

2014 Demand Response Operations Markets Activity Report: August 2014

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PJM Demand Side Response Operations

August 13, 2014



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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 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	25	11.3
DE	DPL	DOVDE					7	3.1	3.1	7	3.1
DE	DPL	DPL	9	106.8			254	144.3	144.3	257	173.6
DE	DPL	ODEC					10	1.6	1.6	10	1.6
IL	COMED	COMED	2,097	428.8			2,008	1,081.5	1,081.5	4,065	1,431.5
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	50	16.6			179	94.4	94.4	180	94.5
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	61	591.8			894	767.2	767.2	904	856.9
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	265.0			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	21	56.2			432	146.8	146.8	433	191.8



State	Zone	EDC	Economic Program		Emergency Energy Only		Load Management DR		Emergency Energy and Load Management DR Total	Unique	
			Locations	MW	Locations	MW	Locations	MW	MW	Locations	MW
NJ	PSEG	PSEG	38	66.0			1,079	352.2	352.2	1,084	376.7
NJ	RECO	RECO					14	4.6	4.6	14	4.6
NY	PENELEC	PaElec					2	1.3	1.3	2	1.3
OH	AEP	AEPCCL					12	12.6	12.6	12	12.6
OH	AEP	AEPSCT	17	151.9			921	626.2	626.2	926	637.9
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	14	93.7			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	6	6.0			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	22	95.8			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	9	19.1			345	97.6	97.6	347	114.4
PA	METED	AECI					1	1.7	1.7	1	1.7
PA	METED	MetEd	35	36.4			536	235.7	235.7	537	238.7
PA	PECO	PE	131	139.6			1,444	404.7	404.7	1,454	472.4
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



State	Zone	EDC	Economic Program		Emergency Energy Only		Load Management DR		Emergency Energy and Load Management DR Total	Unique	
			Locations	MW	Locations	MW	Locations	MW	MW	Locations	MW
PA	PPL	PPL	196	180.2			1,509	611.0	611.0	1,529	737.1
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	2	3.1			205	218.3	218.3	205	218.3
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	40	67.6			861	663.3	663.3	868	692.5
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	5	72.4			297	212.0	212.0	298	216.0
WV	AEP	APWVP					4	0.5	0.5	4	0.5
WV	APS	AETSAP	55	49.4			285	147.9	147.9	287	172.9
Total			2,883	2,973	0	0	15,924	9,360	9,360	18,066	10,391

Note:

- 1) Data as of 8/10/2014.
- 2) Load Management MW are in ICAP.
- 3) Economic MW are CSP reported Load Reduction values.
- 4) Residential Direct Load Control (DLC) reported as one location not a total number of end use customers in that program.
- 5) Unique MW: represents total estimated demand reduction assuming full DR compliance and economic reductions

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
		Limited	Extended	Annual	30	60	120	MW
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



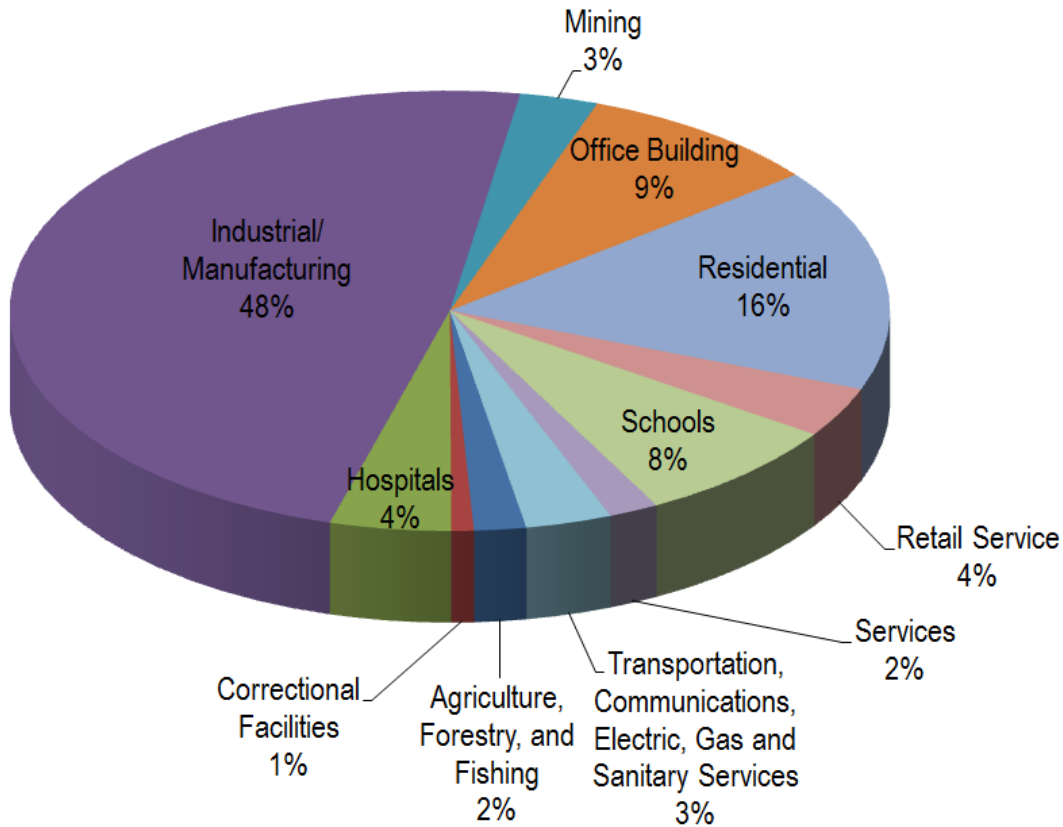
Zone	Resource	DR Product			Lead Times (Minutes)			Total DR
		Limited	Extended	Annual	30	60	120	MW
DPL								
	Pre-Emergency	117.2	116.8	0.0	0.0	0.0	234.0	234.0
	Emergency	17.6	0.9	0.0	0.0	0.0	18.5	18.5
	Total	134.8	117.7	0.0	0.0	0.0	252.5	252.5
DUQ								
	Pre-Emergency	81.4	5.5	0.0	0.0	0.0	86.9	86.9
	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	494.8	39.1	0.0	56.1	0.4	477.4	533.9
	Emergency	81.8	5.2	0.0	0.0	0.0	86.9	86.9
	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	6569.2	1002.8	33.4	694.5	485.5	6425.5	7605.5
	Emergency	1643.5	101.2	9.5	9.5	0.1	1744.5	1754.1
	Total	8212.7	1104.0	42.9	704.0	485.7	8169.9	9359.6

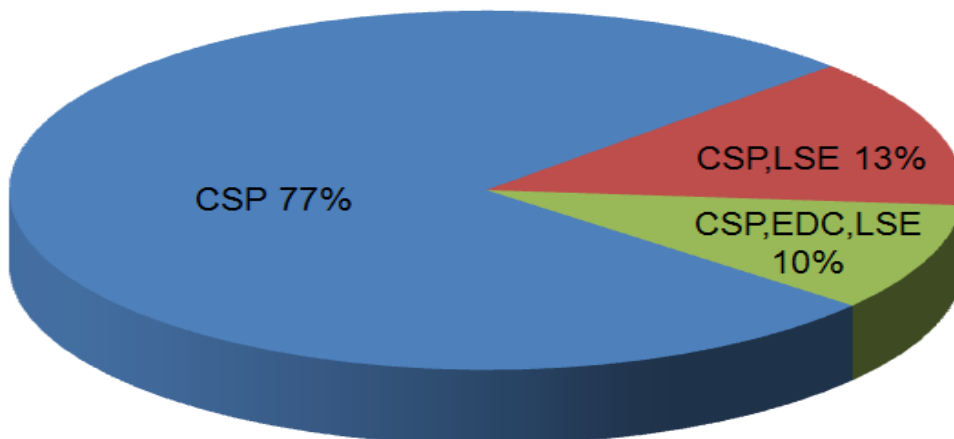
Note: MWs are Nominated Capacity (MWs)

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



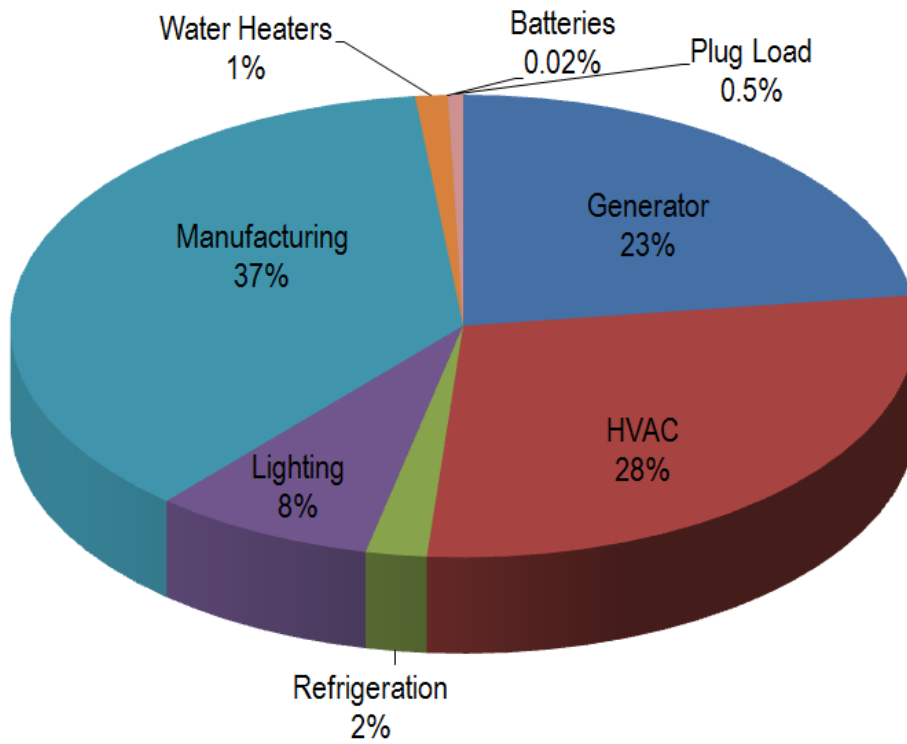
Note: Percent of Nominated Capacity (MWs)

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



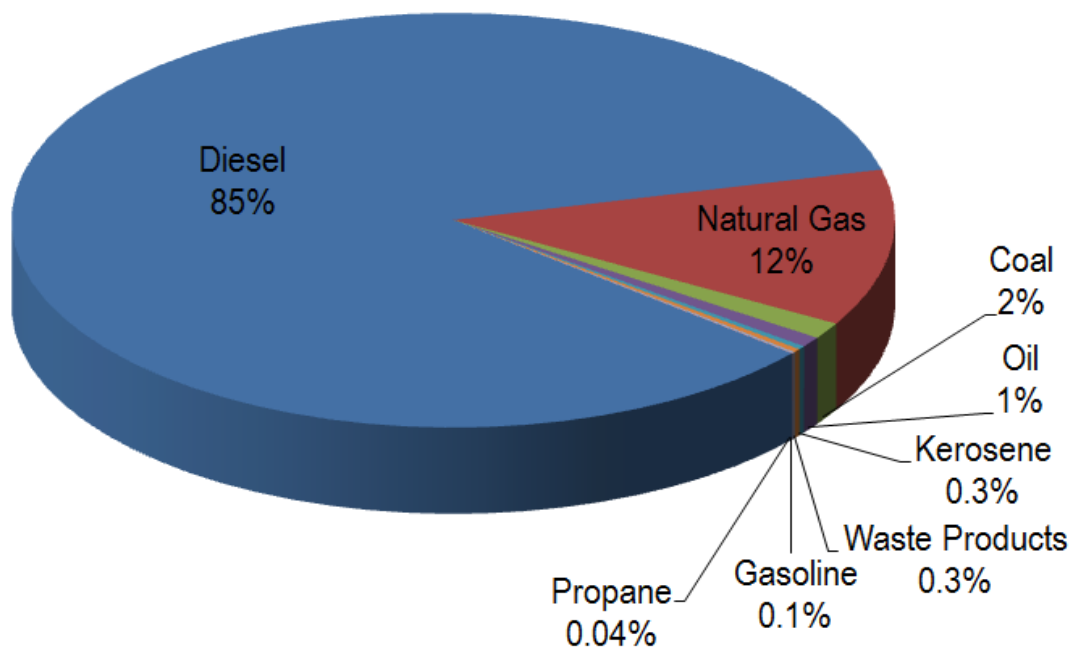
Note: Percent of Nominated Capacity (MWs)

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

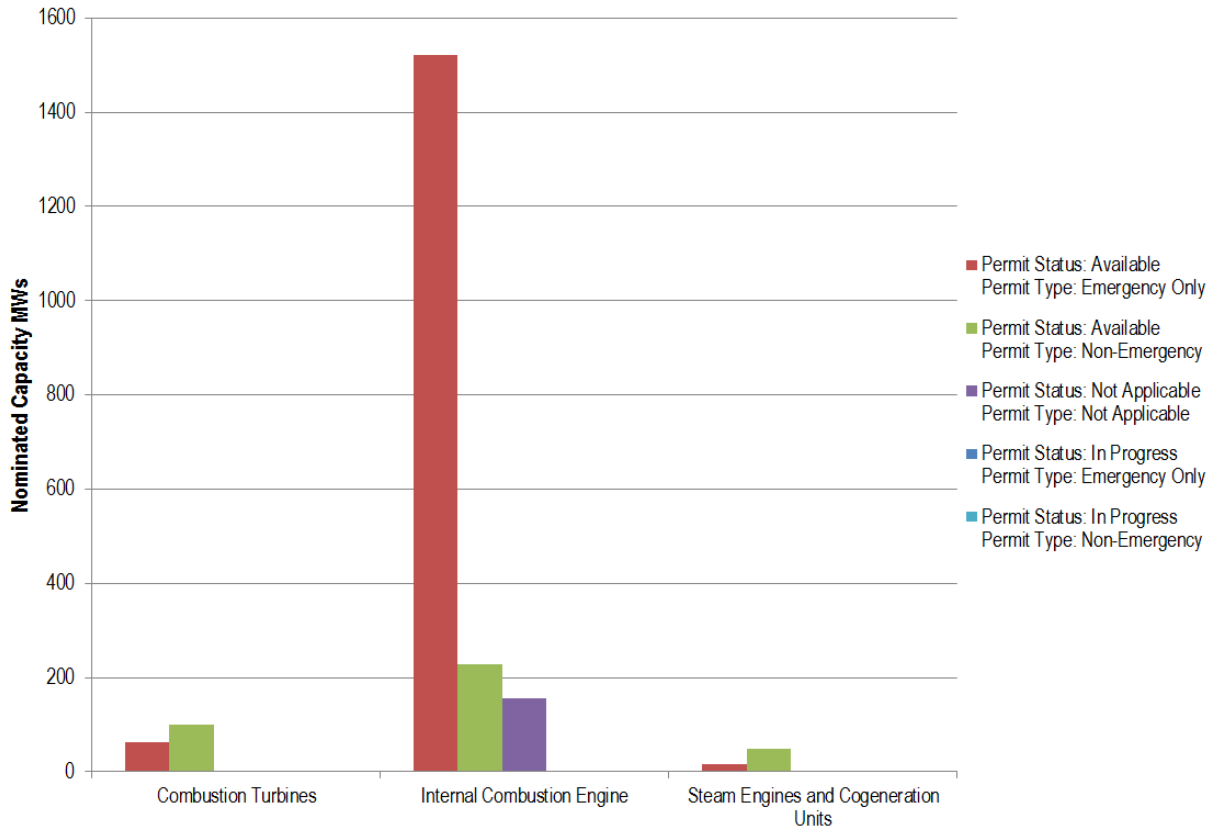


Figure 8: DY 14/15 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation

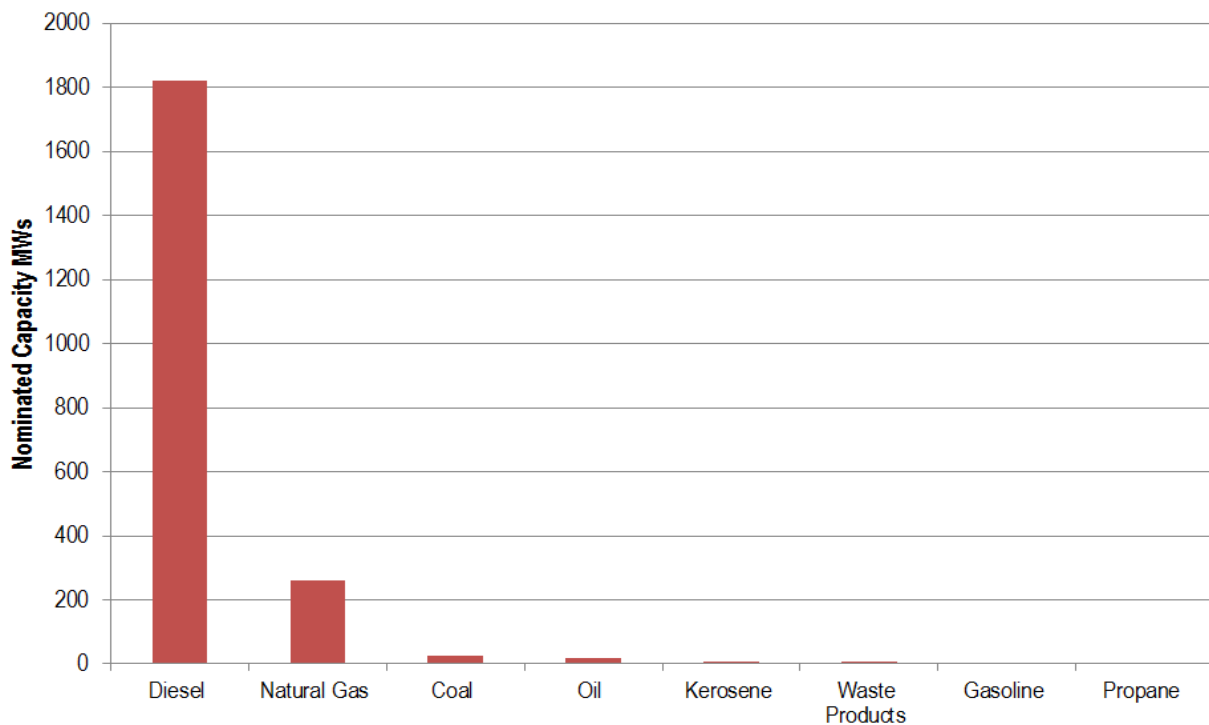


Figure 9: DY 14/15 Confirmed Load Management Full DR Registrations Energy Supply Curve:

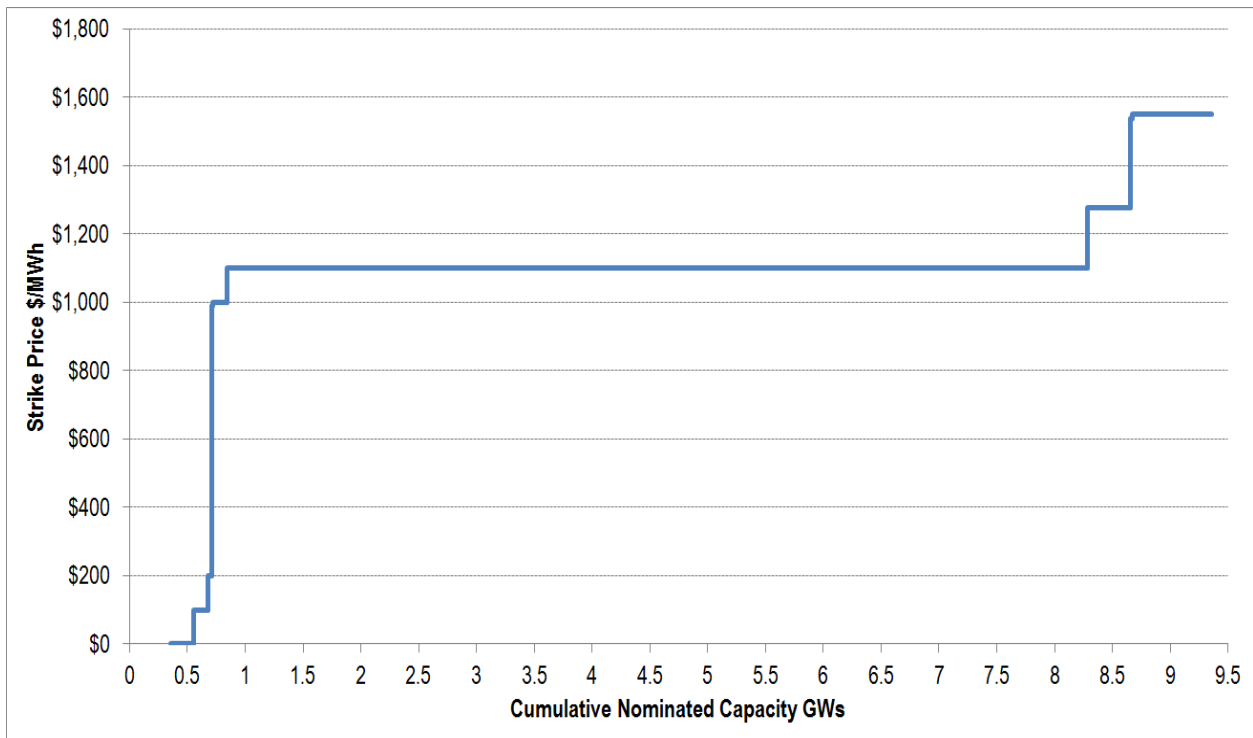
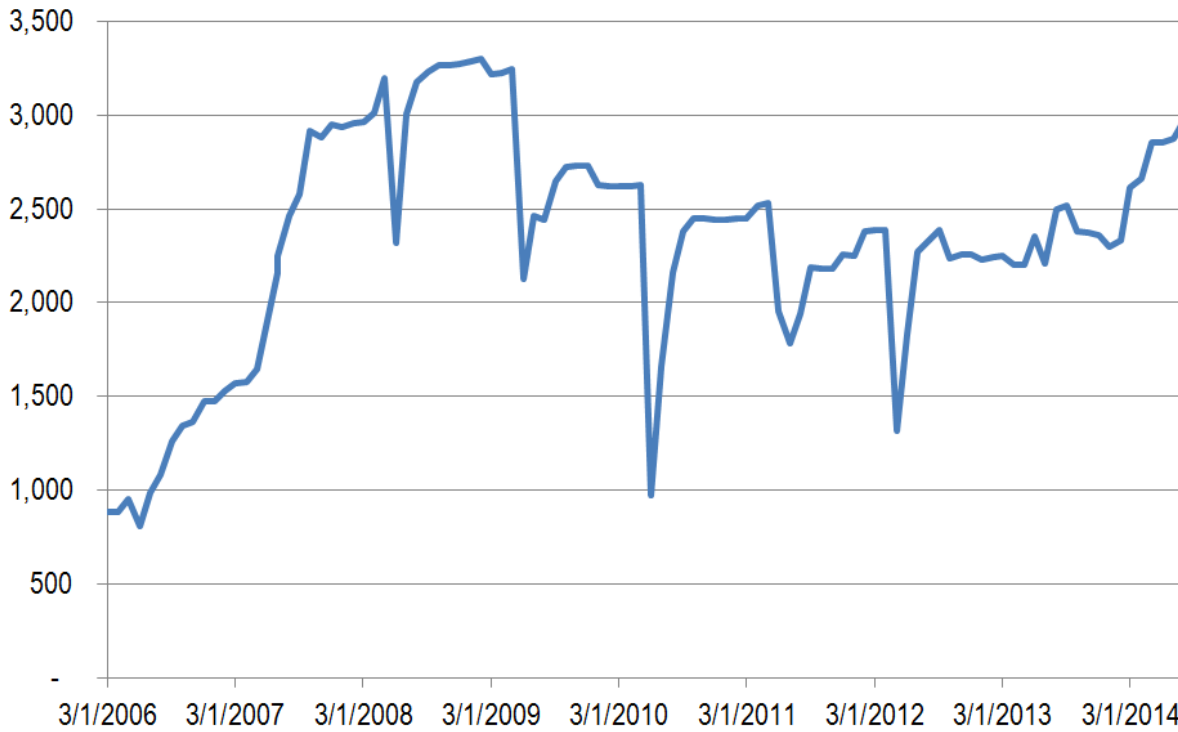


Figure 10: PJM Economic Demand Response Capability in Ancillary Service Markets (2014):

Synch Reserves	Zone	Jan	Feb	Mar	Apr	May	June	July
Locations	RFC MAD	146	146	142	141	142	128	130
	RFC Non-MAD							
	RTO	146	146	142	141	142	128	130
Average Number of Unique Participating Locations per Month:						139		
MWs	RFC MAD	360.6	360.6	360.1	351.6	360.1	329.2	317.7
	RFC Non-MAD							
	RTO	360.6	360.6	360.1	351.6	360.1	329.2	317.7
Average MWs per Month:				349				
Regulation	Zone	Jan	Feb	Mar	Apr	May	June	July
Locations	RTO	176	176	176	176	181	181	179
Average Number of Unique Participating Locations per Month:						178		
MWs	RTO	8.0	8.0	8.0	7.4	10.1	10.1	9.8
Average MWs per Month:				8.8				

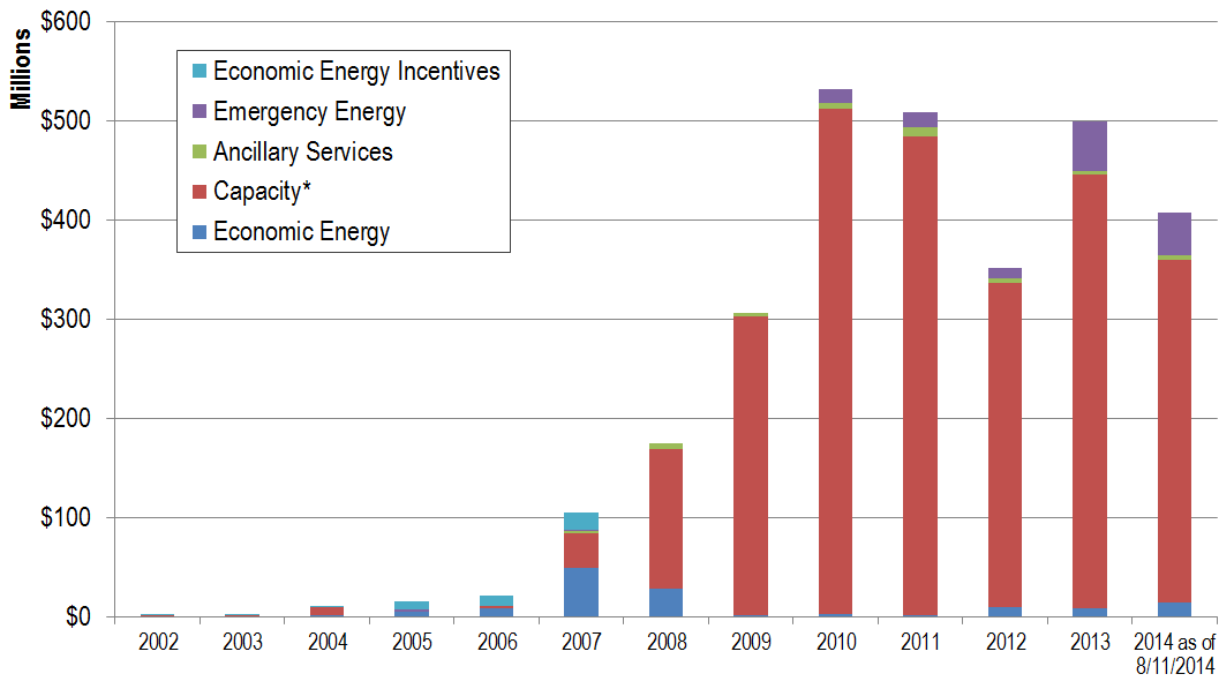
Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report.

Figure 11: PJM Economic Demand Response Capability in Energy Market (3/1/2006-8/10/2014)



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	June	July
DE	DPL	1						
IL	COMED	11	6	5	2	2	5	2
IN	AEP			1				
MD	BGE	45	45	44				
NJ	JCPL	1	2	1			1	
	PSEG	8	6	6	5	4	2	2
OH	AEP	2	1	1			1	
	ATSI		2	1				
	DEOK	1		1				
PA	APS	3	2	2				1
	METED	6	1	4	1		5	1
	PECO	13	6	6	2	3	5	2
	PENELEC	3	3	3	2	3		
VA	PPL	12	4	5	1	2	1	
	AEP	1						
WV	DOM	12	8	7	7	8	5	4
	APS		1	1	1	1		
Total		119	87	88	21	23	25	12

Average Unique Participating Registrations per Month: 54

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

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL	1						
IL	COMED	1						
IN	AEP							
MD	BGE							
NJ	JCPL	1	1	1			1	
	PSEG	4	3	4	3	3	2	2
OH	AEP	1	1	1			1	
	ATSI		1	1				
	DEOK							
PA	APS	1	1	1				1
	METED						1	
	PECO						1	
	PENELEC		1	1	1	1		
VA	PPL	8	3	4		1		
	AEP							
WV	DOM	1	1			1		
	APS							
Total		18	12	13	4	6	6	3

Average Unique Participating Registrations per Month (Day-Ahead): 9

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

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL							
IL	COMED	10	6	5	2	2	5	2
IN	AEP			1				
MD	BGE	45	45	44				
NJ	JCPL		1					
	PSEG	4	3	2	2	1		
OH	AEP	1						
	ATSI		1					
	DEOK	1		1				
PA	APS	2	1	1				
	METED	6	1	4	1		4	1
	PECO	13	6	6	2	3	4	2
	PENELEC	3	2	2	1	2		
	PPL	4	1	1	1	1	1	
VA	AEP	1						
	DOM	11	7	7	7	7	5	4
WV	APS		1	1	1	1		
Total		101	75	75	17	17	19	9

Average Unique Participating Registrations per Month (Real-Time): 45

Figure 16: 2014 Economic Demand Response Monthly MWh Reductions

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL	617						
IL	COMED	1,051	1,327	1,051	238	114	328	137
IN	AEP			60				
MD	BGE	291	294	239				
NJ	JCPL	3,266	1,260	967			228	
	PSEG	1,393	921	701	698	1,171	945	41
OH	AEP	18	28	42			1	
	ATSI		273	247				
	DEOK	1,446		206				
PA	APS	343	1,006	371				525
	METED	30	24	3	1		52	1
	PECO	445	914	162	94	73	18	15
	PENELEC	161	658	250	866	412		
	PPL	2,475	1,276	1,709	2	108	0	
VA	AEP	71						
	DOM	14,113	6,851	11,239	5,707	6,563	78	24
WV	APS		76	319	123	179		
Total		25,722	14,908	17,566	7,729	8,620	1,651	743

Total MWh: 76,938

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

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL	617						
IL	COMED	1						
IN	AEP							
MD	BGE							
NJ	JCPL	3,266	1,285	967			228	
	PSEG	711	459	553	562	1,171	945	41
OH	AEP	16	28	42			1	
	ATSI		273	247				
	DEOK							
PA	APS	325	1,006	295				525
	METED						0	
	PECO						-10	
	PENELEC		100	81	866	412		
	PPL	2,474	1,274	1,692		108		
VA	AEP							
	DOM	2,935	2,480			1,001		
WV	APS							
Total		10,344	6,904	3,878	1,428	2,692	1,164	565

Total Day-Ahead MWh: 26,976

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

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL							
IL	COMED	1,050	1,327	1,051	238	114	328	137
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		52	1
	PECO	445	914	162	94	73	28	15
	PENELEC	161	558	169				
	PPL	1	2	17	2	0	0	
VA	AEP	71						
	DOM	11,178	4,371	11,239	5,707	5,562	78	24
WV	APS		76	319	123	179		
Total		15,378	8,003	13,689	6,300	5,928	487	177

Total Real-Time MWh: 49,962

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

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL	\$195,717						
IL	COMED	\$107,346	\$101,600	\$98,794	\$10,413	\$8,083	\$20,326	\$5,731
IN	AEP			\$9,446				
MD	BGE	\$102,969	\$53,661	\$72,634				
NJ	JCPL	\$1,533,967	\$245,299	\$249,271			\$17,413	
	PSEG	\$421,559	\$119,563	\$95,640	\$41,070	\$58,224	\$52,308	\$4,177
OH	AEP	\$3,205	\$2,345	\$3,610			\$115	
	ATSI		\$29,304	\$44,746				
	DEOK	\$434,252		\$6,624				
PA	APS	\$69,004	\$120,390	\$24,194				\$27,780
	METED	\$6,446	\$1,566	\$1,207	\$55		\$3,363	\$95
	PECO	\$45,449	\$116,251	\$17,758	\$4,860	\$3,728	\$1,637	\$1,141
	PENELEC	\$17,214	\$44,677	\$23,178	\$44,558	\$24,617		
	PPL	\$1,057,653	\$162,695	\$265,538	\$111	\$6,143	\$30	
VA	AEP	\$7,111						
	DOM	\$3,687,939	\$907,262	\$2,190,341	\$244,786	\$537,276	\$4,635	\$1,204
WV	APS		\$4,032	\$25,932	\$5,060	\$12,593		
Total		\$7,689,831	\$1,908,644	\$3,128,912	\$350,913	\$650,665	\$99,826	\$40,127
Total CSP Credits:			\$13,868,919					

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

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL	\$195,717						
IL	COMED	\$34						
IN	AEP							
MD	BGE							
NJ	JCPL	\$1,533,967	\$247,539	\$249,271			\$17,413	
	PSEG	\$272,291	\$68,498	\$83,742	\$33,268	\$58,224	\$52,308	\$4,177
OH	AEP	\$1,936	\$2,345	\$3,610			\$115	
	ATSI		\$29,304	\$44,746				
	DEOK							
PA	APS	\$65,087	\$120,390	\$18,147				\$27,780
	METED						(\$83)	
	PECO						(\$611)	
	PENELEC		\$8,267	\$11,892	\$44,558	\$24,617		
	PPL	\$1,057,078	\$162,481	\$264,673		\$6,130		
VA	AEP							
	DOM	\$547,661	\$403,390			\$53,715		
WV	APS							
Total		\$3,673,770	\$1,042,215	\$676,081	\$77,826	\$142,686	\$69,143	\$31,956
Total Day-Ahead CSP Credits:			\$5,713,677					

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

State	Zone	Jan	Feb	Mar	Apr	May	June	July
DE	DPL							
IL	COMED	\$107,312	\$101,600	\$98,794	\$10,413	\$8,083	\$20,326	\$5,731
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		\$3,446	\$95
	PECO	\$45,449	\$116,251	\$17,758	\$4,860	\$3,728	\$2,248	\$1,141
	PENELEC	\$17,214	\$36,409	\$11,286				
	PPL	\$575	\$213	\$865	\$111	\$13	\$30	
VA	AEP	\$7,111						
	DOM	\$3,140,277	\$503,872	\$2,190,341	\$244,786	\$483,561	\$4,635	\$1,204
WV	APS		\$4,032	\$25,932	\$5,060	\$12,593		
Total		\$4,016,061	\$866,429	\$2,452,832	\$273,087	\$507,979	\$30,683	\$8,171
Total Real-Time CSP Credits:		\$8,155,243						

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

Zone	Jan	Feb	Mar	Apr	May	June	July
AECO	\$88,849	\$21,811	\$36,352	\$4,216	\$6,575	\$1,335.46	\$706.26
AEP	\$1,288,028	\$312,328	\$490,612	\$55,153	\$105,762	\$14,978.15	\$5,372.96
APS	\$499,405	\$121,446	\$194,455	\$20,964	\$38,630	\$5,657.50	\$2,351.15
ATSI	\$610,444	\$155,457	\$248,281	\$30,829	\$57,728	\$8,470.21	\$3,189.81
BGE	\$337,180	\$79,554	\$130,350	\$14,007	\$28,830	\$4,462.79	\$1,928.76
COMED	\$751,755	\$204,212	\$329,208	\$35,592	\$77,758	\$12,214.35	\$2,982.95
DAY	\$163,420	\$40,896	\$62,819	\$7,580	\$14,810	\$2,139.36	\$713.94
DEOK	\$248,210	\$62,898	\$93,801	\$10,662	\$23,030	\$3,345.97	\$1,107.71
DOM	\$1,022,195	\$236,410	\$393,303	\$40,645	\$91,199	\$12,888.36	\$5,378.31
DPL	\$199,246	\$46,459	\$75,679	\$7,990	\$12,526	\$2,260.54	\$1,137.04
DUQ	\$125,656	\$24,946	\$49,291	\$5,212	\$12,433	\$1,788.85	\$702.07
EKPC	\$157,012	\$34,851	\$52,705	\$4,838	\$9,578	\$1,398.38	\$468.40
JCPL	\$201,012	\$50,017	\$81,694	\$8,870	\$15,532	\$3,047.63	\$1,631.83
METED	\$147,610	\$36,986	\$60,434	\$6,656	\$9,572	\$1,710.96	\$820.95
PECO	\$375,321	\$92,690	\$150,894	\$17,175	\$26,901	\$4,756.23	\$2,534.01
PENELEC	\$164,182	\$42,050	\$68,023	\$8,248	\$14,718	\$1,913.30	\$831.74
PEPCO	\$313,847	\$73,684	\$119,799	\$13,360	\$28,608	\$4,352.73	\$1,810.14
PPL	\$421,193	\$104,335	\$167,056	\$18,205	\$26,241	\$4,353.69	\$2,071.54
PSEG	\$368,492	\$92,173	\$150,738	\$18,849	\$30,794	\$5,473.04	\$2,943.13
RECO	\$12,189	\$3,050	\$5,037	\$658	\$1,098	\$216.25	\$99.96
Exports	\$199,734	\$72,391	\$168,380	\$21,206	\$18,342	\$3,061.97	\$1,344.49
TOTAL	\$7,694,978	\$1,908,644	\$3,128,912	\$350,913	\$650,665	\$99,826	\$40,127
Total Zonal Charges:					\$13,874,066		

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

Zone	Jan	Feb	Mar	Apr	May	June	July
AECO	\$41,762	\$13,174	\$8,862	\$819	\$1,507	\$833.94	\$592.22
AEP	\$600,578	\$188,978	\$119,190	\$10,368	\$24,806	\$9,176.65	\$4,387.26
APS	\$234,853	\$73,518	\$47,353	\$3,892	\$9,054	\$3,476.57	\$1,964.20
ATSI	\$287,944	\$93,523	\$60,568	\$5,927	\$14,880	\$5,258.94	\$2,661.51
BGE	\$157,923	\$48,047	\$31,921	\$2,675	\$6,574	\$2,766.55	\$1,612.47
COMED	\$334,108	\$121,509	\$81,405	\$7,299	\$18,077	\$7,658.41	\$2,151.55
DAY	\$75,752	\$24,825	\$15,326	\$1,449	\$3,685	\$1,311.43	\$583.64
DEOK	\$112,731	\$38,196	\$22,579	\$2,037	\$5,190	\$2,040.35	\$891.53
DOM	\$477,844	\$144,419	\$95,282	\$7,528	\$19,064	\$7,898.62	\$4,478.80
DPL	\$93,491	\$28,069	\$18,435	\$1,514	\$2,866	\$1,420.02	\$954.58
DUQ	\$59,691	\$13,551	\$12,048	\$969	\$2,978	\$1,088.43	\$585.61
EKPC	\$72,122	\$21,331	\$12,596	\$848	\$2,132	\$846.93	\$370.95
JCPL	\$94,619	\$30,358	\$19,952	\$1,767	\$3,565	\$1,896.78	\$1,370.13
METED	\$69,258	\$22,377	\$14,782	\$1,256	\$2,296	\$1,062.93	\$687.90
PECO	\$176,174	\$56,149	\$36,890	\$3,383	\$6,121	\$2,962.53	\$2,140.66
PENELEC	\$77,025	\$25,389	\$16,828	\$1,571	\$4,468	\$1,221.51	\$692.42
PEPCO	\$147,707	\$44,627	\$29,325	\$2,557	\$5,871	\$2,685.03	\$1,510.56
PPL	\$197,322	\$63,111	\$40,742	\$3,447	\$6,002	\$2,700.94	\$1,737.63
PSEG	\$173,359	\$55,809	\$37,272	\$3,985	\$7,069	\$3,405.77	\$2,488.51
RECO	\$5,676	\$1,841	\$1,248	\$140	\$248	\$133.86	\$82.71
Exports	\$90,472	\$39,254	\$39,621	\$4,565	\$5,508	\$1,936.98	\$1,140.27
TOTAL	\$3,580,411	\$1,148,053	\$762,224	\$67,996	\$151,962	\$61,783	\$33,085

Total Day-Ahead Zonal Charges: \$5,805,514

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

Zone	Jan	Feb	Mar	Apr	May	June	July
AECO	\$47,088	\$8,637	\$27,490	\$3,397	\$5,068	\$501.52	\$114.03
AEP	\$687,449	\$123,351	\$371,422	\$44,785	\$80,956	\$5,801.50	\$985.70
APS	\$264,553	\$47,928	\$147,102	\$17,072	\$29,576	\$2,180.92	\$386.95
ATSI	\$322,500	\$61,935	\$187,714	\$24,903	\$42,848	\$3,211.28	\$528.30
BGE	\$179,258	\$31,508	\$98,429	\$11,332	\$22,256	\$1,696.23	\$316.29
COMED	\$417,646	\$82,703	\$247,803	\$28,292	\$59,681	\$4,555.94	\$831.40
DAY	\$87,668	\$16,072	\$47,493	\$6,131	\$11,125	\$827.93	\$130.29
DEOK	\$135,478	\$24,702	\$71,222	\$8,625	\$17,840	\$1,305.63	\$216.18
DOM	\$544,352	\$91,990	\$298,020	\$33,118	\$72,135	\$4,989.74	\$899.51
DPL	\$105,754	\$18,390	\$57,244	\$6,476	\$9,660	\$840.52	\$182.46
DUQ	\$65,966	\$11,395	\$37,243	\$4,243	\$9,455	\$700.42	\$116.46
EKPC	\$84,890	\$13,520	\$40,109	\$3,990	\$7,446	\$551.44	\$97.44
JCPL	\$106,392	\$19,659	\$61,742	\$7,104	\$11,966	\$1,150.85	\$261.70
METED	\$78,351	\$14,609	\$45,652	\$5,399	\$7,275	\$648.03	\$133.05
PECO	\$199,147	\$36,541	\$114,004	\$13,792	\$20,780	\$1,793.70	\$393.36
PENELEC	\$87,157	\$16,661	\$51,195	\$6,678	\$10,249	\$691.80	\$139.32
PEPCO	\$166,140	\$29,057	\$90,474	\$10,803	\$22,737	\$1,667.70	\$299.58
PPL	\$223,871	\$41,224	\$126,314	\$14,758	\$20,239	\$1,652.75	\$333.90
PSEG	\$195,133	\$36,364	\$113,466	\$14,864	\$23,725	\$2,067.27	\$454.62
RECO	\$6,512	\$1,209	\$3,789	\$518	\$850	\$82.38	\$17.25
Exports	\$109,263	\$33,137	\$128,759	\$16,641	\$12,834	\$1,124.99	\$204.22
TOTAL	\$4,114,567	\$760,591	\$2,366,688	\$282,918	\$498,703	\$38,043	\$7,042

Total Real-Time Zonal Charges: \$8,068,552

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

Zone	Jan	Feb	Mar	Apr	May	June	July
AECO	\$1,035,717	\$935,486	\$1,035,717	\$1,002,307	\$1,035,717	\$805,435	\$832,282
AEP	\$774,652	\$699,686	\$774,652	\$749,663	\$774,652	\$6,193,547	\$6,399,998
APS	\$493,260	\$445,525	\$493,260	\$477,348	\$493,260	\$3,380,132	\$3,492,803
ATSI	\$377,750	\$341,193	\$377,750	\$365,564	\$377,750	\$3,717,155	\$3,841,060
BGE	\$7,736,807	\$6,988,083	\$7,736,807	\$7,487,232	\$7,736,807	\$5,140,527	\$5,311,878
COMED	\$808,185	\$729,973	\$808,185	\$782,114	\$808,185	\$5,846,358	\$6,041,237
DAY	\$44,278	\$39,993	\$44,278	\$42,849	\$44,278	\$872,987	\$902,087
DEOK	\$16,653	\$15,041	\$16,653	\$16,115	\$16,653	\$330,654	\$341,676
DOM	\$605,391	\$546,805	\$605,391	\$585,863	\$605,391	\$5,165,946	\$5,338,145
DPL	\$1,979,013	\$1,787,496	\$1,979,013	\$1,915,174	\$1,979,013	\$1,542,580	\$1,593,999
DUQ	\$148,045	\$133,718	\$148,045	\$143,269	\$148,045	\$840,774	\$868,800
EKPC	\$1,544	\$1,395	\$1,544	\$1,495	\$1,544	\$9,900	\$10,230
JCPL	\$2,288,883	\$2,067,378	\$2,288,883	\$2,215,048	\$2,288,883	\$1,709,946	\$1,766,944
METED	\$2,246,581	\$2,029,170	\$2,246,581	\$2,174,111	\$2,246,581	\$1,558,377	\$1,610,323
PECO	\$5,314,219	\$4,799,939	\$5,314,219	\$5,142,792	\$5,314,219	\$3,249,878	\$3,358,207
PENELEC	\$2,980,723	\$2,692,266	\$2,980,723	\$2,884,571	\$2,980,723	\$1,675,004	\$1,730,838
PEPCO	\$4,229,396	\$3,820,100	\$4,229,396	\$4,092,964	\$4,229,396	\$3,467,834	\$3,583,429
PPL	\$7,253,736	\$6,551,762	\$7,253,736	\$7,019,745	\$7,253,736	\$5,215,729	\$5,389,586
PSEG	\$8,859,978	\$8,002,561	\$8,859,978	\$8,574,172	\$8,859,978	\$5,460,187	\$5,642,193
RECO	\$257,721	\$232,781	\$257,721	\$249,408	\$257,721	\$118,962	\$122,927
Total	\$47,452,531	\$42,860,351	\$47,452,531	\$45,921,805	\$47,452,531	\$56,301,913	\$58,178,643

Total Capacity Credits: **\$345,620,305**

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

Year	Month	CSPs		Zone		Registrations			MWh			Registration Hours		
		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	2,342	100%
2014	4	3	3	8	8	17	17	100%	6,081	6,300	104%	776	776	100%
2014	5	3	3	7	7	17	17	100%	6,398	5,928	93%	803	696	87%
2014	6	3	1	8	5	40	19	48%	4,301	487	11%	982	516	53%
2014	7	5	1	10	4	36	9	25%	9,363	177	2%	1,195	254	21%
2014	8	3		6		15			1,654			276		
2014	9													
2014	10													
2014	11													
2014	12													
YTD Totals						379	314	83%	69,388	49,962	72%	11,828	10,035	85%
YTD Average		5	4	9	8									

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

Year	Month	CSPs		Zone		Registrations			MWh			Registration Hours		
		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	3,878	82%	817	817	100%
2014	4	2	2	2	2	4	4	100%	1,279	1,428	112%	388	388	100%
2014	5	4	4	4	4	6	6	100%	2,883	2,692	93%	580	580	100%
2014	6	7	4	9	5	12	6	50%	3,951	1,164	29%	770	383	50%
2014	7	8	2	8	2	14	3	21%	7,500	565	8%	1,072	87	8%
2014	8	3		3		6			1,072			114		
2014	9													
2014	10													
2014	11													
2014	12													
YTD Totals						85	62	73%	39,553	26,976	68%	5,728	4,242	74%
YTD Average		6	5	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)

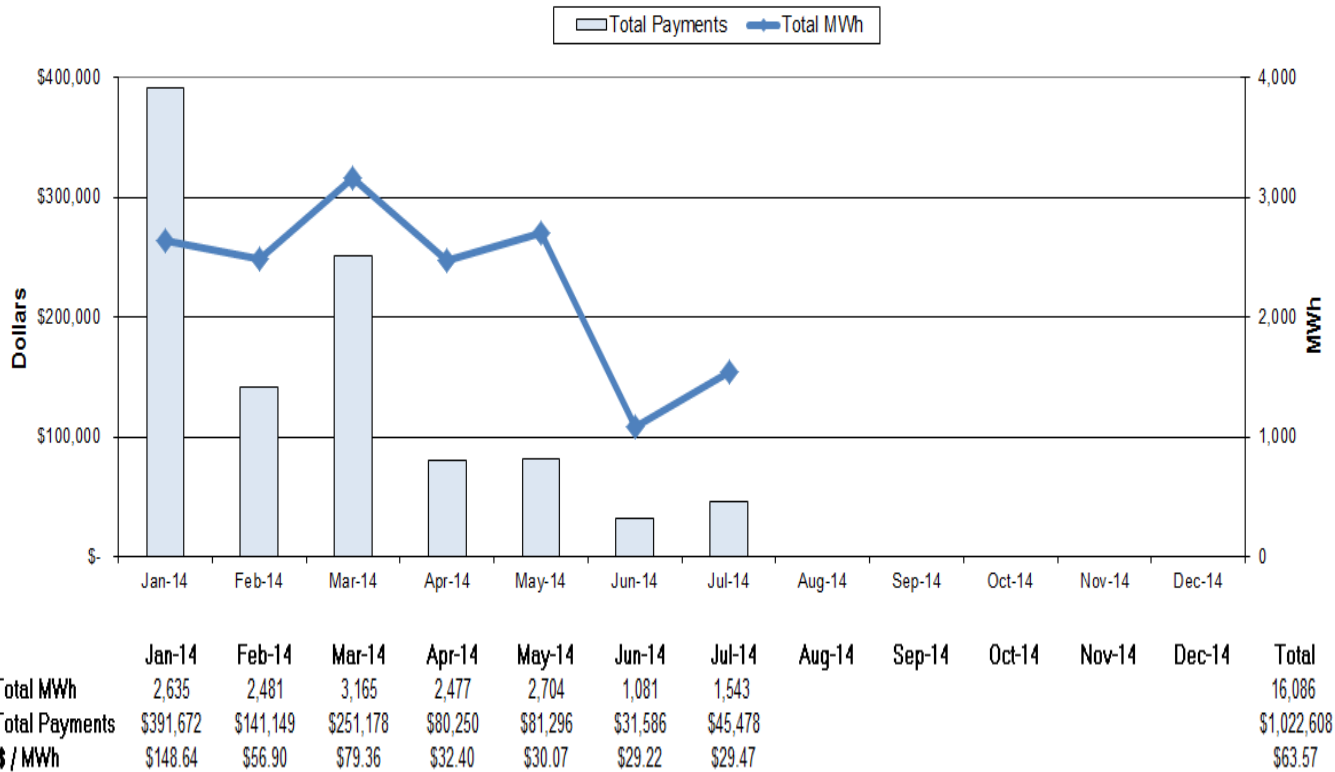
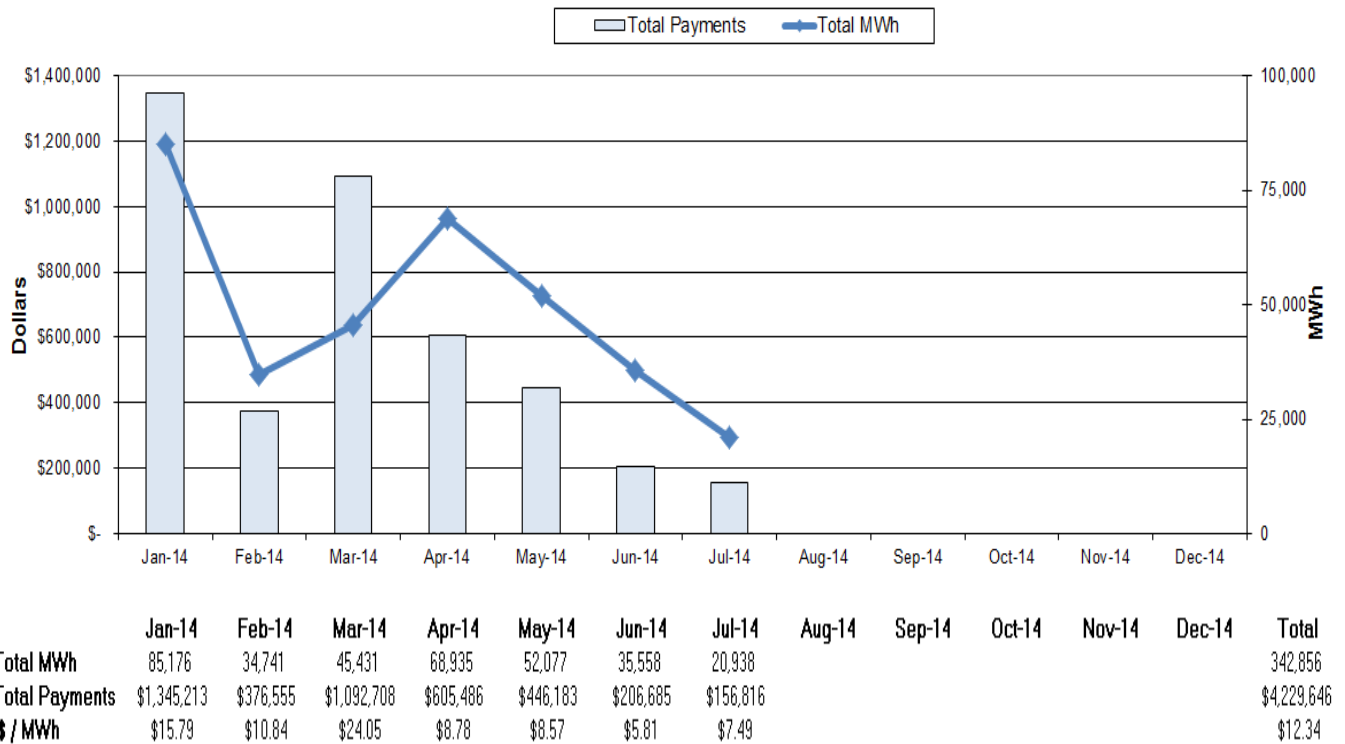
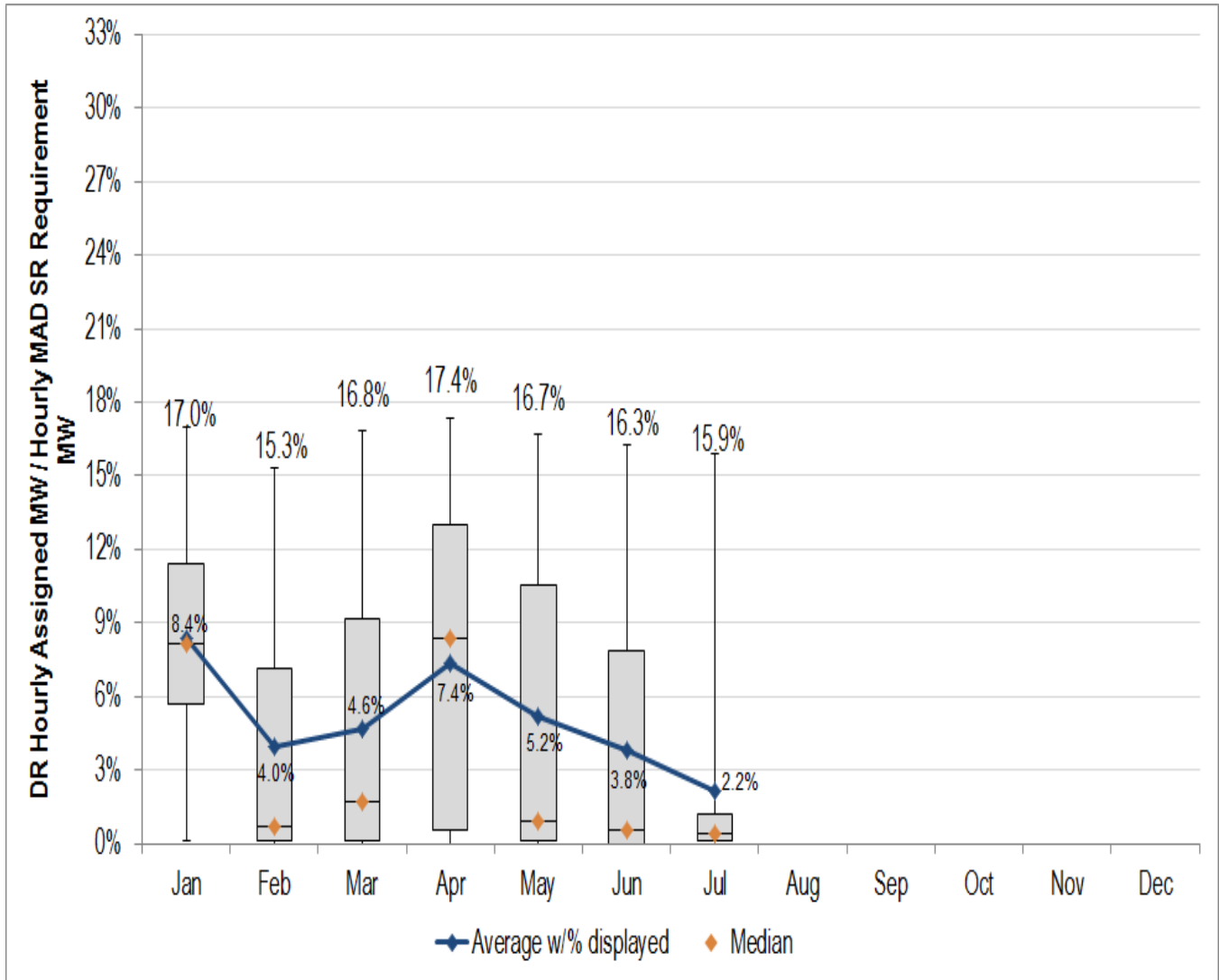


Figure 29: Economic Demand Response Synchronous Reserve Market Participation (2014)



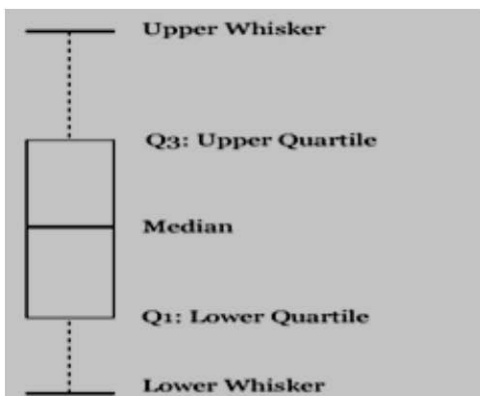
Note: For Figures 28 and 29 above, MWh=sum of the settled MW. Example: 1 MW load available for 12 hours = 12 MWh.

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