

# Distributed Solar Generation in the Long-Term Load Forecast

Load Analysis Subcommittee  
December 10, 2015

- Behind the Meter (BtM) Solar Generation is the solar photovoltaic panels that are not interconnected to PJM nor participate in the PJM Markets. These kinds of resources do not report hourly output data, like interconnected generation resources.
- At this time, PJM is not doing a forecast on other kinds of BtM generation as the expected growth of wind, and non-renewable generation is not significant.

- With the approval of the new load forecast method, PJM recognizes the need to isolate BtM Solar Generation from the historical load. Not addressing BtM Solar Generation means that the reductions in the load attributable to BtM Solar Generation would be explained by the new end-use indicators in the model, thus misrepresenting the forecast.
- Failure to consider BtM Solar Generation essentially assumes that there is less solar in the future than there is now, or, at best, that it grows at a rate of nearly 0%. As history and analysis show, a growth of 0% is not accurate.

PJM will be using a two-step approach to address distributed solar PV generation (aka BtM solar generation) in the PJM Load Forecast.

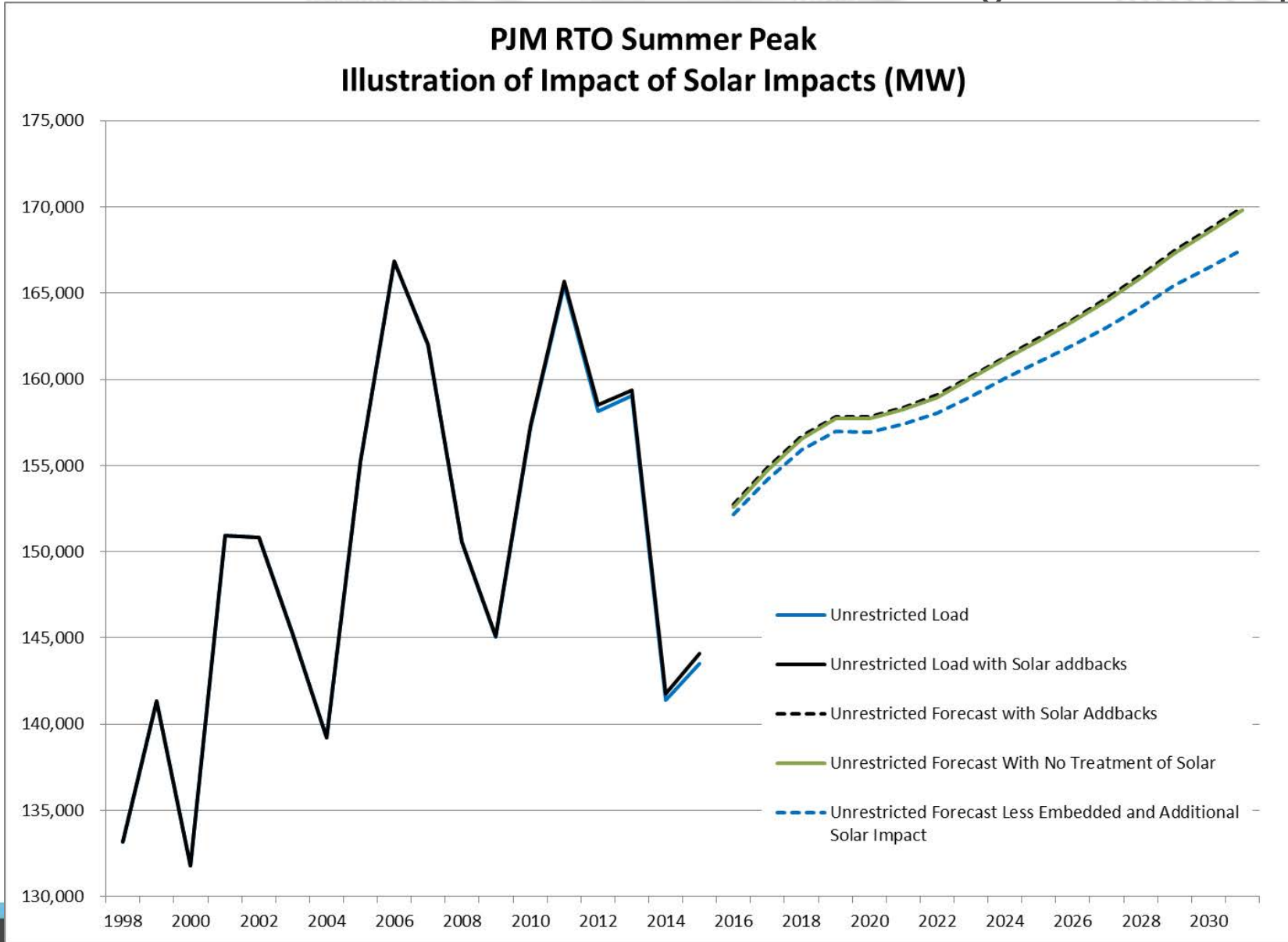
## Step 1:

To account for the historical impacts of BtM solar generation, PJM will use the BtM solar installation data from the Generation Attribute Tracking System, adjusted for solar insolation based on a 27 degree tilt, cloud cover, efficiency degradations, and DC to AC measurement. The back-casted values are an hourly value by zone. These estimates will then be added to the unrestricted load used in PJM load models to generate a forecast that essentially removes BtM solar generation impacts from the load.

## Step 2:

For the forecasted value of BtM solar capacity, PJM contracted with IHS Energy to develop a distributed solar generation forecast specific to the PJM region. The full IHS summary report is available via the link below. PJM will use the state level forecast to determine a zonal level value for the capacity at peak. The zone level capacity value at peak will then be subtracted from the forecast with the solar addbacks. Table B-1 will reflect this subtraction, but the distributed solar generation forecast values will be explicitly shown in the repurposed B-8 table.

IHS Forecast Summary Report: <http://pjm.com/~/media/committees-groups/subcommittees/las/20151130/20151130-item-04-ihs-pjm-pv-forecast-report.ashx>



~~For the non-coincident models, zonal H~~hourly metered load data are supplemented with estimated load drops (as outlined in Attachment A) and estimated distributed solar generation to obtain unrestricted hourly loads. For the non-coincident models, tThe maximum value for each day is used in the regressions. For the coincident models, the zone's contribution to the daily RTO/LDA unrestricted peak load is used in the regressions. For the net energy models, the sum of each day's hourly loads is used in the regressions.

The total amount of behind-the-meter solar generation will be forecasted separately from the load forecast model. This forecasted amount will be used to adjust the unrestricted load of each zone.

## Appendix

The following slides serve to demonstrate the process taken to implement the two-step approach



- Back-casted values were added to the unrestricted loads in order to exclude the impact of solar from the future load
- To calculate back-casted values, the following was done:
  - GATS data was separated by zone, weather station, and online date
    - Weather stations are defined based on M19
  - Installed capacity from GATS was converted using solar insolation and cloud cover values corresponding to the applicable weather station.
  - Temperatures above 55 degrees had an efficiency degradation of 0.27%.
  - Those values then were converted to consider a 27 degree tilt and a DC to AC conversion based on the applicable weather station
  - These values were calculated on an hourly basis for every day since the first date of installation



# GWh of Back-casted Distributed Solar Generation

## Annual GWh of Back-casted Distributed Solar Generation

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AE					0.0	0.1	0.5	1.2	4.8	7.9	11.6	26.2	60.8	105.5	181.6	214.8	270.8	211.9
AEP					0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	10.7	13.4	19.0	23.9	26.0	22.3
APS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.1	6.0	16.6	23.1	31.1	43.3	28.1
ATSI					0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	4.4	15.9	31.7	43.1	49.9	41.8
BGE							0.0	0.0	0.0	0.1	0.2	2.0	5.9	15.2	32.8	46.0	62.8	68.0
COMED			0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.5	0.8	14.0	22.2	23.6	21.6
DAYTON										0.0	0.0	0.1	0.3	1.0	3.9	9.8	10.1	8.0
DEOK		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.8	3.5	8.5	11.0	11.2	8.7
DLCO							0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.4	3.0	3.2	2.5
DOM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.6	3.2	6.5	9.9	18.4	35.8	94.3
DPL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7	2.1	5.2	9.2	32.2	55.2	99.8	129.1	113.4
EKPC										0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3
JCPL			0.0	0.0	0.1	0.6	1.5	3.8	9.8	16.6	24.0	38.1	66.1	121.7	250.1	315.5	395.3	328.2
METED			0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.8	6.8	27.4	38.0	37.2	38.2	28.2
PECO	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	1.3	9.1	27.1	42.2	47.4	49.2	35.9
PENLC			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	2.6	4.8	5.3	6.0	4.9
PEPCO						0.0	0.0	0.0	0.1	0.2	0.5	4.1	9.4	20.9	36.1	57.2	83.1	46.6
PL								0.0	0.0	0.1	0.2	0.8	17.9	66.3	93.9	94.0	97.3	75.3
PS			0.0	0.3	0.4	0.5	0.9	2.5	8.2	17.2	24.9	48.1	114.2	196.7	365.8	481.9	518.2	403.1
RECO			0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.7	0.9	1.0	1.8	3.2	8.2	11.0	11.5	8.6
UGI											0.0	0.0	0.2	0.4	0.4	0.5	0.5	0.4
<b>PJM RTO</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.4</b>	<b>0.7</b>	<b>1.5</b>	<b>3.4</b>	<b>8.4</b>	<b>24.2</b>	<b>44.6</b>	<b>66.2</b>	<b>130.7</b>	<b>328.3</b>	<b>677.7</b>	<b>1,220.8</b>	<b>1,573.4</b>	<b>1,865.4</b>	<b>1,552.3</b>

Please note that all years except for 2015 are based on calendar year, 2015 is through 8/31/2015.



# Unrestricted Peak Loads with Estimated Solar Back-casted Values

## Unrestricted Peak Loads with Estimated Solar Back-casted Value PJM RTO

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
PJM RTO	1998	7/21/1998	17	133,188	0	133,188
PJM RTO	1999	7/30/1999	17	141,321	0	141,321
PJM RTO	2000	8/9/2000	17	131,803	0	131,803
PJM RTO	2001	8/9/2001	16	150,928	0	150,928
PJM RTO	2002	8/1/2002	17	150,830	0	150,830
PJM RTO	2003	8/21/2003	17	145,232	0	145,233
PJM RTO	2004	8/3/2004	17	139,219	1	139,219
PJM RTO	2005	7/26/2005	16	155,209	2	155,211
PJM RTO	2006	8/2/2006	17	166,866	4	166,870
PJM RTO	2007	8/8/2007	16	161,987	13	162,000
PJM RTO	2008	6/9/2008	17	150,560	10	150,570
PJM RTO	2009	8/10/2009	16	145,056	32	145,087
PJM RTO	2010	7/7/2010	17	157,187	96	157,283
PJM RTO	2011	7/21/2011	17	165,465	191	165,656
PJM RTO	2012	7/17/2012	17	158,150	357	158,508
PJM RTO	2013	7/18/2013	17	159,038	323	159,362
PJM RTO	2014	6/17/2014	18	141,402	339	141,741
PJM RTO	2015	7/28/2015	17	143,496	579	144,075



# Step 2– Part 1 – Forecast by State from IHS Report

## Distributed Solar Generation Forecast by State PJM Territory Only Annual Additions of Installed Capacity

PJM Territory of the State	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
DC	3.9	3.6	3.8	4.6	4.1	3.4	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1
DE	14.6	19.4	24.1	25.4	16.8	18.3	30.9	34.2	24.3	23.9	25.2	28.0	34.7	45.4	60.3	81.2
IL	37.2	22.3	15.1	15.0	14.9	24.2	30.0	29.7	32.0	32.8	32.5	32.2	32.0	31.7	33.7	36.4
IN	2.6	2.0	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.3	2.0	2.9	4.1	5.7	5.9	6.2
KY	0.9	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	2.8	3.7
MD	131.3	117.1	119.4	88.4	39.2	14.5	10.3	15.6	25.7	37.6	51.3	68.0	95.9	129.6	142.5	154.7
MI	0.6	0.4	0.4	0.6	0.7	0.9	1.2	1.6	2.0	2.6	3.4	4.5	5.8	6.7	7.6	8.7
NC	85.4	70.1	37.1	37.3	37.5	37.8	38.3	39.0	40.0	42.1	44.8	48.0	52.9	59.6	68.0	77.2
NJ	209.3	116.9	56.4	43.8	52.5	56.2	70.1	92.0	118.6	176.8	245.6	293.6	316.1	354.6	367.3	372.4
OH	10.9	35.6	39.6	39.2	38.9	43.1	44.3	44.8	48.3	49.2	48.8	17.7	8.9	9.9	12.7	16.0
PA	68.3	45.7	47.8	51.5	53.7	38.3	32.4	32.1	31.9	31.6	31.4	32.2	35.2	39.1	53.5	61.5
TN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VA	35.3	33.5	29.9	51.7	72.5	81.3	107.2	121.0	126.5	129.8	132.9	138.2	145.3	153.9	164.4	175.3
WV	1.1	3.9	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	8.3	14.3
Total	601.4	470.8	379.9	363.9	337.0	324.3	374.2	419.3	458.6	535.7	625.8	673.2	738.8	844.1	930.1	1,010.6

- The PJM territories of the state were converted to zone using the energy forecast
  - The energy forecast will be based on all the inputs for the final forecast and this portion will be updated accordingly as we continue to work towards a final forecast.
  - The energy forecast was converted to a state level value using EIA 826 to estimate utility sales by state for those transmission zones that span multiple states
  - Once the share of the zone to the state was calculated, that ratio was applied to the state level solar addition values.



# Step Two – Part 2b – Forecast by Zone

## Distributed Solar Generation Forecast by Zone Annual Additions of Installed Capacity

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
AE	27.6	15.3	7.4	5.7	6.8	7.3	9.1	11.9	15.3	22.8	31.6	37.8	40.6	45.4	47.0	47.5
AEP	13.6	23.1	23.9	27.1	30.3	33.3	37.8	40.3	42.9	44.3	46.1	37.2	37.5	41.6	48.4	56.5
APS	27.3	23.6	24.5	22.2	17.3	12.5	12.2	13.4	14.9	16.5	18.3	20.7	25.0	30.2	35.9	41.4
ATSI	6.7	14.9	16.4	16.4	16.4	17.3	17.5	17.6	18.8	19.1	18.9	7.6	4.6	5.1	6.6	8.0
BGE	64.3	57.2	58.3	43.1	19.1	7.0	5.0	7.6	12.5	18.2	24.9	32.9	46.4	62.7	68.9	74.7
COMED	37.2	22.3	15.1	15.0	14.9	24.2	30.0	29.7	32.0	32.8	32.5	32.2	32.0	31.7	33.7	36.4
DAYTON	1.2	3.8	4.2	4.2	4.1	4.6	4.7	4.8	5.1	5.2	5.2	1.9	1.0	1.1	1.4	1.7
DEOK	1.8	5.6	6.2	6.1	6.1	6.8	7.0	7.0	7.6	7.7	7.7	2.8	1.4	1.6	2.2	2.8
DLCO	6.2	4.2	4.3	4.7	4.9	3.5	2.9	2.9	2.9	2.8	2.8	2.9	3.1	3.5	4.8	5.4
DOM	113.4	96.7	60.9	78.5	95.3	102.7	123.9	135.8	141.3	146.2	151.3	158.9	169.5	183.1	200.1	218.0
DPL	23.7	27.5	32.4	31.8	20.1	20.1	32.7	36.4	27.2	27.6	29.9	33.8	42.4	55.4	71.3	93.2
EKPC	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.6	2.1
JCPL	60.1	33.7	16.3	12.7	15.2	16.2	20.3	26.6	34.4	51.2	71.2	85.3	92.0	103.4	107.2	108.9
METED	6.8	4.5	4.8	5.2	5.4	3.8	3.2	3.2	3.2	3.2	3.2	3.3	3.6	4.0	5.5	6.3
PECO	17.7	11.8	12.4	13.4	13.9	9.9	8.4	8.4	8.3	8.2	8.2	8.4	9.2	10.2	14.0	16.1
PENLC	7.6	5.0	5.2	5.6	5.8	4.2	3.5	3.5	3.4	3.4	3.3	3.4	3.7	4.1	5.5	6.3
PEPCO	46.3	41.4	42.3	33.2	16.8	8.1	6.6	8.3	11.5	15.3	19.7	25.1	34.1	44.9	49.1	53.0
PL	17.5	11.7	12.2	13.2	13.8	9.8	8.3	8.2	8.2	8.1	8.0	8.2	9.0	10.0	13.7	15.7
PS	117.6	65.7	31.7	24.6	29.5	31.6	39.5	51.8	66.7	99.4	138.2	165.1	177.7	199.3	206.3	209.2
RECO	4.0	2.2	1.1	0.8	1.0	1.1	1.3	1.7	2.2	3.3	4.6	5.5	5.9	6.6	6.8	6.9
UGI	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4
<b>PJM RTO</b>	<b>601.4</b>	<b>470.8</b>	<b>379.9</b>	<b>363.9</b>	<b>337.0</b>	<b>324.3</b>	<b>374.2</b>	<b>419.3</b>	<b>458.6</b>	<b>535.7</b>	<b>625.8</b>	<b>673.2</b>	<b>738.8</b>	<b>844.1</b>	<b>930.1</b>	<b>1,010.6</b>



# Step Two – Part 2b – Forecast by Zone

## Distributed Solar Generation Forecast by Zone Cumulative Installed Capacity

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
AE	27.6	42.9	50.3	56.0	62.8	70.1	79.2	91.1	106.4	129.2	160.8	198.6	239.2	284.6	331.6	379.1
AEP	13.6	36.7	60.6	87.7	118.0	151.3	189.1	229.4	272.3	316.6	362.7	399.9	437.4	479.0	527.4	583.9
APS	27.3	50.9	75.4	97.6	115.0	127.5	139.7	153.1	168.0	184.5	202.7	223.5	248.5	278.7	314.5	355.9
ATSI	6.7	21.6	38.1	54.5	70.8	88.1	105.6	123.1	141.9	161.0	179.9	187.5	192.1	197.1	203.7	211.8
BGE	64.3	121.5	179.7	222.9	242.0	249.0	254.0	261.6	274.1	292.3	317.2	350.1	396.6	459.3	528.1	602.9
COMED	37.2	59.5	74.6	89.7	104.6	128.8	158.8	188.5	220.5	253.3	285.8	318.0	350.0	381.7	415.3	451.7
DAYTON	1.2	4.9	9.1	13.3	17.4	22.0	26.7	31.5	36.6	41.8	47.0	48.9	49.9	50.9	52.3	54.0
DEOK	1.8	7.3	13.5	19.7	25.8	32.5	39.5	46.5	54.1	61.9	69.6	72.4	73.8	75.4	77.6	80.4
DLCO	6.2	10.4	14.7	19.4	24.2	27.7	30.6	33.5	36.4	39.2	42.0	44.9	48.1	51.5	56.3	61.7
DOM	113.4	210.1	271.0	349.5	444.8	547.5	671.4	807.2	948.5	1,094.7	1,246.0	1,404.9	1,574.5	1,757.6	1,957.6	2,175.7
DPL	23.7	51.2	83.5	115.3	135.4	155.4	188.1	224.4	251.6	279.2	309.1	342.9	385.3	440.8	512.1	605.3
EKPC	0.5	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	3.3	5.5
JCPL	60.1	93.8	110.2	122.9	138.0	154.3	174.5	201.1	235.5	286.7	357.9	443.2	535.1	638.5	745.8	854.6
METED	6.8	11.3	16.1	21.2	26.6	30.4	33.7	36.9	40.1	43.3	46.5	49.7	53.3	57.3	62.7	69.0
PECO	17.7	29.5	41.9	55.3	69.3	79.2	87.6	96.0	104.3	112.5	120.7	129.1	138.3	148.5	162.5	178.6
PENLC	7.6	12.6	17.9	23.5	29.3	33.5	37.0	40.4	43.8	47.2	50.5	53.9	57.6	61.6	67.1	73.5
PEPCO	46.3	87.7	130.0	163.2	180.0	188.1	194.8	203.1	214.6	229.9	249.7	274.8	308.8	353.8	402.8	455.9
PL	17.5	29.2	41.4	54.6	68.4	78.2	86.5	94.7	102.9	111.0	119.0	127.2	136.2	146.2	159.9	175.6
PS	117.6	183.3	214.9	239.5	269.1	300.7	340.2	391.9	458.6	558.1	696.3	861.4	1,039.1	1,238.3	1,444.6	1,653.8
RECO	4.0	6.2	7.3	8.1	9.1	10.1	11.5	13.2	15.4	18.7	23.3	28.8	34.7	41.2	48.0	54.9
UGI	0.4	0.7	1.0	1.4	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.6	3.9	4.3
<b>PJM RTO</b>	<b>601.4</b>	<b>1,072.2</b>	<b>1,452.1</b>	<b>1,816.1</b>	<b>2,153.1</b>	<b>2,477.4</b>	<b>2,851.6</b>	<b>3,270.9</b>	<b>3,729.6</b>	<b>4,265.3</b>	<b>4,891.1</b>	<b>5,564.3</b>	<b>6,303.1</b>	<b>7,147.2</b>	<b>8,077.4</b>	<b>9,088.0</b>



# Step Two – Part 2c – Historical Values (to account for the back-casted add-backs)

## Distributed Solar Generation of Historical Values by Zone Cumulative Installed Capacity

ZONE	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
AE	192.0	190.4	188.9	187.4	185.9	184.4	182.9	181.5	180.0	178.6	177.1	175.7	174.3	172.9	171.5	170.2
AEP	36.3	36.0	35.8	35.5	35.2	34.9	34.6	34.4	34.1	33.8	33.5	33.3	33.0	32.7	32.5	32.2
APS	41.7	41.4	41.1	40.7	40.4	40.1	39.8	39.4	39.1	38.8	38.5	38.2	37.9	37.6	37.3	37.0
ATSI	50.4	50.0	49.6	49.2	48.8	48.4	48.0	47.6	47.3	46.9	46.5	46.1	45.8	45.4	45.0	44.7
BGE	105.0	104.2	103.4	102.5	101.7	100.9	100.1	99.3	98.5	97.7	96.9	96.2	95.4	94.6	93.9	93.1
COMED	33.9	33.7	33.4	33.1	32.9	32.6	32.3	32.1	31.8	31.6	31.3	31.1	30.8	30.6	30.3	30.1
DAYTON	12.6	12.5	12.4	12.3	12.2	12.1	12.0	11.9	11.8	11.7	11.6	11.6	11.5	11.4	11.3	11.2
DEOK	13.5	13.4	13.3	13.2	13.1	12.9	12.8	12.7	12.6	12.5	12.4	12.3	12.2	12.1	12.0	11.9
DLCO	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9
DOM	109.6	108.7	107.9	107.0	106.2	105.3	104.5	103.6	102.8	102.0	101.2	100.4	99.6	98.8	98.0	97.2
DPL	112.6	111.7	110.8	109.9	109.0	108.2	107.3	106.5	105.6	104.8	103.9	103.1	102.3	101.4	100.6	99.8
EKPC	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
JCPL	381.3	378.2	375.2	372.2	369.2	366.3	363.4	360.4	357.6	354.7	351.9	349.1	346.3	343.5	340.7	338.0
METED	37.2	36.9	36.6	36.3	36.0	35.7	35.4	35.1	34.9	34.6	34.3	34.0	33.8	33.5	33.2	32.9
PECO	49.8	49.4	49.0	48.6	48.2	47.8	47.5	47.1	46.7	46.3	46.0	45.6	45.2	44.9	44.5	44.1
PENLC	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9
PEPCO	82.9	82.3	81.6	81.0	80.3	79.7	79.0	78.4	77.8	77.2	76.5	75.9	75.3	74.7	74.1	73.5
PL	86.7	86.0	85.3	84.6	83.9	83.3	82.6	81.9	81.3	80.6	80.0	79.3	78.7	78.1	77.5	76.8
PS	585.1	580.5	575.8	571.2	566.6	562.1	557.6	553.1	548.7	544.3	540.0	535.7	531.4	527.1	522.9	518.7
RECO	12.4	12.3	12.2	12.1	12.0	11.9	11.8	11.7	11.6	11.5	11.4	11.3	11.2	11.1	11.1	11.0
UGI	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
<b>PJM RTO</b>	<b>1,953.8</b>	<b>1,938.2</b>	<b>1,922.7</b>	<b>1,907.3</b>	<b>1,892.0</b>	<b>1,876.9</b>	<b>1,861.9</b>	<b>1,847.0</b>	<b>1,832.2</b>	<b>1,817.5</b>	<b>1,803.0</b>	<b>1,788.6</b>	<b>1,774.3</b>	<b>1,760.1</b>	<b>1,746.0</b>	<b>1,732.0</b>



- Capacity Factors at Peak were calculated using the hourly back-casted values divided by the AC value of the GATS installations
- Average of HE 17 in the months June, July, and August
- These were applied to the Zonal level Installed Capacity Additions
- The Average Cloud Cover and Average Temperature of HE 17 in the months June, July, August was also calculated for demonstrative purposes.

	Capacity Factor presented at 11/30 LAS and 12/3 PC	Updated Capacity Factor	Average Cloud Cover	Average Temperature
AE	32%	32%	2.2	82
AEP	36%	22%	4.4	81
APS	13%	20%	4.6	83
ATSI	31%	31%	2.7	80
BGE	21%	21%	4.3	84
COMED	26%	24%	4.5	80
DAYTON	25%	25%	4.2	82
DEOK	22%	24%	4.3	83
DLCO	22%	22%	4.5	80
DOM	23%	23%	3.9	86
DPL	29%	29%	2.7	82
EKPC	32%	32%	3.2	82
JCPL	23%	23%	3.6	83
METED	23%	23%	4.2	84
PECO	19%	19%	4.5	84
PENLC	32%	33%	3.2	79
PEPCO	19%	19%	4.7	86
PL	27%	27%	3.3	82
PS	18%	18%	4.7	83
RECO	18%	18%	3.6	79
UGI	25%	25%	3.6	79



# Step 2– Part 4 – Ex-Post Bias Adjustment - will be shown in table B-8

## Distributed Solar Generation Forecast by Zone Cumulative Capacity at Peak

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
AE	69.3	73.6	75.5	76.8	78.5	80.3	82.7	86.0	90.4	97.1	106.6	118.1	130.5	144.4	158.8	173.3
AEP	11.1	16.2	21.4	27.4	34.1	41.4	49.8	58.7	68.2	78.0	88.2	96.4	104.7	113.9	124.6	137.2
APS	13.7	18.4	23.2	27.5	30.9	33.4	35.7	38.3	41.2	44.5	48.0	52.1	57.0	63.0	70.0	78.2
ATSI	17.8	22.3	27.3	32.3	37.3	42.5	47.8	53.2	58.9	64.8	70.5	72.8	74.1	75.6	77.5	79.9
BGE	35.6	47.4	59.5	68.3	72.2	73.5	74.4	75.8	78.2	81.9	87.0	93.7	103.3	116.3	130.6	146.2
COMED	17.2	22.5	26.1	29.7	33.2	39.0	46.2	53.3	60.9	68.8	76.6	84.3	92.0	99.6	107.6	116.3
DAY	3.4	4.4	5.4	6.4	7.4	8.5	9.7	10.9	12.1	13.4	14.7	15.1	15.4	15.6	15.9	16.3
DEOK	3.7	5.0	6.5	8.0	9.4	11.1	12.7	14.4	16.2	18.1	19.9	20.6	20.9	21.3	21.8	22.4
DLCO	2.3	3.3	4.2	5.2	6.3	7.0	7.7	8.3	8.9	9.6	10.2	10.8	11.5	12.2	13.3	14.5
DOM	50.9	72.7	86.4	104.1	125.6	148.8	176.9	207.7	239.7	272.8	307.1	343.2	381.7	423.2	468.7	518.2
DPL	39.7	47.4	56.6	65.6	71.2	76.8	86.0	96.4	104.0	111.8	120.3	129.9	142.0	157.9	178.5	205.4
EKPC	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	1.1	1.8
JCPL	100.1	107.0	110.0	112.2	115.0	118.0	121.9	127.3	134.5	145.4	160.9	179.6	199.8	222.6	246.3	270.4
METED	10.0	11.0	12.0	13.1	14.2	15.0	15.7	16.4	17.0	17.7	18.4	19.0	19.8	20.6	21.8	23.2
PECO	13.0	15.3	17.6	20.1	22.7	24.6	26.1	27.7	29.2	30.7	32.2	33.8	35.5	37.4	40.0	43.1
PENLC	4.3	5.9	7.6	9.4	11.3	12.6	13.7	14.8	15.9	17.0	18.1	19.2	20.4	21.7	23.4	25.5
PEPCO	24.3	32.0	39.8	45.9	49.0	50.4	51.5	53.0	55.0	57.8	61.4	66.0	72.3	80.6	89.7	99.6
PL	28.5	31.6	34.7	38.2	41.8	44.3	46.3	48.4	50.5	52.5	54.5	56.6	58.9	61.5	65.1	69.2
PS	125.3	136.2	141.0	144.6	149.1	153.9	160.1	168.6	179.7	196.6	220.5	249.2	280.1	314.9	350.9	387.5
RECO	2.9	3.3	3.5	3.6	3.8	3.9	4.1	4.4	4.8	5.4	6.2	7.2	8.2	9.3	10.5	11.7
UGI	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.2
<b>PJM RTO</b>	<b>573.7</b>	<b>676.0</b>	<b>759.0</b>	<b>839.3</b>	<b>913.8</b>	<b>986.0</b>	<b>1,070.4</b>	<b>1,164.7</b>	<b>1,266.8</b>	<b>1,385.2</b>	<b>1,522.7</b>	<b>1,669.0</b>	<b>1,829.4</b>	<b>2,013.2</b>	<b>2,217.4</b>	<b>2,441.0</b>

## Additional Requested Data

# Zonal Back-Casted Summary



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value AE Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
AE	1998	7/22/1998	18	2,265		2,265
AE	1999	7/5/1999	18	2,473		2,473
AE	2000	8/7/2000	17	2,329		2,329
AE	2001	8/9/2001	17	2,635		2,635
AE	2002	7/29/2002	18	2,677		2,677
AE	2003	8/22/2003	17	2,485	0	2,485
AE	2004	7/30/2004	18	2,454	0	2,454
AE	2005	7/27/2005	17	2,838	0	2,838
AE	2006	8/3/2006	17	3,009	1	3,010
AE	2007	8/8/2007	17	2,952	2	2,954
AE	2008	6/9/2008	17	2,638	2	2,640
AE	2009	8/10/2009	18	2,707	3	2,710
AE	2010	7/24/2010	17	2,936	15	2,951
AE	2011	7/22/2011	18	2,966	17	2,983
AE	2012	7/18/2012	16	2,853	69	2,921
AE	2013	7/18/2013	18	2,739	35	2,774
AE	2014	7/2/2014	18	2,443	47	2,490
AE	2015	7/20/2015	18	2,553	51	2,604



# Unrestricted Peak Loads with Estimated Solar Back casted Values

Unrestricted Peak Loads with Estimated Solar Backcasted Value  
AEP Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
AEP	1998	7/21/1998	17	21,160		21,160
AEP	1999	7/30/1999	17	21,882		21,882
AEP	2000	8/15/2000	18	20,588		20,588
AEP	2001	8/8/2001	17	22,911		22,911
AEP	2002	8/1/2002	17	23,129	0	23,129
AEP	2003	8/21/2003	17	22,577	0	22,577
AEP	2004	8/3/2004	17	21,886	0	21,886
AEP	2005	7/26/2005	16	23,920	0	23,920
AEP	2006	8/1/2006	15	24,839	0	24,839
AEP	2007	8/8/2007	15	25,301	0	25,301
AEP	2008	6/9/2008	17	23,834	0	23,834
AEP	2009	8/10/2009	15	21,887	0	21,887
AEP	2010	7/23/2010	15	23,508	6	23,515
AEP	2011	7/21/2011	17	24,546	5	24,551
AEP	2012	7/6/2012	17	23,507	4	23,511
AEP	2013	7/18/2013	15	22,947	12	22,958
AEP	2014	7/22/2014	17	21,411	11	21,422
AEP	2015	7/29/2015	16	21,876	10	21,887



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value APS Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
APS	1998	7/22/1998	19	7,314	0	7,314
APS	1999	7/6/1999	18	7,788	0	7,788
APS	2000	6/26/2000	18	7,546	0	7,546
APS	2001	8/9/2001	16	8,265	0	8,265
APS	2002	7/29/2002	17	8,340	0	8,340
APS	2003	8/14/2003	17	8,183	0	8,183
APS	2004	6/9/2004	17	7,996	0	7,996
APS	2005	7/26/2005	17	8,824	0	8,824
APS	2006	8/2/2006	17	8,734	0	8,734
APS	2007	8/8/2007	15	8,638	0	8,638
APS	2008	6/9/2008	17	8,432	0	8,432
APS	2009	8/10/2009	15	7,871	0	7,871
APS	2010	7/23/2010	17	8,532	1	8,532
APS	2011	7/21/2011	18	8,975	2	8,977
APS	2012	6/29/2012	16	8,537	6	8,543
APS	2013	7/18/2013	17	8,681	4	8,685
APS	2014	7/23/2014	17	8,084	5	8,090
APS	2015	8/17/2015	18	8,256	6	8,262



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value

### ATSI Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
ATSI	1998	7/21/1998	16	11,657		11,657
ATSI	1999	7/30/1999	14	12,713		12,713
ATSI	2000	6/14/2000	15	11,959		11,959
ATSI	2001	8/8/2001	16	13,145		13,145
ATSI	2002	8/1/2002	17	13,299	0	13,299
ATSI	2003	8/14/2003	16	12,165	0	12,165
ATSI	2004	8/3/2004	17	12,310	0	12,310
ATSI	2005	7/26/2005	15	13,578	0	13,578
ATSI	2006	8/1/2006	16	13,804	0	13,804
ATSI	2007	8/24/2007	16	13,536	0	13,536
ATSI	2008	6/9/2008	16	12,972	0	12,972
ATSI	2009	8/10/2009	15	12,310	0	12,310
ATSI	2010	7/23/2010	15	13,177	2	13,179
ATSI	2011	7/21/2011	16	14,032	10	14,042
ATSI	2012	7/17/2012	17	13,516	9	13,524
ATSI	2013	7/18/2013	17	13,480	19	13,499
ATSI	2014	9/5/2014	15	12,365	22	12,387
ATSI	2015	7/29/2015	16	12,356	24	12,381





# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value BGE Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
BGE	1998	8/25/1998	17	6,045		6,045
BGE	1999	7/6/1999	17	6,670		6,670
BGE	2000	8/9/2000	17	6,015		6,015
BGE	2001	8/9/2001	17	6,867		6,867
BGE	2002	7/29/2002	18	6,897		6,897
BGE	2003	8/22/2003	17	6,572		6,572
BGE	2004	6/18/2004	17	6,267		6,267
BGE	2005	7/27/2005	17	7,376	0	7,376
BGE	2006	8/3/2006	18	7,484	0	7,484
BGE	2007	8/8/2007	17	7,478	0	7,478
BGE	2008	6/10/2008	17	7,150	0	7,150
BGE	2009	8/10/2009	17	6,596	0	6,596
BGE	2010	7/7/2010	18	7,125	1	7,126
BGE	2011	7/22/2011	17	7,616	5	7,621
BGE	2012	7/18/2012	15	7,435	16	7,451
BGE	2013	7/19/2013	16	7,038	10	7,048
BGE	2014	7/2/2014	17	6,665	11	6,676
BGE	2015	7/20/2015	18	6,507	14	6,522



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value COMED Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
COMED	1998	6/25/1998	17	19,510		19,510
COMED	1999	7/30/1999	16	22,157		22,157
COMED	2000	8/15/2000	17	20,143	0	20,143
COMED	2001	8/9/2001	17	21,574	0	21,574
COMED	2002	8/1/2002	17	21,804	0	21,804
COMED	2003	8/21/2003	17	22,054	0	22,054
COMED	2004	8/3/2004	17	19,794	0	19,794
COMED	2005	8/9/2005	18	21,635	0	21,635
COMED	2006	8/1/2006	18	23,995	0	23,995
COMED	2007	8/7/2007	18	21,970	0	21,970
COMED	2008	7/16/2008	17	20,975	0	20,975
COMED	2009	6/25/2009	16	21,218	0	21,218
COMED	2010	8/12/2010	17	21,915	0	21,915
COMED	2011	7/20/2011	18	23,753	0	23,753
COMED	2012	7/6/2012	17	23,601	8	23,609
COMED	2013	7/18/2013	17	22,290	5	22,295
COMED	2014	7/22/2014	17	19,722	5	19,727
COMED	2015	9/3/2015	18	20,165	13	20,178

# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value DAYTON Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
DAYTON	1998	7/21/1998	17	3,303		3,303
DAYTON	1999	7/30/1999	15	3,460		3,460
DAYTON	2000	8/15/2000	18	3,176		3,176
DAYTON	2001	8/8/2001	17	3,436		3,436
DAYTON	2002	9/10/2002	17	3,283		3,283
DAYTON	2003	8/26/2003	17	3,366		3,366
DAYTON	2004	7/22/2004	18	3,280		3,280
DAYTON	2005	7/25/2005	14	3,725		3,725
DAYTON	2006	8/1/2006	18	3,706		3,706
DAYTON	2007	8/8/2007	15	3,748	0	3,748
DAYTON	2008	9/3/2008	17	3,493	0	3,493
DAYTON	2009	6/25/2009	17	3,327	0	3,327
DAYTON	2010	8/10/2010	17	3,387	0	3,387
DAYTON	2011	7/21/2011	20	3,644	0	3,644
DAYTON	2012	6/28/2012	18	3,495	1	3,496
DAYTON	2013	9/10/2013	16	3,398	2	3,400
DAYTON	2014	8/26/2014	16	3,224	5	3,229
DAYTON	2015	7/29/2015	15	3,269	4	3,273

# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value DEOK Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
DEOK	1998	8/25/1998	17	4,851		4,851
DEOK	1999	7/21/1999	17	5,156		5,156
DEOK	2000	8/31/2000	17	4,872	0	4,872
DEOK	2001	8/7/2001	17	5,197	0	5,197
DEOK	2002	8/5/2002	16	5,423	0	5,423
DEOK	2003	8/26/2003	17	5,227	0	5,227
DEOK	2004	7/13/2004	18	5,106	0	5,106
DEOK	2005	7/25/2005	16	5,756	0	5,756
DEOK	2006	8/3/2006	17	5,595	0	5,595
DEOK	2007	8/23/2007	17	5,769	0	5,769
DEOK	2008	9/3/2008	17	5,403	0	5,403
DEOK	2009	8/10/2009	15	5,014	0	5,014
DEOK	2010	8/4/2010	15	5,545	0	5,545
DEOK	2011	7/21/2011	17	5,600	2	5,602
DEOK	2012	6/29/2012	16	5,445	3	5,448
DEOK	2013	9/10/2013	17	5,146	4	5,150
DEOK	2014	8/27/2014	17	5,039	4	5,043
DEOK	2015	7/29/2015	15	5,123	4	5,127

# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value DLCO Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
DLCO	1998	8/7/1998	16	2,484		2,484
DLCO	1999	7/6/1999	16	2,756		2,756
DLCO	2000	6/14/2000	16	2,673		2,673
DLCO	2001	8/9/2001	17	2,771		2,771
DLCO	2002	8/2/2002	17	2,917		2,917
DLCO	2003	8/21/2003	16	2,686		2,686
DLCO	2004	6/9/2004	18	2,646	0	2,646
DLCO	2005	8/12/2005	17	2,885	0	2,885
DLCO	2006	8/3/2006	16	3,053	0	3,053
DLCO	2007	8/24/2007	17	2,890	0	2,890
DLCO	2008	6/9/2008	17	2,822	0	2,822
DLCO	2009	8/17/2009	16	2,732	0	2,732
DLCO	2010	7/23/2010	15	2,889	0	2,889
DLCO	2011	7/22/2011	15	3,070	0	3,070
DLCO	2012	6/29/2012	14	3,054	1	3,055
DLCO	2013	7/18/2013	16	2,951	2	2,953
DLCO	2014	7/1/2014	17	2,693	1	2,693
DLCO	2015	7/29/2015	18	2,804	1	2,805



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value DOM Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
DOM	1998	7/22/1998	17	15,231		15,231
DOM	1999	7/6/1999	17	16,027		16,027
DOM	2000	8/9/2000	17	15,252	0	15,252
DOM	2001	8/9/2001	17	16,440	0	16,440
DOM	2002	7/29/2002	18	16,911	0	16,911
DOM	2003	8/22/2003	16	16,250	0	16,250
DOM	2004	8/4/2004	17	16,327	0	16,327
DOM	2005	7/27/2005	17	19,028	0	19,028
DOM	2006	8/3/2006	17	19,375	0	19,375
DOM	2007	8/8/2007	17	19,749	0	19,749
DOM	2008	6/10/2008	17	19,111	0	19,111
DOM	2009	8/10/2009	17	18,153	0	18,153
DOM	2010	7/7/2010	17	19,428	0	19,428
DOM	2011	7/22/2011	16	20,147	1	20,149
DOM	2012	6/29/2012	17	19,322	2	19,324
DOM	2013	7/18/2013	17	18,838	4	18,842
DOM	2014	7/2/2014	16	18,760	2	18,762
DOM	2015	6/23/2015	17	19,023	22	19,046



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value DPL Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
DPL	1998	7/23/1998	18	3,277		3,277
DPL	1999	7/6/1999	17	3,714		3,714
DPL	2000	8/7/2000	17	3,476	0	3,476
DPL	2001	8/9/2001	17	3,793	0	3,793
DPL	2002	7/29/2002	16	3,905	0	3,905
DPL	2003	6/26/2003	17	3,687	0	3,687
DPL	2004	8/20/2004	16	3,641	0	3,641
DPL	2005	7/27/2005	17	4,235	0	4,235
DPL	2006	8/3/2006	17	4,328	0	4,328
DPL	2007	8/8/2007	17	4,349	0	4,350
DPL	2008	6/10/2008	17	4,015	0	4,015
DPL	2009	8/21/2009	15	3,843	1	3,844
DPL	2010	7/6/2010	18	4,055	2	4,057
DPL	2011	7/22/2011	17	4,338	11	4,348
DPL	2012	7/18/2012	16	4,152	20	4,172
DPL	2013	7/18/2013	17	4,019	32	4,051
DPL	2014	7/2/2014	18	3,875	24	3,899
DPL	2015	7/20/2015	15	3,821	64	3,885



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value EKPC Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
EKPC	1998	7/21/1998	18	1,486		1,486
EKPC	1999	7/29/1999	17	1,657		1,657
EKPC	2000	8/9/2000	18	1,760		1,760
EKPC	2001	8/8/2001	18	1,805		1,805
EKPC	2002	8/5/2002	18	1,911		1,911
EKPC	2003	8/14/2003	18	1,804		1,804
EKPC	2004	7/13/2004	19	1,676		1,676
EKPC	2005	7/25/2005	18	1,894		1,894
EKPC	2006	7/19/2006	18	1,884		1,884
EKPC	2007	8/9/2007	18	2,003		2,003
EKPC	2008	7/29/2008	19	1,837	0	1,837
EKPC	2009	8/10/2009	18	1,783	0	1,783
EKPC	2010	8/4/2010	16	1,966	0	1,966
EKPC	2011	7/11/2011	18	1,945	0	1,945
EKPC	2012	6/29/2012	17	1,976	0	1,976
EKPC	2013	7/16/2013	17	1,901	0	1,901
EKPC	2014	7/22/2014	18	1,896	0	1,896
EKPC	2015	7/29/2015	18	1,920	0	1,920





# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value

### JCPL Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
JCPL	1998	7/22/1998	17	4,907		4,907
JCPL	1999	7/6/1999	16	5,273		5,273
JCPL	2000	8/7/2000	17	4,961		4,961
JCPL	2001	8/9/2001	18	5,826	0	5,826
JCPL	2002	7/3/2002	16	5,919	0	5,919
JCPL	2003	6/26/2003	17	5,668	0	5,669
JCPL	2004	8/20/2004	16	5,457	1	5,458
JCPL	2005	7/27/2005	16	6,440	1	6,441
JCPL	2006	8/2/2006	17	6,751	2	6,752
JCPL	2007	8/8/2007	17	6,313	4	6,317
JCPL	2008	6/10/2008	17	6,398	4	6,402
JCPL	2009	8/10/2009	18	5,738	4	5,742
JCPL	2010	7/6/2010	17	6,448	19	6,467
JCPL	2011	7/22/2011	15	6,675	53	6,728
JCPL	2012	7/18/2012	15	6,300	76	6,375
JCPL	2013	7/19/2013	16	6,379	115	6,494
JCPL	2014	7/2/2014	17	5,637	93	5,730
JCPL	2015	7/20/2015	18	5,818	73	5,891



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value METED Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
METED	1998	8/26/1998	17	2,225		2,225
METED	1999	7/19/1999	15	2,445		2,445
METED	2000	8/9/2000	17	2,342		2,342
METED	2001	8/9/2001	17	2,600	0	2,600
METED	2002	8/14/2002	15	2,616	0	2,616
METED	2003	8/21/2003	15	2,513	0	2,513
METED	2004	8/3/2004	19	2,556	0	2,556
METED	2005	8/4/2005	15	2,862	0	2,862
METED	2006	8/2/2006	16	3,000	0	3,000
METED	2007	8/8/2007	17	2,995	0	2,995
METED	2008	6/10/2008	17	3,110	0	3,110
METED	2009	8/10/2009	17	2,839	0	2,839
METED	2010	9/2/2010	16	2,940	2	2,942
METED	2011	7/22/2011	15	3,208	14	3,222
METED	2012	7/18/2012	14	3,038	20	3,058
METED	2013	7/18/2013	18	3,013	7	3,020
METED	2014	7/23/2014	17	2,817	12	2,828
METED	2015	8/17/2015	15	2,791	23	2,814



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value PECO Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
PECO	1998	6/26/1998	14	7,108	0	7,108
PECO	1999	7/6/1999	17	8,230	0	8,230
PECO	2000	8/9/2000	17	7,333	0	7,333
PECO	2001	8/9/2001	17	8,186	0	8,186
PECO	2002	8/14/2002	17	8,164	0	8,164
PECO	2003	6/26/2003	17	7,696	0	7,696
PECO	2004	8/20/2004	16	7,567	0	7,567
PECO	2005	7/27/2005	17	8,847	0	8,847
PECO	2006	8/3/2006	17	8,995	0	8,995
PECO	2007	8/8/2007	17	8,850	0	8,850
PECO	2008	6/10/2008	17	8,837	0	8,837
PECO	2009	8/10/2009	17	8,009	0	8,010
PECO	2010	7/7/2010	18	8,911	2	8,912
PECO	2011	7/22/2011	17	9,286	9	9,295
PECO	2012	7/18/2012	15	8,727	22	8,748
PECO	2013	7/18/2013	17	8,655	15	8,670
PECO	2014	7/2/2014	17	8,258	8	8,266
PECO	2015	7/20/2015	16	8,094	25	8,120

# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value

### PENLC Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
PENLC	1998	6/25/1998	15	2,419		2,419
PENLC	1999	7/6/1999	12	2,489		2,489
PENLC	2000	7/31/2000	15	2,482	0	2,482
PENLC	2001	8/9/2001	15	2,708	0	2,708
PENLC	2002	7/29/2002	15	2,706	0	2,706
PENLC	2003	8/14/2003	16	2,623	0	2,623
PENLC	2004	6/9/2004	14	2,638	0	2,638
PENLC	2005	8/4/2005	17	2,875	0	2,875
PENLC	2006	8/2/2006	15	3,069	0	3,069
PENLC	2007	8/8/2007	17	2,902	0	2,902
PENLC	2008	6/9/2008	16	2,880	0	2,880
PENLC	2009	8/17/2009	14	2,817	0	2,817
PENLC	2010	7/8/2010	17	2,970	0	2,971
PENLC	2011	7/22/2011	14	3,128	1	3,129
PENLC	2012	7/17/2012	17	2,913	1	2,914
PENLC	2013	7/18/2013	14	3,087	3	3,090
PENLC	2014	7/1/2014	15	2,788	2	2,790
PENLC	2015	8/17/2015	15	2,819	4	2,823



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value PEPCO Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
PEPCO	1998	6/26/1998	16	5,807		5,807
PEPCO	1999	7/6/1999	17	6,223		6,223
PEPCO	2000	6/12/2000	16	5,721		5,721
PEPCO	2001	8/9/2001	16	6,399		6,399
PEPCO	2002	7/29/2002	17	6,513		6,513
PEPCO	2003	8/22/2003	16	6,166	0	6,166
PEPCO	2004	6/17/2004	16	6,086	0	6,086
PEPCO	2005	7/27/2005	17	6,766	0	6,766
PEPCO	2006	8/3/2006	17	6,947	0	6,947
PEPCO	2007	8/8/2007	16	6,892	0	6,892
PEPCO	2008	6/10/2008	17	6,752	0	6,752
PEPCO	2009	8/10/2009	18	6,325	0	6,325
PEPCO	2010	7/7/2010	17	6,718	2	6,720
PEPCO	2011	7/22/2011	15	7,024	5	7,029
PEPCO	2012	7/18/2012	16	6,758	4	6,762
PEPCO	2013	7/19/2013	16	6,533	14	6,548
PEPCO	2014	7/2/2014	16	6,345	10	6,355
PEPCO	2015	6/23/2015	18	6,268	3	6,271



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value PL Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
PL	1998	7/22/1998	18	5,809		5,809
PL	1999	7/6/1999	17	6,415		6,415
PL	2000	6/26/2000	16	6,068		6,068
PL	2001	8/9/2001	15	6,790		6,790
PL	2002	7/29/2002	16	6,946		6,946
PL	2003	8/14/2003	17	6,480		6,480
PL	2004	8/3/2004	17	6,446		6,446
PL	2005	7/27/2005	14	7,176	0	7,176
PL	2006	8/2/2006	17	7,688	0	7,688
PL	2007	8/8/2007	16	7,304	0	7,304
PL	2008	6/10/2008	16	7,370	0	7,370
PL	2009	8/17/2009	17	6,853	0	6,853
PL	2010	7/7/2010	17	7,216	4	7,220
PL	2011	7/22/2011	14	7,527	30	7,558
PL	2012	7/18/2012	14	7,290	36	7,326
PL	2013	7/18/2013	17	7,328	23	7,351
PL	2014	7/23/2014	16	6,732	31	6,763
PL	2015	9/8/2015	17	6,720	44	6,764



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value PS Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
PS	1998	7/22/1998	16	9,291		9,291
PS	1999	7/6/1999	16	10,225		10,225
PS	2000	6/26/2000	16	9,369		9,369
PS	2001	8/9/2001	16	10,426	0	10,426
PS	2002	8/14/2002	16	10,188	0	10,188
PS	2003	6/26/2003	17	9,855	0	9,856
PS	2004	6/9/2004	17	9,429	0	9,429
PS	2005	7/27/2005	16	11,122	1	11,122
PS	2006	8/2/2006	16	11,229	3	11,232
PS	2007	8/8/2007	17	10,478	3	10,481
PS	2008	6/10/2008	17	10,716	4	10,719
PS	2009	8/21/2009	15	9,687	11	9,698
PS	2010	7/6/2010	17	10,761	37	10,798
PS	2011	7/22/2011	16	10,998	85	11,083
PS	2012	7/18/2012	15	10,475	98	10,572
PS	2013	7/19/2013	16	10,414	214	10,629
PS	2014	7/2/2014	17	9,515	90	9,605
PS	2015	7/20/2015	17	9,595	117	9,712



# Unrestricted Peak Loads with Estimated Solar Back casted Values

Unrestricted Peak Loads with Estimated Solar Backcasted Value  
RECO Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
RECO	1998	6/25/1998	17	364		364
RECO	1999	7/6/1999	16	438		438
RECO	2000	8/9/2000	17	386		386
RECO	2001	9/10/2001	16	471	0	471
RECO	2002	7/23/2002	16	437	0	437
RECO	2003	6/26/2003	17	394	0	394
RECO	2004	6/9/2004	17	383	0	383
RECO	2005	7/27/2005	16	435	0	435
RECO	2006	8/2/2006	16	441	0	441
RECO	2007	7/10/2007	16	423	0	423
RECO	2008	6/10/2008	16	440	0	440
RECO	2009	8/17/2009	17	371	0	371
RECO	2010	7/6/2010	17	430	1	431
RECO	2011	7/22/2011	16	436	1	438
RECO	2012	7/18/2012	14	430	2	432
RECO	2013	7/18/2013	17	438	2	440
RECO	2014	7/2/2014	16	389	3	392
RECO	2015	7/20/2015	17	398	2	400





# Unrestricted Peak Loads with Estimated Solar Back casted Values

Unrestricted Peak Loads with Estimated Solar Backcasted Value  
RECO Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
RECO	1998	6/25/1998	17	364		364
RECO	1999	7/6/1999	16	438		438
RECO	2000	8/9/2000	17	386		386
RECO	2001	9/10/2001	16	471	0	471
RECO	2002	7/23/2002	16	437	0	437
RECO	2003	6/26/2003	17	394	0	394
RECO	2004	6/9/2004	17	383	0	383
RECO	2005	7/27/2005	16	435	0	435
RECO	2006	8/2/2006	16	441	0	441
RECO	2007	7/10/2007	16	423	0	423
RECO	2008	6/10/2008	16	440	0	440
RECO	2009	8/17/2009	17	371	0	371
RECO	2010	7/6/2010	17	430	1	431
RECO	2011	7/22/2011	16	436	1	438
RECO	2012	7/18/2012	14	430	2	432
RECO	2013	7/18/2013	17	438	2	440
RECO	2014	7/2/2014	16	389	3	392
RECO	2015	7/20/2015	17	398	2	400



# Unrestricted Peak Loads with Estimated Solar Back casted Values

## Unrestricted Peak Loads with Estimated Solar Backcasted Value

### UGI Zone

Zone	Year	Date	Hour Ending	Unrestricted Load (MW)	Estimated Solar Backcasted Value (MW)	Unrestricted Load with the addition of the Estimated Solar Backcasted Value (MW)
UGI	1998	7/22/1998	17	156		156
UGI	1999	7/6/1999	14	171		171
UGI	2000	8/9/2000	17	159		159
UGI	2001	8/9/2001	14	181		181
UGI	2002	8/13/2002	17	184		184
UGI	2003	6/26/2003	17	174		174
UGI	2004	6/9/2004	17	171		171
UGI	2005	7/26/2005	18	196		196
UGI	2006	8/1/2006	18	211		211
UGI	2007	7/10/2007	17	194		194
UGI	2008	6/10/2008	17	195	0	195
UGI	2009	8/17/2009	17	181	0	181
UGI	2010	7/7/2010	17	197	0	197
UGI	2011	7/22/2011	17	216	0	216
UGI	2012	7/18/2012	14	200	0	200
UGI	2013	7/18/2013	18	205	0	205
UGI	2014	7/2/2014	13	188	0	188
UGI	2015	9/8/2015	17	193	0	193

# Zone and State level Distributed Solar Generation Forecast



# Distributed Solar Generation Forecast by Zone and State (only represents IHS Forecast)

## Cumulative Capacity at Peak 2016-2031

Zone	State	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
AE	NJ	8.7	13.5	15.9	17.7	19.8	22.1	25.0	28.7	33.6	40.8	50.8	62.7	75.5	89.8	104.6	119.6
AEP	IN	0.9	1.6	2.1	2.5	3.0	3.4	3.9	4.3	4.7	5.2	5.9	7.0	8.5	10.5	12.7	14.9
AEP	KY	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.7	1.2
AEP	MI	0.2	0.4	0.5	0.7	1.0	1.3	1.8	2.3	3.0	4.0	5.2	6.8	8.9	11.4	14.1	17.2
AEP	OH	1.4	6.2	11.4	16.6	21.8	27.6	33.5	39.5	45.9	52.5	59.1	61.5	62.7	64.0	65.7	67.9
AEP	TN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AEP	VA	2.0	3.8	5.4	8.2	12.1	16.5	22.3	28.7	35.5	42.4	49.4	56.7	64.4	72.5	81.2	90.4
AEP	WV	0.2	1.1	2.2	3.3	4.3	5.4	6.4	7.5	8.5	9.5	10.6	11.6	12.6	13.6	15.4	18.5
APS	MD	2.1	4.0	6.0	7.5	8.1	8.4	8.5	8.8	9.2	9.9	10.7	11.9	13.5	15.7	18.1	20.8
APS	PA	1.3	2.1	3.0	4.0	5.0	5.7	6.3	6.9	7.5	8.2	8.8	9.4	10.1	10.8	11.8	13.0
APS	VA	0.2	0.4	0.6	0.9	1.3	1.7	2.3	3.0	3.7	4.5	5.2	6.0	6.8	7.6	8.5	9.5
APS	WV	0.1	0.3	0.5	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	2.8	3.0	3.3	3.7	4.4
ATSI	OH	1.3	5.4	9.9	14.4	18.9	23.8	28.8	33.9	39.4	45.0	50.5	52.5	53.5	54.6	56.0	57.8
ATSI	PA	0.8	1.4	1.9	2.6	3.2	3.7	4.0	4.4	4.8	5.2	5.6	5.9	6.4	6.8	7.5	8.2
BGE	MD	13.5	25.4	37.6	46.7	50.7	52.1	53.2	54.8	57.4	61.2	66.4	73.3	83.0	96.1	110.6	126.2
COMED	IL	9.7	15.5	19.5	23.4	27.3	33.6	41.5	49.2	57.6	66.1	74.6	83.0	91.4	99.7	108.5	118.0
DAYTON	OH	0.3	1.2	2.3	3.3	4.4	5.5	6.7	7.9	9.2	10.5	11.8	12.2	12.5	12.8	13.1	13.5
DEOK	KY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
DEOK	OH	0.4	1.6	3.0	4.3	5.6	7.1	8.7	10.2	11.9	13.6	15.3	15.9	16.2	16.5	17.0	17.5
DLCO	PA	1.4	2.3	3.2	4.3	5.3	6.1	6.8	7.4	8.0	8.6	9.3	9.9	10.6	11.4	12.4	13.6
DOM	NC	19.3	35.1	43.5	51.9	60.4	68.9	77.6	86.4	95.4	104.9	115.0	125.9	137.8	151.3	166.7	184.1
DOM	VA	6.3	12.3	17.7	27.0	40.1	54.7	74.1	96.0	118.8	142.3	166.4	191.4	217.8	245.7	275.5	307.3
DPL	DE	4.2	9.9	16.9	24.3	29.2	34.5	43.5	53.4	60.5	67.4	74.7	82.9	93.0	106.2	123.7	147.3
DPL	MD	2.5	4.8	7.1	8.8	9.6	9.8	10.0	10.3	10.8	11.6	12.6	13.9	15.7	18.3	21.0	24.0
DPL	VA	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.6	2.9	3.3	3.7	4.2	4.7
EKPC	KY	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	1.1	1.7
JCPL	NJ	13.6	21.3	25.0	27.9	31.3	35.0	39.6	45.6	53.4	65.0	81.1	100.5	121.3	144.8	169.1	193.8
METED	PA	1.5	2.6	3.7	4.8	6.0	6.9	7.7	8.4	9.1	9.8	10.6	11.3	12.1	13.0	14.3	15.7
PECO	PA	3.4	5.7	8.1	10.6	13.3	15.2	16.8	18.4	20.0	21.6	23.2	24.8	26.6	28.5	31.2	34.3
PENLC	OH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PENLC	PA	2.5	4.1	5.8	7.6	9.5	10.9	12.0	13.1	14.2	15.3	16.4	17.5	18.7	20.0	21.8	23.9
PEPCO	DC	0.7	1.4	2.1	3.0	3.8	4.4	5.0	5.6	6.3	6.9	7.5	8.1	8.6	9.2	9.8	10.4
PEPCO	MD	8.0	15.1	22.3	27.7	30.1	31.0	31.6	32.5	34.1	36.4	39.5	43.6	49.4	57.3	65.9	75.3
PL	PA	4.8	8.0	11.3	15.0	18.7	21.4	23.7	25.9	28.1	30.4	32.6	34.8	37.3	40.0	43.8	48.1
PS	NJ	21.0	32.7	38.3	42.7	48.0	53.6	60.7	69.9	81.8	99.5	124.2	153.6	185.3	220.9	257.7	295.0
RECO	NJ	0.7	1.1	1.3	1.4	1.6	1.8	2.0	2.4	2.7	3.3	4.2	5.1	6.2	7.4	8.6	9.8
UGI	PA	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	1.0	1.1
<b>PJM RTO</b>		<b>133.6</b>	<b>241.1</b>	<b>329.2</b>	<b>415.1</b>	<b>496.0</b>	<b>575.5</b>	<b>667.7</b>	<b>770.2</b>	<b>880.7</b>	<b>1,007.5</b>	<b>1,153.6</b>	<b>1,307.0</b>	<b>1,474.3</b>	<b>1,665.1</b>	<b>1,876.9</b>	<b>2,108.8</b>

NOTE: These values are based on the IHS State Forecast of the PJM Territory and do not include historical distributed solar generation



Distributed Solar Generation Forecast by Zone and State (represents IHS Forecast and Historical Installed)

Cumulative Capacity at Peak 2016-2031 (State Breakdown of Table B-8)

NOTE: These values are based on the IHS State Forecast of the PJM Territory and include historical distributed solar generation

Zone	State	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
AE	NJ	69.3	73.6	75.5	76.8	78.5	80.3	82.7	86.0	90.4	97.1	106.6	118.1	130.5	144.4	158.8	173.3
AEP	IN	1.0	1.7	2.2	2.6	3.1	3.5	3.9	4.4	4.8	5.3	6.0	7.1	8.5	10.6	12.7	15.0
AEP	KY	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.7	1.2
AEP	MI	0.2	0.4	0.5	0.7	1.0	1.3	1.8	2.3	3.1	4.0	5.2	6.8	8.9	11.4	14.1	17.2
AEP	OH	13.8	18.4	23.6	28.7	33.8	39.4	45.3	51.1	57.5	64.0	70.5	72.8	73.9	75.1	76.8	78.9
AEP	TN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AEP	VA	2.4	4.3	5.9	8.7	12.6	17.0	22.7	29.2	35.9	42.8	49.8	57.2	64.8	72.9	81.6	90.8
AEP	WV	0.4	1.2	2.3	3.4	4.4	5.5	6.6	7.6	8.6	9.7	10.7	11.7	12.7	13.7	15.5	18.6
APS	MD	6.5	8.4	10.3	11.7	12.3	12.5	12.7	12.9	13.3	13.9	14.7	15.8	17.4	19.6	22.0	24.6
APS	PA	2.2	3.1	4.0	4.9	5.9	6.7	7.3	7.9	8.5	9.1	9.7	10.3	10.9	11.7	12.7	13.9
APS	VA	0.2	0.4	0.6	0.9	1.3	1.7	2.3	3.0	3.7	4.5	5.2	6.0	6.8	7.6	8.5	9.5
APS	WV	0.3	0.5	0.8	1.0	1.3	1.6	1.8	2.0	2.3	2.5	2.8	3.0	3.3	3.5	3.9	4.7
ATSI	OH	16.8	20.8	25.2	29.6	33.9	38.7	43.7	48.6	54.0	59.4	64.8	66.7	67.6	68.6	69.9	71.6
ATSI	PA	1.0	1.5	2.1	2.7	3.3	3.8	4.2	4.6	4.9	5.3	5.7	6.1	6.5	7.0	7.6	8.3
BGE	MD	35.4	47.2	59.3	68.1	71.9	73.3	74.1	75.6	78.0	81.7	86.7	93.4	103.0	116.0	130.2	145.7
COMED	IL	18.6	24.3	28.2	32.1	35.9	42.1	49.9	57.6	65.9	74.4	82.8	91.2	99.4	107.7	116.4	125.8
DAYTON	OH	3.4	4.4	5.4	6.4	7.4	8.5	9.7	10.9	12.1	13.4	14.7	15.1	15.4	15.6	15.9	16.3
DEOK	KY	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
DEOK	OH	3.2	4.4	5.7	7.1	8.4	9.9	11.4	12.9	14.5	16.2	17.9	18.5	18.8	19.1	19.5	20.1
DLCO	PA	2.3	3.3	4.2	5.2	6.3	7.0	7.7	8.3	8.9	9.5	10.2	10.8	11.5	12.2	13.3	14.5
DOM	NC	42.0	57.6	65.8	74.1	82.3	90.7	99.2	107.8	116.7	126.0	136.0	146.6	158.4	171.7	186.9	204.2
DOM	VA	8.4	14.4	19.8	29.1	42.1	56.7	76.1	97.9	120.8	144.3	168.3	193.4	219.7	247.6	277.4	309.2
DPL	DE	22.1	27.6	34.4	41.7	46.4	51.6	60.5	70.3	77.2	84.0	91.2	99.2	109.2	122.2	139.6	163.1
DPL	MD	17.5	19.6	21.8	23.4	24.0	24.2	24.3	24.5	24.8	25.5	26.3	27.5	29.3	31.7	34.4	37.3
DPL	VA	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.6	3.0	3.3	3.8	4.2	4.7
EKPC	KY	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	1.1	1.8
JCPL	NJ	100.1	107.0	110.0	112.2	115.0	118.0	121.9	127.3	134.5	145.4	160.9	179.6	199.8	222.6	246.3	270.4
METED	PA	10.0	10.9	12.0	13.1	14.2	15.0	15.7	16.4	17.0	17.7	18.4	19.0	19.8	20.6	21.8	23.2
PECO	PA	13.0	15.2	17.5	20.0	22.6	24.4	26.0	27.5	29.0	30.5	32.0	33.6	35.3	37.2	39.8	42.8
PENLC	OH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PENLC	PA	4.3	5.9	7.6	9.4	11.2	12.6	13.7	14.8	15.9	17.0	18.1	19.1	20.3	21.6	23.4	25.4
PEPCO	DC	2.8	3.5	4.2	5.0	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.5	11.1	11.7	12.2
PEPCO	MD	21.5	28.5	35.6	40.9	43.2	44.0	44.5	45.3	46.8	49.0	52.0	56.0	61.7	69.5	78.0	87.3
PL	PA	28.5	31.5	34.7	38.1	41.7	44.2	46.3	48.3	50.4	52.4	54.4	56.5	58.8	61.4	65.0	69.1
PS	NJ	125.3	136.2	141.0	144.6	149.1	153.9	160.1	168.6	179.7	196.6	220.5	249.2	280.1	314.9	350.9	387.5
RECO	NJ	2.9	3.3	3.5	3.6	3.8	3.9	4.1	4.4	4.8	5.4	6.2	7.2	8.2	9.3	10.5	11.7
UGI	PA	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.2
<b>PJM RTO</b>		<b>576.3</b>	<b>680.3</b>	<b>764.9</b>	<b>847.3</b>	<b>924.7</b>	<b>1,000.8</b>	<b>1,089.7</b>	<b>1,188.7</b>	<b>1,295.9</b>	<b>1,419.4</b>	<b>1,562.1</b>	<b>1,712.3</b>	<b>1,876.4</b>	<b>2,064.0</b>	<b>2,272.5</b>	<b>2,501.3</b>

# Historical Installed Capacity by zone based on installations recorded in the GATS database



# Historical Installed Capacity of Distributed Solar Generation (MW) - AC

## Historical Installed Capacity of Distributed Solar Generation (MW) - AC

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AE					0.0	0.1	0.5	1.8	4.5	6.0	12.2	25.2	45.8	97.1	129.7	155.2	186.4	193.5
AEP					0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	13.4	17.1	23.1	29.0	34.8	36.6
APS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.0	5.0	11.2	16.3	20.3	29.8	42.1
ATSI					0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.5	5.2	18.9	36.3	44.1	47.7	50.8
BGE							0.0	0.0	0.0	0.1	1.3	3.2	8.5	21.7	38.7	52.5	77.3	105.9
COMED			0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.8	1.0	23.4	24.2	33.6	34.2
DAY										0.0	0.0	0.1	0.5	2.1	8.9	11.1	12.5	12.7
DEOK		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.6	1.6	6.1	11.4	11.8	13.3	13.6
DLCO							0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.0	3.5	4.0	4.2	4.4
DOM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.6	2.8	4.4	11.2	18.6	101.1	110.5
DPL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	2.2	4.8	7.9	33.0	61.1	82.8	95.9	113.5
EKPC										0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3
JCPL			0.0	0.0	0.1	1.0	2.0	5.9	12.0	16.2	25.2	38.4	67.7	162.9	236.7	298.9	360.6	384.4
METED			0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	1.5	12.9	32.4	34.9	35.7	36.8	37.5
PECO	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.5	0.6	0.9	3.5	15.4	33.8	43.7	48.6	49.4	50.2
PENLC			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	3.9	4.4	5.0	5.4	5.6
PEPCO						0.0	0.0	0.0	0.1	0.1	0.4	3.3	6.4	13.3	27.2	40.4	59.4	83.6
PL								0.0	0.0	0.1	0.2	2.4	28.5	65.8	75.8	79.1	81.5	87.4
PS			0.0	0.3	0.5	0.6	1.2	4.9	14.8	22.0	33.2	90.7	142.2	290.2	439.5	532.7	570.0	589.9
RECO			0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.0	1.0	1.7	2.1	5.0	10.7	12.0	12.3	12.5
UGI											0.0	0.1	0.2	0.4	0.4	0.4	0.4	0.4
<b>PJM RTO</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.5</b>	<b>0.9</b>	<b>2.2</b>	<b>4.3</b>	<b>13.5</b>	<b>33.0</b>	<b>47.6</b>	<b>78.2</b>	<b>178.5</b>	<b>368.9</b>	<b>821.7</b>	<b>1,237.1</b>	<b>1,506.6</b>	<b>1,812.6</b>	<b>1,969.5</b>

Please note that all years except for 2015 are based on calendar year, 2015 is through 8/31/2015.