

2015 Demand Response Operations Markets Activity Report: January 2016

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PJM Demand Side Response Operations

January 8, 2016



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Figure 1: Delivery Year 15/16 Active Participants in PJM Economic and Load Management DR Programs

State	Zone	EDC	Economic Program		Load Management DR		Unique	
			Locations	MW	Locations	MW	Locations	MW
DC	PEPCO	PEPCO	16	20.7	265	112.6	270	113.7
DE	DPL	DEMEC	12	5.7	26	14.4	26	14.4
DE	DPL	DOVDE			8	3.3	8	3.3
DE	DPL	DPL	8	142.3	263	210.5	263	210.5
DE	DPL	ODEC			8	1.1	8	1.1
IL	COMED	BATAV			1	1.0	1	1.0
IL	COMED	COMED	1,620	445.7	2,426	1,635.1	4,002	1,937.4
IL	COMED	IMEAA1			2	49.6	2	49.6
IN	AEP	AEPIMP			127	345.1	127	345.1
IN	AEP	HEREC	1	39.0	1	26.7	1	26.7
IN	AEP	WVPA			68	2.0	68	2.0
IN	AEP	WVSDI			1	55.6	1	55.6
KY	DEOK	DEK			68	35.0	68	35.0
KY	EKPC	EKPC			11	135.8	11	135.8
MD	APS	AETSAP	57	21.7	192	113.6	192	113.6
MD	APS	AETSHG			5	0.8	5	0.8
MD	APS	AETSTH			3	0.3	3	0.3
MD	APS	AETSWP			1	0.1	1	0.1
MD	BGE	BC	69	1,238.2	880	801.1	892	1,503.1
MD	DPL	DPL	1	26.5	206	76.5	206	76.5
MD	DPL	EASTON			8	2.2	8	2.2
MD	DPL	ODEC	1	1.5	19	8.9	19	8.9
MD	PEPCO	PEPCO	8	279.6	405	427.7	406	427.8
MD	PEPCO	SMECO	6	1.7	109	54.7	109	54.7
NJ	AECO	AE	12	55.9	277	132.2	277	132.2
NJ	AECO	VMEU			25	5.8	25	5.8
NJ	JCPL	AECI			1	0.2	1	0.2
NJ	JCPL	BSHNJ	1	3.0	1	2.2	1	2.2
NJ	JCPL	JCBGS	14	58.6	494	180.1	497	230.3
NJ	PSEG	PSEG	21	53.7	1,146	392.0	1,150	413.1
NJ	RECO	RECO			21	7.2	21	7.2
NY	PENELEC	PaElec			2	1.5	2	1.5
OH	AEP	AEPOPT	14	154.2	975	705.8	975	705.8
OH	AEP	AMPO			47	110.1	47	110.1
OH	AEP	BUCK			2	20.2	2	20.2
OH	ATSI	AMPO			35	165.6	35	165.6
OH	ATSI	BUCK			2	5.5	2	5.5
OH	ATSI	CPP	1	0.9	18	42.4	18	42.4
OH	ATSI	OEEDC	19	82.2	1,186	825.6	1,190	840.3
OH	DAY	AMPO			16	37.1	16	37.1
OH	DAY	BUCK			2	4.1	2	4.1
OH	DAY	DAYEDC	6	6.8	231	152.2	231	152.2
OH	DEOK	AMPO			5	7.7	5	7.7
OH	DEOK	BUCK			2	2.0	2	2.0
OH	DEOK	DEOHIO	13	88.1	456	280.7	456	280.7
PA	APS	AECI			4	0.3	4	0.3



State	Zone	EDC	Economic Program		Load Management DR		Unique	
			Locations	MW	Locations	MW	Locations	MW
PA	APS	AETSAP	9	128.7	673	425.1	675	432.5
PA	APS	CHBDTE			5	2.7	5	2.7
PA	ATSI	PAPWR	2	0.6	99	77.2	99	77.2
PA	DUQ	DLCO	4	17.2	378	184.3	379	199.3
PA	METED	AECI			1	1.6	1	1.6
PA	METED	MetEd	35	51.8	535	281.7	536	284.7
PA	PECO	PE	128	95.2	1,474	492.9	1,481	504.7
PA	PENELEC	AECI			28	14.3	28	14.3
PA	PENELEC	PaElec	4	11.9	624	282.9	625	289.9
PA	PENELEC	WELLSB			1	1.5	1	1.5
PA	PPL	AMPO			11	2.4	11	2.4
PA	PPL	CTZECL			5	1.7	5	1.7
PA	PPL	PPL	257	181.4	1,520	796.1	1,538	880.3
PA	PPL	UGI-UI			14	7.5	14	7.5
TN	AEP	AEPAPT	1	30.0	10	3.1	11	33.1
VA	AEP	AEPAPT	1	0.1	243	233.0	243	233.0
VA	AEP	AMPO			18	14.3	18	14.3
VA	AEP	RADFRD			1	2.0	1	2.0
VA	AEP	SALEM			1	0.1	1	0.1
VA	AEP	VATECH			1	6.3	1	6.3
VA	APS	ODEC			42	35.2	42	35.2
VA	DOM	CVEC			6	4.5	6	4.5
VA	DOM	DOMEDC	32	42.1	1,134	780.7	1,134	780.7
VA	DOM	DOMVME			22	95.6	22	95.6
VA	DOM	NVEC	2	14.6	57	35.8	59	50.4
VA	DOM	ODEC	2	50.2	44	63.1	44	63.1
VA	DPL	ODEC			14	8.6	14	8.6
WV	AEP	AEPAPT	2	4.3	363	364.9	363	364.9
WV	AEP	APWVP			4	0.3	4	0.3
WV	APS	AETSAP	89	53.2	341	221.8	342	231.8
Total			2,468	3,407	17,720	11,635	19,359	12,910

- Note:
- 1) Data as of 1/4/2016.
 - 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.
 - 6) As of January 4, 2016, DY15/16 RPM Committed value is 10,926 MW.



Figure 2: Delivery Year 15/16 MWs in PJM Load Management DR by Resource, Product, and Lead Times

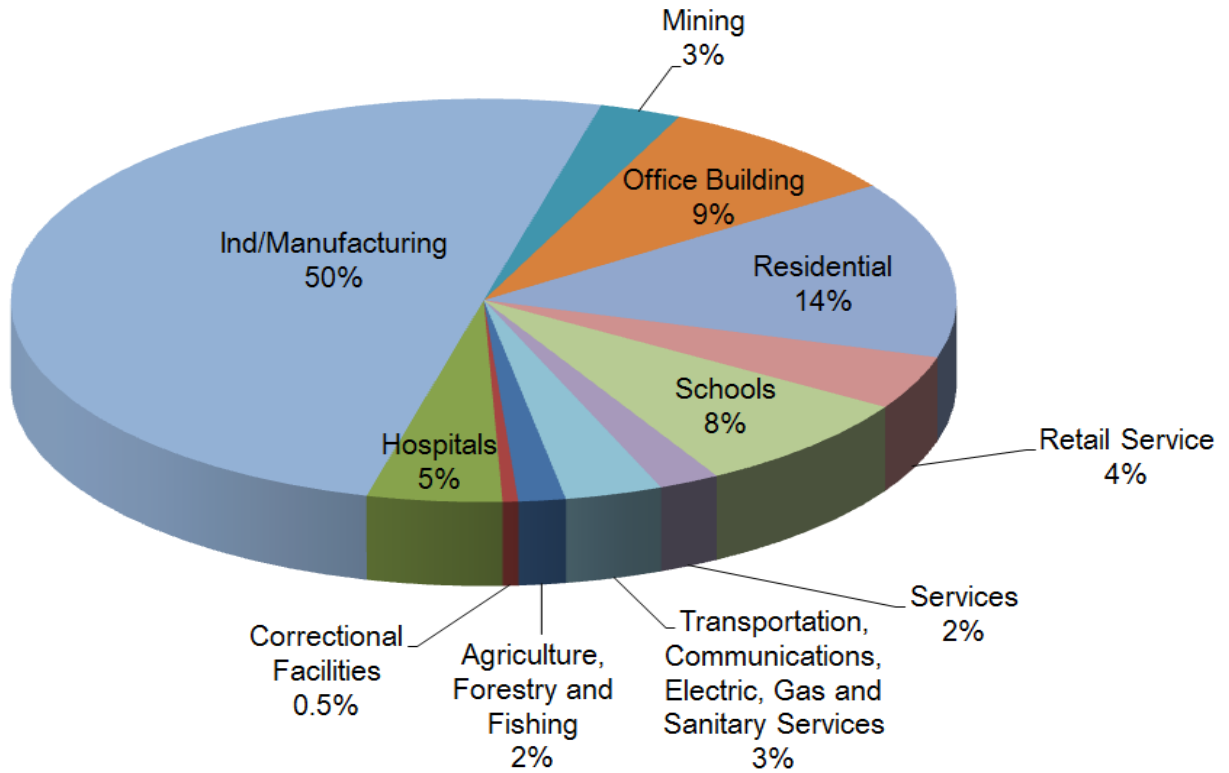
Zone		Product			Lead Times (minutes)			Total MW	Committed MWs
		Limited	Extended	Annual	30	60	120		
AECO									
	Pre-Emergency	59.5	77.5	0.0	122.5	6.2	8.3	137.0	
	Emergency	1.0	0.0	0.0	1.0	0.0	0.0	1.0	
	Total	60.4	77.5	0.0	123.5	6.2	8.3	138.0	130.5
AEP									
	Pre-Emergency	1,522.5	62.4	82.4	960.0	37.0	670.4	1,667.4	
	Emergency	199.8	22.5	0.0	148.6	13.5	60.2	222.3	
	Total	1,722.3	84.9	82.4	1,108.5	50.5	730.6	1,889.6	1,733.3
APS									
	Pre-Emergency	512.1	180.4	12.7	311.9	20.4	372.9	705.2	
	Emergency	88.5	6.2	0.0	71.8	0.4	22.5	94.7	
	Total	600.6	186.6	12.7	383.7	20.8	395.4	799.9	746.1
ATSI									
	Pre-Emergency	509.9	311.5	45.4	400.6	53.1	413.2	866.9	
	Emergency	58.2	182.5	8.8	168.3	8.8	72.3	249.5	
	Total	568.1	494.1	54.2	568.9	62.0	485.5	1,116.4	1,046.2
BGE									
	Pre-Emergency	648.0	44.8	3.8	650.3	10.2	36.0	696.5	
	Emergency	81.6	20.5	2.5	60.4	2.9	41.4	104.6	
	Total	729.6	65.2	6.3	710.6	13.1	77.4	801.1	759.8
COMED									
	Pre-Emergency	821.1	426.7	16.0	972.1	31.8	259.8	1,263.7	
	Emergency	307.8	114.2	0.0	274.9	14.8	132.3	422.0	
	Total	1,128.9	540.9	16.0	1,247.1	46.7	392.0	1,685.8	1,605.3
DAY									
	Pre-Emergency	139.1	13.5	16.6	114.2	0.5	54.4	169.1	
	Emergency	23.2	1.1	0.0	20.1	0.0	4.2	24.3	
	Total	162.3	14.5	16.6	134.3	0.5	58.6	193.4	174.8
DEOK									
	Pre-Emergency	170.2	99.0	0.0	86.4	74.8	108.1	269.3	
	Emergency	54.7	1.6	0.0	30.6	8.7	17.0	56.2	
	Total	224.9	100.6	0.0	116.9	83.5	125.1	325.5	305.9
DOM									
	Pre-Emergency	492.5	29.6	56.8	332.9	35.8	210.2	579.0	
	Emergency	337.7	63.0	0.0	240.3	63.7	96.8	400.8	
	Total	830.2	92.7	56.8	573.2	99.5	307.0	979.7	886.8
DPL									
	Pre-Emergency	192.6	105.1	0.0	182.9	1.3	113.5	297.8	
	Emergency	23.6	4.2	0.0	14.5	2.9	10.4	27.8	
	Total	216.2	109.3	0.0	197.4	4.2	123.9	325.6	295.0
DUQ									
	Pre-Emergency	127.0	32.5	1.1	71.3	7.2	82.2	160.6	
	Emergency	21.4	2.2	0.0	11.9	0.0	11.7	23.6	
	Total	148.5	34.7	1.1	83.1	7.2	93.9	184.3	170.6
EKPC									
	Pre-Emergency	133.3	0.0	0.0	19.1	6.1	108.1	133.3	
	Emergency	2.5	0.0	0.0	2.5	0.0	0.0	2.5	
	Total	135.8	0.0	0.0	21.6	6.1	108.1	135.8	132.4



Zone		Limited	Product		Lead Times (minutes)			Total MW	Committed MWs
			Extended	Annual	30	60	120		
JCPL									
	Pre-Emergency	121.6	47.2	0.0	118.4	18.3	32.1	168.7	
	Emergency	11.0	2.8	0.0	13.6	0.0	0.2	13.8	
	Total	132.6	50.0	0.0	132.0	18.3	32.3	182.5	173.1
METED									
	Pre-Emergency	157.4	73.9	0.0	135.6	19.7	75.9	231.3	
	Emergency	40.5	11.6	0.0	30.6	10.1	11.3	52.0	
	Total	197.8	85.4	0.0	166.2	29.8	87.3	283.3	272.4
PECO									
	Pre-Emergency	233.1	127.1	0.0	259.5	58.5	42.3	360.3	
	Emergency	96.8	35.8	0.0	87.5	7.7	37.5	132.6	
	Total	329.9	163.0	0.0	346.9	66.1	79.8	492.9	479.3
PENELEC									
	Pre-Emergency	185.5	62.1	0.0	117.9	8.1	121.6	247.6	
	Emergency	50.5	2.1	0.0	23.3	0.4	28.9	52.6	
	Total	236.0	64.2	0.0	141.1	8.6	150.5	300.2	286.7
PEPCO									
	Pre-Emergency	326.0	219.8	0.0	370.0	0.6	175.2	545.7	
	Emergency	45.4	3.9	0.0	26.6	7.2	15.5	49.3	
	Total	371.4	223.7	0.0	396.6	7.8	190.7	595.1	535.7
PPL									
	Pre-Emergency	459.2	245.2	0.2	436.3	32.0	236.2	704.5	
	Emergency	92.4	10.8	0.0	63.6	6.7	32.8	103.2	
	Total	551.5	256.0	0.2	499.9	38.8	269.1	807.7	774.3
PSEG									
	Pre-Emergency	233.9	109.5	8.3	303.7	9.6	38.3	351.6	
	Emergency	12.5	6.3	21.6	31.1	4.0	5.2	40.4	
	Total	246.4	115.8	29.8	334.8	13.7	43.5	392.0	410.6
RECO									
	Pre-Emergency	6.5	0.1	0.0	6.3	0.0	0.3	6.6	
	Emergency	0.6	0.0	0.0	0.6	0.0	0.0	0.6	
	Total	7.1	0.1	0.0	6.9	0.0	0.3	7.2	7.0
TOTAL									
	Pre-Emergency	7,050.9	2,267.8	243.3	5,971.8	431.3	3,158.9	9,562.0	
	Emergency	1,549.7	491.3	32.8	1,321.5	151.9	600.4	2,073.8	
	Total	8,600.5	2,759.2	276.1	7,293.3	583.2	3,759.3	11,635.8	10,925.8

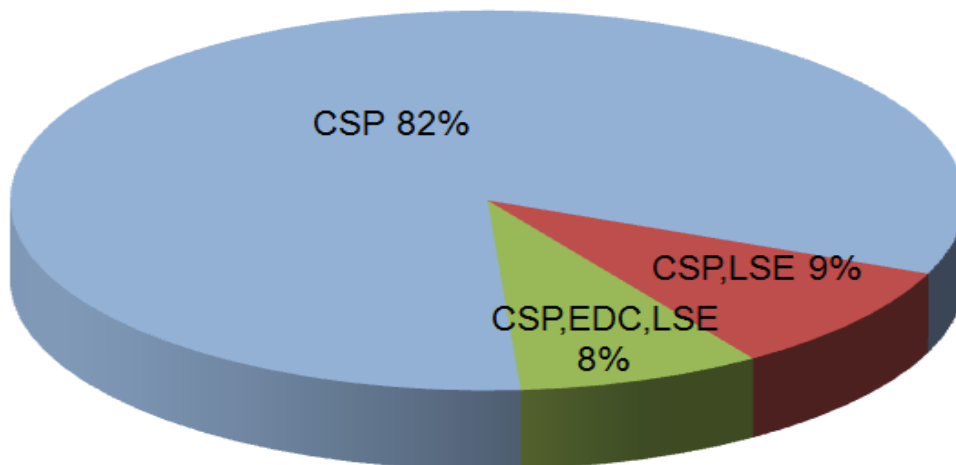
Note: MWs are Nominated Capacity (MWs)

Figure 3: DY 15/16 Confirmed Load Management DR Registrations Business Segments



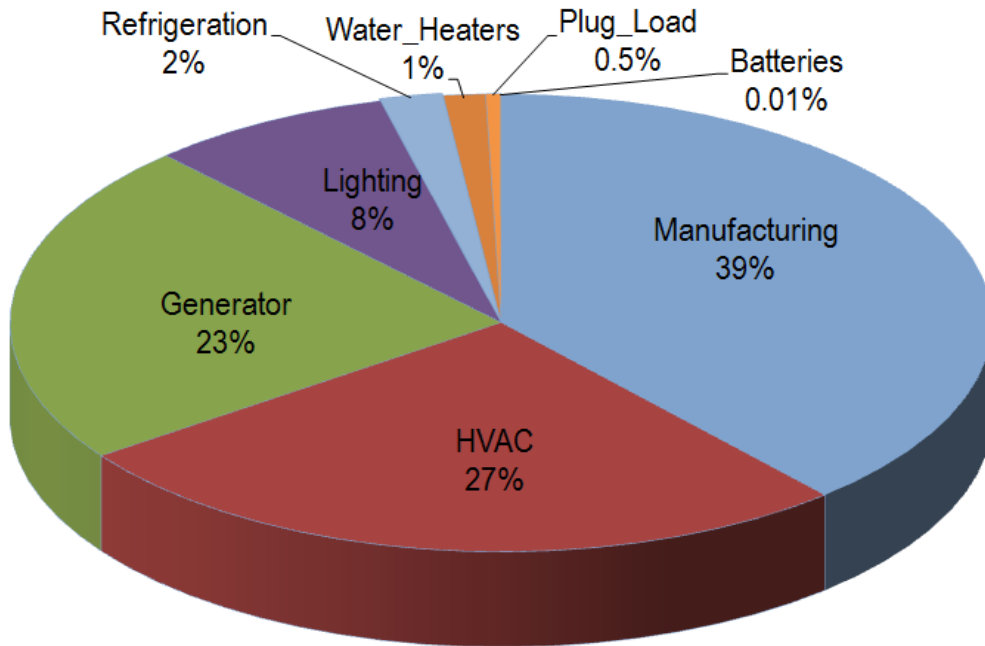
Note: Percent of Nominated Capacity (MWs)

Figure 4: DY 15/16 Confirmed Load Management DR Registrations Owner/Company Type



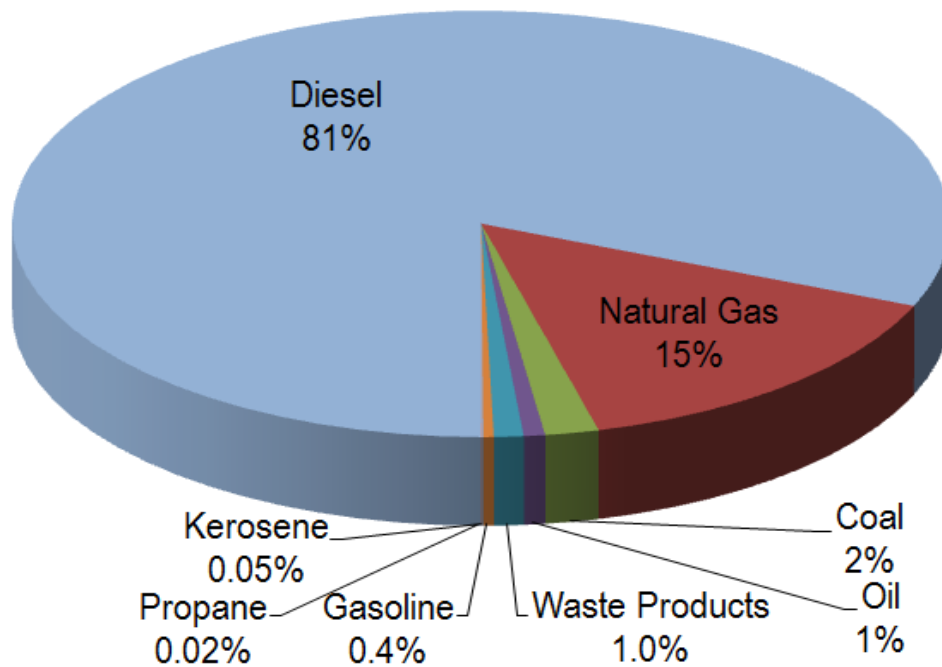
Note: Percent of Nominated Capacity (MWs)

Figure 5: DY 15/16 Confirmed Load Management DR Registrations Customer Load Reduction Methods



Note: Percent of Nominated Capacity (MWs)

Figure 6: DY 15/16 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation



Note: Percent of Nominated Capacity (MWs)

Figure 7: DY 15/16 Confirmed Load Management DR Registrations Generator and Permit Type

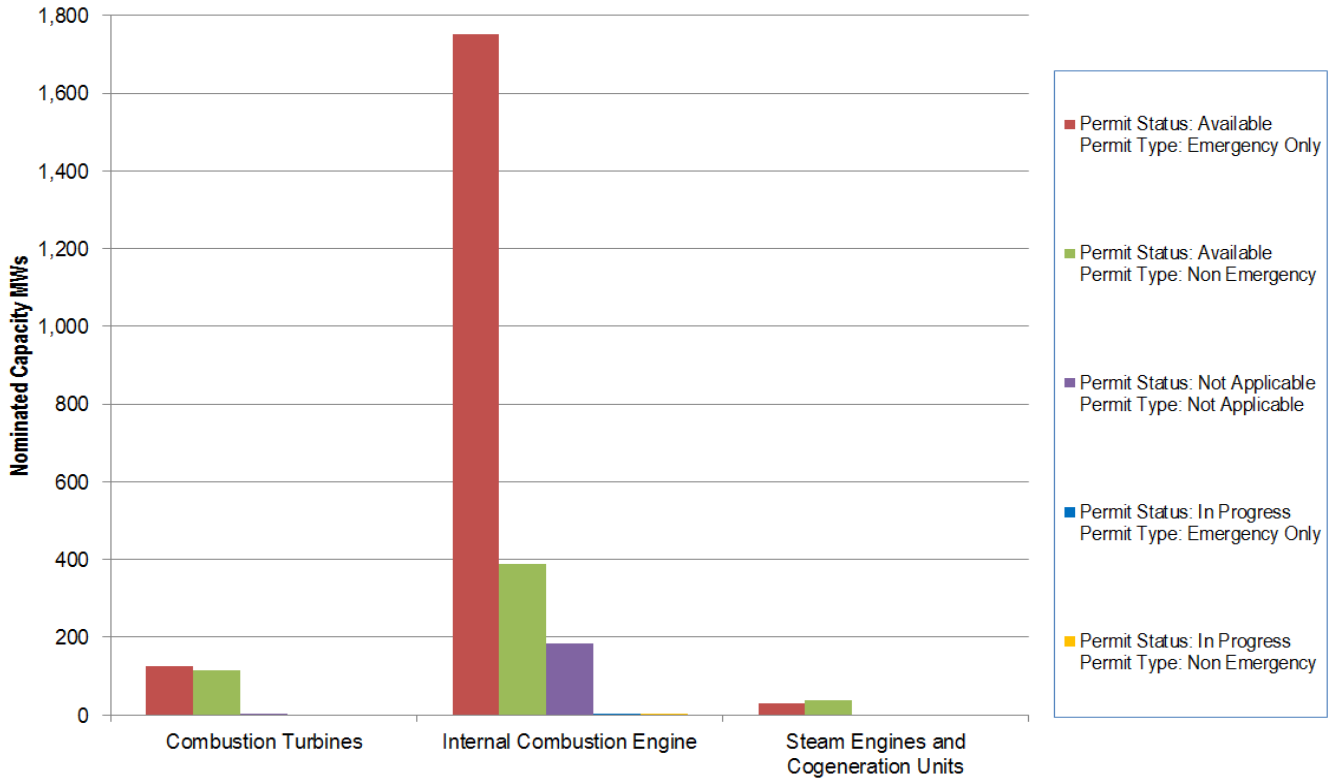


Figure 8: DY 15/16 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation

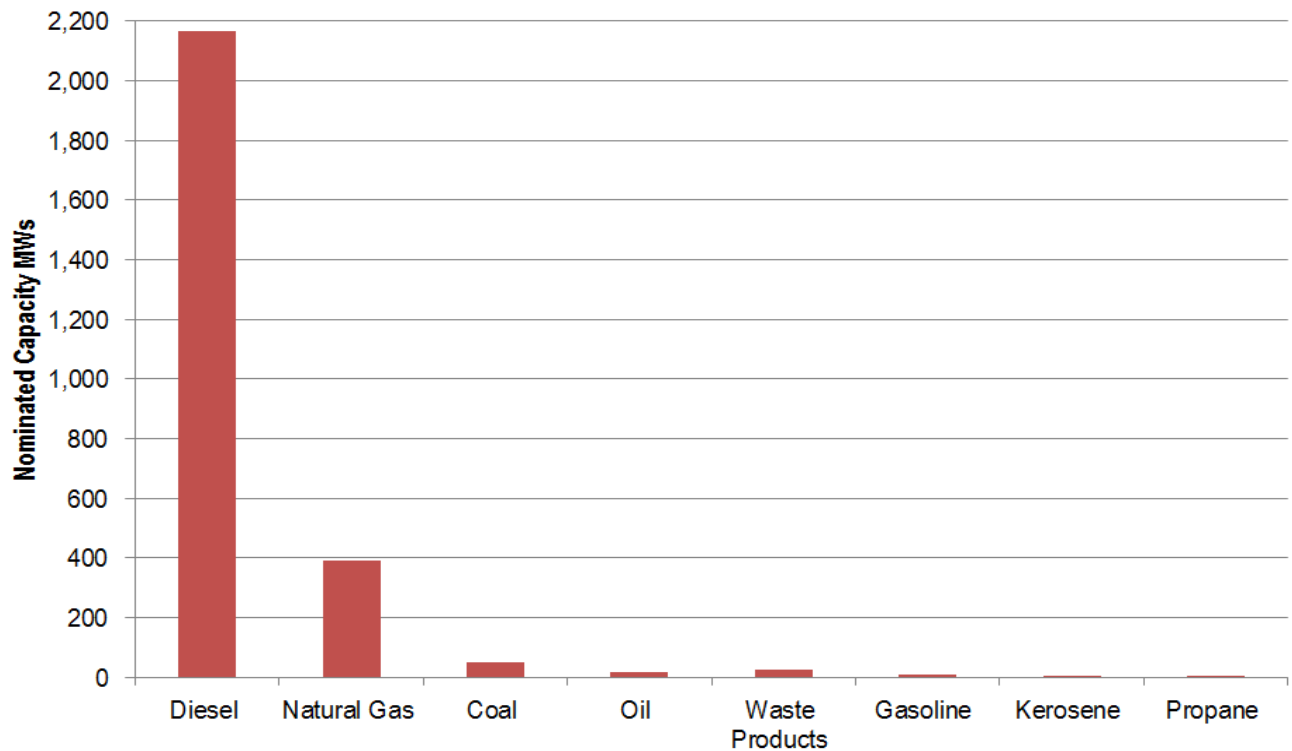
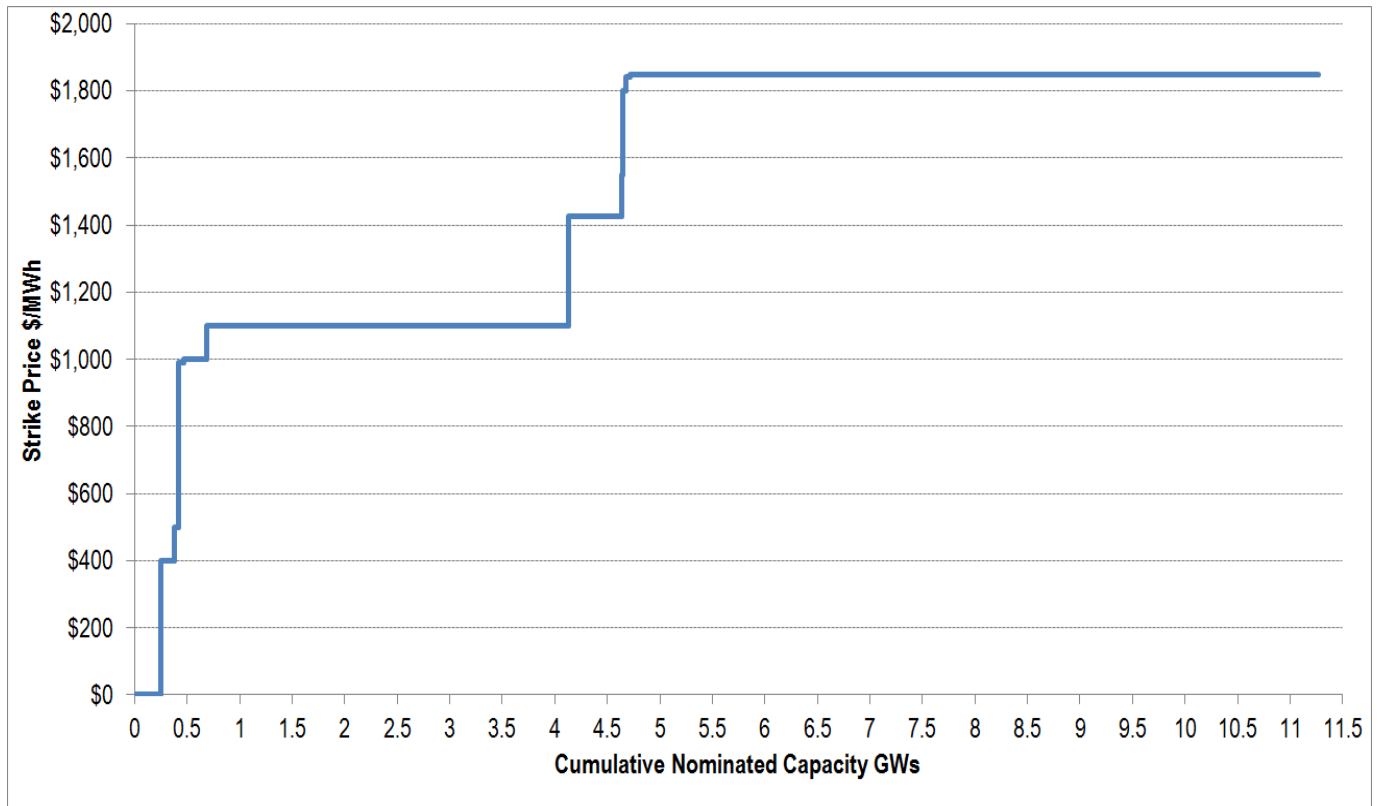


Figure 9: DY 15/16 Confirmed Load Management Full DR Registrations Energy Supply Curve:



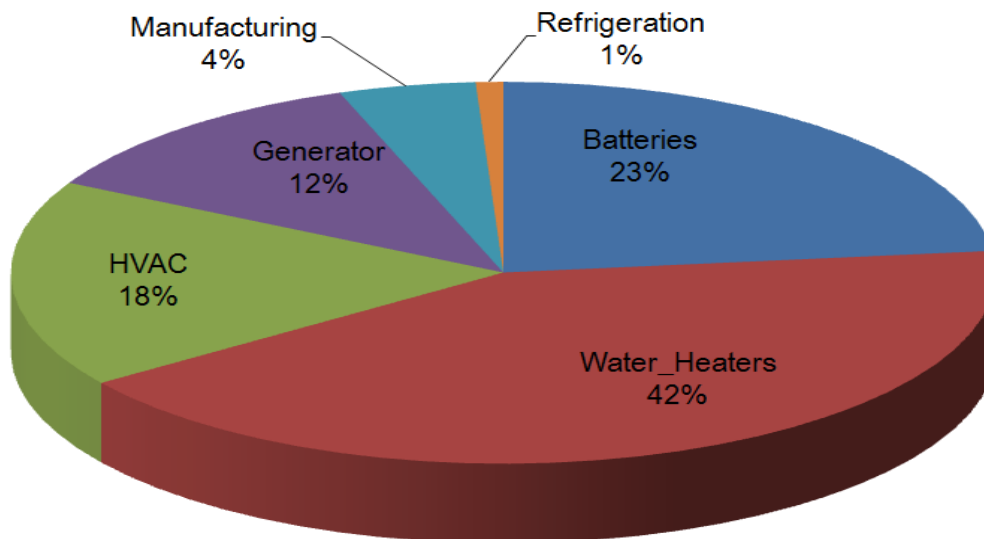
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Figure 10: PJM Economic Demand Response Capability in Ancillary Service Markets (2015):

Synch Reserves	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	MAD	138	141	142	143	142	118	121	122	128	132	134	135
	Non-MAD	2	2	3	3	3	8	8	9	10	10	10	10
RTO		140	143	145	146	145	126	129	131	138	142	144	144
Average Number of Unique Participating Locations per Month:					139								
MWs	MAD	344	345	351	351	351	351	354	354	362	373	375	377
	Non-MAD	14	14	24	24	24	73	73	159	198	198	198	198
RTO		358	358	374	375	374	424	427	513	560	571	574	574
Average MWs per Month:					457								
Regulation	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	RTO	274	274	274	297	298	299	302	304	304	321	286	292
Average Number of Unique Participating Locations per Month:					294								
MWs	RTO	12	12	12	12	13	15	16	18	18	19	21	22
Average MWs per Month:					16								

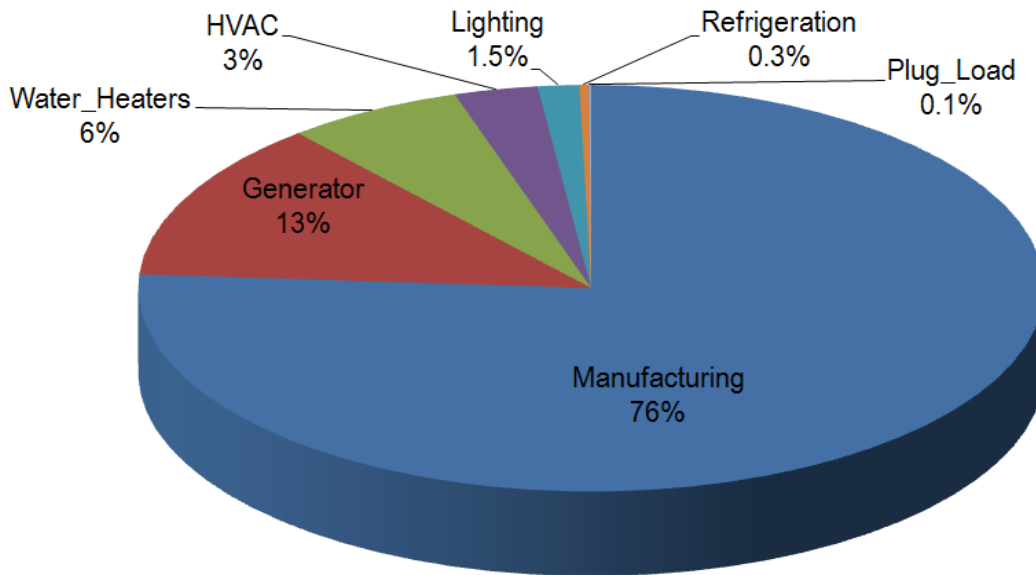
Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report

Figure 11: PJM Demand Response Confirmed Regulation Registrations Load Reduction Methods



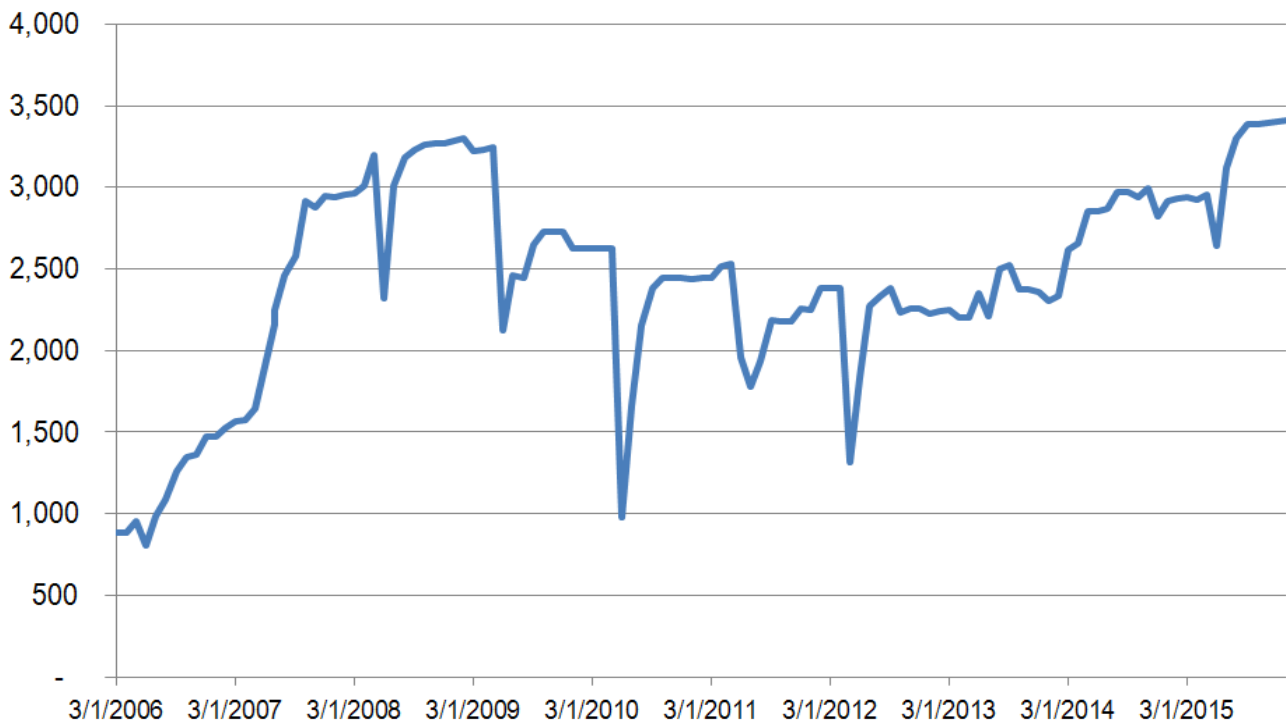
Note: Percent of CSP Reported Load Reduction MWs

Figure 12: PJM Demand Response Confirmed Synch Reserve Registrations Load Reduction Methods

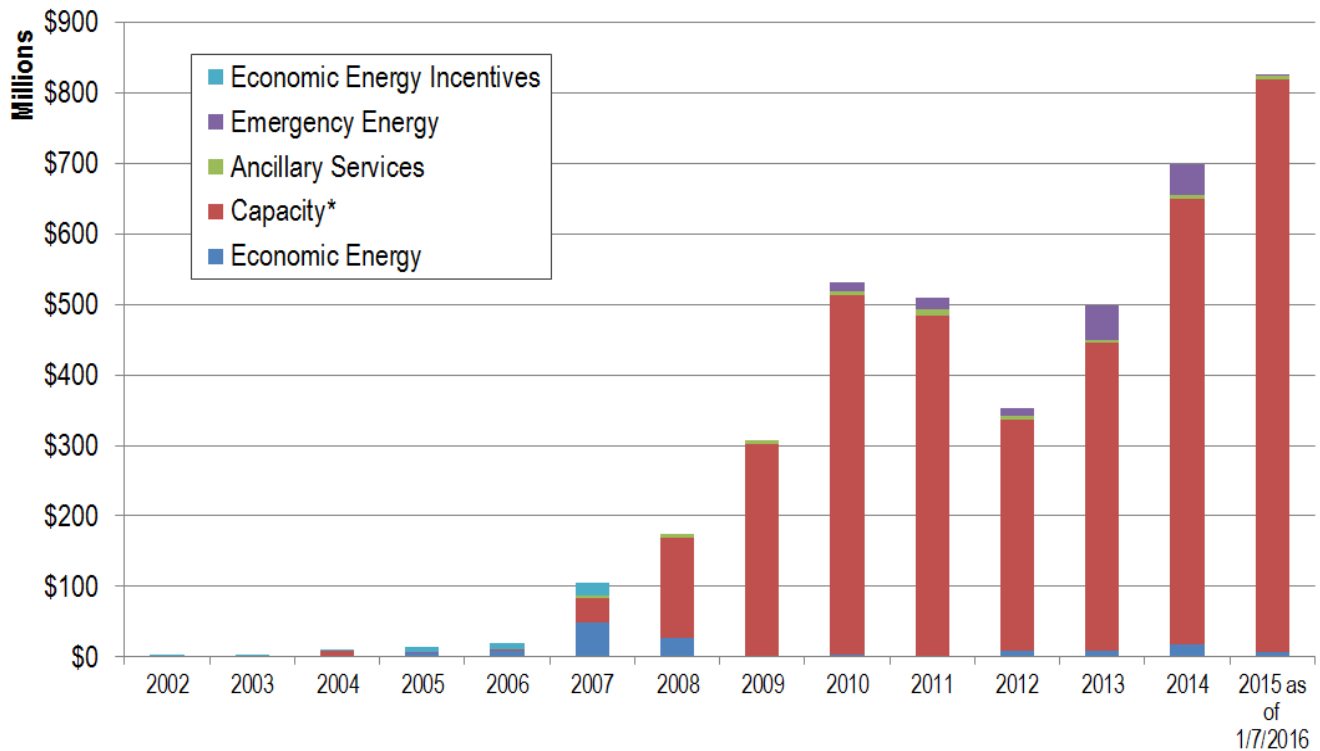


Note: Percent of CSP Reported Load Reduction MWs

Figure 13: PJM Economic Demand Response Capability in Energy Market (3/1/2006-1/4/2016)



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 14: PJM Estimated Revenue for Economic and Load Management DR Markets


*Capacity Net Revenue inclusive of Capacity Credits and Charges.

Figure 15: 2015 Economic Demand Response Monthly Registration Participation

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO							1	1	1			
DE	DPL							3	4	3			
IL	COMED	3	7	6	3	4	6	11	7	9	2	2	2
MD	BGE	1	5	2			4	4	1	4			
	DPL							1	1	1			
	PEPCO		1					2	2	2			
NJ	AECO		1					1	1	1	1		
	JCPL	1	5	1			2	2	2				
	PSEG	7	6	6	6	6	9	10	10	8	7	3	
OH	AEP		2			1	2						
	ATSI		2	1		1	1	1	1	1	1	1	1
	DEOK							8					
PA	APS		1				1	3					
	METED		1	2	1		2	2	1				
	PECO	3	3	3	2	3	7	6	3	2	1		
	PENELEC	2	3	2	2	1	3	2	2	2	2	2	
	PPL	2	2	1			2	3	1	1			
VA	DOM	6	12	3	2	5	5	6	5	3	1	1	1
WV	APS	1	2	1	1	1	1		1	1	1	1	
Total		26	53	28	17	22	45	66	43	39	16	10	4

Average Unique Participating Registrations per Month: 31

Figure 16: 2015 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												
DE	DPL												
IL	COMED			1									
MD	BGE	1	1	1			1	1	1	1			
	DPL												
	PEPCO												
NJ	AECO												
	JCPL	1	1	1			1	1	1				
	PSEG	4	3	3	3	5	5	5	5	4	4	1	
OH	AEP		1			1							
	ATSI		1										
	DEOK							8					
PA	APS		1					1					
	METED												
	PECO												
	PENELEC	1	1	1	1	1	1	1	1	1	1	1	
	PPL	2	1	1			1	1	1				
VA	DOM	1	3	1	1	2	1	1	1				
WV	APS		1										
Total		10	14	9	5	9	10	19	10	6	5	2	0

Average Unique Participating Registrations per Month (Day-Ahead): 8

Figure 17: 2015 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							1	1	1			
DE	DPL							3	4	3			
IL	COMED	3	7	5	3	4	6	11	7	9	2	2	2
MD	BGE		4	1			3	3		3			
	DPL							1	1	1			
	PEPCO		1					2	2	2			
NJ	AECO		1					1	1	1	1		
	JCPL		4				1	1	1				
	PSEG	3	3	3	3	1	4	5	5	4	3	2	
OH	AEP		1				2						
	ATSI		1	1		1	1	1	1	1	1	1	1
	DEOK												
PA	APS						1	2					
	METED		1	2	1		2	2	1				
	PECO	3	3	3	2	3	7	6	3	2	1		
	PENELEC	1	2	1	1		2	1	1	1	1	1	
	PPL		1				1	2		1			
VA	DOM	5	9	2	1	3	4	5	4	3	1	1	1
WV	APS	1	1	1	1	1	1		1	1	1	1	
Total		16	39	19	12	13	35	47	33	33	11	8	4

Average Unique Participating Registrations per Month (Real-Time): 23

Figure 18: 2015 Economic Demand Response Monthly MWh Reductions

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO							65	6	24			
DE	DPL							321	34	165			
IL	COMED	221	1,578	1,257	687	874	550	1,665	1,188	1,193	355	141	63
MD	BGE	20	155	20			2,228	4,750		2,499			
	DPL							66	34	42			
	PEPCO		0					1,128	69	373			
NJ	AECO		0					68	1	5	2		
	JCPL		1,047	478			357	924	157				
	PSEG	1,891	1,465	1,343	1,213	1,377	994	870	742	670	1,943	527	
OH	AEP		6			0	9						
	ATSI		202	0		153	1,516	1,918	1,574	1,525	800	608	215
	DEOK							145					
PA	APS		189				49	341					
	METED		3	17			1	10	1				
	PECO	16	9	9	33	11	23	4	3	3	1		
	PENELEC	1,030	1,019	145	803	527	1,002	811	1,041	1,141	1,215	631	
	PPL	540	449	279			11	298	148				
VA	DOM	5,960	13,377	5,366	2,407	4,333	7,559	6,288	3,730	1,698	3,668	2,723	929
WV	APS	93	150	310	115	84	94		232	96	49	202	
Total		9,771	19,649	9,224	5,258	7,358	14,393	19,673	8,960	9,434	8,033	4,833	1,207

Total MWh: 117,793

Figure 19: 2015 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												
DE	DPL												
IL	COMED			54									
MD	BGE	20	31	16						7			
	DPL												
	PEPCO												
NJ	AECO												
	JCPL		1,042	478			206	814	96				
	PSEG	1,617	1,074	816	1,027	1,377	949	707	599	476	1,791	462	
OH	AEP		6			0							
	ATSI		116										
	DEOK							145					
PA	APS		189					328					
	METED												
	PECO												
	PENELEC	792	459		605	527	917	615	791	1,050	788	451	
	PPL	540	448	279			15	174	148				
VA	DOM	2	1,220	2	5	2,205	3,825	994	912				
WV	APS		46										
Total		2,972	4,629	1,646	1,637	4,109	5,912	3,776	2,546	1,533	2,579	913	0

Total Day-Ahead MWh: 32,251

Figure 20: 2015 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							65	6	24			
DE	DPL							321	34	165			
IL	COMED	221	1,578	1,204	687	874	550	1,665	1,188	1,193	355	141	63
MD	BGE		124	3			2,228	4,750		2,492			
	DPL							66	34	42			
	PEPCO		0					1,128	69	373			
NJ	AECO		0					68	1	5	2		
	JCPL		5				151	110	61				
	PSEG	274	391	527	186		45	163	143	193	152	65	
OH	AEP		0				9						
	ATSI		87	0		153	1,516	1,918	1,574	1,525	800	608	215
	DEOK												
PA	APS						49	13					
	METED		3	17			1	10	1				
	PECO	16	9	9	33	11	23	4	3	3	1		
	PENELEC	238	560	145	198		85	196	250	91	427	180	
	PPL		0				-4	125					
VA	DOM	5,957	12,158	5,364	2,402	2,128	3,734	5,294	2,818	1,698	3,668	2,723	929
WV	APS	93	104	310	115	84	94		232	96	49	202	
Total		6,800	15,020	7,578	3,620	3,249	8,481	15,898	6,414	7,901	5,453	3,920	1,207

Total Real-Time MWh: 85,543

Figure 21: Economic Demand Response Monthly Energy Market Revenue (2015)

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO							\$2,404	\$268	\$1,335			
								\$9,417	\$2,112	\$9,727			
IL	COMED	\$7,427	\$104,411	\$53,013	\$18,571	\$28,200	\$21,305	\$73,096	\$51,210	\$42,361	\$9,771	\$4,558	\$2,184
MD	BGE	\$1,234	\$60,999	\$2,390			\$114,333	\$230,609	(\$108)	\$147,507			
								\$3,676	\$836	\$3,850			
	PEPCO		\$18					\$39,762	\$3,020	\$19,485			
NJ	AECO		\$13					\$2,290	\$45	\$235	\$58		
	JCPL	(\$7,267)	\$268,892	\$66,534			\$28,311	\$95,798	\$7,670				
	PSEG	\$122,649	\$184,354	\$72,647	\$45,415	\$66,952	\$40,573	\$35,747	\$33,117	\$33,795	\$49,507	\$13,536	
OH	AEP		\$945			(\$21)	\$67						
	ATSI		\$20,918	\$42		\$7,783	\$65,122	\$72,388	\$59,705	\$65,998	\$28,633	\$22,463	\$5,580
	DEOK							\$20,097					
PA	APS		\$41,790				\$3,678	\$21,341					
	METED		\$508	\$2,467			\$14	\$523	\$57				
	PECO	\$1,772	\$1,082	\$875	\$975	\$421	\$954	\$154	\$123	\$142	\$13		
	PENELEC	\$45,423	\$65,691	\$5,511	\$26,617	\$23,564	\$44,832	\$31,952	\$41,499	\$55,953	\$42,126	\$19,919	
	PPL	\$47,561	\$94,484	\$32,384			\$599	\$16,487	\$7,304				
VA	DOM	\$470,144	\$1,945,669	\$421,571	\$98,387	\$326,926	\$426,607	\$290,427	\$156,806	\$75,917	\$154,837	\$123,566	\$40,608
WV	APS	\$9,292	\$19,338	\$10,333	\$4,304	\$2,801	\$3,745		\$7,946	\$5,027	\$1,915	\$4,690	
Total		\$698,233	\$2,809,114	\$667,768	\$194,270	\$456,626	\$750,141	\$946,170	\$371,609	\$461,331	\$286,860	\$188,732	\$48,372

Total CSP Credits: \$7,879,227

Figure 22: Economic Demand Response Monthly Energy Market Revenue Day-Ahead Activity (2015)

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO												
IL	COMED			\$1,363									
MD	BGE	\$1,234	\$7,665	\$2,049			\$339	\$218	(\$108)	\$618			
	PEPCO												
NJ	AECO												
	JCPL	(\$7,267)	\$268,303	\$66,534			\$20,145	\$79,562	\$5,464				
	PSEG	\$101,862	\$152,053	\$49,986	\$36,021	\$66,952	\$38,562	\$30,169	\$27,636	\$25,930	\$44,484	\$11,908	
OH	AEP		\$928			(\$21)							
	ATSI		\$10,271										
	DEOK							\$20,097					
PA	APS		\$41,790					\$20,624					
	METED												
	PECO												
	PENELEC	\$33,890	\$21,994	\$163	\$19,048	\$23,564	\$42,068	\$24,327	\$32,974	\$51,762	\$27,322	\$16,081	
	PPL	\$47,561	\$94,413	\$32,384			\$786	\$7,120	\$7,304				
VA	DOM	\$111	\$89,572	\$110	\$213	\$181,718	\$209,970	\$36,767	\$33,329				
WV	APS		\$17,055										
Total		\$177,389	\$704,043	\$152,590	\$55,282	\$272,213	\$311,871	\$218,885	\$106,600	\$78,310	\$71,805	\$27,989	\$0

Total Day-Ahead CSP Credits: \$2,176,978

Figure 23: Economic Demand Response Monthly Energy Market Revenue Real-Time Activity (2015)

State	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DC	PEPCO							\$2,404	\$268	\$1,335			
								\$9,417	\$2,112	\$9,727			
IL	COMED	\$7,427	\$104,411	\$51,650	\$18,571	\$28,200	\$21,305	\$73,096	\$51,210	\$42,361	\$9,771	\$4,558	\$2,184
MD	BGE		\$53,334	\$341			\$113,994	\$230,391		\$146,889			
								\$3,676	\$836	\$3,850			
	PEPCO		\$18					\$39,762	\$3,020	\$19,485			
NJ	AECO		\$13					\$2,290	\$45	\$235	\$58		
	JCPL		\$589				\$8,165	\$16,236	\$2,206				
	PSEG	\$20,787	\$32,301	\$22,660	\$9,394		\$2,011	\$5,579	\$5,482	\$7,865	\$5,023	\$1,628	
OH	AEP		\$17				\$67						
	ATSI		\$10,647	\$42		\$7,783	\$65,122	\$72,388	\$59,705	\$65,998	\$28,633	\$22,463	\$5,580
	DEOK												
PA	APS						\$3,678	\$717					
	METED		\$508	\$2,467			\$14	\$523	\$57				
	PECO	\$1,772	\$1,082	\$875	\$975	\$421	\$954	\$154	\$123	\$142	\$13		
	PENELEC	\$11,533	\$43,697	\$5,348	\$7,569		\$2,764	\$7,625	\$8,525	\$4,190	\$14,804	\$3,838	
	PPL		\$72				(\$187)	\$9,367					
VA	DOM	\$470,033	\$1,856,098	\$421,460	\$98,173	\$145,208	\$216,637	\$253,660	\$123,477	\$75,917	\$154,837	\$123,566	\$40,608
WV	APS	\$9,292	\$2,283	\$10,333	\$4,304	\$2,801	\$3,745		\$7,946	\$5,027	\$1,915	\$4,690	
Total		\$520,844	\$2,105,071	\$515,178	\$138,987	\$184,413	\$438,270	\$727,286	\$265,010	\$383,021	\$215,055	\$160,744	\$48,372

Total Real-Time CSP Credits: \$5,702,250

Figure 24: Economic Demand Response Energy Market Cost Allocation by Zone (2015)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$8,144	\$32,233	\$7,885	\$1,675	\$6,752	\$9,830	\$13,208	\$5,325	\$6,801	\$3,002	\$1,362	\$195
AEP	\$110,175	\$460,039	\$108,168	\$35,842	\$73,540	\$120,888	\$145,840	\$56,877	\$67,862	\$48,580	\$34,095	\$9,477
APS	\$46,313	\$186,348	\$43,950	\$14,169	\$28,661	\$45,064	\$55,760	\$21,279	\$25,583	\$18,221	\$12,864	\$3,656
ATSI	\$53,788	\$218,608	\$55,824	\$19,925	\$39,112	\$63,114	\$78,631	\$30,821	\$37,763	\$25,846	\$17,698	\$4,973
BGE	\$31,720	\$124,739	\$28,379	\$8,934	\$20,043	\$35,112	\$41,528	\$16,457	\$19,268	\$11,789	\$8,242	\$2,288
COMED	\$58,545	\$275,905	\$69,202	\$18,046	\$42,842	\$82,223	\$117,173	\$45,452	\$58,942	\$32,680	\$24,125	\$7,121
DAY	\$14,864	\$56,946	\$14,135	\$4,813	\$9,977	\$16,888	\$20,690	\$8,084	\$9,623	\$6,666	\$4,595	\$1,303
DEOK	\$20,275	\$89,027	\$21,328	\$6,816	\$16,210	\$28,087	\$33,858	\$12,734	\$15,622	\$10,200	\$7,088	\$1,967
DOM	\$93,812	\$388,679	\$84,586	\$26,191	\$60,039	\$107,084	\$125,545	\$48,151	\$55,234	\$35,569	\$25,288	\$6,791
DPL	\$18,319	\$75,492	\$16,560	\$3,070	\$10,660	\$16,842	\$20,435	\$8,365	\$10,947	\$5,569	\$3,935	\$936
DUQ	\$9,970	\$35,023	\$11,012	\$3,864	\$9,227	\$14,519	\$18,241	\$6,782	\$8,561	\$5,284	\$3,608	\$992
EKPC	\$11,403	\$54,120	\$11,522	\$2,788	\$6,507	\$11,799	\$14,052	\$5,224	\$6,192	\$4,247	\$3,341	\$973
JCPL	\$18,592	\$72,039	\$17,775	\$4,136	\$13,725	\$23,025	\$30,367	\$12,173	\$15,694	\$7,170	\$3,317	\$245
METED	\$13,736	\$53,971	\$13,034	\$2,642	\$8,660	\$11,134	\$14,472	\$6,179	\$8,403	\$4,856	\$2,181	\$180
PECO	\$34,695	\$137,349	\$32,562	\$6,487	\$23,321	\$31,876	\$42,687	\$17,720	\$23,928	\$11,964	\$5,549	\$433
PENELEC	\$15,541	\$60,547	\$15,391	\$4,838	\$9,599	\$14,545	\$17,959	\$7,212	\$8,946	\$6,792	\$4,290	\$1,030
PEPCO	\$29,008	\$114,217	\$26,061	\$8,609	\$20,091	\$34,254	\$40,812	\$15,694	\$18,509	\$11,291	\$7,979	\$2,150
PPL	\$38,227	\$153,234	\$36,723	\$6,891	\$22,204	\$25,649	\$38,119	\$15,540	\$21,233	\$12,859	\$5,893	\$641
PSEG	\$36,731	\$133,282	\$33,547	\$8,416	\$24,829	\$40,193	\$52,829	\$21,200	\$27,995	\$14,223	\$6,496	\$1,058
RECO	\$1,231	\$4,301	\$1,110	\$291	\$1,076	\$1,552	\$2,157	\$837	\$1,099	\$508	\$282	\$68
Exports	\$33,144	\$83,014	\$19,015	\$5,828	\$9,552	\$16,723	\$21,808	\$9,501	\$13,128	\$9,543	\$6,504	\$1,896
TOTAL	\$698,233	\$2,809,114	\$667,768	\$194,270	\$456,626	\$750,400	\$946,170	\$371,609	\$461,331	\$286,860	\$188,732	\$48,372

Total Zonal Charges: \$7,879,487

Figure 25: Economic Demand Response Day-Ahead Energy Market Cost Allocation by Zone (2015)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$2,473	\$7,304	\$1,683	\$534	\$3,903	\$4,036	\$3,937	\$1,388	\$1,005	\$519	\$136	\$0
AEP	\$30,054	\$106,712	\$22,259	\$10,345	\$41,038	\$48,356	\$40,096	\$14,026	\$10,718	\$9,720	\$2,777	\$0
APS	\$13,466	\$42,933	\$9,166	\$4,123	\$15,943	\$18,136	\$15,381	\$5,335	\$4,017	\$3,603	\$1,041	\$0
ATSI	\$15,274	\$52,178	\$11,554	\$5,881	\$21,719	\$25,253	\$22,180	\$7,748	\$5,995	\$5,257	\$1,478	\$0
BGE	\$9,518	\$28,084	\$5,966	\$2,599	\$11,485	\$14,094	\$12,163	\$4,316	\$2,989	\$2,353	\$653	\$0
COMED	\$15,659	\$65,793	\$15,172	\$5,516	\$27,325	\$30,398	\$32,439	\$10,993	\$9,078	\$7,083	\$1,898	\$0
DAY	\$4,193	\$13,307	\$2,877	\$1,391	\$5,492	\$6,700	\$5,667	\$2,134	\$1,500	\$1,348	\$378	\$0
DEOK	\$5,455	\$20,566	\$4,411	\$1,985	\$8,779	\$11,291	\$9,150	\$3,069	\$2,436	\$2,056	\$580	\$0
DOM	\$26,498	\$86,221	\$18,055	\$7,686	\$34,922	\$42,537	\$36,231	\$12,467	\$8,545	\$7,055	\$1,987	\$0
DPL	\$5,419	\$16,923	\$3,536	\$958	\$6,249	\$6,800	\$6,073	\$2,171	\$1,632	\$938	\$330	\$0
DUQ	\$2,802	\$8,746	\$2,240	\$1,182	\$5,005	\$5,931	\$5,128	\$1,659	\$1,347	\$1,081	\$304	\$0
EKPC	\$3,086	\$12,256	\$2,517	\$784	\$3,489	\$4,671	\$3,752	\$1,206	\$936	\$806	\$241	\$0
JCPL	\$5,529	\$16,342	\$3,702	\$1,303	\$7,865	\$9,491	\$8,941	\$3,131	\$2,345	\$1,252	\$337	\$0
METED	\$4,077	\$12,108	\$2,691	\$858	\$4,991	\$4,754	\$4,299	\$1,620	\$1,284	\$847	\$217	\$0
PECO	\$10,475	\$30,963	\$6,946	\$2,178	\$13,483	\$13,593	\$12,931	\$4,621	\$3,631	\$2,091	\$558	\$0
PENELEC	\$4,747	\$14,461	\$3,167	\$1,454	\$5,447	\$5,868	\$5,118	\$1,813	\$1,423	\$1,373	\$369	\$0
PEPCO	\$8,605	\$26,026	\$5,518	\$2,546	\$11,571	\$13,589	\$11,999	\$4,142	\$2,876	\$2,266	\$642	\$0
PPL	\$11,237	\$34,163	\$7,645	\$2,265	\$12,701	\$11,368	\$11,135	\$4,052	\$3,202	\$2,287	\$601	\$0
PSEG	\$12,133	\$31,951	\$7,066	\$2,649	\$14,184	\$16,487	\$15,570	\$5,504	\$4,269	\$2,521	\$664	\$0
RECO	\$409	\$1,049	\$233	\$93	\$611	\$652	\$614	\$215	\$169	\$93	\$25	\$0
Exports	\$10,930	\$19,481	\$3,905	\$1,706	\$6,136	\$6,582	\$6,513	\$2,435	\$2,244	\$2,016	\$494	\$0
TOTAL	\$202,040	\$647,566	\$140,310	\$58,036	\$262,336	\$300,585	\$269,317	\$94,046	\$71,642	\$56,564	\$15,710	\$0

Total Day-Ahead Zonal Charges: \$2,118,153

Figure 26: Economic Demand Response Real-Time Energy Market Cost Allocation by Zone (2015)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$5,671	\$24,929	\$6,202	\$1,141	\$2,849	\$5,794	\$9,272	\$3,938	\$5,796	\$2,483	\$1,226	\$195
AEP	\$80,121	\$353,327	\$85,908	\$25,498	\$32,502	\$72,532	\$105,744	\$42,851	\$57,144	\$38,860	\$31,317	\$9,477
APS	\$32,847	\$143,415	\$34,784	\$10,046	\$12,718	\$26,929	\$40,379	\$15,944	\$21,567	\$14,619	\$11,823	\$3,656
ATSI	\$38,514	\$166,430	\$44,269	\$14,043	\$17,393	\$37,861	\$56,450	\$23,073	\$31,768	\$20,590	\$16,220	\$4,973
BGE	\$22,202	\$96,656	\$22,413	\$6,335	\$8,557	\$21,018	\$29,365	\$12,140	\$16,279	\$9,435	\$7,590	\$2,288
COMED	\$42,887	\$210,112	\$54,030	\$12,530	\$15,517	\$51,825	\$84,734	\$34,459	\$49,863	\$25,597	\$22,227	\$7,121
DAY	\$10,671	\$43,639	\$11,258	\$3,423	\$4,485	\$10,188	\$15,023	\$5,950	\$8,123	\$5,318	\$4,217	\$1,303
DEOK	\$14,821	\$68,461	\$16,917	\$4,831	\$7,430	\$16,796	\$24,708	\$9,665	\$13,186	\$8,144	\$6,507	\$1,967
DOM	\$67,314	\$302,458	\$66,531	\$18,505	\$25,117	\$64,546	\$89,313	\$35,684	\$46,689	\$28,514	\$23,301	\$6,791
DPL	\$12,900	\$58,569	\$13,024	\$2,111	\$4,412	\$10,043	\$14,362	\$6,195	\$9,315	\$4,631	\$3,604	\$936
DUQ	\$7,168	\$26,277	\$8,772	\$2,681	\$4,221	\$8,588	\$13,113	\$5,123	\$7,214	\$4,202	\$3,304	\$992
EKPC	\$8,316	\$41,864	\$9,005	\$2,004	\$3,017	\$7,128	\$10,300	\$4,018	\$5,256	\$3,441	\$3,100	\$973
JCPL	\$13,062	\$55,698	\$14,073	\$2,834	\$5,860	\$13,534	\$21,426	\$9,042	\$13,349	\$5,918	\$2,980	\$245
METED	\$9,659	\$41,863	\$10,342	\$1,784	\$3,670	\$6,380	\$10,173	\$4,559	\$7,119	\$4,009	\$1,964	\$180
PECO	\$24,220	\$106,387	\$25,616	\$4,309	\$9,838	\$18,283	\$29,756	\$13,098	\$20,296	\$9,873	\$4,990	\$433
PENELEC	\$10,794	\$46,086	\$12,224	\$3,385	\$4,152	\$8,677	\$12,841	\$5,400	\$7,523	\$5,419	\$3,921	\$1,030
PEPCO	\$20,403	\$88,191	\$20,543	\$6,062	\$8,520	\$20,666	\$28,813	\$11,552	\$15,633	\$9,025	\$7,337	\$2,150
PPL	\$26,989	\$119,072	\$29,078	\$4,626	\$9,504	\$14,281	\$26,984	\$11,488	\$18,031	\$10,572	\$5,293	\$641
PSEG	\$24,598	\$101,331	\$26,482	\$5,767	\$10,645	\$23,706	\$37,258	\$15,696	\$23,726	\$11,703	\$5,833	\$1,058
RECO	\$822	\$3,253	\$877	\$198	\$466	\$900	\$1,543	\$622	\$930	\$415	\$257	\$68
Exports	\$22,215	\$63,534	\$15,110	\$4,122	\$3,416	\$10,141	\$15,295	\$7,066	\$10,884	\$7,528	\$6,011	\$1,896
TOTAL	\$496,193	\$2,161,548	\$527,458	\$136,234	\$194,289	\$449,816	\$676,853	\$277,563	\$389,690	\$230,296	\$173,022	\$48,372

Total Real-Time Zonal Charges: \$5,761,334

Figure 27: Load Management Demand Response Monthly Capacity Revenue from RPM (2015)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$832,282	\$751,739	\$832,282	\$805,435	\$832,282	\$985,380	\$1,018,226	\$1,018,226	\$985,380	\$1,018,226	\$985,380	\$1,018,226
AEP	\$6,399,998	\$5,780,644	\$6,399,998	\$6,193,547	\$6,399,998	\$6,612,928	\$6,833,359	\$6,833,359	\$6,612,928	\$6,833,359	\$6,612,928	\$6,833,359
APS	\$3,492,803	\$3,154,790	\$3,492,803	\$3,380,132	\$3,492,803	\$3,174,034	\$3,279,835	\$3,279,835	\$3,174,034	\$3,279,835	\$3,174,034	\$3,279,835
ATSI	\$3,841,060	\$3,469,344	\$3,841,060	\$3,717,155	\$3,841,060	\$18,481,726	\$19,097,783	\$19,097,783	\$18,481,726	\$19,097,783	\$18,481,726	\$19,097,783
BGE	\$5,311,878	\$4,797,825	\$5,311,878	\$5,140,527	\$5,311,878	\$5,367,246	\$5,546,155	\$5,546,155	\$5,367,246	\$5,546,155	\$5,367,247	\$5,546,155
COMED	\$6,041,237	\$5,456,601	\$6,041,237	\$5,846,358	\$6,041,237	\$6,463,717	\$6,679,174	\$6,679,174	\$6,463,717	\$6,679,174	\$6,463,717	\$6,679,174
DAY	\$902,087	\$814,788	\$902,087	\$872,987	\$902,087	\$736,289	\$760,832	\$760,832	\$736,289	\$760,832	\$736,289	\$760,832
DEOK	\$341,676	\$308,610	\$341,676	\$330,654	\$341,676	\$1,277,237	\$1,319,812	\$1,319,812	\$1,277,237	\$1,319,812	\$1,277,237	\$1,319,812
DOM	\$5,338,145	\$4,821,550	\$5,338,145	\$5,165,946	\$5,338,145	\$5,066,825	\$5,235,719	\$5,235,719	\$5,066,825	\$5,235,719	\$5,066,824	\$5,235,719
DPL	\$1,593,999	\$1,439,741	\$1,593,999	\$1,542,580	\$1,593,999	\$2,130,080	\$2,201,083	\$2,201,083	\$2,130,080	\$2,201,083	\$2,130,080	\$2,201,083
DUQ	\$868,800	\$784,722	\$868,800	\$840,774	\$868,800	\$849,964	\$878,296	\$878,296	\$849,964	\$878,296	\$849,964	\$878,296
EKPC	\$10,230	\$9,240	\$10,230	\$9,900	\$10,230	\$46,245	\$47,787	\$47,787	\$46,245	\$47,787	\$46,245	\$47,787
JCPL	\$1,766,944	\$1,595,949	\$1,766,944	\$1,709,946	\$1,766,944	\$1,665,010	\$1,720,510	\$1,720,510	\$1,665,010	\$1,720,510	\$1,665,010	\$1,720,510
METED	\$1,610,323	\$1,454,485	\$1,610,323	\$1,558,377	\$1,610,323	\$1,613,449	\$1,667,231	\$1,667,231	\$1,613,449	\$1,667,231	\$1,613,449	\$1,667,231
PECO	\$3,358,207	\$3,033,220	\$3,358,207	\$3,249,878	\$3,358,207	\$3,700,859	\$3,824,221	\$3,824,221	\$3,700,859	\$3,824,221	\$3,700,859	\$3,824,221
PENELEC	\$1,730,838	\$1,563,337	\$1,730,838	\$1,675,004	\$1,730,838	\$2,540,797	\$2,625,490	\$2,625,490	\$2,540,797	\$2,625,490	\$2,540,797	\$2,625,490
PEPCO	\$3,583,429	\$3,236,645	\$3,583,429	\$3,467,834	\$3,583,429	\$4,096,205	\$4,232,745	\$4,232,745	\$4,096,205	\$4,232,745	\$4,096,205	\$4,232,745
PPL	\$5,389,586	\$4,868,013	\$5,389,586	\$5,215,729	\$5,389,586	\$5,411,083	\$5,591,452	\$5,591,452	\$5,411,083	\$5,591,452	\$5,411,083	\$5,591,452
PSEG	\$5,642,193	\$5,096,174	\$5,642,193	\$5,460,187	\$5,642,193	\$3,738,271	\$3,862,880	\$3,862,880	\$3,738,271	\$3,862,880	\$3,738,271	\$3,862,880
RECO	\$122,927	\$111,031	\$122,927	\$118,962	\$122,927	\$99,707	\$103,031	\$103,031	\$99,707	\$103,031	\$99,707	\$103,031
Total	\$58,178,643	\$52,548,452	\$58,178,643	\$56,301,913	\$58,178,643	\$74,057,052	\$76,525,620	\$76,525,620	\$74,057,052	\$76,525,621	\$74,057,052	\$76,525,621

Total Capacity Credits: \$811,659,932

Figure 28: Economic Demand Response Dispatched vs Settled Real-Time Energy Market Summary (2015)

Time		CSPs		Zone		Registrations			MWh			Registration Hours		
Year	Month	Dispatched	Settled	Dispatched	Settled	Dispatched	Settled	%	Dispatched	Settled	%	Dispatched	Settled	%
2015	1	4	4	6	6	16	16	100%	7,109	6,800	96%	696	696	100%
2015	2	8	8	14	14	39	39	100%	12,940	15,020	116%	1,581	1,581	100%
2015	3	6	6	9	9	19	19	100%	6,069	7,578	125%	892	892	100%
2015	4	4	4	7	7	12	12	100%	3,087	3,620	117%	587	587	100%
2015	5	4	4	6	6	13	13	100%	2,752	3,249	118%	743	743	100%
2015	6	7	7	12	12	35	35	100%	6,745	8,481	126%	1,114	1,114	100%
2015	7	12	12	14	14	47	47	100%	13,696	15,898	116%	1,945	1,945	100%
2015	8	8	8	12	12	33	33	100%	6,502	6,414	99%	1,510	1,510	100%
2015	9	9	9	12	12	33	33	100%	8,200	7,901	96%	1,531	1,531	93%
2015	10	4	4	8	8	11	11	73%	4,599	5,453	117%	928	893	79%
2015	11	4	4	7	6	9	8	56%	3,914	3,920	19%	695	502	37%
2015	12	4	2	7	3	10	4	40%	2,804	1,207	43%	457	186	41%
YTD Totals						277	270	97%	78,416	85,543	109%	12,679	12,180	96%
YTD Average		6	6	10	9									

Figure 29: Economic Demand Response Cleared vs Settled Day-Ahead Energy Market Summary (2015)

Time		CSPs		Zone		Registrations			MWh			Registration Hours		
Year	Month	Cleared	Settled	Cleared	Settled	Cleared	Settled	%	Cleared	Settled	%	Cleared	Settled	%
2015	1	6	6	6	6	10	10	100%	2,982	2,972	100%	923	923	100%
2015	2	8	8	9	9	14	14	100%	4,329	4,629	107%	712	712	100%
2015	3	6	6	7	7	9	9	100%	1,576	1,646	104%	397	397	100%
2015	4	2	2	3	3	5	5	100%	1,747	1,637	94%	572	572	100%
2015	5	3	3	4	4	9	9	100%	4,122	4,109	100%	545	545	100%
2015	6	4	4	6	6	10	10	100%	5,785	5,912	102%	847	847	100%
2015	7	6	6	8	8	19	19	100%	4,565	3,776	83%	1,141	1,141	100%
2015	8	5	5	6	6	10	10	100%	2,359	2,546	108%	630	630	100%
2015	9	2	2	3	3	6	6	100%	1,437	1,533	107%	539	539	96%
2015	10	2	2	2	2	5	5	60%	2,076	2,579	118%	619	619	78%
2015	11	2	2	2	2	4	2	25%	833	913	40%	290	211	35%
2015	12	2	0	2	0	5	0	0%	872	0	0%	291	0	0%
YTD Totals						106	99	93%	32,684	32,251	99%	7,506	7,136	95%
YTD Average		4	4	5	5									

Note: For Figures 28 and 29 above, Settlement information 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 30: Economic Demand Response Regulation Market Participation (2015)

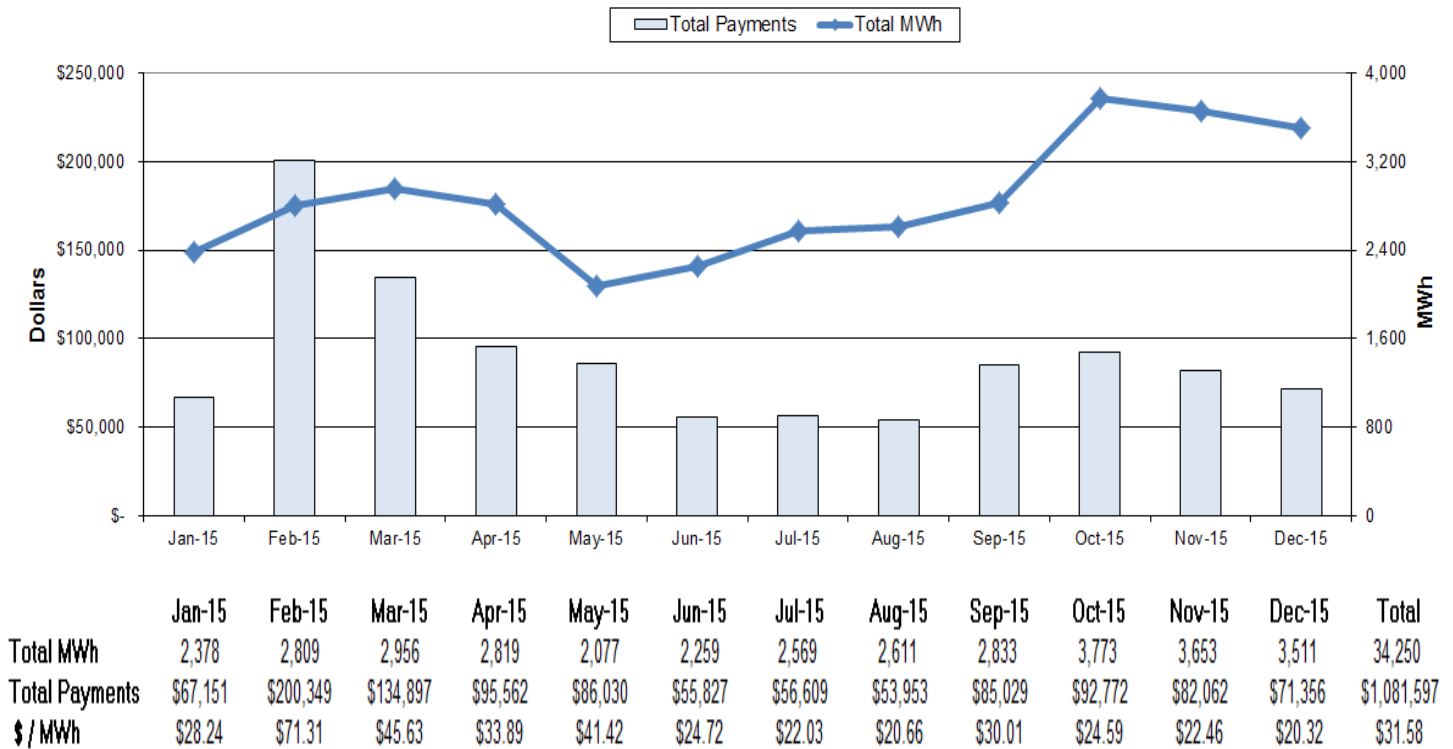
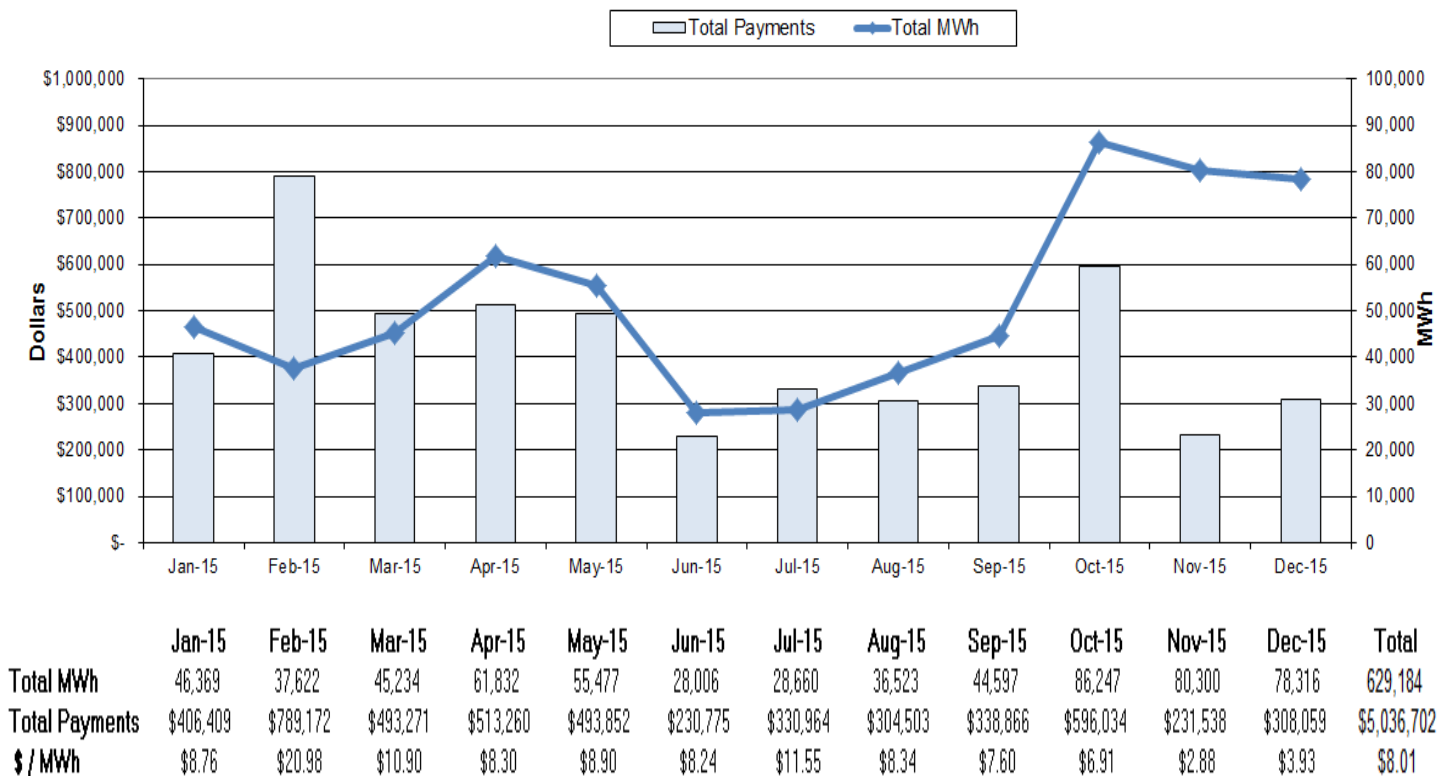
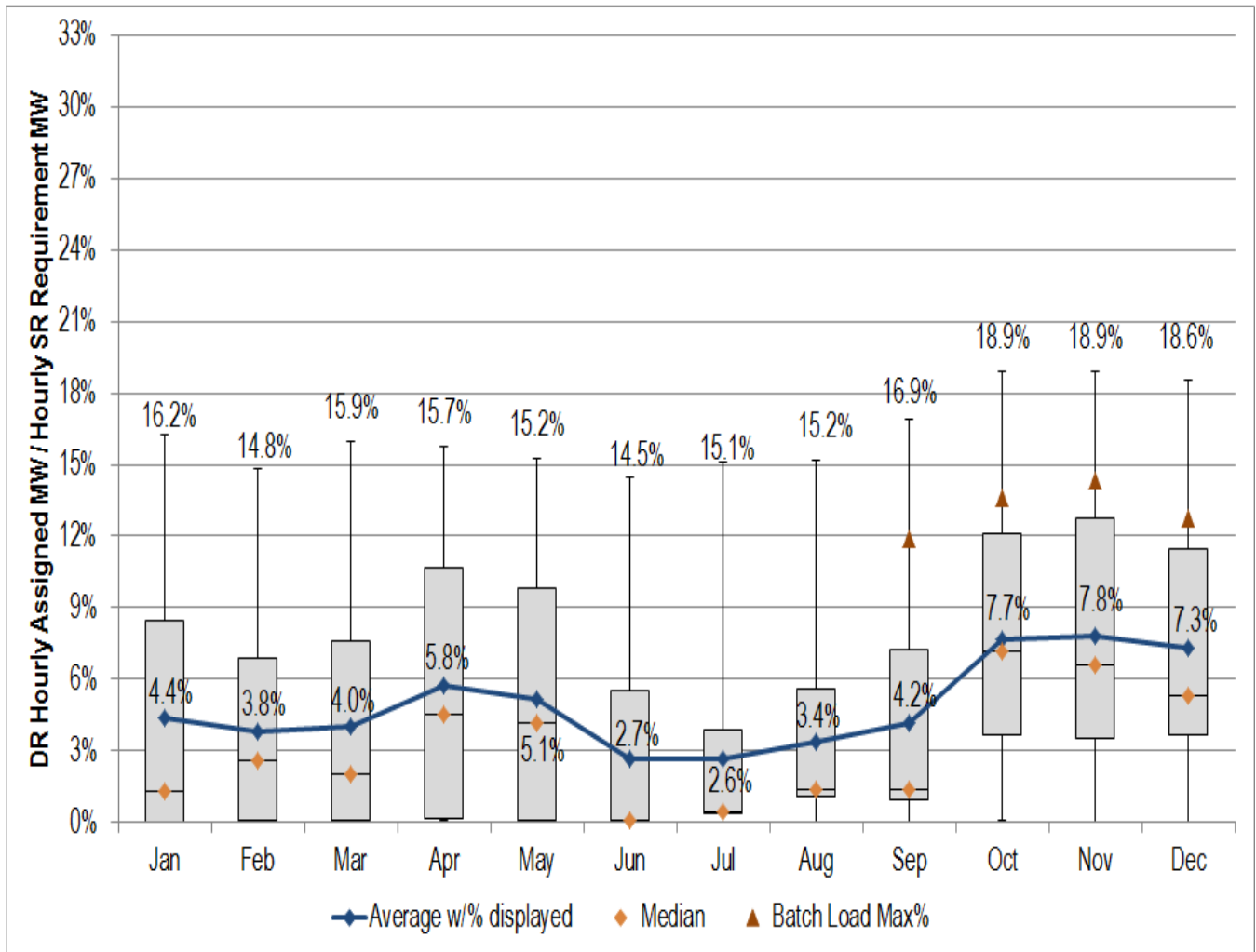


Figure 31: Economic Demand Response Synchronous Reserve Market Participation (2015)



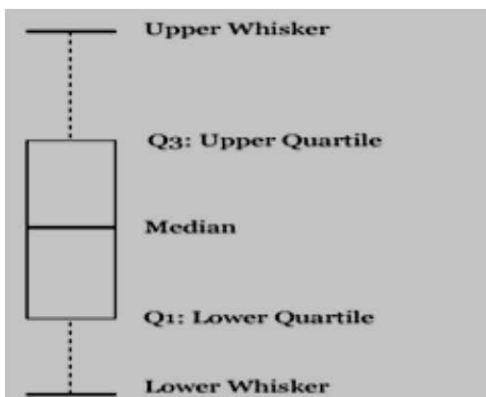
Note: For Figures 30 and 31 above, MWh=sum of the settled MW. Example: 1 MW load available for 12 hours = 12 MWh.

Figure 32: Economic DR Synchronous Reserve Penetration Distribution (Box-plot) for 2015



Notes:

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