

2013 Demand Response Operations Markets Activity Report: April 2014

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PJM Demand Side Response Operations

April 18, 2014



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Figure 1: Delivery Year 13/14 Active Participants in PJM Economic and Emergency DR Programs

State	Zone	EDC	Economic Program		Emergency Energy		Emergency DR		Emergency		
			Locations	MW	Locations	MW	Locations	MW	MW	Locations	MW
DC	PEPCO	PEPCO	20	19.2			237	76.4	76.4	238	76.7
DE	DPL	DEMEC	3	6.3			27	17.0	17.0	27	17.0
DE	DPL	DOVDE					6	2.8	2.8	6	2.8
DE	DPL	DPL	10	80.2			272	125.4	125.4	275	154.7
DE	DPL	ODEC					11	2.4	2.4	11	2.4
IL	COMED	COMED	687	409.8			1691	857.4	857.4	2321	1125.6
IL	COMED	IMEAA1					2	49.4	49.4	2	49.4
IN	AEP	AEPSCT	1	190.8			70	297.2	297.2	70	297.2
IN	AEP	HEREC	1	2.5			1	20.7	20.7	1	20.7
IN	AEP	WVSDI					1	18.0	18.0	1	18.0
KY	DEOK	DEK					68	36.5	36.5	68	36.5
KY	EKPC	EKPC					11	110.3	110.3	11	110.3
MD	APS	AETSAP	42	15.7			174	90.1	90.1	175	90.2
MD	APS	AETSTH					2	0.4	0.4	2	0.4
MD	APS	ODEC					1	0.1		1	0.0
MD	BGE	BC	122	296.5			958	720.6	720.6	989	771.4
MD	DPL	DPL	3	29.3			239	82.0	82.0	239	82.0
MD	DPL	EASTON					8	2.7	2.7	8	2.7
MD	DPL	ODEC	1	0.5			37	10.8	10.8	37	10.8
MD	PEPCO	PEPCO	14	173.6			354	296.8	296.8	360	297.2
MD	PEPCO	SMECO	5	0.4			121	53.6	53.6	121	53.6
MI	AEP	AEPSCT					3	2.3	2.3	3	2.3
NC	DOM	DOMEDC	1	37.0					0.0	1	37.0
NJ	AECO	AE	10	40.4			243	100.3	100.3	243	100.3
NJ	AECO	VMEU	1	0.2			26	7.4	7.4	26	7.4
NJ	JCPL	AECI					1	0.2	0.2	1	0.2
NJ	JCPL	JCBGS	14	54.8			491	174.6	174.6	492	219.6
NJ	PSEG	PSEG	55	67.8			1169	396.2	396.2	1175	428.9
NJ	RECO	RECO					19	5.5	5.5	19	5.5
NY	PENELEC	PaElec					2	1.8	1.8	2	1.8
OH	AEP	AEPCCL					8	10.5	10.5	8	10.5
OH	AEP	AEPSCT	26	116.0			758	599.1	599.1	761	638.6
OH	AEP	AMPO					15	34.6	34.6	15	34.6
OH	AEP	BUCK					4	36.4	36.4	4	36.4
OH	ATSI	AMPO					5	11.6	11.6	5	11.6
OH	ATSI	BUCK					1	4.4	4.4	1	4.4
OH	ATSI	CPP					15	33.2	33.2	15	33.2
OH	ATSI	OEEDC	13	134.6	1	0.2	720	663.7	663.9	724	722.0
OH	DAY	AMPO					2	2.0	2.0	2	2.0
OH	DAY	BUCK					1	3.4	3.4	1	3.4

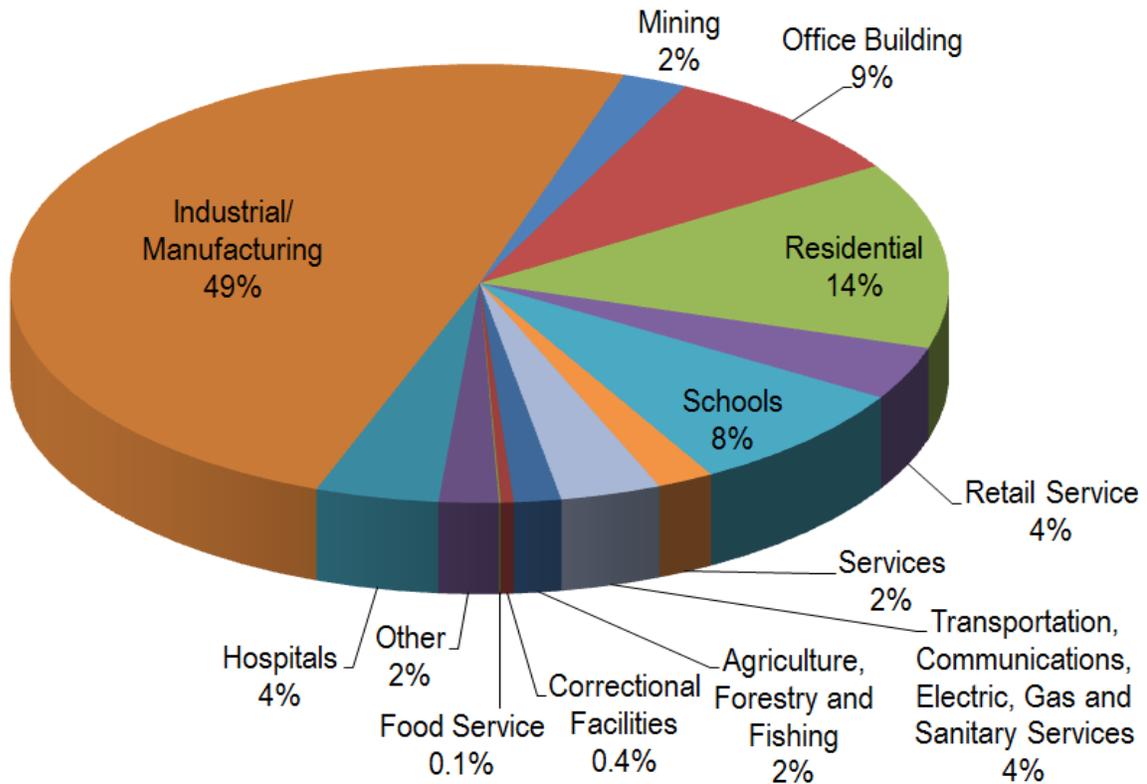


OH	DAY	DAYEDC	8	15.5			160	80.2	80.2	161	91.2
OH	DEOK	AMPO					1	27.5	27.5	1	27.5
OH	DEOK	DEOHIO	4	51.1	1	7.1	332	260.2	267.3	335	318.3
PA	APS	AECI					5	2.2	2.2	5	2.2
PA	APS	AETSAP	13	89.5			581	340.1	340.1	585	347.7
PA	APS	CHBDTE					1	0.4	0.4	1	0.4
PA	ATSI	PAPWR	1	0.1			67	45.5	45.5	67	45.5
PA	DUQ	DLCO	4	18.5	1	2.0	283	93.6	95.6	285	110.6
PA	METED	AECI					1	1.6	1.6	1	1.6
PA	METED	MetEd	33	46.7			484	204.6	204.6	487	209.6
PA	PECO	PE	196	149.6			1505	440.2	440.2	1530	504.9
PA	PENELEC	AECI					19	9.6	9.6	19	9.6
PA	PENELEC	PaElec	5	12.3			590	290.9	290.9	591	298.9
PA	PENELEC	WELLSB					2	1.1	1.1	2	1.1
PA	PPL	AMPO					15	2.7	2.7	15	2.7
PA	PPL	CTZECL					8	2.5	2.5	8	2.5
PA	PPL	PPL	188	266.0			1436	678.6	678.6	1444	728.6
PA	PPL	UGI-UI					17	7.7	7.7	17	7.7
TN	AEP	AEPSCT	1	30.0			10	13.4	13.4	11	43.4
VA	AEP	AEPSCT	5	19.1			214	224.0	224.0	215	224.1
VA	AEP	AMPO					2	1.9	1.9	2	1.9
VA	APS	AMPO					3	1.1	1.1	3	1.1
VA	APS	ODEC					36	25.7	25.7	36	25.7
VA	DOM	CVEC					4	1.0	1.0	4	1.0
VA	DOM	DOMEDC	41	81.7			854	614.8	614.8	865	660.5
VA	DOM	DOMVME					21	78.1	78.1	21	78.1
VA	DOM	NVEC	4	30.2			11	16.1	16.1	13	30.7
VA	DOM	ODEC	2	22.9			33	88.4	88.4	33	88.4
VA	DPL	ODEC					9	2.3	2.3	9	2.3
WV	AEP	AEPSCT	4	88.5			315	305.5	305.5	317	320.0
WV	AEP	APWVP					4	0.6	0.6	4	0.6
WV	APS	AETSAP	4	62.4			267	146.9	146.9	270	193.7
Total			1,542	2,660	3	9	15,064	8,967	8,976	15,818	9,901

Note:

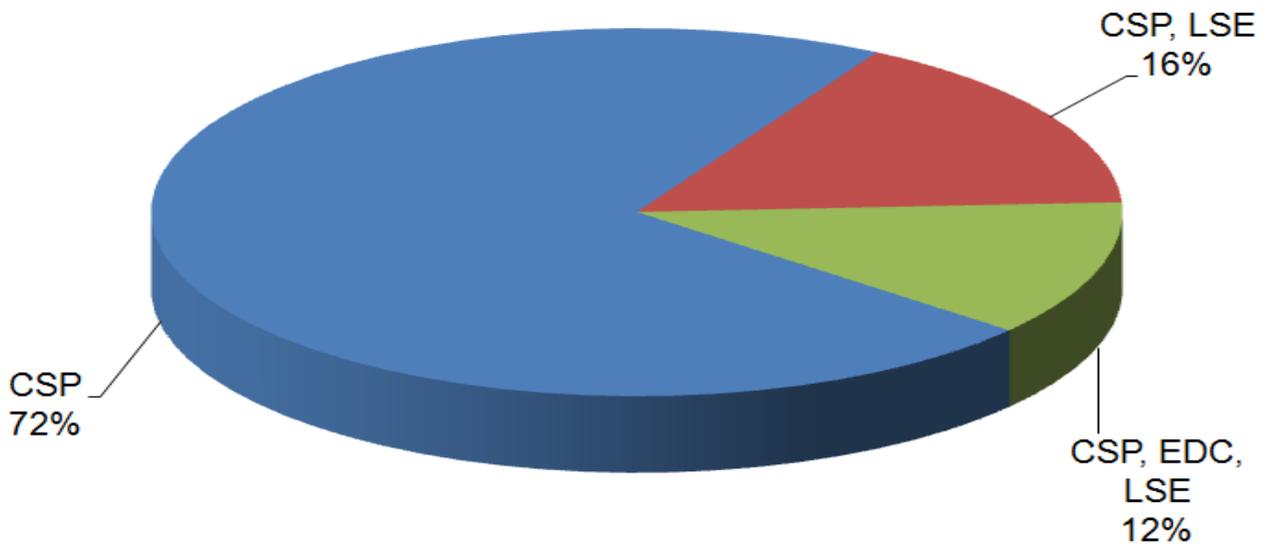
- 1) Data as of 04/10/2014.
- 2) Emergency MW are in ICAP.
- 3) Economic MW are CSP reported Load Reduction values.
- 4) Residential Direct Load Control (DLC) reported as one location not a total number of end use customers in that program.
- 5) Unique MW: represents total estimated demand reduction assuming full DR compliance and economic reductions.

Figure 2: Business Segments for Confirmed Emergency DR Registrations for DY 13/14



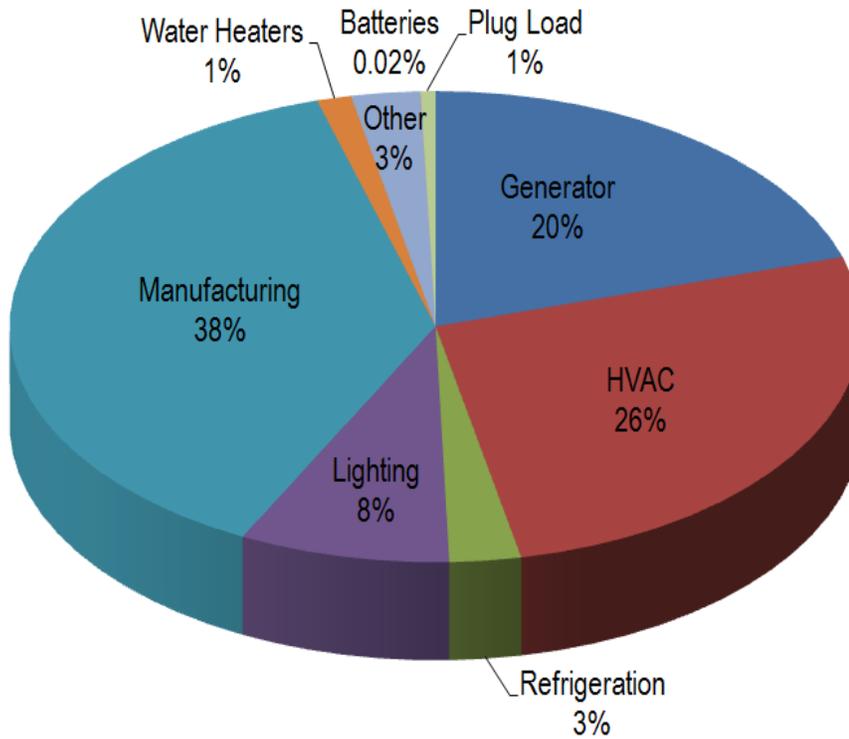
Note: Percent of Nominated Capacity (MWs)

Figure 3: Breakout of Owner/Company Type for Confirmed Emergency DR Registrations for DY 13/14



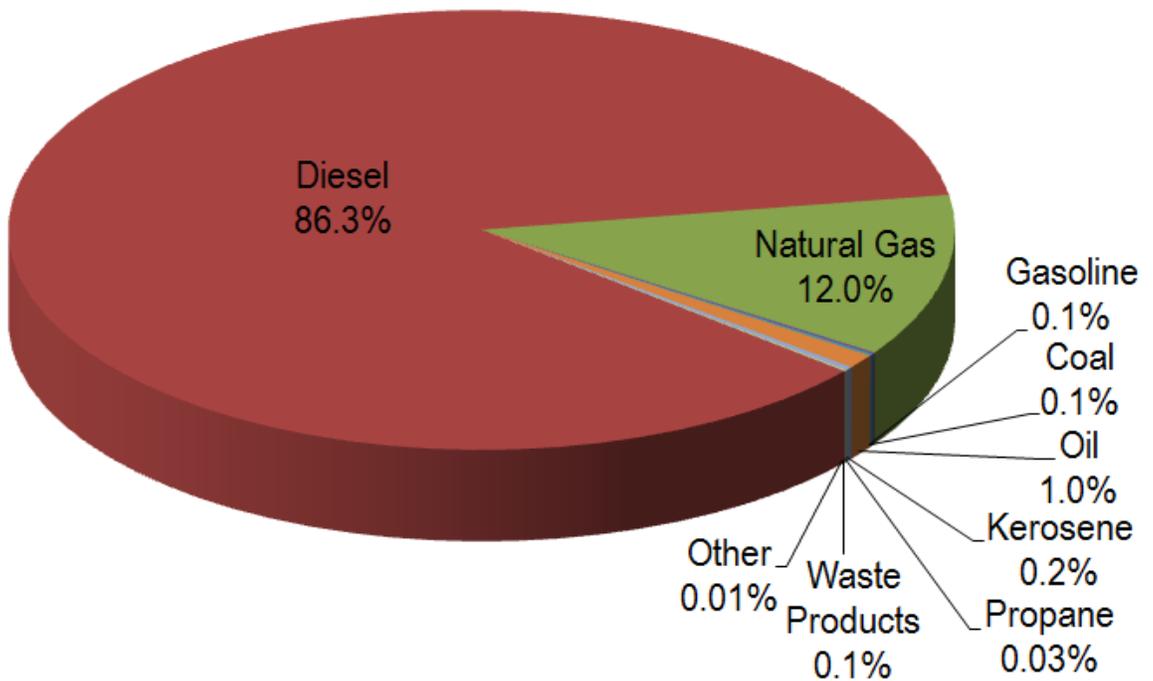
Note: Percent of Nominated Capacity (MWs)

Figure 4: Confirmed Emergency DR Registrations for DY 13/14 by end use customer load reduction methods



Note: Percent of Nominated Capacity (MWs)

Figure 5: Fuel Mix for Confirmed Emergency DR Registrations with Behind the Meter Generation for DY 13/14



Note: Percent of Nominated Capacity (MWs)

Figure 6: Breakout of Generator and Permit Type for Confirmed Emergency DR Registrations for DY 13/14

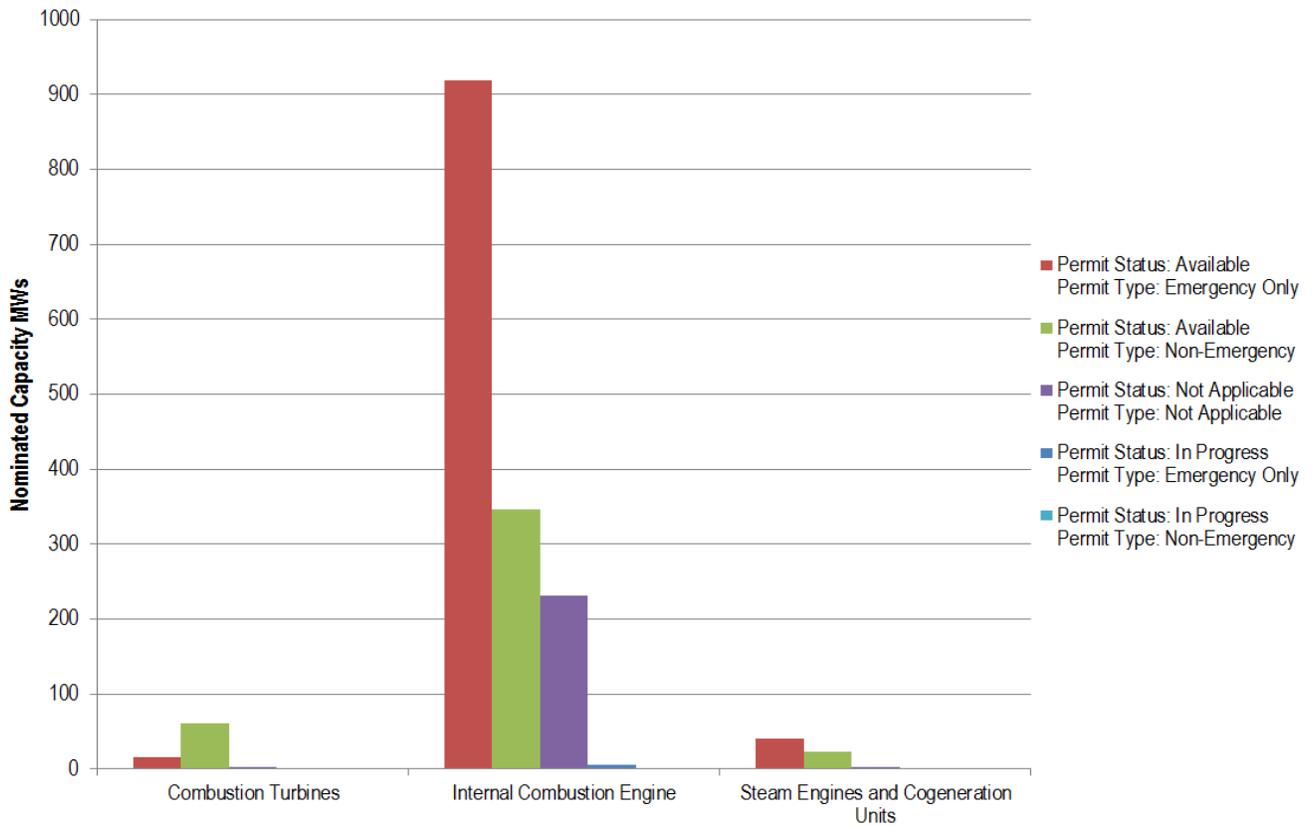


Figure 7: Fuel Mix for Confirmed Emergency DR Registrations for DY 13/14 with Behind the Meter Generation

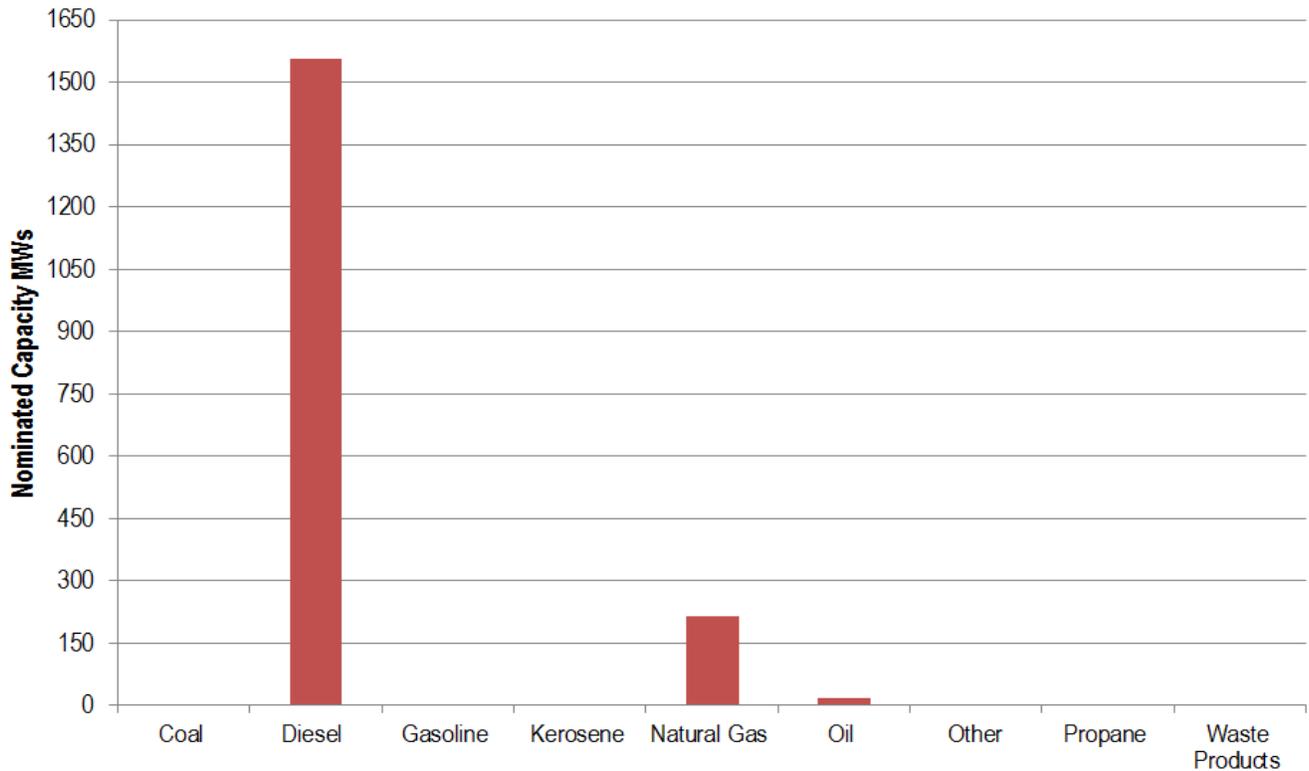
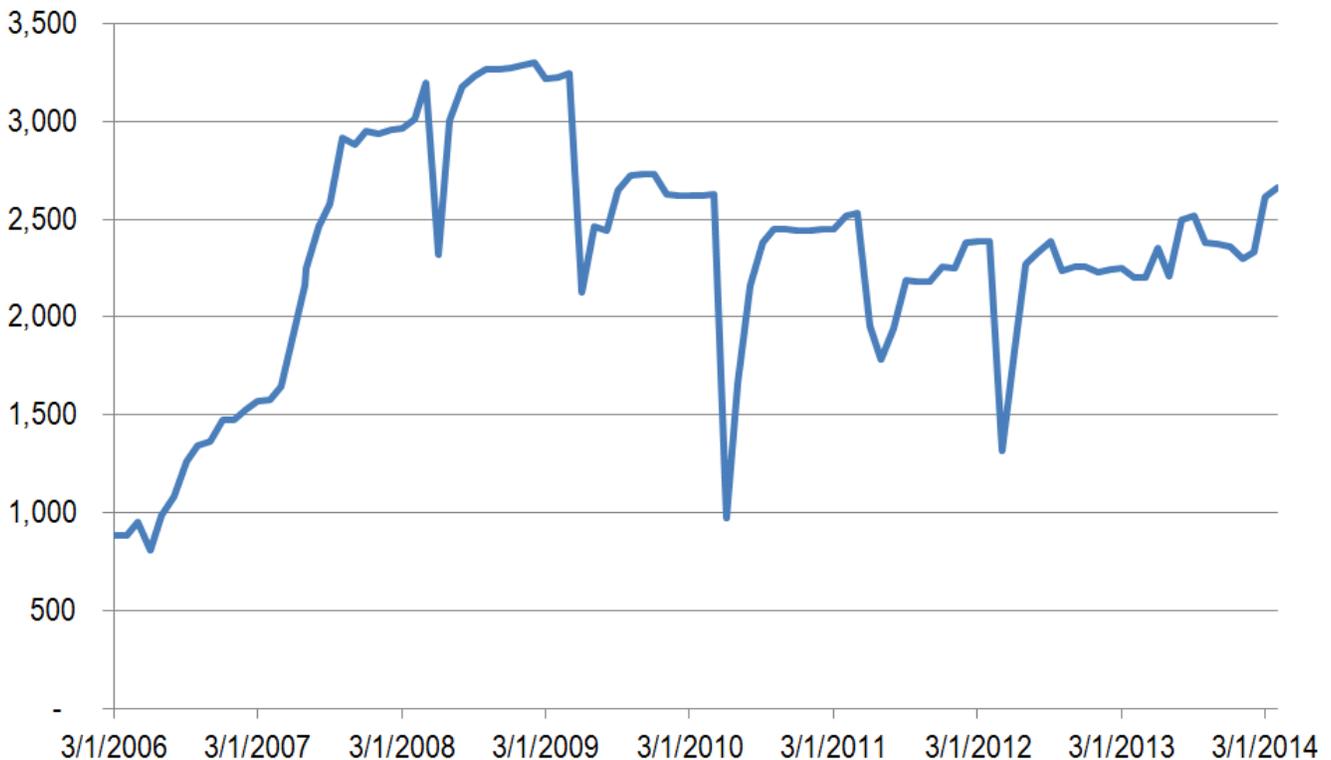


Figure 8: PJM Economic Demand Response Capability in Ancillary Service Markets (2013):

Synch Reserves	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	RFC MAD	152	152	171	171	169	154	161	159	165	158	157	157
	RFC Non-MAD												
	RTO	152	152	171	171	169	154	161	159	165	158	157	157
Average Number of Unique Participating Locations per Month:								161					
MWs	RFC MAD	398	397	403	407	396	356	369	369	364	371	370	362
	RFC Non-MAD												
	RTO	398	397	403	407	396	356	369	369	364	371	370	362
Average MWs per Month:						380							
Regulation	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	RTO	53	53	55	55	55	55	55	55	55	96	95	173
Average Number of Unique Participating Locations per Month:								71					
MWs	RTO	5.8	5.8	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.4	6.1	7.4
Average MWs per Month:						6.2							

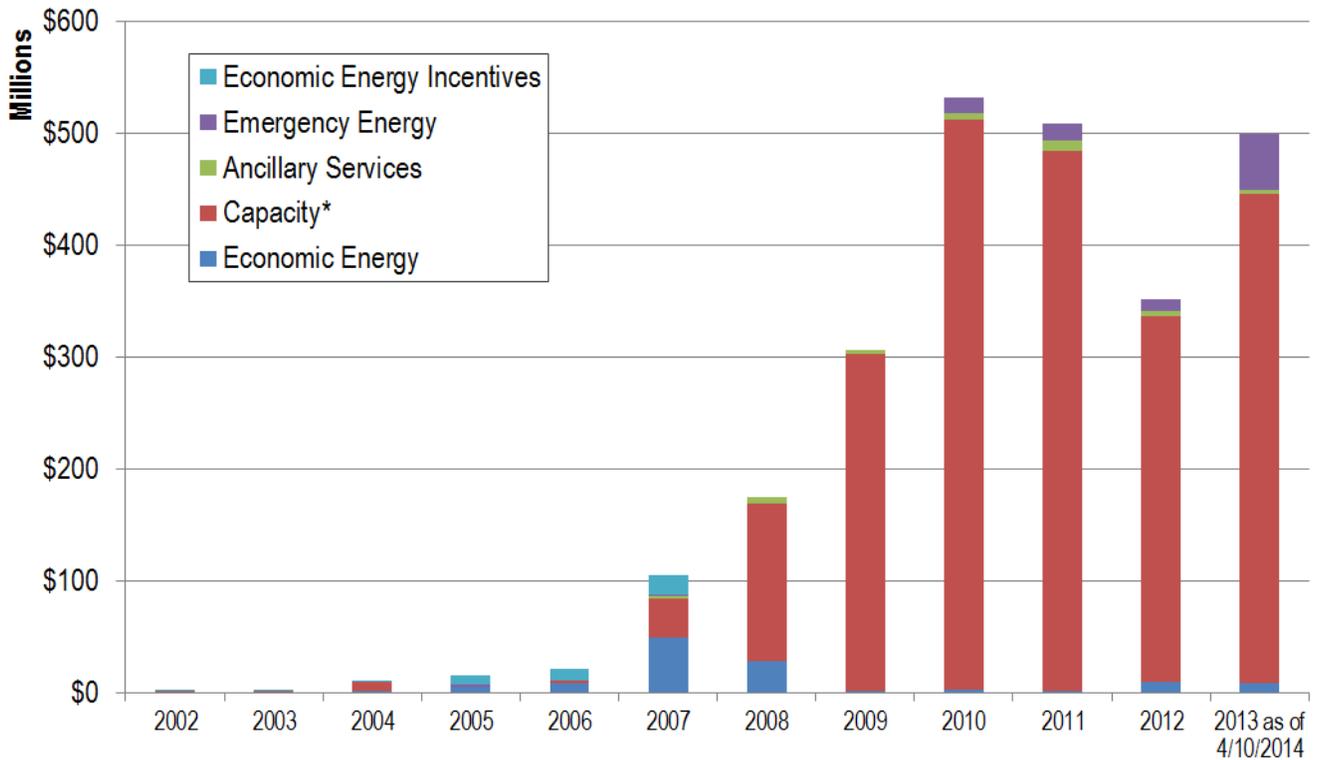
Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report.

Figure 9: PJM Economic Demand Response Capability in Energy Market (3/1/2006-4/10/2014)



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 10: PJM Estimated Revenue for Economic and Emergency DR Markets



*Capacity Net Revenue inclusive of Capacity Credits and Charges.

Figure 11: 2013 Economic Demand Response Monthly Registration Participation

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO								2				
IL	COMED	3	2	3	3	5	5	12	13	13	7	3	5
IN	AEP							1					
MD	APS							1					
	BGE	22						66	1	23		22	
	DPL							2					
	PEPCO						1		5	3			
NC	DOM						1	1	1	1			
NJ	AECO			1				2					
	JCPL		1				1	1		1			
	PSEG	2	2	1	1	3	6	58	7	7	7	5	5
OH	AEP	1	1	1	1			3	1	1			
	ATSI	1				1	2	2	1				
	DEOK							1	20	19			
PA	APS						3	5	2				1
	METED	1	1	2	1	2	4	7		2		1	1
	PECO	6	3	3	4	9	13	22	7	10	3	4	5
	PENELEC	1			1	2	3	5	2	2	2	3	3
	PPL	3	1	2	1	3	5	15	2	4		1	4
VA	AEP							2					
	DOM	8	3	7	4	9	11	17	8	10	4	5	8
WV	AEP						1	1					
	APS	1	1		1	1	1	1		1	1	1	1
Total		49	15	20	17	35	57	224	72	97	24	45	33
Average Unique Participating Registrations per Month:								57					

Figure 12: 2013 Economic Demand Response Monthly Registration Participation Day-Ahead Activity

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED							1	1	1			
IN	AEP												
MD	APS							1					
	BGE									1			
	DPL												
	PEPCO												
NC	DOM						1	1	1	1			
NJ	AECO												
	JCPL		1				1	1		1			
	PSEG	2	2	1	1	1	4	54	3	4	4	3	3
OH	AEP	1	1	1	1			1	1	1			
	ATSI	1											
	DEOK								19	18			
PA	APS						1	2	2				1
	METED												
	PECO						2	2	2	2			
	PENELEC					1	1	1	1	1	1	1	1
	PPL	1		1			3	2	1	2			3
VA	AEP							1					
	DOM	1	1	2	2	2	4	5	4	4	1	1	1
WV	AEP						1						
	APS						1	1					
Total		6	5	5	4	4	19	73	35	36	6	5	9
Average Unique Participating Registrations per Month (Day-Ahead):							17						

Figure 13: 2013 Economic Demand Response Monthly Registration Participation Real-Time Activity

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO								2				
IL	COMED	3	2	3	3	5	5	11	12	12	7	3	5
IN	AEP							1					
MD	APS												
	BGE	22						66	1	22		22	
	DPL							2					
	PEPCO						1		5	3			
NC	DOM												
NJ	AECO			1				2					
	JCPL												
	PSEG					2	2	4	4	3	3	2	2
OH	AEP							2					
	ATSI					1	2	2	1				
	DEOK							1	1	1			
PA	APS						2	3					
	METED	1	1	2	1	2	4	7		2		1	1
	PECO	6	3	3	4	9	11	20	5	8	3	4	5
	PENELEC	1			1	1	2	4	1	1	1	2	2
	PPL	2	1	1	1	3	2	13	1	2		1	1
VA	AEP							1					
	DOM	7	2	5	2	7	7	12	4	6	3	4	7
WV	AEP												
	APS	1	1		1	1				1	1	1	1
Total		43	10	15	13	31	38	151	37	61	18	40	24
Average Unique Participating Registrations per Month (Real-Time):							40						

Figure 14: 2013 Economic Demand Response Monthly MWh Reductions

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED	153	346	616	121	885	1,317	2,055	4,721	2,270	488	56	706
IN	AEP												
MD	APS							68					
	BGE	134						3,155	12	187		32	
	DPL							117					
	PEPCO						0						
NC	DOM						1,251	2,880	990	920			
NJ	AECO							143					
	JCPL						678	1,579		210			
	PSEG	0	134	15	11	103	321	1,463	1,676	930	1,823	885	1,430
OH	AEP	5	2	12	2			76	4	1			
	ATSI	3				44	162	172	21				
	DEOK							261	510	215			
PA	APS						297	921	167				421
	METED			15	5	1	21	66		2		1	1
	PECO	53	23	32	58	233	47	605	72	52	63	176	122
	PENELEC	198			246	747	685	759	1,367	720	1,756	1,122	835
	PPL	220	1	11	1	126	590	1,838	10	511			470
VA	AEP							148					
	DOM	6,319	5,647	6,818	5,413	5,247	8,371	10,504	5,564	8,486	6,347	5,898	5,314
WV	AEP						2						
	APS	202	88		230	302	144	45		115	335	167	206
Total		7,287	6,241	7,520	6,088	7,689	13,886	26,856	15,114	14,618	10,812	8,338	9,505
Total MWh:						133,953							

Figure 15: 2013 Economic Demand Response Monthly MWh Reductions Day-Ahead Activity

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED							1	6	8			
IN	AEP												
MD	APS							68					
	BGE									87			
	DPL												
	PEPCO												
NC	DOM						1,251	2,880	990	920			
NJ	AECO												
	JCPL						678	1,579		210			
	PSEG	0	134	15	11	25	122	946	113	245	414	417	322
OH	AEP	5	2	12	2			1	4	1			
	ATSI	3											
	DEOK								47	199			
PA	APS						286	764	167				421
	METED												
	PECO						4	19	10	11			
	PENELEC					333	226	318	370	114	506	292	175
	PPL	31		10			590	1,736	10	505			465
VA	AEP							36					
	DOM	5,193	5,373	6,521	5,396	4,281	2,531	1,958	951	2,128	1,203	966	782
WV	AEP						2						
	APS						144	45					
Total		5,233	5,508	6,558	5,410	4,638	5,833	10,352	2,669	4,427	2,123	1,676	2,165
Total Day-Ahead MWh:						56,593							

Figure 16: 2013 Economic Demand Response Monthly MWh Reductions Real-Time Activity

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED	153	346	616	121	885	1,317	2,054	4,714	2,263	488	56	706
IN	AEP												
MD	APS												
	BGE	134						3,155	12	100		32	
	DPL							117					
	PEPCO						0						
NC	DOM												
NJ	AECO							143					
	JCPL												
	PSEG					78	199	517	1,563	684	1,409	468	1,108
OH	AEP							76					
	ATSI					44	162	172	21				
	DEOK							261	463	16			
PA	APS						12	157					
	METED			15	5	1	21	66		2		1	1
	PECO	53	23	32	58	233	43	586	62	41	63	176	122
	PENELEC	198			246	414	459	440	997	606	1,249	830	659
	PPL	189	1	1	1	126		103	1	6			6
VA	AEP							112					
	DOM	1,126	274	297	17	966	5,840	8,545	4,612	6,358	5,144	4,932	4,532
WV	AEP												
	APS	202	88		230	302				115	335	167	206
Total		2,054	733	962	678	3,051	8,053	16,504	12,445	10,191	8,689	6,662	7,339
							Total Real-Time MWh:	77,360					

Figure 17: Economic Demand Response Monthly Energy Market Revenue (2013)

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED	\$5,321	\$12,164	\$29,708	\$5,859	\$45,446	\$56,963	\$133,970	\$213,041	\$113,641	\$19,687	\$1,756	\$24,708
IN	AEP												
MD	APS							\$18,226					
	BGE	\$24,717						\$613,266	\$916	\$8,198		\$1,309	
	DPL							\$18,315					
	PEPCO						\$5						
NC	DOM						\$82,842	\$429,429	\$63,606	\$159,254			
NJ	AECO							\$19,459					
	JCPL		\$2,741				\$54,991	\$303,879		\$42,411			
	PSEG	(\$2,301)	\$6,610	\$494	\$391	\$7,168	\$14,355	\$269,924	\$79,168	\$42,845	\$77,245	\$37,828	\$94,460
OH	AEP	\$312	\$92	\$564	\$104			\$4,656	\$234	\$76			
	ATSI	\$107				\$2,958	\$8,511	\$11,924	\$1,112				
	DEOK							\$19,680	\$20,281	\$33,961			
PA	APS						\$14,056	\$72,173	\$8,126				\$27,793
	METED			\$891	\$242	\$44	\$1,410	\$6,805		\$250		\$31	\$65
	PECO	\$5,740	\$787	\$1,293	\$2,643	\$9,707	\$2,683	\$57,315	\$3,854	\$2,651	\$2,736	\$7,338	\$5,359
	PENELEC	\$16,177			\$10,873	\$41,587	\$35,639	\$59,914	\$64,180	\$45,565	\$76,687	\$40,545	\$39,671
	PPL	\$11,531	\$44	\$629	\$58	\$7,114	\$31,959	\$200,419	(\$891)	\$29,830			\$35,035
VA	AEP							\$21,525					
	DOM	\$331,699	\$250,431	\$375,001	\$275,860	\$311,106	\$421,776	\$919,143	\$289,662	\$412,358	\$266,794	\$259,335	\$281,498
WV	AEP						\$84						
	APS	\$6,126	\$2,874		\$11,214	\$13,104	\$5,323	\$10,251		\$3,121	\$13,186	\$4,606	\$6,513
Total		\$399,431	\$275,743	\$408,581	\$307,244	\$438,235	\$730,598	\$3,190,273	\$743,289	\$894,163	\$456,336	\$352,748	\$515,102
							Total CSP Credits:	\$8,711,742					

Figure 18: Economic Demand Response Monthly Energy Market Revenue Day-Ahead Activity (2013)

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED							\$36	\$337	\$430			
IN	AEP												
MD	APS							\$18,226					
	BGE									\$2,946			
	DPL												
	PEPCO												
NC	DOM						\$82,842	\$429,429	\$63,606	\$159,254			
NJ	AECO												
	JCPL		\$2,741				\$54,991	\$303,879		\$42,411			
	PSEG	(\$2,301)	\$6,610	\$494	\$391	\$1,645	\$4,206	\$240,401	\$3,894	\$13,412	\$18,177	\$20,301	\$23,875
OH	AEP	\$312	\$92	\$564	\$104			\$28	\$234	\$76			
	ATSI	\$107											
	DEOK								\$2,645	\$32,696			
PA	APS						\$13,354	\$54,941	\$8,126				\$27,793
	METED												
	PECO						\$270	\$1,618	\$340	\$404			
	PENELEC					\$19,795	\$10,696	\$24,480	\$17,798	\$5,522	\$22,611	\$12,259	\$9,413
	PPL	\$434		\$575			\$31,959	\$184,874	(\$945)	\$29,830			\$34,785
VA	AEP							\$7,812					
	DOM	\$243,957	\$236,075	\$359,766	\$275,017	\$252,552	\$137,040	\$217,078	\$48,178	\$140,726	\$49,515	\$46,260	\$35,957
WV	AEP						\$84						
	APS						\$5,323	\$10,251					
Total		\$242,510	\$245,517	\$361,399	\$275,512	\$273,992	\$340,764	\$1,493,053	\$144,212	\$427,708	\$90,303	\$78,819	\$131,822
							Total Day-Ahead CSP Credits:	\$4,105,613					

Figure 19: Economic Demand Response Monthly Energy Market Revenue Real-Time Activity (2013)

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED	\$5,321	\$12,164	\$29,708	\$5,859	\$45,446	\$56,963	\$133,934	\$212,704	\$113,211	\$19,687	\$1,756	\$24,708
IN	AEP												
MD	APS												
	BGE	\$24,717						\$613,266	\$916	\$5,251		\$1,309	
	DPL							\$18,315					
	PEPCO						\$5						
NC	DOM												
NJ	AECO							\$19,459					
	JCPL												
	PSEG					\$5,523	\$10,149	\$29,523	\$75,274	\$29,433	\$59,069	\$17,528	\$70,585
OH	AEP							\$4,629					
	ATSI					\$2,958	\$8,511	\$11,924	\$1,112				
	DEOK							\$19,680	\$17,635	\$1,265			
PA	APS						\$701	\$17,232					
	METED			\$891	\$242	\$44	\$1,410	\$6,805		\$250		\$31	\$65
	PECO	\$5,740	\$787	\$1,293	\$2,643	\$9,707	\$2,413	\$55,697	\$3,514	\$2,248	\$2,736	\$7,338	\$5,359
	PENELEC	\$16,177			\$10,873	\$21,792	\$24,943	\$35,434	\$46,382	\$40,042	\$54,076	\$28,286	\$30,258
	PPL	\$11,097	\$44	\$54	\$58	\$7,114		\$15,545	\$54				\$250
VA	AEP							\$13,713					
	DOM	\$87,742	\$14,357	\$15,235	\$843	\$58,554	\$284,737	\$702,065	\$241,484	\$271,632	\$217,279	\$213,076	\$245,541
WV	AEP												
	APS	\$6,126	\$2,874		\$11,214	\$13,104				\$3,121	\$13,186	\$4,606	\$6,513
Total		\$156,921	\$30,226	\$47,181	\$31,732	\$164,242	\$389,833	\$1,697,220	\$599,077	\$466,454	\$366,033	\$273,929	\$383,280
							Total Real-Time CSP Credits:	\$4,606,129					

Figure 20: Economic Demand Response Energy Market Cost Allocation by Zone (2013)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$4,806	\$3,099	\$4,740	\$3,650	\$5,386	\$11,191	\$52,491	\$11,202	\$12,613	\$5,783	\$4,600.55	\$5,964.80
AEP	\$67,631	\$47,571	\$71,259	\$51,113	\$67,113	\$109,958	\$458,979	\$111,611	\$125,114	\$69,685	\$51,454.36	\$82,665.60
APS	\$25,315	\$17,718	\$25,868	\$18,399	\$24,441	\$39,474	\$169,333	\$40,109	\$50,032	\$27,200	\$22,304.08	\$32,452.42
ATSI	\$32,808	\$23,274	\$34,544	\$25,607	\$36,067	\$58,469	\$258,935	\$59,590	\$74,116	\$38,142	\$27,820.25	\$41,405.32
BGE	\$17,908	\$11,493	\$16,638	\$12,554	\$18,517	\$31,690	\$135,483	\$31,249	\$39,679	\$19,640	\$16,661.99	\$21,670.16
COMED	\$41,883	\$30,446	\$45,769	\$37,561	\$46,686	\$84,637	\$428,676	\$96,475	\$109,681	\$51,849	\$28,501.68	\$55,263.96
DAY	\$8,592	\$5,951	\$8,775	\$6,668	\$8,910	\$15,062	\$65,318	\$15,599	\$18,578	\$9,640	\$7,098.52	\$10,861.62
DEOK	\$12,773	\$8,921	\$13,218	\$10,074	\$13,997	\$24,452	\$101,325	\$24,976	\$27,984	\$14,633	\$9,110.59	\$15,570.24
DOM	\$50,347	\$33,733	\$50,867	\$38,152	\$51,169	\$90,065	\$375,666	\$90,159	\$111,573	\$57,214	\$48,888.01	\$63,576.79
DPL	\$10,195	\$6,472	\$9,926	\$6,626	\$9,522	\$18,459	\$79,055	\$18,098	\$21,616	\$10,117	\$8,953.25	\$11,813.21
DUQ	\$6,766	\$4,908	\$7,270	\$5,562	\$7,971	\$13,403	\$58,050	\$13,357	\$15,087	\$8,469	\$5,302.60	\$7,812.64
EKPC						\$10,290	\$42,616	\$10,317	\$10,681	\$5,929	\$5,159.66	\$8,317.03
JCPL	\$10,728	\$6,393	\$10,964	\$8,421	\$13,884	\$25,235	\$121,810	\$24,102	\$29,761	\$12,613	\$10,962.83	\$13,540.24
METED	\$7,665	\$5,188	\$8,059	\$5,968	\$7,645	\$13,483	\$59,084	\$13,478	\$16,056	\$8,106	\$7,540.89	\$10,241.18
PECO	\$19,052	\$12,646	\$20,067	\$15,235	\$21,348	\$38,156	\$170,893	\$37,413	\$45,563	\$22,602	\$18,970.82	\$24,762.53
PENELEC	\$9,543	\$6,801	\$9,501	\$6,696	\$8,552	\$13,770	\$60,735	\$14,074	\$17,362	\$9,766	\$8,628.44	\$11,382.44
PEPCO	\$16,193	\$10,679	\$15,825	\$12,548	\$17,242	\$30,194	\$129,391	\$30,183	\$38,721	\$18,846	\$15,409.43	\$20,044.43
PPL	\$21,586	\$15,042	\$21,962	\$15,470	\$19,969	\$34,384	\$148,019	\$34,446	\$40,923	\$20,979	\$20,878.30	\$27,586.32
PSEG	\$21,165	\$14,988	\$20,394	\$16,444	\$24,295	\$44,567	\$206,042	\$42,784	\$53,826	\$25,262	\$21,043.51	\$26,570.49
RECO	\$735	\$509	\$690	\$483	\$952	\$1,756	\$8,454	\$1,621	\$1,988	\$881	\$692.06	\$915.29
Exports	\$13,739	\$9,912	\$12,246	\$10,012	\$34,568	\$21,903	\$59,917	\$22,446	\$33,208	\$18,981	\$12,766.55	\$22,685.63
TOTAL	\$399,431	\$275,743	\$408,581	\$307,244	\$438,235	\$730,598	\$3,190,273	\$743,289	\$894,163	\$456,336	\$352,748	\$515,102.32
Total Zonal Charges:					\$8,711,743							

Figure 21: Economic Demand Response Day-Ahead Energy Market Cost Allocation by Zone (2013)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$3,013	\$2,698	\$3,979	\$3,177	\$3,332	\$4,981	\$24,165	\$2,823	\$6,529	\$909	\$826.43	\$1,494.83
AEP	\$42,548	\$41,440	\$60,129	\$44,553	\$41,418	\$48,465	\$211,246	\$26,787	\$58,467	\$11,477	\$9,955.46	\$19,914.19
APS	\$15,794	\$15,427	\$21,839	\$16,060	\$15,065	\$17,222	\$77,503	\$9,810	\$24,188	\$4,177	\$3,919.36	\$7,905.53
ATSI	\$21,058	\$20,426	\$29,193	\$22,309	\$21,871	\$26,022	\$118,802	\$14,433	\$35,041	\$6,293	\$5,302.91	\$10,735.73
BGE	\$11,339	\$9,969	\$13,981	\$10,890	\$11,669	\$13,864	\$62,280	\$7,874	\$18,957	\$2,832	\$2,851.61	\$5,103.48
COMED	\$25,498	\$26,701	\$38,527	\$32,631	\$27,995	\$38,901	\$199,652	\$23,919	\$53,159	\$9,130	\$6,357.89	\$11,988.05
DAY	\$5,486	\$5,204	\$7,395	\$5,798	\$5,503	\$6,838	\$30,187	\$3,740	\$8,761	\$1,573	\$1,316.69	\$2,581.27
DEOK	\$7,984	\$7,798	\$11,121	\$8,768	\$8,570	\$10,939	\$46,646	\$5,863	\$13,345	\$2,429	\$1,749.57	\$3,419.17
DOM	\$31,172	\$29,146	\$42,807	\$33,132	\$31,901	\$39,047	\$172,547	\$22,425	\$51,468	\$8,196	\$7,678.60	\$14,780.12
DPL	\$6,403	\$5,603	\$8,353	\$5,852	\$5,892	\$8,301	\$36,283	\$4,563	\$10,858	\$1,580	\$1,645.13	\$2,942.95
DUQ	\$4,248	\$4,308	\$6,144	\$4,838	\$4,723	\$5,968	\$26,465	\$3,130	\$7,473	\$1,394	\$1,017.65	\$2,225.85
EKPC						\$4,548	\$19,674	\$2,374	\$4,856	\$950	\$978.59	\$1,823.23
JCPL	\$6,792	\$5,735	\$9,205	\$7,320	\$8,863	\$11,151	\$56,072	\$6,013	\$15,726	\$2,127	\$2,042.74	\$3,332.77
METED	\$4,753	\$4,515	\$6,785	\$5,189	\$4,644	\$5,948	\$27,148	\$3,394	\$8,456	\$1,350	\$1,302.80	\$2,618.29
PECO	\$11,769	\$10,993	\$16,908	\$13,414	\$13,017	\$16,800	\$78,564	\$9,392	\$23,889	\$3,632	\$3,326.81	\$6,353.70
PENELEC	\$6,233	\$6,067	\$8,029	\$5,811	\$5,219	\$6,035	\$27,886	\$3,421	\$8,284	\$1,644	\$1,538.79	\$2,853.43
PEPCO	\$10,250	\$9,300	\$13,331	\$10,869	\$10,680	\$13,244	\$59,334	\$7,596	\$18,698	\$2,732	\$2,567.32	\$4,713.27
PPL	\$13,362	\$13,099	\$18,496	\$13,484	\$12,147	\$15,027	\$67,833	\$8,563	\$21,135	\$3,722	\$3,613.93	\$7,033.98
PSEG	\$13,777	\$13,426	\$17,148	\$14,254	\$14,841	\$19,681	\$94,977	\$10,634	\$27,925	\$4,154	\$3,905.95	\$6,603.04
RECO	\$479	\$457	\$581	\$421	\$581	\$772	\$3,904	\$406	\$1,015	\$149	\$146.86	\$227.64
Exports	\$9,535	\$8,867	\$10,259	\$8,532	\$28,420	\$10,126	\$26,456	\$5,780	\$15,935	\$3,553	\$2,695.53	\$5,285.31
TOTAL	\$251,494	\$241,179	\$344,210	\$267,301	\$276,352	\$323,881	\$1,467,622	\$182,941	\$434,166	\$74,000	\$64,741	\$123,935.84
Total Day-Ahead Zonal Charges:					\$4,051,823							

Figure 22: Economic Demand Response Real-Time Energy Market Cost Allocation by Zone (2013)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$1,793	\$400	\$761	\$474	\$2,055	\$6,209	\$28,326	\$8,379	\$6,084	\$4,874	\$3,774.12	\$4,469.97
AEP	\$25,084	\$6,131	\$11,130	\$6,560	\$25,695	\$61,493	\$247,734	\$84,824	\$66,647	\$58,208	\$41,498.90	\$62,751.41
APS	\$9,521	\$2,291	\$4,029	\$2,339	\$9,375	\$22,252	\$91,830	\$30,299	\$25,843	\$23,023	\$18,384.72	\$24,546.88
ATSI	\$11,750	\$2,848	\$5,351	\$3,299	\$14,196	\$32,447	\$140,133	\$45,157	\$39,075	\$31,849	\$22,517.34	\$30,669.59
BGE	\$6,569	\$1,524	\$2,657	\$1,664	\$6,848	\$17,825	\$73,203	\$23,375	\$20,722	\$16,808	\$13,810.38	\$16,566.68
COMED	\$16,385	\$3,745	\$7,241	\$4,930	\$18,691	\$45,737	\$229,025	\$72,556	\$56,522	\$42,720	\$22,143.78	\$43,275.90
DAY	\$3,106	\$748	\$1,380	\$870	\$3,407	\$8,224	\$35,132	\$11,859	\$9,817	\$8,067	\$5,781.82	\$8,280.34
DEOK	\$4,789	\$1,122	\$2,097	\$1,306	\$5,427	\$13,513	\$54,680	\$19,113	\$14,639	\$12,204	\$7,361.02	\$12,151.07
DOM	\$19,175	\$4,587	\$8,060	\$5,020	\$19,268	\$51,018	\$203,119	\$67,734	\$60,105	\$49,018	\$41,209.41	\$48,796.67
DPL	\$3,792	\$869	\$1,572	\$774	\$3,630	\$10,157	\$42,772	\$13,536	\$10,758	\$8,537	\$7,308.12	\$8,870.27
DUQ	\$2,518	\$600	\$1,126	\$724	\$3,249	\$7,435	\$31,584	\$10,227	\$7,615	\$7,075	\$4,284.94	\$5,586.79
EKPC						\$5,742	\$22,942	\$7,943	\$5,825	\$4,979	\$4,181.07	\$6,493.80
JCPL	\$3,935	\$658	\$1,759	\$1,101	\$5,021	\$14,085	\$65,738	\$18,089	\$14,036	\$10,486	\$8,920.09	\$10,207.47
METED	\$2,912	\$673	\$1,274	\$779	\$3,002	\$7,534	\$31,936	\$10,084	\$7,599	\$6,756	\$6,238.09	\$7,622.89
PECO	\$7,283	\$1,654	\$3,159	\$1,822	\$8,331	\$21,356	\$92,329	\$28,021	\$21,674	\$18,970	\$15,644.00	\$18,408.83
PENELEC	\$3,310	\$734	\$1,472	\$885	\$3,333	\$7,734	\$32,850	\$10,653	\$9,078	\$8,122	\$7,089.65	\$8,529.01
PEPCO	\$5,943	\$1,379	\$2,494	\$1,680	\$6,562	\$16,950	\$70,057	\$22,587	\$20,023	\$16,114	\$12,842.11	\$15,331.16
PPL	\$8,224	\$1,943	\$3,466	\$1,986	\$7,822	\$19,357	\$80,185	\$25,883	\$19,788	\$17,257	\$17,264.36	\$20,552.34
PSEG	\$7,388	\$1,562	\$3,246	\$2,190	\$9,454	\$24,886	\$111,065	\$32,150	\$25,901	\$21,108	\$17,137.56	\$19,967.45
RECO	\$255	\$52	\$110	\$62	\$371	\$984	\$4,550	\$1,216	\$973	\$732	\$545.19	\$687.66
Exports	\$4,204	\$1,045	\$1,987	\$1,480	\$6,148	\$11,777	\$33,461	\$16,666	\$17,273	\$15,428	\$10,071.02	\$17,400.32
TOTAL	\$147,937	\$34,565	\$64,371	\$39,944	\$161,883	\$406,716	\$1,722,650	\$560,348	\$459,997	\$382,335	\$288,008	\$391,166.48
Total Real-Time Zonal Charges:					\$4,659,920							

Figure 23: Emergency Demand Response Monthly Capacity Revenue from RPM (2013)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$411,097	\$371,313	\$411,097	\$397,836	\$411,097	\$1,002,307	\$1,035,717	\$1,035,717	\$1,002,307	\$1,035,717	\$1,002,307	\$1,035,717
AEP	\$425,101	\$383,962	\$425,101	\$411,388	\$425,101	\$749,663	\$774,652	\$774,652	\$749,663	\$774,652	\$749,663	\$774,652
APS	\$185,478	\$167,528	\$185,478	\$179,495	\$185,478	\$477,348	\$493,260	\$493,260	\$477,348	\$493,260	\$477,348	\$493,260
ATSI	\$19,859	\$17,937	\$19,859	\$19,218	\$19,859	\$365,564	\$377,750	\$377,750	\$365,564	\$377,750	\$365,564	\$377,750
BGE	\$5,430,108	\$4,904,613	\$5,430,108	\$5,254,943	\$5,430,108	\$7,487,232	\$7,736,807	\$7,736,807	\$7,487,232	\$7,736,807	\$7,487,232	\$7,736,807
COMED	\$405,926	\$366,643	\$405,926	\$392,831	\$405,926	\$782,114	\$808,185	\$808,185	\$782,114	\$808,185	\$782,114	\$808,185
DAY	\$63,670	\$57,508	\$63,670	\$61,616	\$63,670	\$42,849	\$44,278	\$44,278	\$42,849	\$44,278	\$42,849	\$44,278
DEOK	\$8,185	\$7,393	\$8,185	\$7,921	\$8,185	\$16,115	\$16,653	\$16,653	\$16,115	\$16,653	\$16,115	\$16,653
DOM	\$306,929	\$277,226	\$306,929	\$297,028	\$306,929	\$585,863	\$605,391	\$605,391	\$585,863	\$605,391	\$585,863	\$605,391
DPL	\$1,547,049	\$1,397,335	\$1,547,049	\$1,497,145	\$1,547,049	\$1,915,174	\$1,979,013	\$1,979,013	\$1,915,174	\$1,979,013	\$1,915,174	\$1,979,013
DUQ	\$49,718	\$44,907	\$49,718	\$48,114	\$49,718	\$143,269	\$148,045	\$148,045	\$143,269	\$148,045	\$143,269	\$148,045
EKPC						\$1,495	\$1,544	\$1,544	\$1,495	\$1,544	\$1,495	\$1,544
JCPL	\$1,495,628	\$1,350,890	\$1,495,628	\$1,447,382	\$1,495,628	\$2,215,048	\$2,288,883	\$2,288,883	\$2,215,048	\$2,288,883	\$2,215,048	\$2,288,883
METED	\$1,044,281	\$943,222	\$1,044,281	\$1,010,595	\$1,044,281	\$2,174,111	\$2,246,581	\$2,246,581	\$2,174,111	\$2,246,581	\$2,174,111	\$2,246,581
PECO	\$2,660,069	\$2,402,643	\$2,660,069	\$2,574,260	\$2,660,069	\$5,142,792	\$5,314,219	\$5,314,219	\$5,142,792	\$5,314,219	\$5,142,792	\$5,314,219
PENELEC	\$1,144,857	\$1,034,064	\$1,144,857	\$1,107,926	\$1,144,857	\$2,884,571	\$2,980,723	\$2,980,723	\$2,884,571	\$2,980,723	\$2,884,571	\$2,980,723
PEPCO	\$1,906,591	\$1,722,082	\$1,906,591	\$1,845,088	\$1,906,591	\$4,092,964	\$4,229,396	\$4,229,396	\$4,092,964	\$4,229,396	\$4,092,964	\$4,229,396
PPL	\$3,247,272	\$2,933,020	\$3,247,272	\$3,142,521	\$3,247,272	\$7,019,745	\$7,253,736	\$7,253,736	\$7,019,745	\$7,253,736	\$7,019,745	\$7,253,736
PSEG	\$2,354,400	\$2,126,555	\$2,354,400	\$2,278,452	\$2,354,400	\$8,574,172	\$8,859,978	\$8,859,978	\$8,574,172	\$8,859,978	\$8,574,172	\$8,859,978
RECO	\$14,896	\$13,454	\$14,896	\$14,415	\$14,896	\$249,408	\$257,721	\$257,721	\$249,408	\$257,721	\$249,408	\$257,721
Total	\$22,721,111	\$20,522,294	\$22,721,111	\$21,988,172	\$22,721,111	\$45,921,805	\$47,452,531	\$47,452,531	\$45,921,805	\$47,452,531	\$45,921,805	\$47,452,531
Total Capacity Credits:					\$438,249,339							

Figure 24: Economic Demand Response Dispatched vs Settled Real-Time Energy Market Summary (2013)

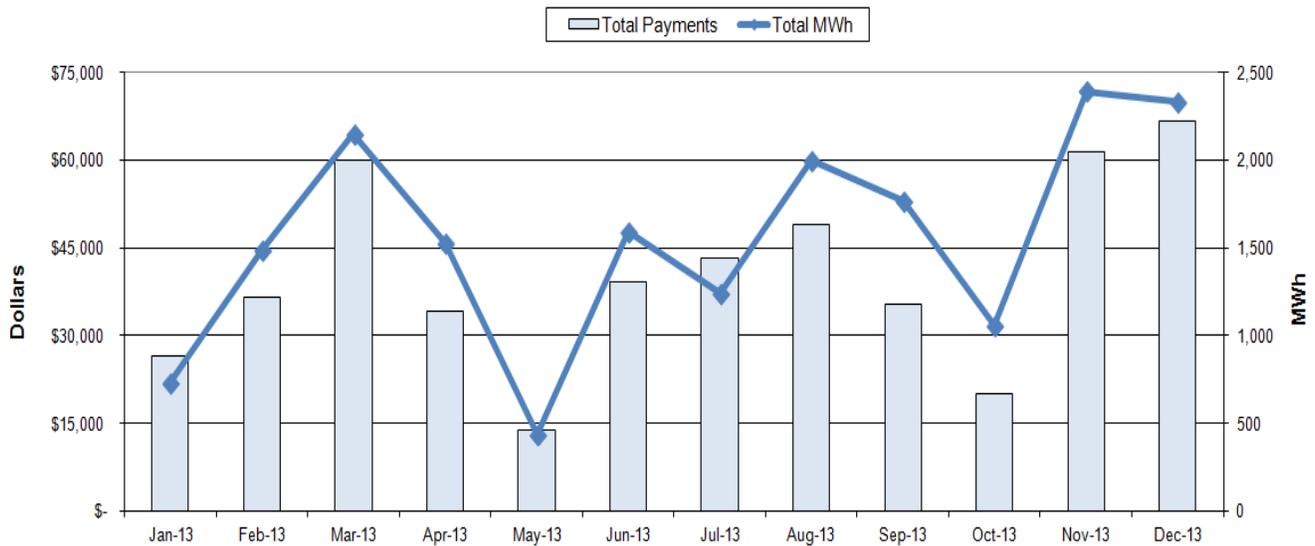
Time		CSPs		Zone		Registrations			MWh			Registration Hours		
Year	Month	Dispatched	Settled	Dispatched	Settled	Dispatched	Settled	%	Dispatched	Settled	%	Dispatched	Settled	%
2013	1	6	6	8	8	43	43	100%	1,951	2,054	105%	699	699	100%
2013	2	2	2	6	6	10	10	100%	452	733	162%	295	295	100%
2013	3	3	3	6	6	15	15	100%	597	962	161%	480	480	100%
2013	4	4	4	7	7	13	13	100%	685	678	99%	472	472	100%
2013	5	5	5	9	9	31	31	100%	2,416	3,051	126%	718	718	100%
2013	6	4	4	10	10	38	38	100%	8,694	8,053	93%	1,068	1,068	100%
2013	7	11	11	14	14	151	151	100%	20,445	16,504	81%	3,613	3,613	100%
2013	8	7	7	10	10	37	37	100%	11,576	12,445	108%	2,128	2,054	97%
2013	9	7	7	11	11	68	61	90%	11,084	10,191	92%	1,465	1,329	91%
2013	10	3	3	6	6	18	18	100%	7,860	8,689	111%	1,258	1,252	100%
2013	11	4	4	9	9	40	40	100%	6,114	6,662	109%	798	789	99%
2013	12	3	3	8	8	24	24	100%	6,617	7,339	111%	1,369	1,369	100%
YTD Totals						488	481	99%	78,491	77,360	99%	14,363	14,138	98%
YTD Average		5	5	9	9									

Figure 25: Economic Demand Response Cleared vs Settled Day-Ahead Energy Market Summary (2013)

Time		CSPs		Zone		Registrations			MWh			Registration Hours		
Year	Month	Cleared	Settled	Cleared	Settled	Cleared	Settled	%	Cleared	Settled	%	Cleared	Settled	%
2013	1	4	4	5	5	6	6	100%	5,387	5,233	97%	172	172	100%
2013	2	4	4	4	4	5	5	100%	5,403	5,508	102%	183	183	100%
2013	3	4	4	4	4	5	5	100%	6,349	6,558	103%	212	212	100%
2013	4	3	3	3	3	4	4	100%	5,463	5,410	99%	109	109	100%
2013	5	3	3	3	3	4	4	100%	4,569	4,638	102%	157	157	100%
2013	6	8	8	8	8	19	19	100%	5,472	5,833	107%	399	399	100%
2013	7	10	10	9	9	73	73	100%	10,174	10,352	102%	1,477	1,477	100%
2013	8	8	8	9	9	35	35	100%	3,282	2,669	81%	616	616	100%
2013	9	9	9	10	10	36	36	100%	4,677	4,427	95%	543	512	94%
2013	10	3	3	3	3	6	6	100%	1,841	2,123	115%	247	225	91%
2013	11	4	4	3	3	5	5	100%	1,399	1,676	120%	214	204	95%
2013	12	6	6	5	5	9	9	100%	2,056	2,165	105%	284	284	100%
YTD Totals						207	207	100%	56,073	56,593	101%	4,613	4,550	99%
YTD Average		6	6	6	6									

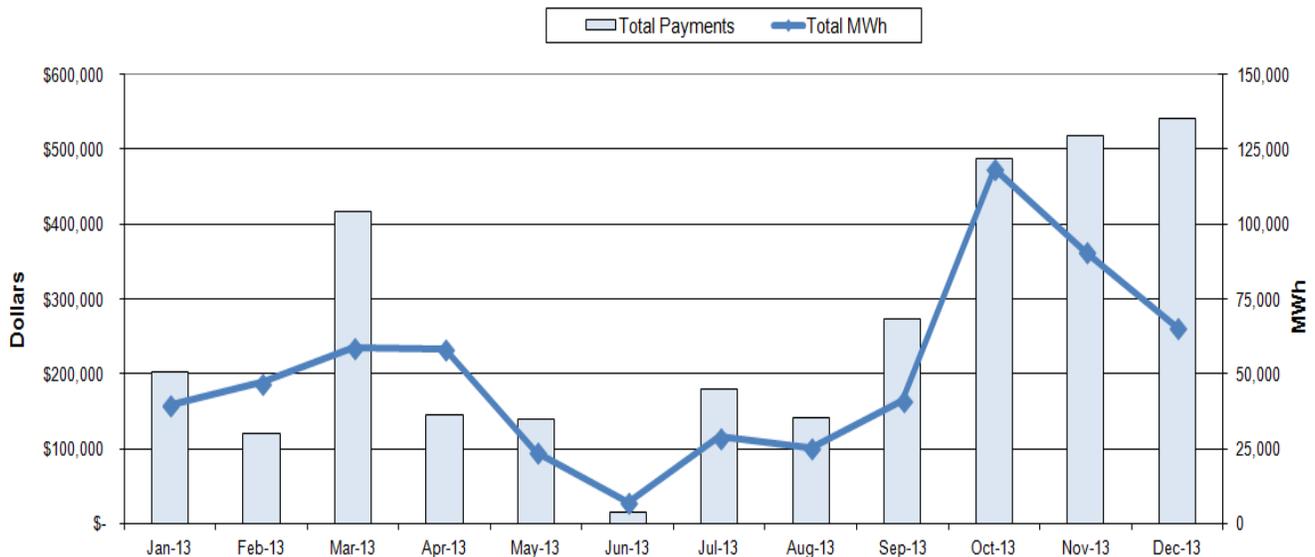
Note: For Figures 24 and 25 above, Settlement information is submitted up to 60 days after the event. Therefore, YTD performance reflected in these reports for the current 2 months is artificially low due to incomplete information at the time of report preparation.

Figure 26: Economic Demand Response Regulation Market Participation (2013)



	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Total MWh	731	1,488	2,153	1,526	440	1,594	1,240	2,000	1,766	1,057	2,394	2,335	18,723
Total Payments	\$26,424	\$36,552	\$59,885	\$34,255	\$13,945	\$39,292	\$43,181	\$48,975	\$35,292	\$20,004	\$61,348	\$66,743	\$485,896
\$/MWh	\$36.17	\$24.56	\$27.82	\$22.45	\$31.67	\$24.65	\$34.83	\$24.48	\$19.99	\$18.92	\$25.63	\$28.59	\$25.95

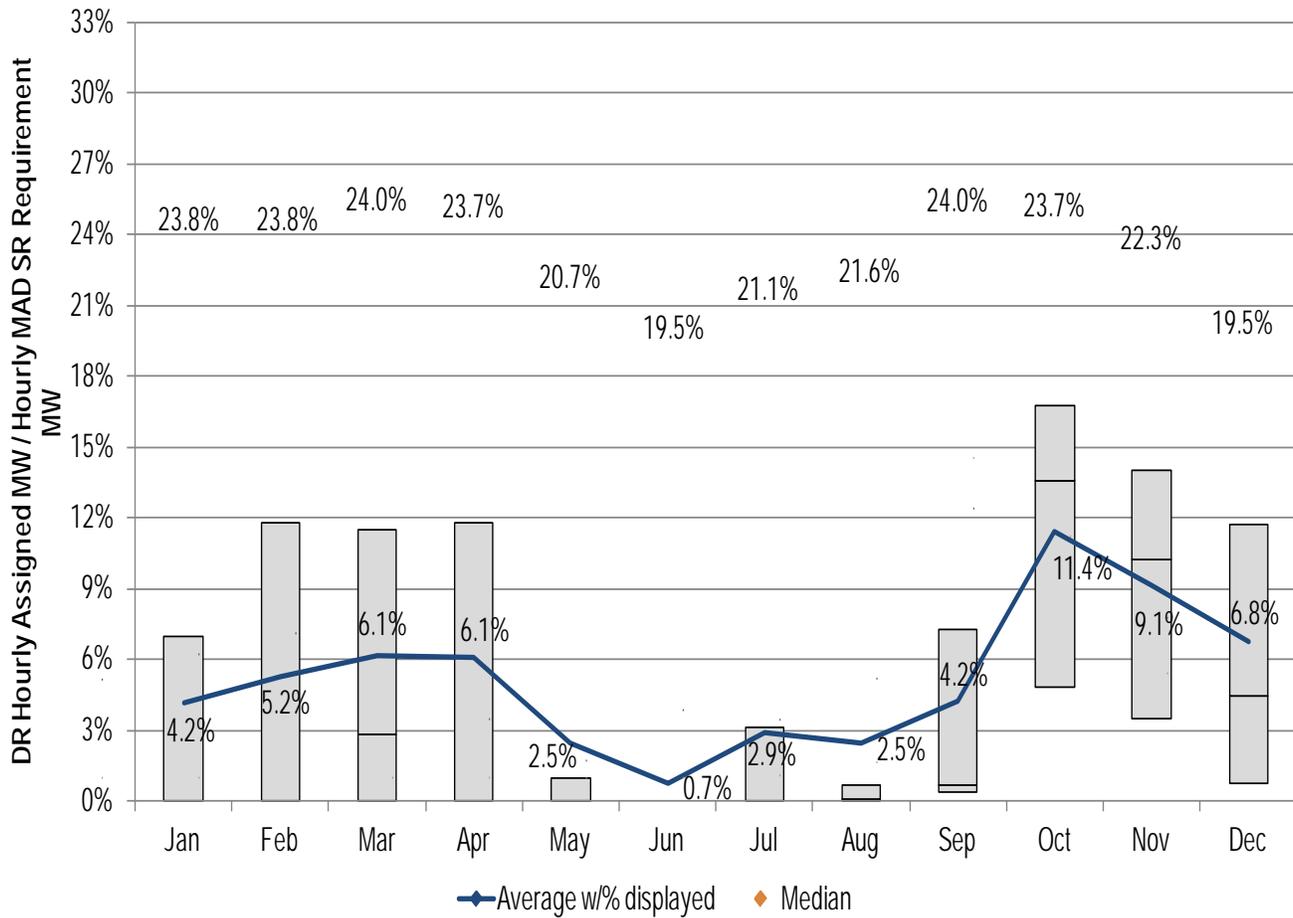
Figure 27: Economic Demand Response Synchronous Reserve Market Participation (2013)



	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Total MWh	39,618	47,180	58,723	58,370	23,900	7,224	29,028	25,311	41,199	118,459	90,903	65,607	605,521
Total Payments	\$203,303	\$121,273	\$416,062	\$145,962	\$139,287	\$15,077	\$180,007	\$140,926	\$272,975	\$486,563	\$517,230	\$541,067	\$3,179,731
\$/MWh	\$5.13	\$2.57	\$7.09	\$2.50	\$5.83	\$2.09	\$6.20	\$5.57	\$6.63	\$4.11	\$5.69	\$8.25	\$5.25

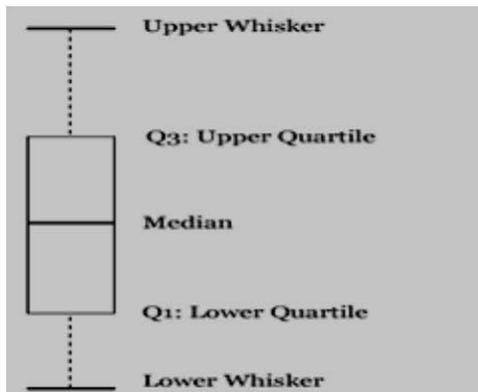
Note: For Figures 26 and 27 above, MWh=sum of the settled MW. Example: 1 MW load available for 12 hours = 12 MWh.

Figure 28: Economic DR Synchronous Reserve Penetration Distribution (Box-plot) for MAD Zone (2013)



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