Emergency	81.7	5.2	0.0	0.0	0.0	86.8	86.8
	Total	576.6	44.3	0.0	56.1	0.4	564.3	620.9
PSEG								
	Pre-Emergency	298.0	27.2	0.6	86.3	0.6	239.0	325.8
	Emergency	16.9	0.0	9.5	9.5	0.0	16.9	26.4
	Total	314.9	27.2	10.1	95.8	0.6	255.9	352.2



Zone	Resource	DR Product			Lead Times (Minutes)			Total DR
		Limited	Extended	Annual	30	60	120	MW
RECO								
	Pre-Emergency	2.2	1.8	0.0	0.0	0.0	4.0	4.0
	Emergency	0.6	0.0	0.0	0.0	0.0	0.6	0.6
	Total	2.8	1.8	0.0	0.0	0.0	4.6	4.6
TOTAL								
	Pre-Emergency	6569.3	1002.8	33.4	694.5	485.5	6425.6	7605.6
	Emergency	1643.4	101.2	9.5	9.5	0.1	1744.4	1754.0
	Total	8212.7	1104.0	42.9	704.0	485.7	8169.9	9359.6

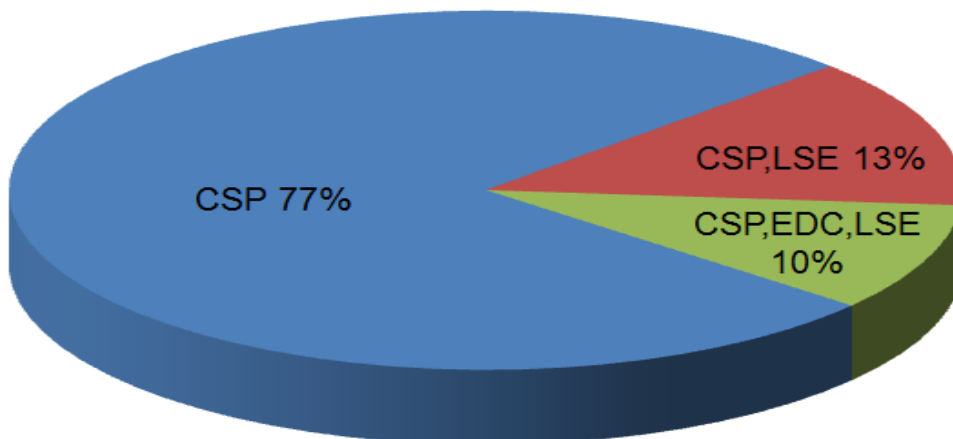
Note: MWs are Nominated Capacity (MWs)

Figure 3: DY 14/15 Confirmed Load Management DR Registrations Business Segments



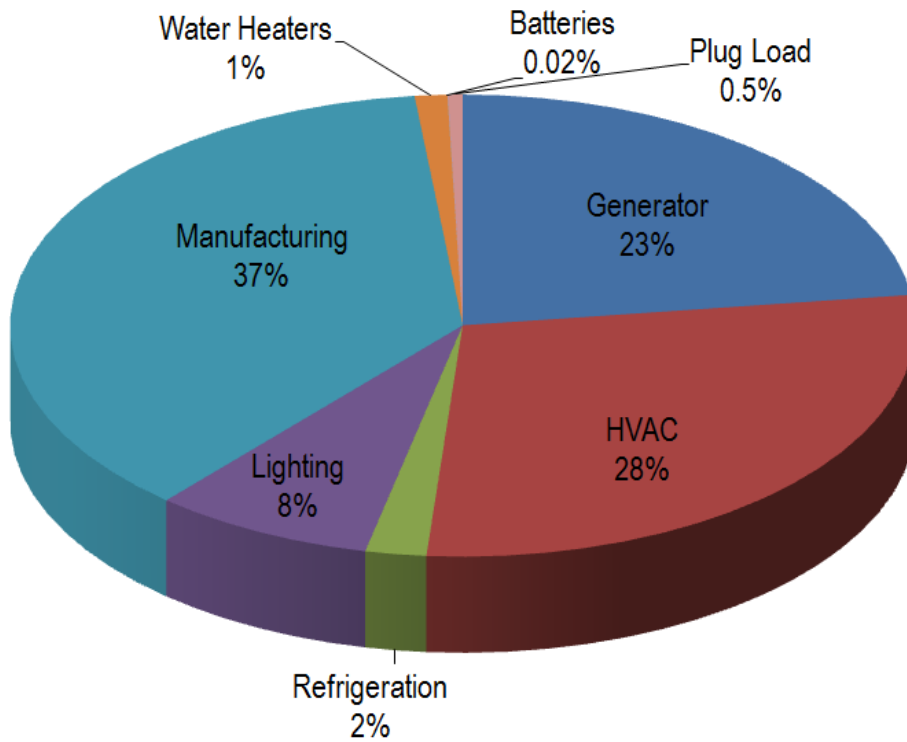
Note: Percent of Nominated Capacity (MWs)

Figure 4: DY 14/15 Confirmed Load Management DR Registrations Owner/Company Type



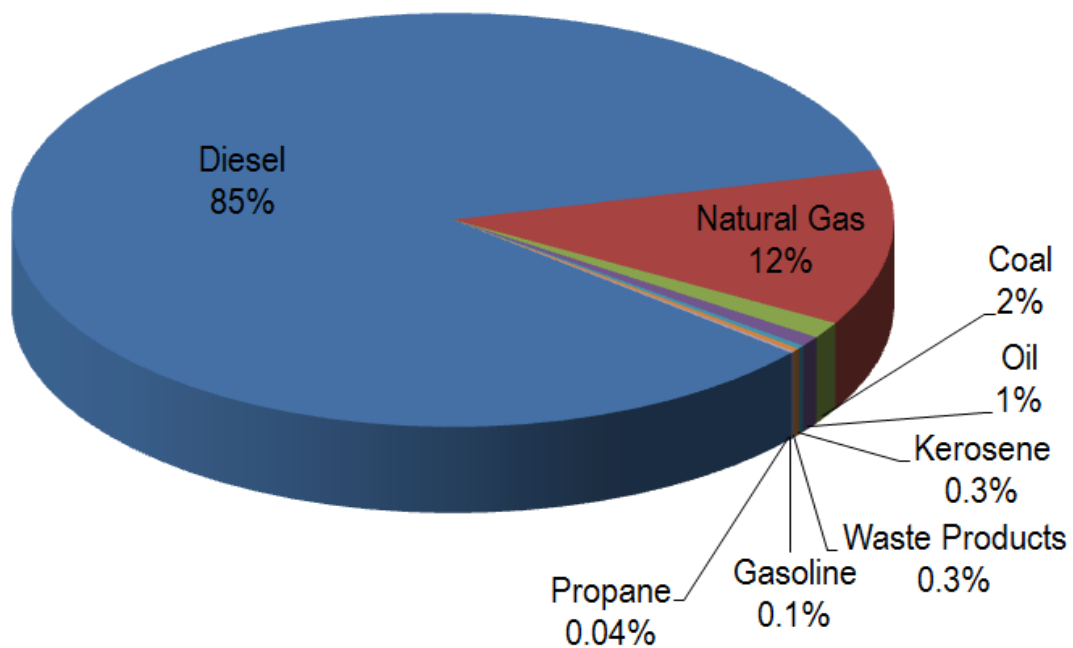
Note: Percent of Nominated Capacity (MWs)

Figure 5: DY 14/15 Confirmed Load Management DR Registrations Customer Load Reduction Methods



Note: Percent of Nominated Capacity (MWs)

Figure 6: DY 14/15 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation



Note: Percent of Nominated Capacity (MWs)

Figure 7: DY 14/15 Confirmed Load Management DR Registrations Generator and Permit Type

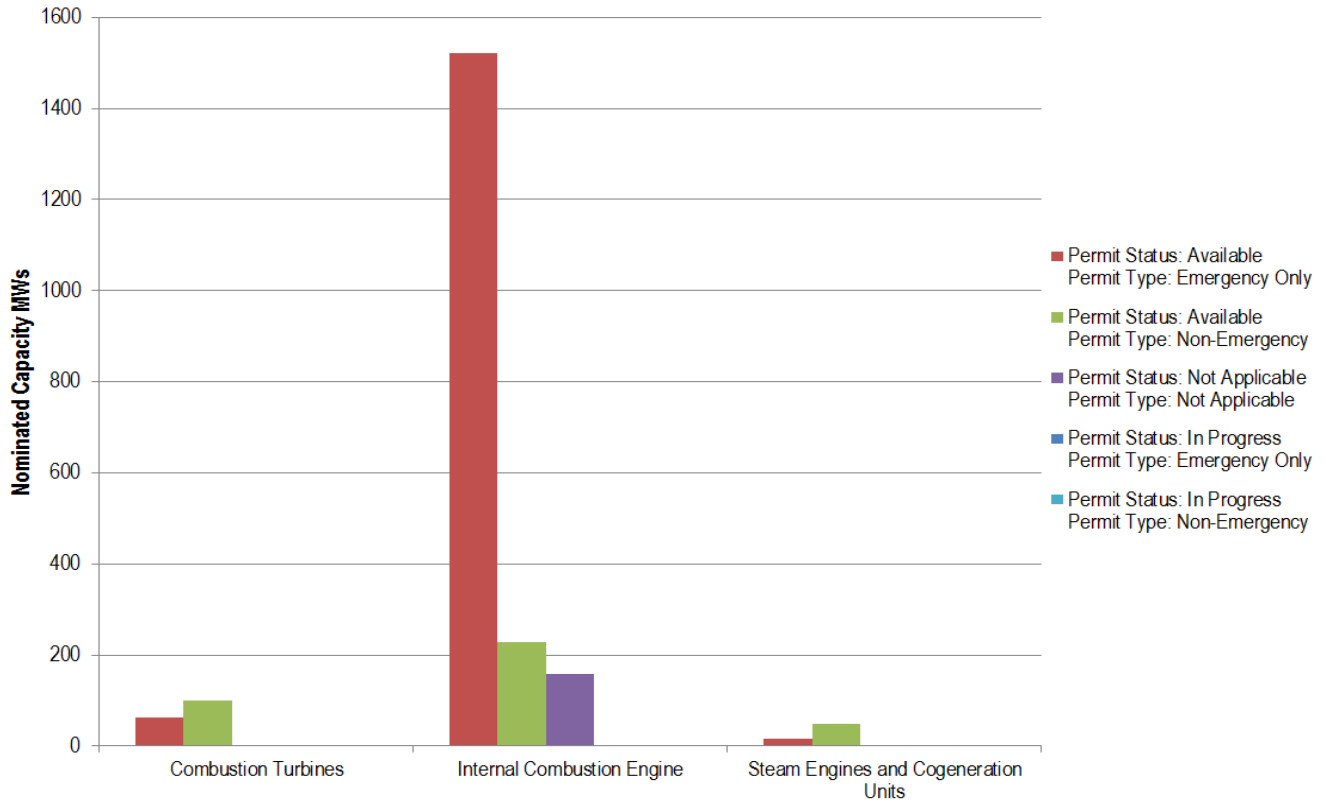


Figure 8: DY 14/15 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation

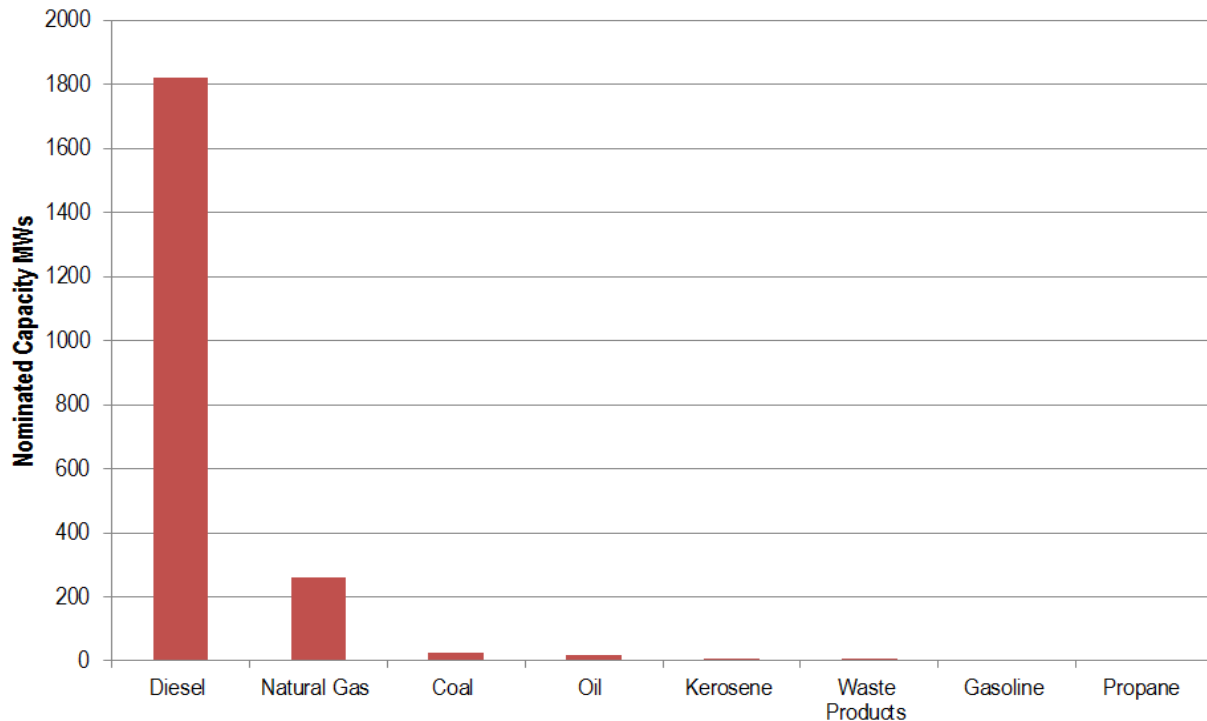


Figure 9: DY 14/15 Confirmed Load Management Full DR Registrations Energy Supply Curve:

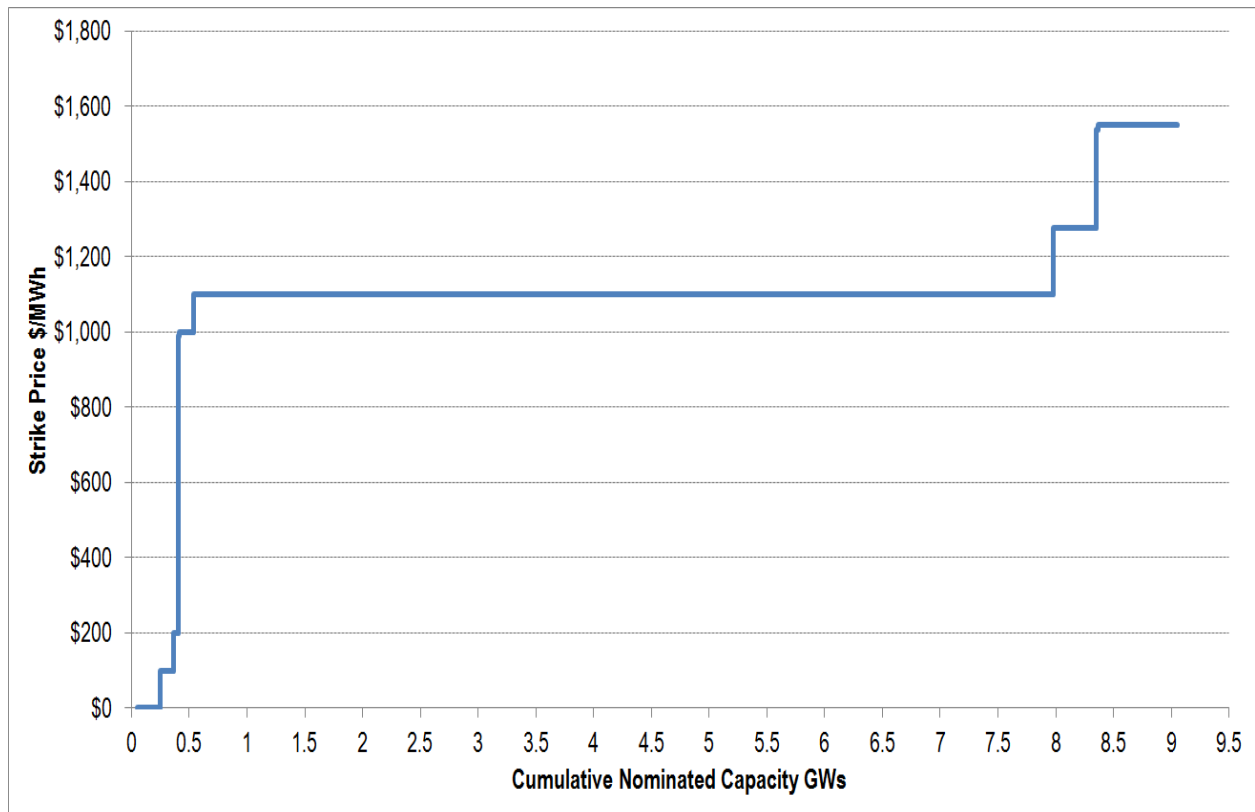
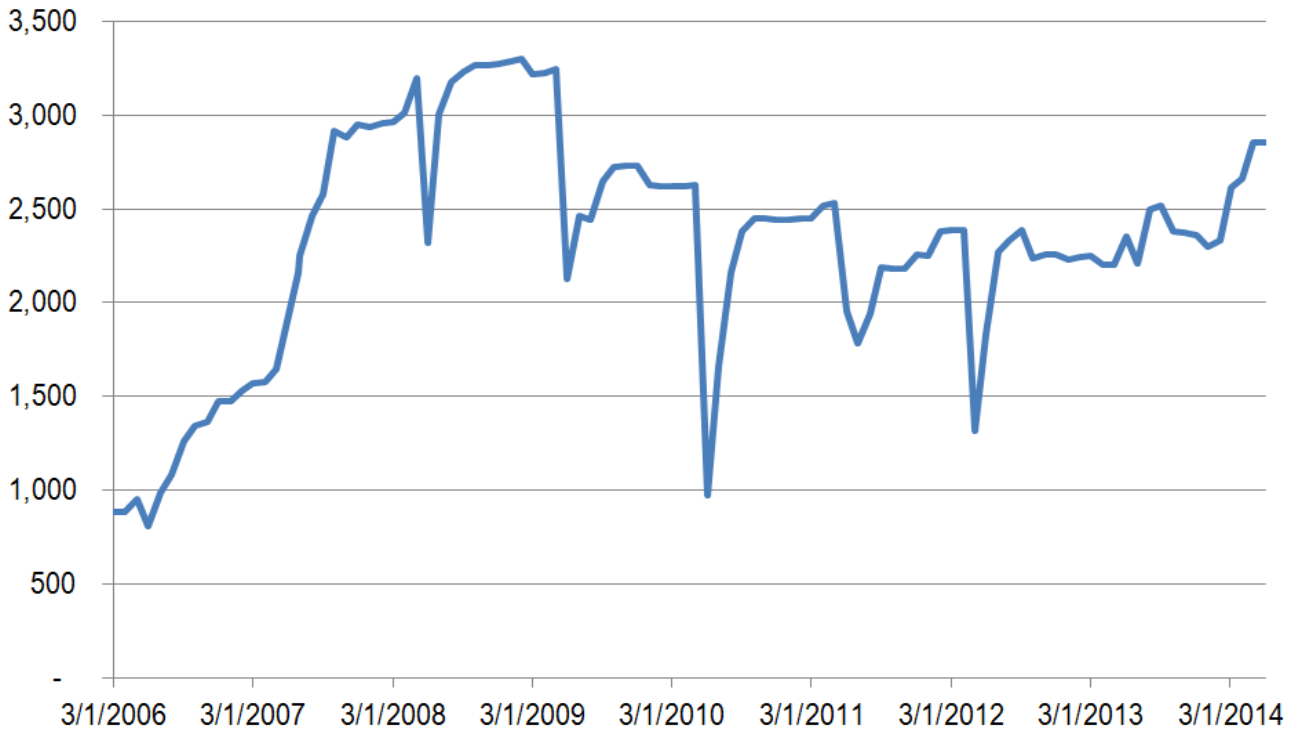


Figure 10: PJM Economic Demand Response Capability in Ancillary Service Markets (2014):

Synch Reserves	Zone	Jan	Feb	Mar	Apr	May
Locations	RFC MAD	146	146	147	147	148
	RFC Non-MAD					
	RTO	146	146	147	147	148
Average Number of Unique Participating Locations per Month:						147
MWs	RFC MAD	361	361	361	361	370
	RFC Non-MAD					
	RTO	361	361	361	361	370
Average MWs per Month:			363			
Regulation	Zone	Jan	Feb	Mar	Apr	May
Locations	RTO	176	176	176	177	178
Average Number of Unique Participating Locations per Month:						177
MWs	RTO	8.0	8.0	8.0	8.8	8.8
Average MWs per Month:			8.3			

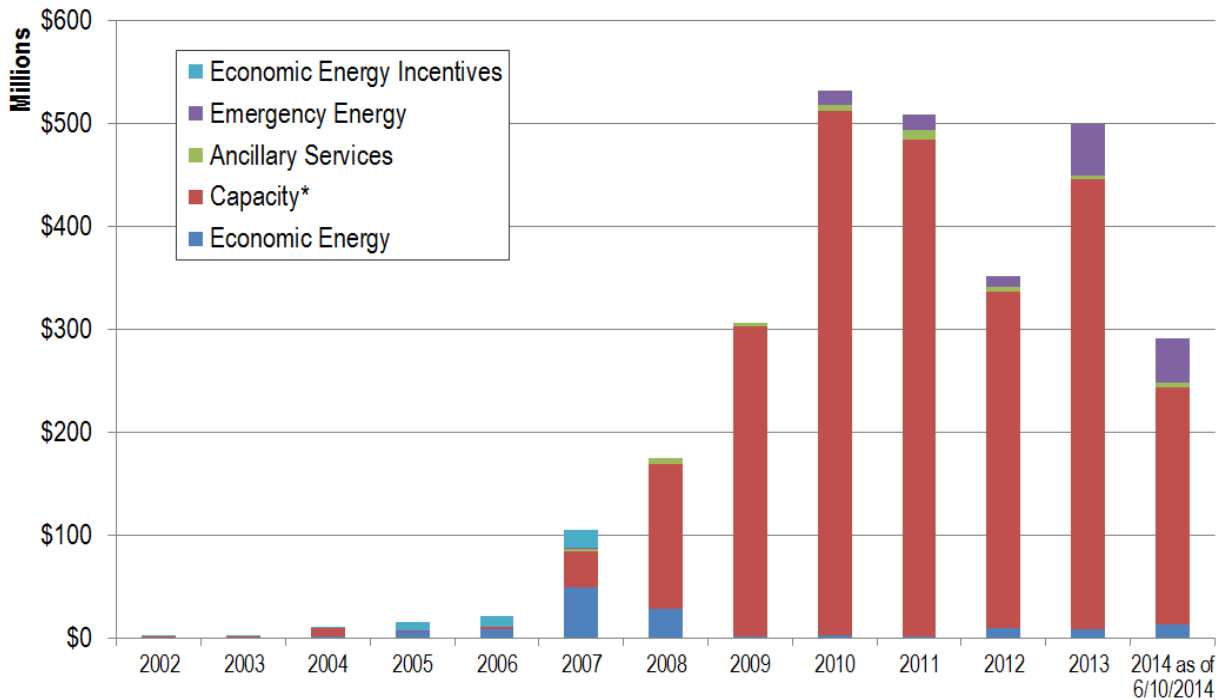
Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report.

Figure 11: PJM Economic Demand Response Capability in Energy Market (3/1/2006-6/10/2014)



Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report.

Figure 12: PJM Estimated Revenue for Economic and Load Management DR Markets



*Capacity Net Revenue inclusive of Capacity Credits and Charges.

Figure 13: 2014 Economic Demand Response Monthly Registration Participation

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL	1				
IL	COMED	11	6	5	2	1
IN	AEP			1		
MD	BGE	45	45	44		
NJ	JCPL	1	2	1		
	PSEG	8	6	6	5	1
OH	AEP	2	1	1		
	ATSI		2	1		
	DEOK	1		1		
PA	APS	3	2	2		
	METED	6	1	4	1	
	PECO	13	6	6	2	2
	PENELEC	3	3	3	2	
	PPL	12	4	5	1	1
VA	AEP	1				
	DOM	12	8	7	3	5
WV	APS		1	1		
Total		119	87	88	16	10

Average Unique Participating Registrations per Month: 64

Figure 14: 2014 Economic Demand Response Monthly Registration Participation Day-Ahead Activity

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL	1				
IL	COMED	1				
IN	AEP					
MD	BGE					
NJ	JCPL	1	1	1		
	PSEG	4	3	4	3	1
OH	AEP	1	1	1		
	ATSI		1	1		
	DEOK					
PA	APS	1	1	1		
	METED					
	PECO					
	PENELEC		1	1	1	
	PPL	8	3	4		1
VA	AEP					
	DOM	1	1			
WV	APS					
Total		18	12	13	4	2

Average Unique Participating Registrations per Month (Day-Ahead): 10

Figure 15: 2014 Economic Demand Response Monthly Registration Participation Real-Time Activity

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL					
IL	COMED	10	6	5	2	1
IN	AEP			1		
MD	BGE	45	45	44		
NJ	JCPL		1			
	PSEG	4	3	2	2	
OH	AEP	1				
	ATSI		1			
	DEOK	1		1		
PA	APS	2	1	1		
	METED	6	1	4	1	
	PECO	13	6	6	2	2
	PENELEC	3	2	2	1	
	PPL	4	1	1	1	
VA	AEP	1				
	DOM	11	7	7	3	5
WV	APS		1	1		
Total		101	75	75	12	8

Average Unique Participating Registrations per Month (Real-Time): 54

Figure 16: 2014 Economic Demand Response Monthly MWh Reductions

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL	617				
IL	COMED	1,051	1,327	1,051	176	3
IN	AEP			60		
MD	BGE	291	294	239		
NJ	JCPL	3,266	1,260	728		
	PSEG	1,393	921	701	698	352
OH	AEP	18	28	42		
	ATSI		273	247		
	DEOK	1,446		206		
PA	APS	343	1,006	371		
	METED	30	24	3	1	
	PECO	445	914	162	94	39
	PENELEC	161	658	250		
	PPL	2,475	1,276	1,709	2	108
VA	AEP	71				
	DOM	14,113	6,851	11,239	40	81
WV	APS		76	319		
Total		25,722	14,908	17,327	1,011	583

Total MWh: 59,550

Figure 17: 2014 Economic Demand Response Monthly MWh Reductions Day-Ahead Activity

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL	617				
IL	COMED	1				
IN	AEP					
MD	BGE					
NJ	JCPL	3,266	1,285	728		
	PSEG	711	459	553	562	352
OH	AEP	16	28	42		
	ATSI		273	247		
	DEOK					
PA	APS	325	1,006	295		
	METED					
	PECO					
	PENELEC		100	81		
	PPL	2,474	1,274	1,692		108
	VA	AEP				
	DOM	2,935	2,480			
WV	APS					
Total		10,344	6,904	3,639	562	460

Total Day-Ahead MWh: 21,909

Figure 18: 2014 Economic Demand Response Monthly MWh Reductions Real-Time Activity

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL					
IL	COMED	1,050	1,327	1,051	176	3
IN	AEP			60		
MD	BGE	291	294	239		
NJ	JCPL		(25)			
	PSEG	682	461	148	136	
OH	AEP	2				
	ATSI					
	DEOK	1,446		206		
PA	APS	18		76		
	METED	30	24	3	1	
	PECO	445	914	162	94	39
	PENELEC	161	558	169		
	PPL	1	2	17	2	
VA	AEP	71				
	DOM	11,178	4,371	11,239	40	81
WV	APS		76	319		
Total		15,378	8,003	13,689	448	123

Total Real-Time MWh: 37,641

Figure 19: Economic Demand Response Monthly Energy Market Revenue (2014)

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL	\$195,717				
IL	COMED	\$107,346	\$101,600	\$98,794	\$7,970	\$503
IN	AEP			\$9,446		
MD	BGE	\$102,969	\$53,661	\$72,634		
NJ	JCPL	\$1,533,967	\$245,299	\$206,852		
	PSEG	\$421,559	\$119,563	\$95,640	\$40,592	\$18,066
OH	AEP	\$3,205	\$2,345	\$3,610		
	ATSI		\$29,304	\$44,746		
	DEOK	\$434,252		\$6,624		
PA	APS	\$69,004	\$120,390	\$24,194		
	METED	\$6,446	\$1,566	\$1,207	\$55	
	PECO	\$45,449	\$116,251	\$17,758	\$4,860	\$1,595
	PENELEC	\$17,214	\$44,677	\$23,178	(\$17)	
	PPL	\$1,057,653	\$162,695	\$265,538	\$111	\$6,130
VA	AEP	\$7,111				
	DOM	\$3,687,939	\$907,262	\$2,190,341	\$1,795	\$6,816
WV	APS		\$4,032	\$25,932		
Total		\$7,689,831	\$1,908,644	\$3,086,494	\$55,367	\$33,110

Total CSP Credits: \$12,773,446

Figure 20: Economic Demand Response Monthly Energy Market Revenue Day-Ahead Activity (2014)

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL	\$195,717				
IL	COMED	\$34				
IN	AEP					
MD	BGE					
NJ	JCPL	\$1,533,967	\$247,539	\$206,852		
	PSEG	\$272,291	\$68,498	\$83,742	\$32,790	\$18,066
OH	AEP	\$1,936	\$2,345	\$3,610		
	ATSI		\$29,304	\$44,746		
	DEOK					
PA	APS	\$65,087	\$120,390	\$18,147		
	METED					
	PECO					
	PENELEC		\$8,267	\$11,892	(\$17)	
	PPL	\$1,057,078	\$162,481	\$264,673		\$6,130
VA	AEP					
	DOM	\$547,661	\$403,390			
WV	APS					
Total		\$3,673,770	\$1,042,215	\$633,662	\$32,773	\$24,196

Total Day-Ahead CSP Credits: \$5,406,616

Figure 21: Economic Demand Response Monthly Energy Market Revenue Real-Time Activity (2014)

State	Zone	Jan	Feb	Mar	Apr	May
DE	DPL					
IL	COMED	\$107,312	\$101,600	\$98,794	\$7,970	\$503
IN	AEP			\$9,446		
MD	BGE	\$102,969	\$53,661	\$72,634		
NJ	JCPL		(\$2,239)			
	PSEG	\$149,268	\$51,065	\$11,898	\$7,802	
OH	AEP	\$1,269				
	ATSI					
	DEOK	\$434,252		\$6,624		
PA	APS	\$3,917		\$6,047		
	METED	\$6,446	\$1,566	\$1,207	\$55	
	PECO	\$45,449	\$116,251	\$17,758	\$4,860	\$1,595
	PENELEC	\$17,214	\$36,409	\$11,286		
	PPL	\$575	\$213	\$865	\$111	
VA	AEP	\$7,111				
	DOM	\$3,140,277	\$503,872	\$2,190,341	\$1,795	\$6,816
WV	APS		\$4,032	\$25,932		
Total		\$4,016,061	\$866,429	\$2,452,832	\$22,594	\$8,913
Total Real-Time CSP Credits:				\$7,366,830		

Figure 22: Economic Demand Response Energy Market Cost Allocation by Zone (2014)

Zone	Jan	Feb	Mar	Apr	May
AECO	\$88,849	\$21,811	\$35,877	\$663	\$358
AEP	\$1,288,028	\$312,328	\$483,899	\$8,417	\$5,468
APS	\$499,405	\$121,446	\$191,808	\$3,163	\$1,971
ATSI	\$610,444	\$155,457	\$244,890	\$4,832	\$2,909
BGE	\$337,180	\$79,554	\$128,581	\$2,194	\$1,303
COMED	\$751,755	\$204,212	\$324,626	\$5,921	\$4,311
DAY	\$163,420	\$40,896	\$61,950	\$1,192	\$747
DEOK	\$248,210	\$62,898	\$92,471	\$1,658	\$1,199
DOM	\$1,022,195	\$236,410	\$388,045	\$6,078	\$4,205
DPL	\$199,246	\$46,459	\$74,685	\$1,222	\$662
DUQ	\$125,656	\$24,946	\$48,787	\$772	\$624
EKPC	\$157,012	\$34,851	\$51,975	\$710	\$497
JCPL	\$201,012	\$50,017	\$80,616	\$1,357	\$839
METED	\$147,610	\$36,986	\$59,621	\$997	\$535
PECO	\$375,321	\$92,690	\$148,879	\$2,649	\$1,471
PENELEC	\$164,182	\$42,050	\$67,114	\$1,314	\$727
PEPCO	\$313,847	\$73,684	\$118,189	\$2,089	\$1,346
PPL	\$421,193	\$104,335	\$164,832	\$2,750	\$1,432
PSEG	\$368,492	\$92,173	\$148,764	\$3,341	\$1,669
RECO	\$12,189	\$3,050	\$4,971	\$117	\$58
Exports	\$199,734	\$72,391	\$165,913	\$3,930	\$779
TOTAL	\$7,694,978	\$1,908,644	\$3,086,494	\$55,367	\$33,110
Total Zonal Charges:				\$12,778,592	

Figure 23: Economic Demand Response Day-Ahead Energy Market Cost Allocation by Zone (2014)

Zone	Jan	Feb	Mar	Apr	May
AECO	\$41,762	\$13,174	\$8,862	\$418	\$252
AEP	\$600,578	\$188,978	\$119,190	\$5,120	\$3,961
APS	\$234,853	\$73,518	\$47,353	\$1,922	\$1,427
ATSI	\$287,944	\$93,523	\$60,568	\$2,965	\$2,119
BGE	\$157,923	\$48,047	\$31,921	\$1,376	\$925
COMED	\$334,108	\$121,509	\$81,405	\$3,589	\$3,169
DAY	\$75,752	\$24,825	\$15,326	\$729	\$538
DEOK	\$112,731	\$38,196	\$22,579	\$1,002	\$862
DOM	\$477,844	\$144,419	\$95,282	\$3,754	\$2,994
DPL	\$93,491	\$28,069	\$18,435	\$775	\$468
DUQ	\$59,691	\$13,551	\$12,048	\$473	\$453
EKPC	\$72,122	\$21,331	\$12,596	\$417	\$354
JCPL	\$94,619	\$30,358	\$19,952	\$877	\$593
METED	\$69,258	\$22,377	\$14,782	\$617	\$376
PECO	\$176,174	\$56,149	\$36,890	\$1,686	\$1,040
PENELEC	\$77,025	\$25,389	\$16,828	\$798	\$535
PEPCO	\$147,707	\$44,627	\$29,325	\$1,294	\$961
PPL	\$197,322	\$63,111	\$40,742	\$1,712	\$1,006
PSEG	\$173,359	\$55,809	\$37,272	\$2,064	\$1,185
RECO	\$5,676	\$1,841	\$1,248	\$72	\$42
Exports	\$90,472	\$39,254	\$39,621	\$2,568	\$616
TOTAL	\$3,580,411	\$1,148,053	\$762,224	\$34,226	\$23,876

Total Day-Ahead Zonal Charges: \$5,548,790

Figure 24: Economic Demand Response Real-Time Energy Market Cost Allocation by Zone (2014)

Zone	Jan	Feb	Mar	Apr	May
AECO	\$47,088	\$8,637	\$27,014	\$245	\$106
AEP	\$687,449	\$123,351	\$364,710	\$3,297	\$1,507
APS	\$264,553	\$47,928	\$144,456	\$1,242	\$544
ATSI	\$322,500	\$61,935	\$184,323	\$1,866	\$789
BGE	\$179,258	\$31,508	\$96,660	\$819	\$377
COMED	\$417,646	\$82,703	\$243,221	\$2,332	\$1,142
DAY	\$87,668	\$16,072	\$46,624	\$463	\$209
DEOK	\$135,478	\$24,702	\$69,892	\$657	\$337
DOM	\$544,352	\$91,990	\$292,762	\$2,324	\$1,211
DPL	\$105,754	\$18,390	\$56,250	\$447	\$194
DUQ	\$65,966	\$11,395	\$36,739	\$299	\$171
EKPC	\$84,890	\$13,520	\$39,379	\$294	\$142
JCPL	\$106,392	\$19,659	\$60,664	\$480	\$246
METED	\$78,351	\$14,609	\$44,839	\$380	\$159
PECO	\$199,147	\$36,541	\$111,989	\$963	\$432
PENELEC	\$87,157	\$16,661	\$50,286	\$517	\$191
PEPCO	\$166,140	\$29,057	\$88,864	\$795	\$385
PPL	\$223,871	\$41,224	\$124,090	\$1,038	\$426
PSEG	\$195,133	\$36,364	\$111,493	\$1,277	\$484
RECO	\$6,512	\$1,209	\$3,723	\$45	\$16
Exports	\$109,263	\$33,137	\$126,292	\$1,362	\$163
TOTAL	\$4,114,567	\$760,591	\$2,324,270	\$21,141	\$9,233

Total Real-Time Zonal Charges: \$7,229,802

Figure 25: Load Management Demand Response Monthly Capacity Revenue from RPM (2014)

Zone	Jan	Feb	Mar	Apr	May
AECO	\$1,035,717	\$935,486	\$1,035,717	\$1,002,307	\$1,035,717
AEP	\$774,652	\$699,686	\$774,652	\$749,663	\$774,652
APS	\$493,260	\$445,525	\$493,260	\$477,348	\$493,260
ATSI	\$377,750	\$341,193	\$377,750	\$365,564	\$377,750
BGE	\$7,736,807	\$6,988,083	\$7,736,807	\$7,487,232	\$7,736,807
COMED	\$808,185	\$729,973	\$808,185	\$782,114	\$808,185
DAY	\$44,278	\$39,993	\$44,278	\$42,849	\$44,278
DEOK	\$16,653	\$15,041	\$16,653	\$16,115	\$16,653
DOM	\$605,391	\$546,805	\$605,391	\$585,863	\$605,391
DPL	\$1,979,013	\$1,787,496	\$1,979,013	\$1,915,174	\$1,979,013
DUQ	\$148,045	\$133,718	\$148,045	\$143,269	\$148,045
EKPC	\$1,544	\$1,395	\$1,544	\$1,495	\$1,544
JCPL	\$2,288,883	\$2,067,378	\$2,288,883	\$2,215,048	\$2,288,883
METED	\$2,246,581	\$2,029,170	\$2,246,581	\$2,174,111	\$2,246,581
PECO	\$5,314,219	\$4,799,939	\$5,314,219	\$5,142,792	\$5,314,219
PENELEC	\$2,980,723	\$2,692,266	\$2,980,723	\$2,884,571	\$2,980,723
PEPCO	\$4,229,396	\$3,820,100	\$4,229,396	\$4,092,964	\$4,229,396
PPL	\$7,253,736	\$6,551,762	\$7,253,736	\$7,019,745	\$7,253,736
PSEG	\$8,859,978	\$8,002,561	\$8,859,978	\$8,574,172	\$8,859,978
RECO	\$257,721	\$232,781	\$257,721	\$249,408	\$257,721
Total	\$47,452,531	\$42,860,351	\$47,452,531	\$45,921,805	\$47,452,531

Total Capacity Credits: \$231,139,750

This area is intentionally left blank

Figure 26: Economic Demand Response Dispatched vs Settled Real-Time Energy Market Summary (2014)

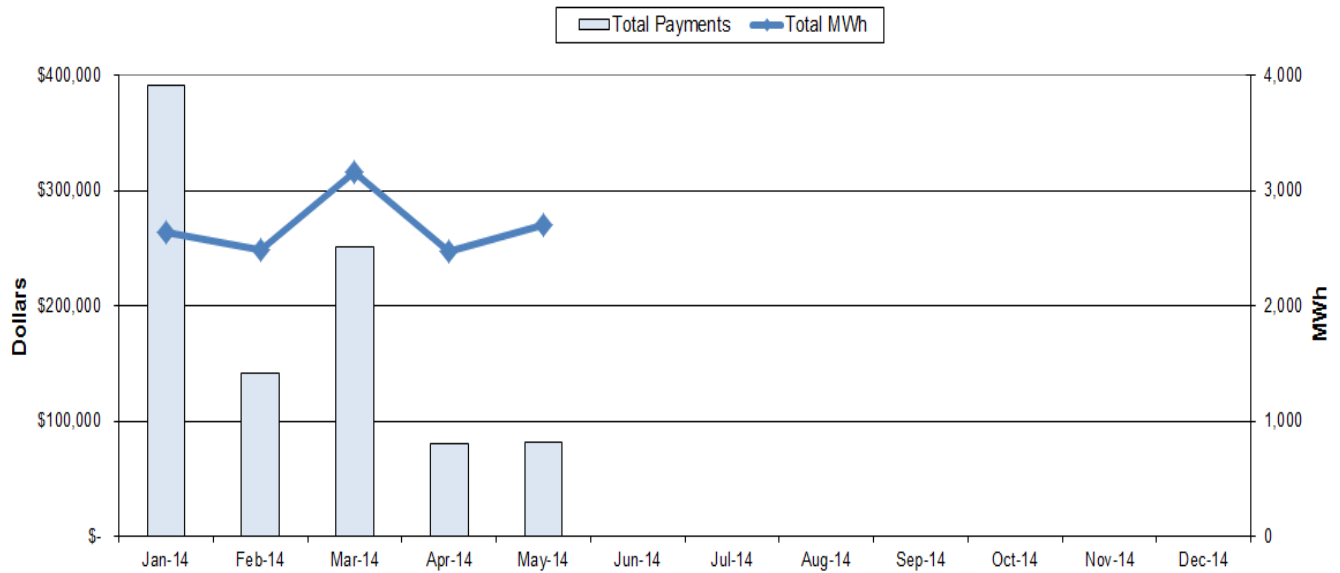
Time		CSPs		Zone		Registrations			MWh			Registration Hours		
Year	Month	Dispatched	Settled	Dispatched	Settled	Dispatched	Settled	%	Dispatched	Settled	%	Dispatched	Settled	%
2014	1	7	7	12	12	104	102	98%	16,305	15,378	94%	2,928	2,925	100%
2014	2	7	7	11	11	75	75	100%	10,037	8,003	80%	2,526	2,526	100%
2014	3	5	5	11	11	75	75	100%	15,247	13,689	90%	2,342	2,225	95%
2014	4	3	2	7	7	15	12	80%	5,912	448	8%	741	455	61%
2014	5	3	1	7	3	17	8	47%	6,388	123	2%	779	135	17%
2014	6	2		4		13			2,100			278		
2014	7													
2014	8													
2014	9													
2014	10													
2014	11													
2014	12													
YTD Totals						299	272	91%	55,988	37,641	67%	9,594	8,266	86%
YTD Average		5	4	9	9									

Figure 27: Economic Demand Response Cleared vs Settled Day-Ahead Energy Market Summary (2014)

Time		CSPs		Zone		Registrations			MWh			Registration Hours		
Year	Month	Cleared	Settled	Cleared	Settled	Cleared	Settled	%	Cleared	Settled	%	Cleared	Settled	%
2014	1	9	9	8	8	18	18	100%	10,663	10,344	97%	1,193	1,193	100%
2014	2	8	8	8	8	12	12	100%	7,490	6,904	92%	794	794	100%
2014	3	7	7	7	7	13	13	100%	4,715	3,639	77%	817	817	100%
2014	4	2	2	2	2	4	4	100%	984	562	57%	313	210	67%
2014	5	4	2	4	2	6	2	33%	2,883	460	16%	580	110	19%
2014	6	3		5		6			717			294		
2014	7													
2014	8													
2014	9													
2014	10													
2014	11													
2014	12													
YTD Totals						59	49	83%	27,451	21,909	80%	3,991	3,124	78%
YTD Average		6	6	6	5									

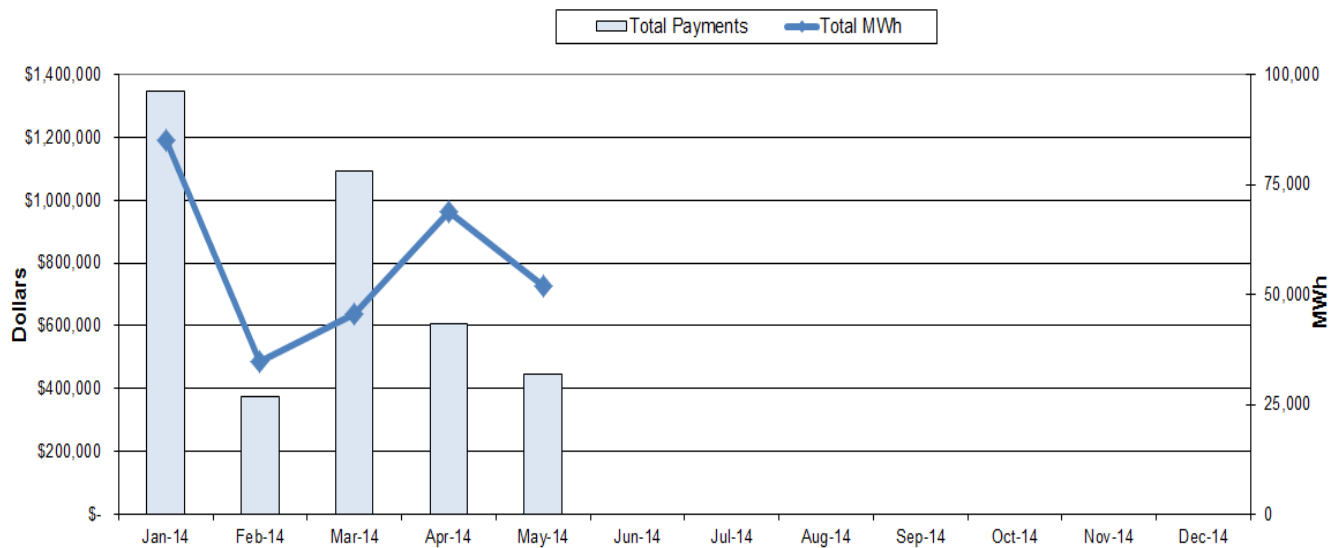
Note: For Figures 26 and 27 above, Settlement information is submitted up to 60 days after the event. Therefore, YTD performance reflected in these reports for the current 2 months is artificially low due to incomplete information at the time of report preparation.

Figure 28: Economic Demand Response Regulation Market Participation (2014)



	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
Total MWh	2,635	2,481	3,165	2,477	2,704								13,462
Total Payments	\$391,672	\$141,149	\$251,178	\$80,250	\$81,296								\$945,545
\$/MWh	\$148.64	\$56.90	\$79.36	\$32.40	\$30.07								\$70.24

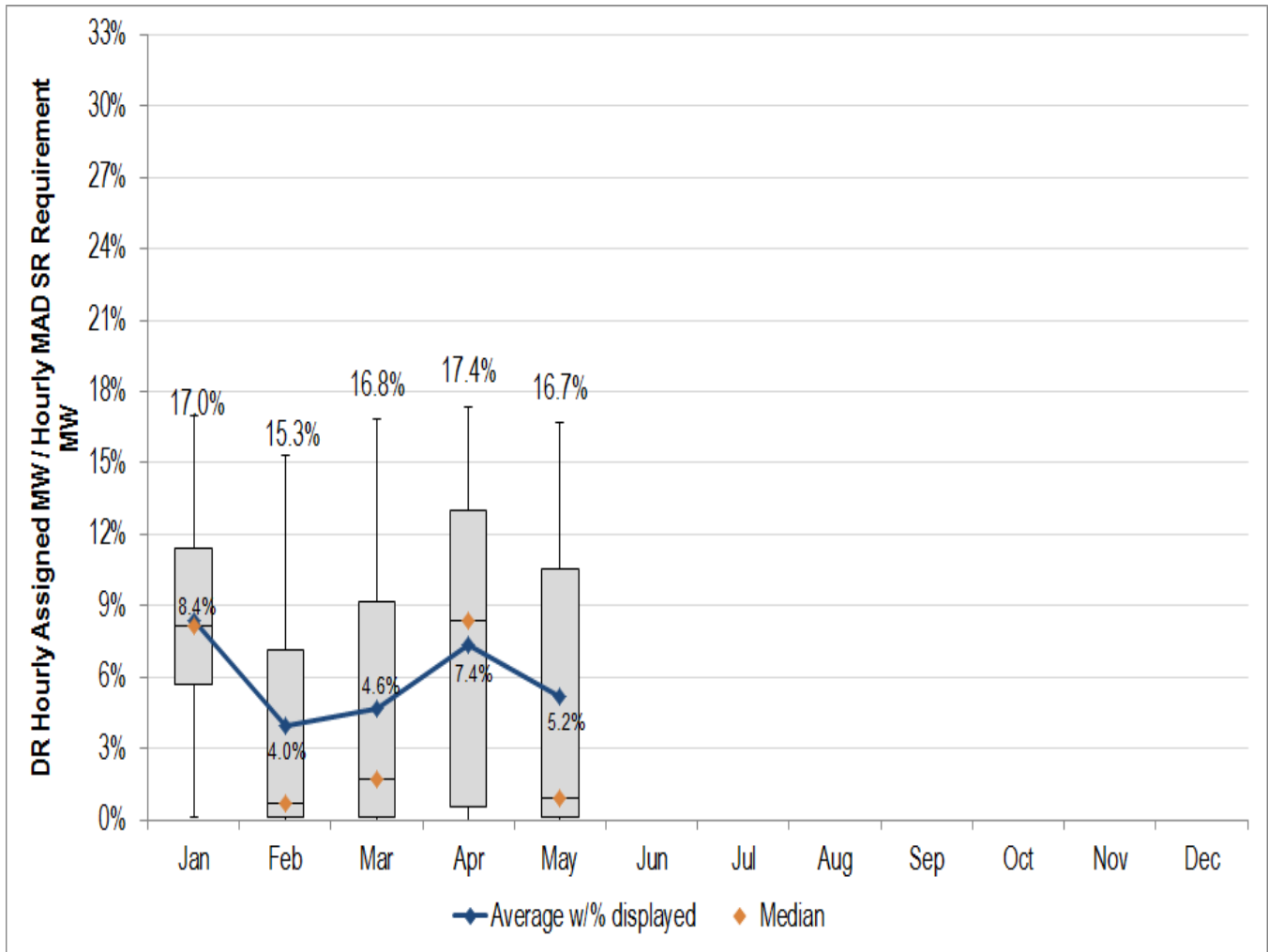
Figure 29: Economic Demand Response Synchronous Reserve Market Participation (2014)



	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
Total MWh	85,176	34,741	45,431	68,935	52,077								286,361
Total Payments	\$1,345,213	\$376,555	\$1,092,708	\$605,486	\$446,183								\$3,866,145
\$/MWh	\$15.79	\$10.84	\$24.05	\$8.78	\$8.57								\$13.50

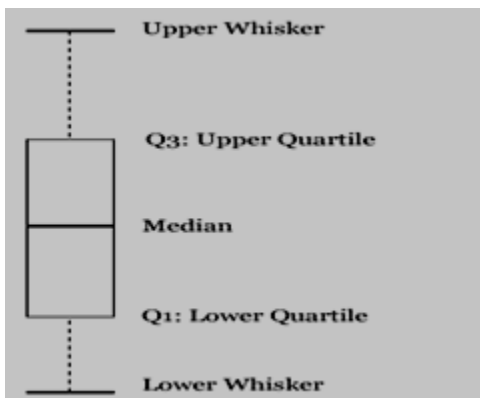
Note: For Figures 28 and 29 above, MWh=sum of the settled MW. Example: 1 MW load available for 12 hours = 12 MWh.

Figure 30: Economic DR Synchronous Reserve Penetration Distribution (Box-plot) for MAD Zone (2014)



Notes:

- 1) Economic Demand Response are Tier2 resources.
- 2) Percents shown on upper whisker are maximum hourly DR percentage of Total MAD SR Requirement.
- 3) The Box-plot depicts the distribution of DR hourly assigned (as a percentage of the MAD requirement) for a month:



The upper whisker is the maximum value

The box top is the Upper Quartile (75%) value

The line inside the box is the median (50%) value

The box bottom is the Lower Quartile (25%) value

The lower whisker is the minimum value