

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF)	
LOUISVILLE GAS AND ELECTRIC)	CASE NO. 2018-00295
COMPANY FOR AN ADJUSTMENT OF ITS)	
ELECTRIC AND GAS RATES)	

RESPONSE OF
LOUISVILLE GAS AND ELECTRIC COMPANY
TO
THE FIRST SET OF DATA REQUESTS OF
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.
DATED NOVEMBER 13, 2018

FILED: NOVEMBER 29, 2018

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says that he is Chief Operating Officer for Louisville Gas and Electric Company and Kentucky Utilities Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



Lonnie E. Bellar

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.




Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Gregory J. Meiman**, being duly sworn, deposes and says that he is Vice President, Human Resources for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.


Gregory J. Meiman

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.


Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **William Steven Seelye**, being duly sworn, deposes and states that he is a Principal of The Prime Group, LLC, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



William Steven Seelye

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of November 2018.

 (SEAL)

Notary Public


My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky

Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **David S. Sinclair**, being duly sworn, deposes and says that he is Vice President, Energy Supply and Analysis for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



David S. Sinclair

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 29th day of November 2018.



Notary Public

My Commission Expires:
Judy Schooler
Notary Public, ID No. 603967
State at Large, Kentucky
Commission Expires 7/11/2022

VERIFICATION

COMMONWEALTH OF PENNSYLVANIA)
)
COUNTY OF CUMBERLAND) SS:

The undersigned, **John J. Spanos**, being duly sworn, deposes and says that he is the Senior Vice President for Gannett Fleming Valuation and Rate Consultants, LLC, that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

John J. Spanos
John J. Spanos

Subscribed and sworn to before me, a Notary Public in and before said County and Commonwealth, this 20th day of November 2018.

Cheryl Ann Rutter (SEAL)
Notary Public

My Commission Expires:

February 20, 2019

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Cheryl Ann Rutter, Notary Public
East Pennsboro Twp., Cumberland County
My Commission Expires Feb. 20, 2019
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 1

Responding Witness: William Steven Seelye

Q.1-1. Please provide the class cost of service model in excel format with formulas.

A.1-1. See the following Excel attachments to the response to PSC 1-53:

- 1) Att_LGE_PSC_1-53_Exhibit_WSS-27_WSS-29_LGE_COSS_
Functional_Assgmt_and_Class_Alloc.xlsx and
- 2) Att_LGE_PSC_1-53_Exhibit_WSS-9_WSS-10_WSS-11_WSS-12_WSS-
33_WSS-34_LGE_Gas_COSS.xlsx.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 2

Responding Witness: William Steven Seelye

- Q.1-2. Please provide, in excel format, for each rate class, by Company, monthly coincident peak demand at the generation level (i.e., including losses), for the test year. These rate classes should correspond to the rate classes used in Mr. Seelye's class cost of service study.
- A.1-2. The information required to calculate the monthly peaks for each rate class is provided in the Excel spreadsheet filed in response to AG 1-137.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 3

Responding Witness: David S. Sinclair / William Steven Seelye

Q.1-3. To the extent not provided in response to the previous question, please provide the following information for each rate class/rate schedule included as a separate class in the class cost of service study for the test year 12 months ending April 2020:

- a. monthly system peak load (LGE and KU separately stated and combined).
- b. the load of each rate class at the time of the monthly LGE/KU system peak, showing the following:
 1. load at meter
 2. losses
 3. load at generation
- c. Monthly mWh energy at the generation voltage level for the rate class/rate schedule.
- d. Energy and demand loss factors for each voltage level, by rate class/rate schedule, at which customers on the rate class/rate schedule take service.
- e. Monthly mWh energy sales at the meter, separately stated for each voltage at which customers in each rate class/rate schedule take service, by rate class/rate schedule (for example, the metered mWh for Rate PS secondary and Rate PS primary by month).

A.1-3.

- a. See attached.
- b.
 1. Only load at generation was prepared for study.

2. Only load at generation was prepared for study.
 3. See attached.
- c. See attached.
 - d. See the attachment to the response to Question No. 7, part c.
 - e. Only energy at generation was prepared for study.

Monthly System Peak Load(kWh)			
Year	Month	LGE	CC
2019	5	2,183,591	5,426,984
2019	6	2,387,027	5,833,335
2019	7	2,537,946	6,016,996
2019	8	2,679,866	6,360,043
2019	9	2,404,579	5,698,434
2019	10	1,725,807	4,418,552
2019	11	1,634,640	4,837,310
2019	12	1,661,413	5,214,576
2020	1	1,816,534	5,972,313
2020	2	1,667,954	5,246,158
2020	3	1,710,687	5,012,169
2020	4	1,646,218	4,302,754

Load at Generation at Time of LGE System Peak(kWh)

		1	2	100	210	220	230	240	300	320	400	420
				General	CPS	CPS	CTOD	CTOD	IPS	IPS	ITOD	ITOD
Year	Month	Residential	RTOD	Service	Primary	Secondary	Primary	Secondary	Secondary	Primary	Secondary	Primary
2019	5	862,867	135	286,211	18,463	304,218	132,729	159,798	32,872	855	47,927	181,183
2019	6	1,118,739	206	264,037	17,648	296,697	121,054	161,503	30,236	643	47,092	180,254
2019	7	1,160,728	188	341,758	17,614	302,244	134,527	166,049	33,628	773	48,265	189,220
2019	8	1,354,621	346	278,141	18,113	307,030	133,844	179,262	28,837	534	46,144	186,477
2019	9	1,183,636	219	277,771	15,570	287,945	104,593	154,793	29,761	578	47,101	169,812
2019	10	694,646	132	219,833	13,691	225,884	91,741	127,539	26,862	585	41,951	151,888
2019	11	635,040	160	174,630	13,152	227,866	76,054	126,776	25,020	371	37,774	159,935
2019	12	747,769	171	167,392	13,086	223,591	69,441	122,751	21,452	491	31,842	128,856
2020	1	877,697	243	168,060	13,086	236,753	74,542	125,704	21,109	455	34,176	126,997
2020	2	696,382	113	193,557	13,187	233,125	74,651	117,449	29,323	677	38,298	145,820
2020	3	659,273	128	178,248	12,882	261,425	86,918	135,336	33,380	604	43,969	151,839
2020	4	630,942	135	192,544	11,548	254,275	74,845	137,578	26,949	586	37,337	138,020

600	801	63	64	60	61	62
	Special	Outdoor		Unmetered	Traffic	Lighting
RTS	Contract	Sports	EV_Charge	Lighting	Energy	Energy
		Lighting			Svc	Svc
147,214	8,760	1	-	-	361	-
141,504	7,024	1	-	-	388	-
133,583	8,992	0	-	-	376	-
137,297	8,847	1	-	-	372	-
126,962	5,439	0	-	-	398	-
121,216	9,481	2	-	-	357	-
125,454	7,125	2	5	23,870	391	1,017
101,392	8,385	3	-	23,399	399	993
101,694	8,375	4	-	26,207	428	1,006
91,941	6,603	5	-	25,394	407	1,021
143,055	3,254	1	-	-	372	-
135,012	6,061	1	-	-	384	-

Monthly Energy at Generation Level(MWh)

		1	2	100	210	220	230	240	300	320	400
		Residential	RTOD	General Service	CPS Primary	CPS Secondary	CTOD Primary	CTOD Secondary	IPS Secondary	IPS Primary	ITOD Secondary
Year	Month										
2019	5	310,913	72	116,232	9,789	148,120	74,186	84,601	18,624	351	27,663
2019	6	403,462	89	129,222	10,299	155,347	78,083	89,980	18,298	360	28,317
2019	7	530,143	114	146,226	10,508	165,238	79,707	96,843	18,748	364	29,938
2019	8	535,529	116	146,342	10,719	165,342	81,339	96,753	19,291	369	29,812
2019	9	397,000	88	118,299	8,691	138,655	65,990	81,434	16,818	308	25,786
2019	10	284,673	68	101,223	7,889	124,194	59,847	73,629	15,057	286	23,571
2019	11	278,166	69	102,095	8,730	128,016	66,226	75,645	16,197	317	24,314
2019	12	336,073	81	103,532	8,718	130,463	66,130	77,770	16,151	316	24,640
2020	1	384,293	91	109,842	8,475	135,839	64,286	77,168	16,218	307	25,118
2020	2	329,415	80	99,268	7,637	119,788	57,934	67,482	15,250	277	22,205
2020	3	339,228	84	109,137	8,190	129,145	62,130	72,641	17,082	297	24,204
2020	4	262,435	68	95,551	7,972	121,721	60,477	69,327	15,649	289	22,921

	420	600	801	63	64	60	61	62
			Special	Outdoor		Unmetered	Traffic	Lighting
ITOD Primary	RTS	Contract	Sports	Lighting	EV_Charge	Lighting	Energy	Energy
							Svc	Svc
	118,570	107,107	4,596	2	0	7,938	269	301
	121,561	95,496	5,287	2	0	7,328	280	310
	123,049	87,209	5,416	2	0	7,009	280	274
	124,695	95,048	5,313	2	0	7,555	277	309
	104,123	79,259	5,561	2	0	8,438	287	330
	96,664	83,235	4,730	2	0	9,122	266	369
	106,967	96,307	4,528	2	0	9,903	282	422
	106,811	87,964	4,884	2	0	10,776	298	457
	103,833	84,302	5,746	2	0	11,400	319	437
	93,574	69,796	4,901	2	0	9,863	283	397
	100,351	92,549	4,519	2	0	9,033	277	334
	97,682	88,861	4,539	2	0	8,358	277	332

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 4

Responding Witness: William Steven Seelye

Q.1-4. With regard to Exhibit WSS-19 (LOLP), please provide all supporting workpapers, in excel format with all formulas intact, used to develop this exhibit. This would include, but not be limited to:

- a. hourly system load
- b. hourly rate class load at:
 1. meter
 2. generation voltage
 3. loss factor used to convert metered load into load at generation
- c. hourly LOLP for the combined KU-LGE system

A.1-4.

- a. See the response to AG 1-137.
- b. See the response to AG 1-137.
- c. See the response to AG 1-141(a).

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 5

Responding Witness: David S. Sinclair

Q.1-5. Please provide the output of the analysis used to develop hourly LOLP. Provide in excel format, with formulas intact.

A.1-5. See the response to AG 1-141.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 6

Responding Witness: David S. Sinclair

Q.1-6. Provide, for the past three years (2017, 2016 and 2015) the following actual information:

- a. monthly system peak load (LGE and KU separately stated and combined system.
- b. date and hour of the LGE + KU monthly peaks
- c. date and hour of the separate LGE and KU monthly peaks

A.1-6. See attached.

Case No. 2018-00295
Attachment to Response to KIUC-1 Question No. 6ab
Page 1 of 1
Sinclair

Year	Month	Datetime	CC	LGE_CoincidentPeak	KU_CoincidentPeak
2015	1	2015-01-08 07:00	6,833	1,973	4,860
2015	2	2015-02-20 07:00	7,079	1,967	5,112
2015	3	2015-03-06 07:00	5,973	1,712	4,261
2015	4	2015-04-09 14:00	4,240	1,524	2,716
2015	5	2015-05-11 12:00	5,314	1,971	3,343
2015	6	2015-06-15 15:00	6,262	2,472	3,790
2015	7	2015-07-29 14:00	6,392	2,585	3,807
2015	8	2015-08-03 16:00	6,208	2,484	3,724
2015	9	2015-09-04 15:00	6,199	2,443	3,756
2015	10	2015-10-08 15:00	4,802	1,797	3,005
2015	11	2015-11-23 07:00	5,015	1,570	3,445
2015	12	2015-12-04 07:00	5,026	1,570	3,456
2016	1	2016-01-19 07:00	6,223	1,808	4,415
2016	2	2016-02-10 09:00	5,780	1,741	4,039
2016	3	2016-03-02 08:00	4,843	1,496	3,347
2016	4	2016-04-26 14:00	4,791	1,810	2,982
2016	5	2016-05-31 15:00	5,289	2,075	3,214
2016	6	2016-06-23 14:00	6,334	2,498	3,836
2016	7	2016-07-26 15:00	6,458	2,524	3,934
2016	8	2016-08-26 15:00	6,451	2,515	3,936
2016	9	2016-09-07 15:00	6,291	2,436	3,855
2016	10	2016-10-19 15:00	5,114	1,966	3,147
2016	11	2016-11-21 08:00	4,809	1,521	3,288
2016	12	2016-12-15 07:00	5,813	1,797	4,016
2017	1	2017-01-06 11:00	5,679	1,755	3,924
2017	2	2017-02-10 07:00	5,229	1,599	3,630
2017	3	2017-03-16 06:00	5,434	1,618	3,815
2017	4	2017-04-20 15:00	4,708	1,802	2,906
2017	5	2017-05-18 14:00	5,446	2,100	3,346
2017	6	2017-06-13 13:00	6,078	2,367	3,710
2017	7	2017-07-21 16:00	6,503	2,589	3,914
2017	8	2017-08-17 13:00	6,233	2,460	3,774
2017	9	2017-09-21 15:00	5,763	2,305	3,458
2017	10	2017-10-04 15:00	4,807	1,880	2,928
2017	11	2017-11-20 07:00	4,853	1,535	3,318
2017	12	2017-12-28 08:00	5,612	1,651	3,961

Year	Month	Datetime	LGE_NonCoincidentPeak
2015	1	2015-01-08 08:00	1,976
2015	2	2015-02-20 07:00	1,967
2015	3	2015-03-06 08:00	1,724
2015	4	2015-04-09 15:00	1,527
2015	5	2015-05-07 16:00	2,043
2015	6	2015-06-23 15:00	2,488
2015	7	2015-07-29 15:00	2,594
2015	8	2015-08-03 16:00	2,484
2015	9	2015-09-04 15:00	2,443
2015	10	2015-10-07 16:00	1,827
2015	11	2015-11-23 07:00	1,570
2015	12	2015-12-18 18:00	1,577
2016	1	2016-01-18 19:00	1,821
2016	2	2016-02-10 11:00	1,774
2016	3	2016-03-03 12:00	1,549
2016	4	2016-04-26 14:00	1,810
2016	5	2016-05-31 15:00	2,075
2016	6	2016-06-23 14:00	2,498
2016	7	2016-07-19 15:00	2,543
2016	8	2016-08-11 15:00	2,521
2016	9	2016-09-08 15:00	2,480
2016	10	2016-10-06 16:00	1,970
2016	11	2016-11-02 18:00	1,612
2016	12	2016-12-15 20:00	1,815
2017	1	2017-01-06 18:00	1,791
2017	2	2017-02-09 19:00	1,609
2017	3	2017-03-16 07:00	1,627
2017	4	2017-04-20 15:00	1,802
2017	5	2017-05-18 15:00	2,118
2017	6	2017-06-14 15:00	2,431
2017	7	2017-07-21 15:00	2,608
2017	8	2017-08-17 13:00	2,460
2017	9	2017-09-21 15:00	2,305
2017	10	2017-10-04 15:00	1,880
2017	11	2017-11-20 08:00	1,538
2017	12	2017-12-27 18:00	1,731

Year	Month	Datetime	KU_NonCoincidentPeak
2015	1	2015-01-08 07:00	4,860
2015	2	2015-02-20 07:00	5,112
2015	3	2015-03-06 07:00	4,261
2015	4	2015-04-24 06:00	2,753
2015	5	2015-05-11 12:00	3,343
2015	6	2015-06-15 14:00	3,790
2015	7	2015-07-28 13:00	3,865
2015	8	2015-08-04 14:00	3,785
2015	9	2015-09-03 16:00	3,787
2015	10	2015-10-08 15:00	3,005
2015	11	2015-11-23 07:00	3,445
2015	12	2015-12-04 07:00	3,456
2016	1	2016-01-19 07:00	4,415
2016	2	2016-02-10 08:00	4,043
2016	3	2016-03-02 08:00	3,347
2016	4	2016-04-26 16:00	2,991
2016	5	2016-05-31 14:00	3,225
2016	6	2016-06-23 14:00	3,836
2016	7	2016-07-26 14:00	3,936
2016	8	2016-08-26 15:00	3,936
2016	9	2016-09-07 15:00	3,855
2016	10	2016-10-19 13:00	3,150
2016	11	2016-11-21 08:00	3,288
2016	12	2016-12-15 07:00	4,016
2017	1	2017-01-08 08:00	4,004
2017	2	2017-02-10 07:00	3,630
2017	3	2017-03-16 06:00	3,815
2017	4	2017-04-20 15:00	2,906
2017	5	2017-05-18 14:00	3,346
2017	6	2017-06-13 13:00	3,710
2017	7	2017-07-21 16:00	3,914
2017	8	2017-08-17 14:00	3,783
2017	9	2017-09-27 15:00	3,518
2017	10	2017-10-09 15:00	3,002
2017	11	2017-11-20 07:00	3,318
2017	12	2017-12-28 08:00	3,961

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 7

Responding Witness: William Steven Seelye

Q.1-7. Please provide all supporting workpapers, in excel format where available, used to develop the class cost of service study. Include at a minimum the following:

- a. the excel models used to develop the projected test year hourly system and rate class loads.
- b. an excel spreadsheet containing the LOLP hourly results and the development of the LOLP rate class demand allocation factors.
- c. the loss study used to support the energy and demand loss factors used in the class cost of service study.

A.1-7.

- a. See the Excel attachment to the response to AG 1-137.
- b. See the response to part a.
- c. See attached.

LG&E AND KU SERVICES COMPANY

**LG&E Power System
2010 Analysis of System Losses**

August 2012

Prepared by:



Management Applications Consulting, Inc.
1103 Rocky Drive – Suite 201
Reading, PA 19609
Phone: (610) 670-9199 / Fax: (610) 670-9190



MANAGEMENT APPLICATIONS CONSULTING, INC.

1103 Rocky Drive • Suite 201 • Reading, PA 19609-1157 • 610/670-9199 • fax 610/670-9190 • www.manapp.com

August 16, 2012

Mr. Robert M. Conroy
Director of Rates
LG&E and KU Services Company
220 West Main Street
Louisville, KY 40202

RE: 2010 LOSS ANALYSIS – LG&E

Dear Mr. Conroy:

Transmitted herewith are the results of the 2010 Analysis of System Losses for LG&E and KU Services Company's Louisville Gas & Electric (LG&E) power system. Our analysis develops cumulative expansion factors (loss factors) for both demand (peak/kW) and energy (average/kWh) losses by discrete voltage levels applicable to metered sales data. Our analysis considers only technical losses in arriving at our final recommendations. Please note that the proposed loss factors include a common or system-wide transmission factor for both LG&E and KU studies.

On behalf of MAC, we appreciate the opportunity to assist you in performing the loss analysis contained herein. The level of detailed load research and sales data by voltage level, coupled with a summary of power flow data and power system model, forms the foundation for determining reasonable and representative power losses on the LG&E system. Our review of these data and calculated loss results support the proposed loss factors as presented herein for your use in various cost of service, rate studies, and demand analyses.

Should you require any additional information, please let us know at your earliest convenience.

Sincerely,

A handwritten signature in cursive script that reads "Paul M. Normand".

Paul M. Normand
Principal

Enclosure
PMN/rjp

**LG&E AND KU SERVICES COMPANY
2010 Analysis of System Losses – LG&E Power System**

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Appendix A – Results of LG&E (LG&E and KU) Transmission System 2010 Loss Analysis

Appendix B – Results of LG&E 2010 Loss Analysis

Appendix C – Discussion of Hoebel Coefficient



LG&E AND KU SERVICES COMPANY 2010 Analysis of System Losses – LG&E Power System

1.0 EXECUTIVE SUMMARY

This report presents LG&E 2010 Analysis of System Losses for the power systems as performed by Management Applications Consulting, Inc. (MAC). The study developed separate demand (kW) and energy (kWh) loss factors for each voltage level of service in the power system for LG&E. The cumulative loss factor results by voltage level, as presented herein, can be used to adjust metered kW and kWh sales data for losses in performing cost of service studies, determining voltage discounts, and other analyses which may require a loss adjustment.

The procedures used in the overall loss study were similar to prior studies and emphasized the use of "in house" resources where possible. To this end, extensive use was made of the Company's peak hour power flow data and transformer plant investments in the model. In addition, measured and estimated load data provided a means of calculating reasonable estimates of losses by using a "top-down" and "bottom-up" procedure. In the "top-down" approach, losses from the high voltage system, through and including distribution substations, were calculated along with power flow data, conductor and transformer loss estimates, and metered poles.

At this point in the analysis, system loads and losses at the input into the distribution substation system are known with reasonable accuracy. However, it is the remaining loads and losses on the distribution substations, primary system, secondary circuits, and services which are generally difficult to estimate. Estimated and actual Company load data provided the starting point for performing a "bottom-up" approach for calculating the remaining distribution losses. Basically, this "bottom-up" approach develops line loadings by first determining loads and losses at each level beginning at a customer's meter service entrance and then going through secondary lines, line transformers, primary lines, and finally distribution substation. These distribution system loads and associated losses are then compared to the initial calculated input into Distribution Substation loadings for reasonableness prior to finalizing the loss factors. An overview of the loss study is shown on Figure 1 on page 4.

Appendix A of this report presents the Transmission loss analysis which was calculated separately and the results incorporated into the final loss factors as shown on Table 1 on the next page.

Table 1 (columns (a) and (b)) also provides the final results from Appendix B for the 2010 calendar year. Exhibits 8 and 9 of Appendix B present a more detailed analysis of the final calculated summary results of losses by segments and delivery voltage of the power system. The following Table 1 cumulative loss expansion factors are applicable only to metered sales at the point of receipt for adjustment to the power system's input level.

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TABLE 1
Loss Factors at Sales (Meter) Level, Calendar Year 2010

<u>Voltage Level of Service</u>	<u>Total LG&E</u> (a)	<u>Delivery System (Excludes Transmission)</u> (b)	<u>Recalculated Total LG&E With Appendix A Transmission Losses</u> (c) (d) = 1/(c)	
<u>Demand (kW)</u>				
Transmission ¹	1.01549	1.00000	1.02805	0.97272
Primary Substation	1.02152	1.00594	1.03415	0.96698
Primary	1.04295	1.02704	1.05585	0.94710
Secondary	1.06325	1.04703	1.07640	0.92902
<u>Energy (kWh)</u>				
Transmission ¹	1.01033	1.00000	1.02271	0.97779
Primary Substation	1.01619	1.00581	1.02865	0.97215
Primary	1.02998	1.01946	1.04261	0.95913
Secondary	1.05325	1.04160	1.06525	0.93875
Losses – Net System Input ²	4.37% MWh			
	5.56% MW			
Losses – Net System Output ³	4.57% MWh			
	5.89% MW			

Notes: Column (a) Results derived from Appendix A for Transmission and Appendix B for all remaining factors.

Column (b) Column (a) loss factors excluding all Transmission-related losses.

Column (c) Column (b) delivery-only loss factors with incorporating the composite LG&E system-wide Transmission loss factors from Appendix A, Schedule 1, lines 5 and 10.

Column (d) All loss factors presented in columns (a), (b), and (c) are expansion factors applicable to metered sales as a multiplier. Column (d) is simply the inverse of column (c) and results in a loss factor that is used to divide metered sales to derive sales requirement at input.

The loss factors presented in the Delivery Only column of Table 1 are the Total LG&E loss factors divided by the transmission loss factor from column (a) in order to remove these losses from each service level loss factor. For example, the secondary distribution demand loss factor of 1.04703 includes the recovery of all remaining non-transmission losses from the distribution substation, primary lines, line transformers, secondary conductors and services.

¹ Reflects results for 500 kV, 345 kV, 161 kV, 138 kV and 69 kV from Appendix A.

² Net system input equals firm sales plus losses, Company use less non-requirement sales and related losses. See Appendix A, Exhibit I, for their calculations.

³ Net system output uses losses divided by output or sales data as a reference.

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The net system input shown in Table 1 represents the MWh losses of 4.37% for the total LG&E load using calculated losses divided by the associated input energy to the system. The 5.56% represents the MW losses also using system input as a reference. The net system output reference shown in Table 1 represents MWh losses of 4.57% and MW losses of 5.89%. These results use the appropriate total losses for each but are divided by system output or sales. These calculations are all based on the data and results shown on Exhibits 1, 7 and 9 of the study.

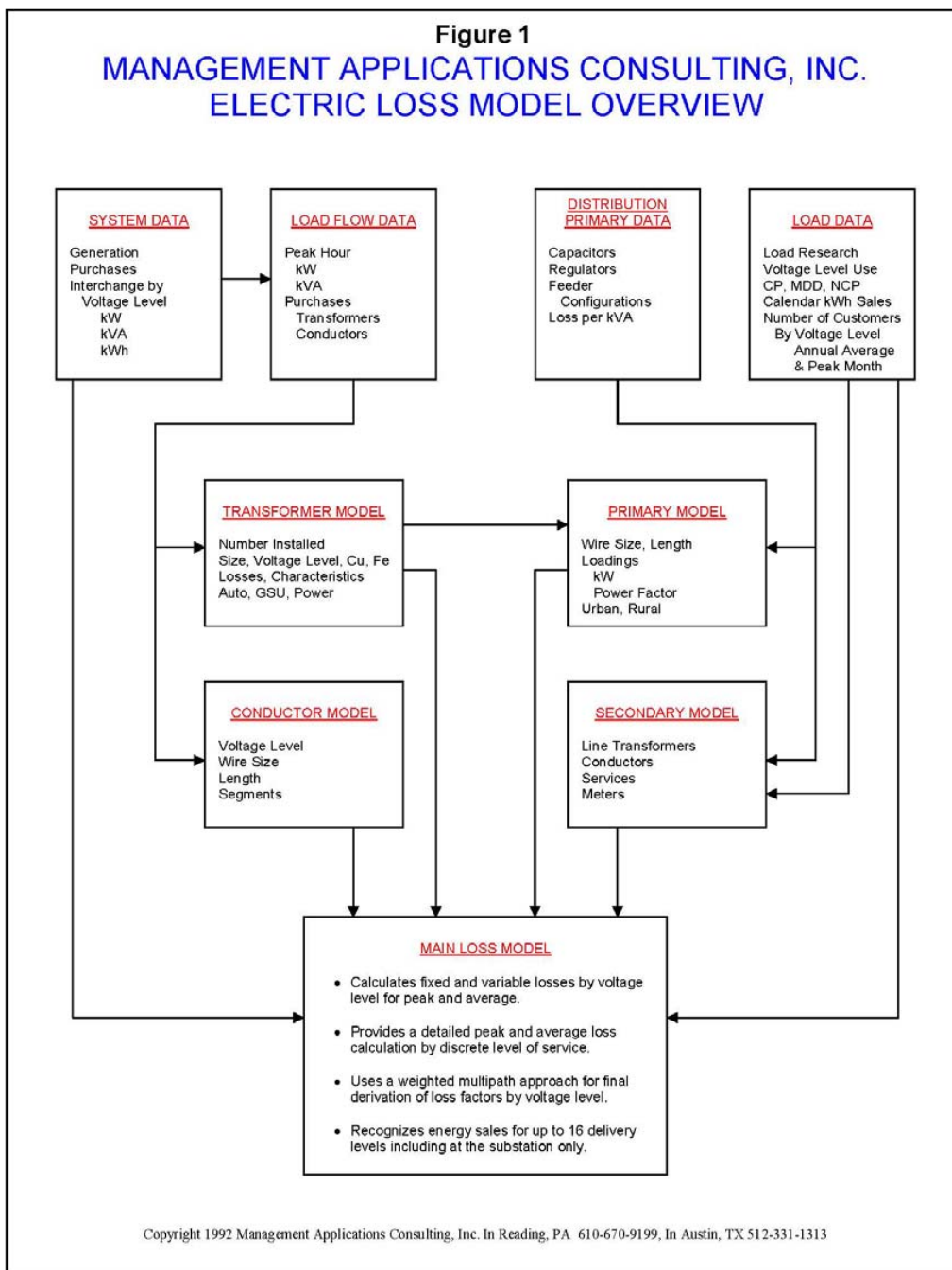
Due to the very nature of losses being primarily a function of equipment loadings, the loss factor derivations for any voltage level must consider both the load at that level plus the loads from lower voltages and their associated losses. As a result, cumulative losses on losses equates to additional load at higher levels along with future changes (+ or –) in loads throughout the power system. It is therefore important to recognize that losses are multiplicative in nature (future) and not additive (test year only) for all future years to ensure total recovery based on prospective fixed loss factors for each service voltage.

The derivation of the cumulative loss factors (Appendix B) shown in Table 1 (columns (a) and (b)) have been detailed for all electrical facilities in Exhibit 9, page 1 for demand and page 2 for energy. Beginning on line 1 of page 1 (demand) under the secondary column, metered sales are adjusted for service losses on lines 3 and 4. This new total load (with losses) becomes the load amount for the next higher facilities of secondary conductors and their loss calculations. This process is repeated for all the installed facilities until the secondary sales are at the input level (line 45). The final loss factor for all delivery voltages using this same process is shown on line 46 and Table 1 for demand. This procedure is repeated in Exhibit 9, page 2, for the energy loss factors.

The loss factor calculation is simply the input required (line 45) divided by the metered sales (line 2).

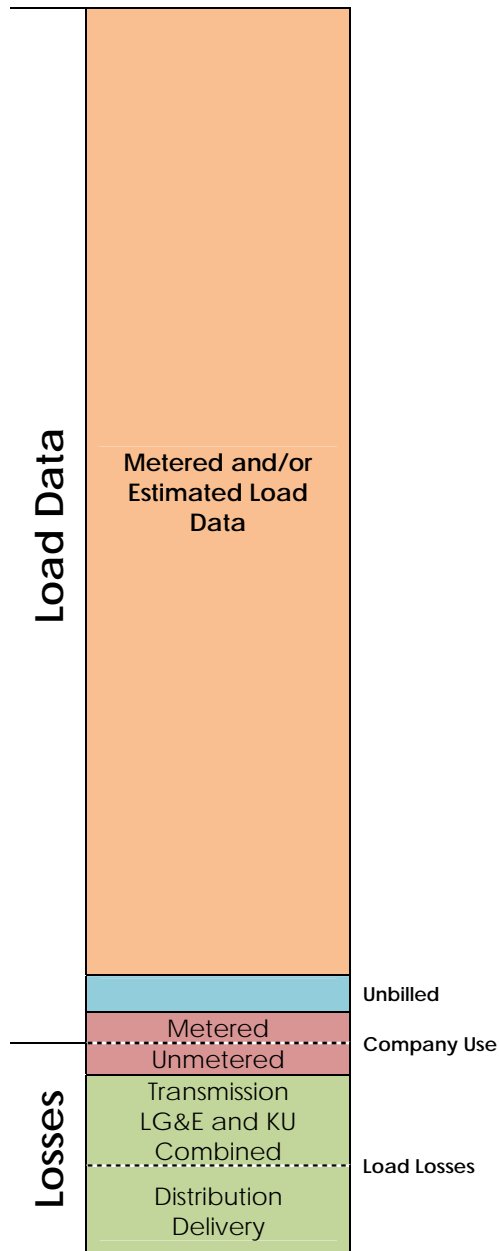
An overview of the loss study is shown on Figure 1 on the next page. Figure 2 simply illustrates the major components that must be considered in a loss analysis.

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**Figure 2
LG&E and KU Services Company – LG&E
Jurisdiction Energy and Loss Components**



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2.0 INTRODUCTION

This report of the 2010 Analysis of System Losses for the LG&E power system provides a summary of results, conceptual background or methodology, description of the analyses, and input information related to the study.

2.1 Conduct of Study

Typically, between five to ten percent of the total kWh requirements of an electric utility is lost or unaccounted for in the delivery of power to customers. Investments must be made in facilities which support the total load which includes losses or unaccounted for load. Revenue requirements associated with load losses are an important concern to utilities and regulators in that customers must equitably share in all of these cost responsibilities. Loss expansion factors are the mechanism by which customers' metered demand and energy data are mathematically adjusted to the generation or input level (point of reference) when performing cost and revenue calculations.

An acceptable accounting of losses can be determined for any given time period using available engineering, system, and customer data along with empirical relationships. This loss analysis for the delivery of demand and energy utilizes such an approach. A microcomputer loss model⁴ is utilized as the vehicle to organize the available data, develop the relationships, calculate the losses, and provide an efficient and timely avenue for future updates and sensitivity analyses. Our procedures and calculations are similar with prior loss studies, and they rely on numerous databases that include customer statistics and power system investments.

Company personnel performed most of the data gathering and data processing efforts and checked for reasonableness. MAC provided assistance as necessary to construct databases, transfer files, perform calculations, and check the reasonableness of results. A review of the preliminary results provided for additions to the database and modifications to certain initial assumptions based on available data. Efforts in determining the data required to perform the loss analysis centered on information which was available from existing studies or reports within the Company. From an overall perspective, our efforts concentrated on five major areas:

1. System information concerning peak demand and annual energy requirements by voltage level,
2. High voltage power system power flow data and associated loss calculations,
3. Distribution system primary and secondary loss calculations,
4. Derivation of fixed and variable losses by voltage level, and
5. Development of final cumulative expansion factors at each voltage for peak demand (kW) and annual energy (kWh) requirements at the point of delivery (meter).

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2.2 Electric Power Losses

Losses in power systems consist of primarily technical losses with a much smaller level of non-technical losses.

Technical Losses

Electrical losses result from the transmission of energy over various electrical equipment. The largest component of these losses is power dissipation as a result of varying loading conditions and are oftentimes called load losses which are proportional to the square of the current (I^2R). These losses can be as high as 75% of all technical losses. The remaining losses are called no-load and represent essentially fixed (constant) energy losses throughout the year. These no-load losses represent energy required by a power system to energize various electrical equipment regardless of their loading levels. The major portion of no-load losses consists of core or magnetizing energy related to installed transformers throughout the power system.

Non-Technical Losses

These are unaccounted for energy losses that are related to energy theft, metering, non-payment by customers, and accounting errors. Losses related to these areas are generally very small and can be extremely difficult and subjective to quantify. Our efforts generally do not develop any meaningful level as appropriate because we assume that improving technology and utility practices have minimized these amounts.

2.3 Description of Model

The loss model is a customized applications model, constructed using the Excel software program. Documentation consists primarily of the model equations at each cell location. A significant advantage of such a model is that the actual formulas and their corresponding computed values at each cell of the model are immediately available to the analyst.

A brief description of the three (3) major categories of effort for the preparation of each loss model is as follows:

- Main sheet which contains calculations for all primary and secondary losses, summaries of all conductor and transformer calculations from other sheets discussed below, output reports and supporting results.

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- Transformer sheet which contains data input and loss calculations for each distribution substation. Separate iron and copper losses are calculated for each transformer by identified type.

Appendix A presents a separate hourly loss study result which derived the loss factors for the combined LG&E system-wide Transmission only (69 kV through 500 kV) of the LG&E and KU power system. These Transmission results are then incorporated on Table 1 of the Executive summary to derive the final LG&E 2010 loss factors by voltage level of energy delivery.

Appendix B presents a detailed loss study result which derives the loss factors for the Company's system-wide power system. Appendix B, Exhibits 8 and 9, presents the final detailed summary results of the demand and energy losses for each major portion of the total LG&E power system.

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3.0 METHODOLOGY

3.1 Background

The objective of a Loss Study is to provide a reasonable set of energy (average) and demand (peak) loss expansion factors which account for system losses associated with the transmission and delivery of power to each voltage level over a designated period of time. The focus of this study is to identify the difference between total energy inputs and the associated sales with the difference being equitably allocated to all delivery levels. Several key elements are important in establishing the methodology for calculating and reporting the Company's losses. These elements are:

- Selection of voltage level of services,
- Recognition of losses associated with conductors, transformations, and other electrical equipment/components within voltage levels,
- Identification of customers and loads at various voltage levels of service,
- Review of generation or net power supply input at each level for the test period studied, and
- Analysis of kW and kWh sales by voltage levels within the test period.

The three major areas of data gathering and calculations in the loss analysis were as follows:

1. System Information (monthly and annual)
 - MWH generation and MWH sales.
 - Coincident peak estimates and net power supply input from all sources and voltage levels.
 - Customer load data estimates from available load research information, adjusted MWH sales, and number of customers in the customer groupings and voltage levels identified in the model.
 - System default values, such as power factor, loading factors, and load factors by voltage level.

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2. High Voltage System (Appendix A)
 - Conductor information was summarized from a database by the Company which reflects the transmission system by voltage level. Extensive use was made of the Company's power flow data with the losses calculated and incorporated into the final loss calculations.
 - Transformer information was developed in a database to model transformation at each voltage level. Substation power, step-up, and auto transformers were individually identified along with any operating data related to loads and losses.
 - Power flow data and calculations for each hour (8760) formed the basis for the peak and annual load losses in the high voltage (500 kV through 69 kV) loss calculations.

3. Distribution System (Appendix B)
 - Distribution Substations – Data was developed for modeling each substation as to its size and loading. The Company provided loss characteristics for each transformer. Loss calculations were performed from this data to determine no load losses separately for each transformer. The annual load losses were calculated using an average load level for each transformer which replaced the prior Hoebel formula method.
 - Primary lines – Line loading and loss characteristics for several representative primary circuits were obtained from the Company. These loss results developed kW loss per MW of load and a composite average percentage was calculated to derive the primary loss estimate.
 - Line transformers – Losses in line transformers were based on each customer service group's size, as well as the number of customers per transformer. Accounting and load data provided the foundation with which to model the transformer loadings and to calculate load and no load losses.
 - Secondary network – Typical secondary networks were estimated for conductor sizes, lengths, loadings, and customer penetration for residential and small general service customers.
 - Services – Typical services were estimated for each secondary service class of customers identified in the study with respect to type, length, and loading.

LG&E AND KU SERVICES COMPANY **2010 Analysis of System Losses – LG&E Power System**

The loss analysis was thus performed by constructing the model in segments and subsequently calculating the composite until the constraints of peak demand and energy were met:

- Information as to the physical characteristics and loading of each transformer and conductor segment was modeled.
- Conductors, transformers, and distribution were grouped by voltage level, and unadjusted losses were calculated.
- The loss factors calculated at each voltage level were determined by "compounding" the per-unit losses. Equivalent sales at the supply point were obtained by dividing sales at a specific level by the compounded loss factor to determine losses by voltage level.
- The resulting demand and energy loss expansion factors were then used to adjust all sales to the generation or input level in order to estimate the difference.
- Reconciliation of kW and kWh sales by voltage level using the reported system kW and kWh was accomplished by adjusting the initial loss factor estimates until the mismatch or difference was eliminated (Appendix B, Exhibits 6 and 7).

3.2 Calculations and Analysis

This section provides a discussion of the input data, assumptions, and calculations performed in the loss analysis. Specific appendices have been included in order to provide documentation of the input data utilized in the model.

3.2.1 Bulk and Transmission Lines (500 kV – 69 kV)

The transmission line losses were calculated based on a modeling of unique voltage levels identified by the Company's power flow data and configuration for the entire integrated Power System (Appendix A). Specific information as to length of line, type of conductor, voltage level, and hourly loading were utilized as data input in the power flow analyses.

Actual MW and MVA line loadings were based on LG&E's hourly loading conditions. Calculations of line losses were performed and summarized by fixed and variable components for both Transmission and GSU facilities for reporting purposes as shown in Appendix A of this report.

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3.2.2 Bulk and Transmission Transformers

The transmission transformer loss analysis required several steps in order to properly consider the characteristics associated with various transformer types; such as, step-up, auto transformers, distribution substations, and line transformers. In addition, further efforts were required to identify both iron and copper losses within each of these transformer types in order to obtain reasonable peak (kW) and average annual energy (kWh) losses. While iron losses were considered essentially constant for each hour, recognition had to be made for the varying degree of copper losses due to hourly equipment loadings.

The remaining miscellaneous losses considered in the loss study consisted of several areas which do not lend themselves to any reasonable level of modeling for estimating their respective losses and were therefore lumped together into a single loss factor of 0.10%. The typical range of values for these losses is from 0.10% to 0.25%, and we have assumed the lower value to be conservative at this time. The losses associated with this loss factor include bus bars, unmetered station use, and grounding transformers.

3.2.3 Distribution System

The load data at the substation and customer level, coupled with primary and secondary network information, was sufficient to model the distribution system in adequate detail to calculate losses.

Distribution Substations

The Distribution Substation loss derivation required several steps to recognize the loss characteristics relating to iron or fixed losses versus the copper or load varying (I^2R) losses. The fixed component was based on Company loss characteristics from manufacturer's test results. The annual variable loss calculations considered a different approach by using an average hourly loading level and used this to the peak hour losses as a ratio (average/peak)² times 8760 hours with an average adjustment factor and peak hour losses.

Primary Lines

Primary line loadings take into consideration the available distribution load along with the actual customer loads including losses. Primary line loss estimates were prepared by the Company for use in this loss study. These estimates considered loads per substation, voltage levels, loadings, total circuit miles, wire size, and single- to three-phase investment estimates. All of these factors were considered in calculating the actual demand (kW) and energy (kWh) for the primary system.



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Line Transformers

Losses in line transformers were determined based on typical transformer sizes for each secondary customer service group and an estimated or calculated number of customers per transformer. Accounting records and estimates of load data provided the necessary database with which to model the loadings. These calculations also made it possible to determine separate copper and iron losses for distribution line transformers, based on a table of representative losses for various transformer sizes.

Secondary Line Circuits

A calculation of secondary line circuit losses was performed for loads served through these secondary line investments. Estimates of typical conductor sizes, lengths, loadings and customer class penetrations were made to obtain total circuit miles and losses for the secondary network. Customer loads which do not have secondary line requirements were also identified so that a reasonable estimate of losses and circuit miles of these investments could be made.

Service Drops and Meters

Service drops were estimated for each secondary customer reflecting conductor size, length and loadings to obtain demand losses. A separate calculation was also performed using customer maximum demands to obtain kWh losses. Meter loss estimates were also made for each customer and incorporated into the calculations of kW and kWh losses included in the Summary Results.

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4.0 DISCUSSION OF RESULTS

A brief description of each Exhibit is provided in Appendices A and B:

Exhibit 1 – Summary of Company Data

This exhibit reflects system information used to determine percent losses and a detailed summary of kW and kWh losses by voltage level. The loss factors developed in Exhibit 7 are also summarized by voltage level.

Exhibit 2 – Summary of Conductor Information

A summary of MW and MWH load and no load losses for Distribution conductors by voltage levels is presented. The sum of all calculated losses by high voltage is based on input data information provided in Appendix A. Percent losses are based on equipment loadings.

Exhibit 3 – Summary of Transformer Information

This exhibit summarizes Distribution transformer losses by various types and voltage levels throughout the system. Load losses reflect the copper portion of transformer losses while iron losses reflect the no load or constant losses. MWH losses are estimated using an average load loss factor for copper and the annual load losses times the test year hours.

Exhibit 4 – Summary of Losses Diagram (2 Pages)

This loss diagram represents the inputs and output of power at system peak conditions. Page 1 details information from all points of the power system and what is provided to the distribution system for primary loads. This portion of the summary can be viewed as a "top down" summary into the distribution system.

Page 2 represents a summary of the development of primary line loads and distribution substations based on a "bottom up" approach. Basically, loadings are developed from the customer meter through the Company's physical investments based on load research and other metered information by voltage level to arrive at MW and MVA requirements during peak load conditions by voltage levels.

Exhibit 5 – Summary of Sales and Calculated Losses

Summary of Calculated Losses represents a tabular summary of MW and MWH load and no load losses by discrete areas of delivery within each voltage level. Losses have been identified and are derived based on summaries obtained from Exhibits 2 and 3 and losses associated with meters, capacitors and regulators.

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Exhibit 6 – Development of Loss Factors, Unadjusted

This exhibit calculates demand and energy losses and loss factors by specific voltage levels based on sales level requirements. The actual results reflect loads by level and summary totals of losses at that level, or up to that level, based on the results as shown in Exhibit 5. Finally, the estimated values at generation are developed and compared to actual generation to obtain any difference or mismatch.

Exhibit 7 – Development of Loss Factors, Adjusted

The adjusted loss factors are the results of adjusting Exhibit 6 for any difference. All differences between estimated and actual are prorated to each level based on the ratio of each level's total load plus losses to the system total. These new loss factors reflect an adjustment in losses due only to the kW and kWh mismatch.

Exhibit 8 – Adjusted Losses and Loss Factors by Facility

These calculations present an expanded summary detail of Exhibit 7 for each segment of the power system with respect to the flow of power and associated losses from the receipt of energy at the meter to the generation for the LG&E power system.

Exhibit 9 – Summary of Losses by Delivery Voltage

These calculations present a reformatted summary of losses presented in Exhibits 7 and 8 by power system delivery segment as calculated by voltage level of service based on reported metered sales.

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Appendix A

Results of LG&E (LG&E and KU)
Transmission System 2010 Loss Analysis



**Louisville Gas and Electric Company (LGE)
Kentucky Utilities Company (KU)
2011 Transmission Loss Analysis**

Pages 1-2	Index
Schedule 1, Page 3	<p>Presents the summary loss results of the calculated hourly losses for the Company's LGE and KU control areas at the annual peak hour and for the annual average losses for all hours of the year.</p> <p>Calculated loss factors are applicable to the metered (output) sales level. All data is from Schedule 2.</p> <p>Section I - Summarizes the transmission loss results with GSU losses included.</p> <p>Section II - Summarizes GSU only losses.</p> <p>Section III - Summarizes the transmission only losses excluding GSU losses.</p>
Schedule 1A, Page 4	<p>Presents the summary loss results of the calculated hourly losses for the Company's LGE control areas at the annual peak hour and for the annual average losses for all hours of the year.</p>
Schedule 1B, Page 5	<p>Presents the summary loss results of the calculated hourly losses for the Company's KU control areas at the annual peak hour and for the annual average losses for all hours of the year.</p>
Schedule 2, Page 6	<p>Summary of the summer and winter peak hour MW and annual MWH losses for LGE and KU and the total system.</p> <p>Results are detailed by segment and season: Summer (June, July, August, and September), Winter (all months excluding Summer months).</p> <p>Loss data is from Schedule 3.</p>
Schedule 3, Page 7	<p>Summary of MW and MWH loss results for each control area by season and voltage level.</p>
Schedule 4, Page 8	<p>Summary of seasonal peak hour MW and average MWH loss results for LGE by season and voltage level.</p>

**Louisville Gas and Electric Company (LGE)
Kentucky Utilities Company (KU)
2011 Transmission Loss Analysis**

Schedule 5, Summary of seasonal peak hour MW and average MWH loss results for KU by
Page 9 season and voltage level.

Appendices:

Page 10 A - Peak Demand
Page 11 B - Monthly Energy
Page 12 C - Energy Summary
Page 13 D - Demand Summary

Appendices include summaries of hourly calculation of losses for each identified type at transmission voltage levels by season identified by fixed and variable with GSU losses identified separately.

Workpapers:

Page 14 1 - LGE
Page 15 2 - KU

Workpapers 1 and 2 present detailed summary results of eight separate power flows for each control area (LGE and KU) for a total of sixteen unique simulations and loss results.

Page 16 3 - Corona Loss Calculations
Page presents the Corona loss estimate and calculations by voltage level and control area (LGE and KU) for the peak in MW and the annual MWH for 2010.

Page 17 Page presents the pole miles by company and voltage level.

LGEE (LGE & KU) 2011 TRANSMISSION LOSS ANALYSIS (1)

I TRANSMISSION LOSSES WITH GSU		LOSSES	% OF TOTAL TRANSMISSION	INPUT	OUTPUT	LOSS FACTOR (Input/Output)	
A. DEMAND		<u>Peak (MW) Summer (June - September)</u>					
1	LGE	57.9	27.8%	4,060	4,002	1.01448	
2	KU	150.3	72.2%	4,865	4,715	1.03187	
3	Total Demand Losses Combined (3)	208.2	100.0%	7,905	7,697	1.02705	
4	Unmetered Station Use Adjustment					0.00100	
5	Demand Loss Factor					1.02805	
B. ENERGY		<u>Annual MWH</u>					
6	LGE	199,404	21.5%	21,626,727	21,427,323	1.00931	
7	KU	727,568	78.5%	27,462,725	26,735,158	1.02721	
8	Total Energy Losses Combined (3)	926,971	100.0%	43,634,621	42,707,650	1.02171	
9	Unmetered Station Use Adjustment					0.00100	
10	Energy Loss Factor					1.02271	
II TRANSMISSION GSU LOSSES		<u>LOSSES (MW)</u>			<u>LOSSES (MWH)</u>		
A. GSU LOSSES (2)		FIXED	VARIABLE	TOTAL	FIXED	VARIABLE	TOTAL
11	LGE	2.90	8.50	11.40	15,715	38,826	54,541
12	KU	2.40	5.40	7.80	14,820	25,784	40,604
13	Total GSU Losses	5.30	13.90	19.20	30,535	64,610	95,145
III TRANSMISSION ONLY LOSSES		LOSSES	% OF TOTAL TRANSMISSION	INPUT	OUTPUT	LOSS FACTOR (Input/Output)	
A. DEMAND LOSSES (Loss II-A)		<u>Peak (MW) Summer (June - September)</u>					
14	LGE	46.5	24.6%	4,049	4,002	1.01163	
15	KU	142.5	75.4%	4,857	4,715	1.03021	
16	Total Demand Combined (2)	189.0	100.0%	7,886	7,697	1.02456	
17	Unmetered Station Use Adjustment					0.00100	
18	Demand Loss Factor					1.02556	
B. ENERGY LOSSES (Loss II-A)		<u>Annual MWH</u>					
19	LGE	144,863	17.4%	21,572,186	21,427,323	1.00676	
20	KU	686,964	82.6%	27,422,121	26,735,158	1.02570	
21	Total Energy Combined (2)	831,826	100.0%	43,539,476	42,707,650	1.01948	
22	Unmetered Station Use Adjustment					0.00100	
23	Energy Loss Factor					1.02048	

Notes:

- (1) Study Period from February 2011 through January 2012.
- (2) GSU losses from Schedule 3.
- (3) See Schedule 1A, Schedule 1B, and Schedule 2.

LGE 2011 TRANSMISSION LOSS ANALYSIS

I TRANSMISSION LOSSES WITH GSU		LOSSES	INPUT	OUTPUT	LOSS FACTOR (Input/Output)																				
A. DEMAND		Peak (MW) Summer (June - September)																							
1	LGE	57.9	4,060	4,002	1.01448																				
2	Unmetered Station Use Adjustment				0.00100																				
3	Demand Loss Factor				1.01548																				
B. ENERGY		Annual MWH																							
4	LGE	199,404	21,626,727	21,427,323	1.00931																				
5	Unmetered Station Use Adjustment				0.00100																				
6	Energy Loss Factor				1.01031																				
II TRANSMISSION GSU LOSSES		<table border="1" style="width: 100%; border-collapse: collapse; margin: 0 auto;"> <thead> <tr> <th colspan="3" style="text-align: center;">LOSSES (MW)</th> <th colspan="3" style="text-align: center;">LOSSES (MWH)</th> </tr> <tr> <th style="text-align: center;">FIXED</th> <th style="text-align: center;">VARIABLE</th> <th style="text-align: center;">TOTAL</th> <th style="text-align: center;">FIXED</th> <th style="text-align: center;">VARIABLE</th> <th style="text-align: center;">TOTAL</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2.90</td> <td style="text-align: center;">8.50</td> <td style="text-align: center;">11.40</td> <td style="text-align: center;">15,715</td> <td style="text-align: center;">38,826</td> <td style="text-align: center;">54,541</td> </tr> </tbody> </table>						LOSSES (MW)			LOSSES (MWH)			FIXED	VARIABLE	TOTAL	FIXED	VARIABLE	TOTAL	2.90	8.50	11.40	15,715	38,826	54,541
LOSSES (MW)			LOSSES (MWH)																						
FIXED	VARIABLE	TOTAL	FIXED	VARIABLE	TOTAL																				
2.90	8.50	11.40	15,715	38,826	54,541																				
A. GSU LOSSES (1)																									
7	LGE	2.90	8.50	11.40	15,715	38,826	54,541																		
III TRANSMISSION ONLY LOSSES		LOSSES	INPUT	OUTPUT	LOSS FACTOR (Input/Output)																				
A. DEMAND LOSSES		Peak (MW) Summer (June - September)																							
8	LGE (Line 1 - Line 7)	46.5	4,049	4,002	1.01163																				
9	Unmetered Station Use Adjustment				0.00100																				
10	Demand Loss Factor				1.01263																				
B. ENERGY LOSSES		Annual MWH																							
11	LGE (Line 4 - Line 7)	144,863	21,572,186	21,427,323	1.00676																				
12	Unmetered Station Use Adjustment				0.00100																				
13	Energy Loss Factor				1.00776																				

Notes:

1. GSU losses from Schedule 3.
2. See Schedule 2

KU 2011 TRANSMISSION LOSS ANALYSIS

I TRANSMISSION LOSSES WITH GSU

	LOSSES	INPUT	OUTPUT	LOSS FACTOR (Input/Output)	
A. DEMAND					
<u>Peak (MW) Summer (June - September)</u>					
1	KU	150.3	4,865	4,715	1.03187
2	Unmetered Station Use Adjustment				0.00100
3	Demand Loss Factor				1.03287
B. ENERGY					
<u>Annual MWH</u>					
4	KU	727,568	27,462,725	26,735,158	1.02721
5	Unmetered Station Use Adjustment				0.00100
6	Energy Loss Factor				1.02821

II TRANSMISSION GSU LOSSES

	LOSSES (MW)			LOSSES (MWH)			
	FIXED	VARIABLE	TOTAL	FIXED	VARIABLE	TOTAL	
A. GSU LOSSES (1)							
7	KU	2.40	5.40	7.80	14,820	25,784	40,604

III TRANSMISSION ONLY LOSSES

	LOSSES	INPUT	OUTPUT	LOSS FACTOR (Input/Output)	
A. DEMAND LOSSES					
<u>Peak (MW) Summer (June - September)</u>					
8	KU (Line 1 - Line 7)	142.5	4,857	4,715	1.03021
9	Unmetered Station Use Adjustment				0.00100
10	Demand Loss Factor				1.03121
B. ENERGY LOSSES					
<u>Annual MWH</u>					
11	KU (Line 4 - Line 7)	686,964	27,422,121	26,735,158	1.02570
12	Unmetered Station Use Adjustment				0.00100
13	Energy Loss Factor				1.02670

Notes:

1. GSU losses from Schedule 3.
2. See Schedule 2

LGEE (LGE & KU) POWER FLOW RESULTS - SUMMARY OF LOSSES

TRANSMISSION LOSSES WITH GSU	PEAK (SUMMER)		PEAK (OTHER)		ANNUAL	
	Total (MW)	% of Total System Losses	Total (MW)	% of Total System Losses	Total Annual (MWH)	% of Total System Losses
<u>LGE</u>						
1 Transmission Use (Peak MW, Annual MWH)	4,002		3,300		21,427,323	
2 Input (Line 1 + Line 5)	4,060		3,328		21,626,727	
Transmission						
3 Fixed	5.9	2.9%	5.2	2.3%	43,657	4.7%
4 Variable	52.0	25.0%	22.5	10.0%	155,747	16.8%
5 Total Transmission - LGE	57.9	27.8%	27.7	12.3%	199,404	21.5%
6 Losses % of Input (Line 5/Line 2)	1.43%		0.83%		0.92%	
7 Losses % of Output (Line 5/Line 1)	1.45%		0.84%		0.93%	
<u>KU</u>						
8 Transmission Use (Peak MW, Annual MWH)	4,715		4,961		26,735,158	
9 Input (Line 8 + Line 12)	4,865		5,159		27,462,725	
Transmission						
10 Fixed	8.2	3.9%	8.1	3.6%	67,476	7.3%
11 Variable	142.0	68.2%	190.0	84.1%	660,091	71.2%
12 Total Transmission - KU	150.3	72.2%	198.1	87.7%	727,568	78.5%
13 Losses % of Input (Line 12/Line 9)	3.09%		3.84%		2.65%	
14 Losses % of Output (Line 2/Line 8)	3.19%		3.99%		2.72%	
<u>TOTAL LGE & KU</u>						
15 LGEE Load (Peak MW, Annual MWH) Input	8,925		8,487		49,089,452	
16 LGE Energy Delivery to KU	-1,020		-1,228		-5,454,831	
17 Total Load (Peak MW, Annual MWH)	7,905		7,259		43,634,621	
Transmission						
18 Fixed	14.2	6.8%	13.4	5.9%	111,133	12.0%
19 Variable	194.0	93.2%	212.5	94.1%	815,838	88.0%
20 Total System	208.2	100.0%	225.9	100.0%	926,971	100.0%
21 Losses % of Input (Line 20/Line 15)	2.33%		2.66%		1.89%	
22 Losses % of Output (Line 20/Line 15/Line 20))	2.39%		2.73%		1.92%	
COMBINED LGEE DELIVERED ENERGY & LOSSES						
	SUMMER		WINTER		ANNUAL	
23 LGEE Load (All data in MWH) Output	17,146,907		31,015,574		48,162,481	
24 LGE Energy Delivery to KU	-1,689,262		-3,765,569		-5,454,831	
25 Total Load (Annual MWH) Output	15,457,645		27,250,005		42,707,650	
Transmission Losses						
26 Fixed	37,940	11.1%	73,193	12.5%	111,133	12.0%
27 Variable	303,970	88.9%	511,869	87.5%	815,838	88.0%
28 Total Transmission Losses	341,909	100.0%	585,062	100.0%	926,971	100.0%
29 Losses % of Output (Line 28/Line 23)	1.99%		1.89%		1.92%	

LGEE (LGE & KU) POWER FLOW RESULTS - TOTAL TRANSMISSION

CONDUCTOR AND TRANSFORMER LOSSES (MW)

TIME	MW TRANSMISSION USE	Transmission Fixed	Transmission Variable	GSU Fixed	GSU Variable	Subtotal Conductor & Transformer	Load Adjustment for Combined Only
OTHER - LGE							
1 PEAK - MW	3,300	3.15	16.50	2.10	6.00	27.75	1228.00
2 LOSS % TO LOAD		0.095%	0.500%	0.064%	0.182%	0.841%	
3 LOSS % TO TOTAL LOSSES		11.349%	59.461%	7.568%	21.622%	100.000%	
4							
5 OTHER MWH	13,679,183	18,668	63,034	10,054	24,023	115,779	3,765,569
6 LOSS % TO LOAD		0.136%	0.461%	0.073%	0.176%	0.846%	
7 LOSS % TO TOTAL LOSSES		16.124%	54.443%	8.684%	20.749%	100.000%	
SUMMER - LGE							
8 PEAK - MW	4,002	3.05	43.50	2.90	8.50	57.95	1020.00
9 LOSS % TO LOAD		0.076%	1.087%	0.072%	0.212%	1.448%	
10 LOSS % TO TOTAL LOSSES		5.262%	75.066%	5.004%	14.668%	100.000%	
11							
12 SUMMER MWH	7,748,140	9,274	53,887	5,661	14,803	83,625	1,689,262
13 LOSS % TO LOAD		0.120%	0.695%	0.073%	0.191%	1.079%	
14 LOSS % TO TOTAL LOSSES		11.090%	64.439%	6.770%	17.702%	100.000%	
TOTAL ANNUAL - LGE							
15 SUMMER PEAK - MW	4,002	3.05	43.50	2.90	8.50	57.95	1020.00
16 ANNUAL MWH	21,427,323	27,942	116,921	15,715	38,826	199,404	5,454,831
17 LOSS % TO TOTAL ANNUAL OUTPUT		0.130%	0.546%	0.073%	0.181%	0.931%	
LOSS FACTORS - LGE							
18 Demand						1.01448	
19 Energy						1.00931	
OTHER - KU							
20 PEAK - MW	4,961	5.81	183.94	2.30	6.10	198.15	
21 LOSS % TO LOAD		0.117%	3.708%	0.046%	0.123%	3.994%	
22 LOSS % TO TOTAL		2.930%	92.831%	1.161%	3.079%	100.000%	
23							
24 OTHER MWH	17,336,391	35,105	408,661	9,366	16,151	469,283	
25 LOSS % TO LOAD		0.202%	2.357%	0.054%	0.093%	2.707%	
26 LOSS % TO TOTAL LOSSES		7.481%	87.082%	1.996%	3.442%	100.000%	
SUMMER - KU							
27 PEAK - MW	4,715	5.81	136.65	2.40	5.40	150.25	
28 LOSS % TO LOAD		0.123%	2.898%	0.051%	0.115%	3.187%	
29 LOSS % TO TOTAL		3.864%	90.945%	1.597%	3.594%	100.000%	
30							
31 SUMMER MWH	9,398,766	17,551	225,647	5,454	9,633	258,285	
32 LOSS % TO LOAD		0.187%	2.401%	0.058%	0.102%	2.748%	
TOTAL ANNUAL - KU							
33 PEAK - MW	4,715	5.81	136.65	2.40	5.40	150.25	
34 ANNUAL MWH	26,735,158	52,656	634,307	14,820	25,784	727,568	
35 LOSS % TO TOTAL ANNUAL OUTPUT		0.197%	2.373%	0.055%	0.096%	2.721%	
LOSS FACTORS - KU							
36 Demand						1.03187	
37 Energy						1.02721	
TOTAL ANNUAL - LGEE OUTPUT & LOSSES							
38 PEAK SUMMER - MW	8,717	8.86	180.15	5.30	13.90	208.20	1020.00
39 SUMMER MWH	17,146,907	26,825	279,534	11,115	24,436	341,909	1,689,262
40 PEAK OTHER MW	8,262	8.96	200.44	4.40	12.10	225.90	1228.00
41 OTHER MWH	31,015,574	53,773	471,695	19,420	40,174	585,062	3,765,569
42 ANNUAL MWH	48,162,481	80,598	751,228	30,535	64,610	926,971	5,454,831

LGE POWER FLOW RESULTS

CONDUCTOR AND TRANSFORMER LOSSES (MW)

TIME	MW-LGE TRANSMISSION USE	Transmission Fixed (4)	Transmission Variable	GSU Fixed	GSU Variable	Subtotal Conductor & Transformer
OTHER - LGE						
1 PEAK - MW	3,300	3.15	16.50	2.10	6.00	27.75
2 LOSS % TO LOAD		0.095%	0.500%	0.064%	0.182%	0.841%
3 LOSS % TO TOTAL LOSSES		11.349%	59.461%	7.568%	21.622%	100.000%
4						
5 OTHER MWH	13,679,183	18,668	63,034	10,054	24,023	115,779
6 LOSS % TO LOAD		0.136%	0.461%	0.073%	0.176%	0.846%
7 LOSS % TO TOTAL LOSSES		16.124%	54.443%	8.684%	20.749%	100.000%
SUMMER - LGE						
8 PEAK - MW	4,002	3.05	43.50	2.90	8.50	57.95
9 LOSS % TO LOAD		0.076%	1.087%	0.072%	0.212%	1.448%
10 LOSS % TO TOTAL LOSSES		5.262%	75.066%	5.004%	14.668%	100.000%
11						
12 SUMMER MWH	7,748,140	9,274	53,887	5,661	14,803	83,625
13 LOSS % TO LOAD		0.120%	0.695%	0.073%	0.191%	1.079%
14 LOSS % TO TOTAL LOSSES		11.090%	64.439%	6.770%	17.702%	100.000%
TOTAL ANNUAL - LGE						
15 SUMMER PEAK - MW	4,002	3.05	43.50	2.90	8.50	57.95
16 LOSS % TO SUMMER PEAK MW		0.076%	1.087%	0.072%	0.212%	1.448%
17 ANNUAL MWH	21,427,323	27,942	116,921	15,715	38,826	199,404
18 LOSS % TO ANNUAL MWH		0.130%	0.546%	0.073%	0.181%	0.931%
LOSS FACTORS - LGE						
19 Demand						1.01448
20 Energy						1.00931

NOTES:

- (1) Summer Period includes June, July, August, and September.
- (2) Other Period includes all non Summer Period months.
- (3) Transmission Use = Load + Exports + Passthroughs
- (4) Transmission Fixed includes Corona Losses

KU POWER FLOW RESULTS

CONDUCTOR AND TRANSFORMER LOSSES (MW)

TIME	MW-KU TRANSMISSION USE	Transmission Fixed (4)	Transmission Variable (5)	GSU Fixed	GSU Variable	Subtotal Conductor & Transformer
OTHER - KU						
1 PEAK - MW	4,961	5.81	183.94	2.30	6.10	198.15
2 LOSS % TO LOAD		0.117%	3.708%	0.046%	0.123%	3.994%
3 LOSS % TO TOTAL LOSSES		2.930%	92.831%	1.161%	3.079%	100.000%
4						
5 OTHER MWH	17,336,391	35,105	408,661	9,366	16,151	469,283
6 LOSS % TO LOAD		0.202%	2.357%	0.054%	0.093%	2.707%
7 LOSS % TO TOTAL LOSSES		7.481%	87.082%	1.996%	3.442%	100.000%
SUMMER - KU						
8 PEAK - MW	4,715	5.81	136.65	2.40	5.40	150.25
9 LOSS % TO LOAD		0.123%	2.898%	0.051%	0.115%	3.187%
10 LOSS % TO TOTAL LOSSES		3.864%	90.945%	1.597%	3.594%	100.000%
11						
12 SUMMER MWH	9,398,766	17,551	225,647	5,454	9,633	258,285
13 LOSS % TO LOAD		0.187%	2.401%	0.058%	0.102%	2.748%
14 LOSS % TO TOTAL LOSSES		6.795%	87.364%	2.112%	3.730%	100.000%
TOTAL ANNUAL - KU						
15 SUMMER PEAK - MW	4,715	5.81	136.65	2.40	5.40	150.25
16 LOSS % TO SUMMER PEAK MW		0.123%	2.898%	0.051%	0.115%	3.187%
17 ANNUAL MWH	26,735,158	52,656	634,307	14,820	25,784	727,568
18 LOSS % TO ANNUAL MWH		0.197%	2.373%	0.055%	0.096%	2.721%
LOSS FACTORS - KU						
19 Demand						1.03187
20 Energy						1.02721

NOTES:

- (1) Summer Period includes June, July, August, and September.
- (2) Other Period includes all non Summer Period months.
- (3) Transmission Use = Load + Exports + Passthroughs
- (4) Transmission Fixed includes Corona Losses
- (5) Transmission Variable includes Losses at 0.5% from Appendix A (MW) and Appendix B (MWH)

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Kentucky Utilities	OTHER 2/11/11 8:00 February-11	SUMMER 7/11/11 16:00 July-11	OTHER	SUMMER
Loads:				
1 KU Load (including losses)	4,292	4,102		
2 EKPC on KU	446	355		
3 TVA on KU	59	58		
4 OMU Load (3%)	-	12		
5 BREC on KU	6	6		
6 KMPA Load (3%)	108	129		
7 Total Load	<u>4,911</u>	<u>4,662</u>	4,911.00	4,662.00
Export (Delivered):				
8 KU Off-System Sales	-	-		
9 AMEM - Pass Through	-	-		
10 CARGILL - Pass Through	-	-		
11 OMU Exports	249	204		
12 KMPA Exports	-	-		
13 Constellation - Pass Through	-	-		
14 TEA - Pass Through	-	-		
15 TVA (OATT) - Pass Through	-	-		
16 Total Exports	<u>249</u>	<u>204</u>	249.00	204.00
17 BTM (0.5%) - OMU Network Load	112	182		
18 BTM (0.5%) - KMPA Gen	-	49		
19 Total BTM	<u>112</u>	<u>231</u>		
20 Losses at 0.5%	0.560	1.155	5,160.00	4,866.00
21 Losses from Schedule 5, Lines 1 and 8			-198.71	-151.41
22 Peak MW Load			<u>4,961.29</u>	<u>4,714.59</u>



Louisville Gas and Electric

Loads:				
23 LGE Load (including losses)	1,725	2,654		
23 EKPC on LGE	61	77		
24 Hoosier on LGE	5	6		
25 Total Load	<u>1,791</u>	<u>2,737</u>	1,791.00	2,737.00
Export (Delivered):				
26 IMEA	146	146		
27 IMPA	155	157		
28 LGE Off-System Sales	8	-		
29 OVEC to SIGE	-	-		
30 Total Exports	<u>309</u>	<u>303</u>	309.00	303.00
31 LGE to KU	1,228	1,020	1,228.00	1,020.00
32 Losses from Schedule 4, Lines 1 and 8			3,328.00	4,060.00
33 Peak MW Load			-27.75	-57.95
			<u>3,300.25</u>	<u>4,002.05</u>

Notes:

- (1) Information above was gathered through the Peak Load spreadsheet which is used for FERC Form 1 data collection. Additionally, information was gathered from the individual billings each month, which also flows into FERC Form 1.
- (2) OSS information was gathered through multiple spreadsheets from Revenue Accounting and Transmission groups.

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 Appendix B
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Kentucky Utilities

Prepared by: FR/DH

	February-11	March-11	April-11	May-11	June-11	July-11	August-11	September-11	October-11	November-11	December-11	January-12	Total	Other	Summer
Loads:															
1 KU Load (including losses)	1,882,033	1,838,010	1,567,127	1,688,187	1,906,541	2,167,087	2,097,914	1,653,158	1,650,548	1,687,623	1,918,215	2,083,767	22,140,210		
2 EKPC on KU	192,766	183,756	155,967	163,451	164,293	182,579	182,121	147,273	142,289	161,421	192,322	213,632	2,081,870		
3 TVA on KU	30,019	26,656	20,497	22,985	27,885	34,587	29,211	21,634	19,664	26,719	36,278	34,830	330,965		
4 OMU Load (3%)	-	-	-	555	-	1,043	1,328	165	6,757	-	-	-	-	9,848	
5 BREC on KU	3,047	2,972	2,440	2,382	2,575	2,943	3,367	3,272	3,715	2,495	3,797	4,364	37,370		
6 KMPA Load (3%)	53,933	54,624	50,868	58,455	71,032	79,177	77,514	57,137	49,740	51,011	56,115	56,274	715,880		
7 Total Load	2,161,798	2,106,018	1,796,898	1,936,015	2,172,326	2,467,416	2,391,455	1,882,639	1,872,713	1,929,269	2,206,727	2,392,867	25,316,143	16,402,307	8,913,836
Export (Delivered):															
8 KU Off-System Sales	10,003	1,971	14	13,001	23,568	12,175	4,828	384	29,307	2,890	542	265	98,948		
9 AMEM - Pass Through	-	-	2,400	-	-	-	-	-	12,000	2,400	11,338	51,500	79,638		
10 CARGILL - Pass Through	31,261	100	-	23,399	2,400	-	-	20,527	13,749	70	-	-	91,506		
11 OMU Exports	165,206	183,023	175,905	50,051	156,463	143,444	137,842	155,042	106,507	137,874	176,030	158,940	1,746,327		
12 KMPA Exports	-	-	-	-	-	-	-	-	59	-	-	-	59		
13 Constellation - Pass Through	-	-	-	11,734	4,740	24,485	34,163	25,048	34,099	-	-	-	134,269		
14 TEA - Pass Through	-	-	-	-	-	-	-	-	59	66	-	-	125		
15 TVA (OATT) - Pass Through	-	-	308	-	-	-	-	-	-	-	-	-	308		
16 Total Exports	206,470	185,094	178,627	98,185	187,171	180,104	176,833	201,001	195,780	143,300	187,910	210,705	2,151,180	1,406,071	745,109
17 BTM (0.5%) - OMU Network Load	64,375	67,851	62,989	71,662	86,097	103,156	96,293	73,876	61,587	65,420	69,832	70,719	893,857		
18 BTM (0.5%) - KMPA Gen	-	-	-	1,054	4,315	9,837	4,422	858	1,839	-	1,479	1,872	25,677		
19 Total BTM	64,375	67,851	62,989	72,716	90,412	112,993	100,715	74,734	63,426	65,420	71,311	72,591	919,534		
20 Losses at 0.5%	322	339	315	364	452	565	504	374	317	327	357	363	4,598		
21 Total MWH Input														17,808,378	9,658,945
22 Losses from Schedule 5, Lines 5 and 12														-471,986	-260,179
23 Total MWH Output														17,336,391	9,398,766

Louisville Gas and Electric

	February-11	March-11	April-11	May-11	June-11	July-11	August-11	September-11	October-11	November-11	December-11	January-12	Total	Other	Summer
Loads:															
23 LGE Load (including losses)	903,869	935,217	852,840	998,568	1,189,433	1,431,090	1,316,506	968,118	877,979	870,461	958,046	988,020	12,290,147		
24 EKPC on LGE	25,617	24,530	20,953	24,482	30,141	37,883	33,856	23,583	21,869	22,649	27,706	29,346	322,615		
25 Hoosier on LGE	3,006	3,093	2,628	3,247	3,465	3,908	3,767	3,220	3,081	2,998	3,210	3,263	38,886		
26 Total Load	932,492	962,840	876,421	1,026,297	1,223,039	1,472,881	1,354,129	994,921	902,929	896,108	988,962	1,020,629	12,651,648	7,606,677	5,044,971
Export (Delivered):															
27 IMEA	87,925	74,691	45,921	89,073	102,288	100,626	86,582	74,691	75,238	61,640	90,715	99,872	989,262		
28 IMPA	93,431	79,319	48,912	94,516	107,515	106,729	90,741	77,329	79,575	65,340	97,587	105,971	1,046,965		
29 LGE Off-System Sales	155,240	139,458	45,904	124,917	96,244	96,890	49,158	108,739	205,726	207,341	158,716	95,688	1,484,021		
30 OVEC to SIGE	-	-	-	-	-	-	-	-	-	-	-	-	-		
31 Total Exports	336,596	293,468	140,737	308,506	306,047	304,245	226,481	260,759	360,539	334,321	347,018	301,531	3,520,248	2,422,716	1,097,532
32 LGE to KU	484,518	444,877	370,225	397,072	364,002	440,065	446,201	438,994	458,456	438,203	561,790	610,428	5,454,831	3,765,569	1,689,262
33 Total MWH Input														13,794,962	7,831,765
34 Losses from Schedule 4, Lines 5 and 12														-115,779	-83,625
35 Total MWH Output														13,679,183	7,748,140

Information above was gathered through the Peak Load spreadsheet which is used for FERC Form 1 data collection. Additionally, information was gathered from the individual billings each month, which also flows into FERC Form 1 OSS information was gathered through multiple spreadsheets from Revenue Accounting and Transmission groups.

LGEE Loss Summary

LGE Loss Summary			Transmission Losses		Generation Losses	
Season	Month		Fixed	Variable	Fixed	Variable
1	O	01	1,944	8,405	1,405	3,124
2	O	02	1,753	7,950	1,165	3,114
3	O	03	1,970	8,159	1,205	3,317
4	O	04	1,923	6,323	1,217	2,547
5	O	05	1,978	9,932	1,207	3,076
6	S	06	1,877	13,384	1,289	3,615
7	S	07	1,933	16,655	1,542	4,380
8	S	08	1,940	15,067	1,454	3,936
9	S	09	1,915	8,781	1,376	2,872
10	O	10	1,999	7,087	1,180	2,917
11	O	11	1,937	6,926	1,273	2,856
12	O	12	1,960	8,252	1,402	3,072
13		Total	23,129	116,921	15,715	38,826
14		Summer Corona	1,609			
15	S	Total LGE Summer	9,274	53,887	5,661	14,803
16		Other Corona	3,204			
17	O	Total LGE Other	18,668	63,034	10,054	24,023

KU Loss Summary			Transmission Losses		Generation Losses	
Season	Month		Fixed	Variable	Fixed	Variable
18	O	01	3,246	66,020	1,272	2,314
19	O	02	2,937	65,153	1,209	2,146
20	O	03	3,279	51,357	1,244	2,220
21	O	04	3,200	40,542	1,058	1,929
22	O	05	3,312	41,568	1,190	2,000
23	S	06	3,155	59,549	1,405	2,449
24	S	07	3,247	64,025	1,459	2,832
25	S	08	3,260	61,754	1,436	2,666
26	S	09	3,187	42,213	1,154	1,686
27	O	10	3,306	42,719	1,079	1,752
28	O	11	3,189	49,382	1,089	1,865
29	O	12	3,271	54,623	1,225	1,925
30		Total	38,589	638,905	14,820	25,784
31		Summer Corona	4,702			
32	S	Total KU Summer	17,551	227,541	5,454	9,633
33		Other Corona	9,365			
34	O	Total KU Other	35,105	411,364	9,366	16,151

LGEE Loss Summary			Transmission Losses		Generation Losses	
Season	Month		Fixed	Variable	Fixed	Variable
35	O	01	5,190	74,425	2,677	5,438
36	O	02	4,690	73,103	2,374	5,260
37	O	03	5,249	59,516	2,449	5,537
38	O	04	5,123	46,865	2,275	4,476
39	O	05	5,290	51,500	2,397	5,076
40	S	06	5,032	72,933	2,694	6,064
41	S	07	5,180	80,680	3,001	7,212
42	S	08	5,200	76,821	2,890	6,602
43	S	09	5,102	50,994	2,530	4,558
44	O	10	5,305	49,806	2,259	4,669
45	O	11	5,126	56,308	2,362	4,721
46	O	12	5,231	62,875	2,627	4,997
47		Total	61,718	755,826	30,535	64,610
48		Summer Corona	6,311			
49	S	Total LGEE Summer	26,825	281,428	11,115	24,436
50		Other Corona	12,569			
51	O	Total LGEE Other	53,773	474,398	19,420	40,174

Notes:

(1) Includes Corona Losses from Workpaper 3

Summer Peak Hour 2011-07-11-1600

		Transmission Losses		Generation Losses	
		Fixed (1)	Variable	Fixed	Variable
1	KU	5.8	137.8	2.4	5.4
2	LG&E	3.0	43.5	2.9	8.5
3	Combined	8.9	181.3	5.3	13.9

Winter Peak Hour 2011-02-11-0800

		Transmission Losses		Generation Losses	
		Fixed (1)	Variable	Fixed	Variable
4	KU	5.8	184.5	2.3	6.1
5	LG&E	3.1	16.5	2.1	6.0
6	Combined	9.0	201.0	4.4	12.1

		Corona Losses (MW)
		Fixed (1)
7	KU	1.606
8	LG&E	0.549
9	Combined	2.155

Notes:

(1) Includes Corona Losses from Workpaper 3

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Hour	LG&E Load	KU on LG&E	EKPC on LG&E	HE on LG&E	LG&E T Loss-f	LG&E T Loss-v	LG&E G Loss-f	LG&E G Loss-v	Net Export	BLG Export	Month
2011-02-01-0100	1217.7	6.3	35.6	4.3	2.6	11.5	1.7	4.6	1394.6	0	02
2011-02-01-0200	1179.1	6	34.4	4.4	2.6	11	1.7	4.4	1373.9	0	02
2011-02-01-0300	1147.9	5.8	33.6	4	2.6	10.8	1.7	4.3	1354.7	0	02
2011-02-01-0400	1138.1	5.6	33	4	2.6	11.6	1.7	4.3	1374.9	0	02
2011-02-01-0500	1149.1	5.7	33.8	3.9	2.6	12	1.7	4.5	1398.1	0	02
2011-02-01-0600	1201.1	6	37.3	4	2.6	12.5	1.7	4.6	1379.2	0	02
2011-02-01-0700	1347.6	6.8	41.9	4.1	2.6	15.3	1.7	5.6	1454.3	0	02
2011-02-01-0800	1429.8	7.2	43.4	4.3	2.6	15.6	1.7	5.6	1354.1	0	02
2011-02-01-0900	1431	7.1	41.9	4.7	2.6	15.6	1.7	5.5	1329.5	0	02
2011-02-01-1000	1424.8	7	41	4.6	2.6	15.4	1.7	5	1236.6	0	02
2011-02-01-1100	1440.5	7	40.8	4.6	2.6	14	1.7	4.6	1122.7	0	02
2011-02-01-1200	1442.4	6.9	40.3	4.5	2.6	14.3	1.7	4.7	1132	0	02
2011-02-01-1300	1438.7	6.8	40.3	4.5	2.6	14.5	1.7	4.8	1159.1	0	02
2011-02-01-1400	1394.7	6.7	39.4	4.4	2.6	13.6	1.7	4.6	1138.9	0	02
2011-02-01-1500	1371.6	6.6	39	4.6	2.6	13.2	1.7	4.3	1098	0	02
2011-02-01-1600	1388.5	6.7	39.7	4.6	2.6	13.2	1.7	4.2	1038.9	0	02
2011-02-01-1700	1408.8	6.8	41.6	4.3	2.6	13.5	1.7	4.3	1064.8	0	02
2011-02-01-1800	1448.7	7	44.2	4.3	2.6	14.7	1.7	4.6	1129.1	0	02
2011-02-01-1900	1483.7	7.2	45.7	4.4	2.6	15.1	1.7	4.8	1162.1	0	02
2011-02-01-2000	1450.8	7.1	45.2	4.7	2.6	15	1.7	4.6	1149.2	0	02
2011-02-01-2100	1414.2	7	44	4.7	2.6	14.5	1.7	4.6	1163.9	0	02
2011-02-01-2200	1337.9	6.6	41.1	4.6	2.6	12.8	1.7	4.5	1190.9	0	02
2011-02-01-2300	1255.5	6.1	37.2	4.2	2.6	11.5	1.7	4.1	1168.2	0	02
2011-02-02-0000	1140.4	5.7	32.8	4	2.6	9	1.7	3.4	1062.1	0	02
2011-02-02-0100	1076.3	5.4	30.7	4.3	2.6	8.1	1.7	3.2	1029.2	0	02
2011-02-02-0200	1046.7	5.3	30.5	4.2	2.6	7.9	2.1	3.3	1168.7	0	02
2011-02-02-0300	1071.2	5.4	32.4	4.1	2.6	8.1	2.1	3.5	1273.5	0	02
2011-02-02-0400	1101.7	5.7	35.5	4.2	2.6	8.3	2	3.6	1282.3	0	02
2011-02-02-0500	1162.1	6.1	38.3	4.3	2.6	9.4	2.1	4.2	1451.1	0	02
2011-02-02-0600	1230.2	7	42.9	4.5	2.6	10.5	2.1	4.6	1495.4	0	02
2011-02-02-0700	1387.9	8.1	49.3	4.7	2.6	13.1	2.1	5.6	1531.5	0	02
2011-02-02-0800	1502.7	9	51.8	4.6	2.6	15.4	2.1	6.5	1611.9	0	02
2011-02-02-0900	1511.5	9	50.4	4.6	2.6	15.2	2.1	6.3	1585.1	0	02
2011-02-02-1000	1514.9	9.3	49.8	4.8	2.6	15.1	2.1	6.2	1560.6	0	02
2011-02-02-1100	1544.2	9.1	49.4	4.9	2.6	15.6	2.1	6.4	1580	0	02
2011-02-02-1200	1552	9.1	49	4.7	2.6	15.7	2.1	6.4	1549	0	02
2011-02-02-1300	1558.5	9	48.6	4.5	2.6	15.9	2.1	6.8	1617.1	0	02
2011-02-02-1400	1559.7	8.9	48.3	4.5	2.6	16	2.1	6.7	1606.8	0	02
2011-02-02-1500	1554.9	8.8	47.3	4.5	2.6	15.8	2.1	6.6	1601.7	0	02
2011-02-02-1600	1538.9	8.7	47.9	4.6	2.6	15.6	2.1	6.5	1595	0	02
2011-02-02-1700	1537.9	8.6	50.4	5	2.6	15.6	2.1	6.9	1654.1	0	02
2011-02-02-1800	1556.3	9	52.5	5	2.6	15.6	2.1	6.7	1595.9	0	02
2011-02-02-1900	1616.8	9.4	56.5	5	2.6	16.6	2.1	6.5	1492.9	0	02
2011-02-02-2000	1618.7	9.4	57.6	5	2.6	16.6	2.1	6.5	1486	0	02

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Hour	KU Load	KU on LG&E	KU on EKPC	EKPC on KU	BREC on KU	TVA on KU	OMU on KU	KMPA on KU	KU T Loss-f	KU T Loss-v	KU G Loss-f	KU G Loss-v	Net Export	OMU Export	PADP Gen	Month
2011-02-01-0100	2345.7	6.3	59.6	280.6	5	37.6	82	68.6	4.4	85.8	1.9	2.1	-1050.5	146.1	0	02
2011-02-01-0200	2259.9	6	57.9	265.6	4.9	35.2	83.5	65	4.4	82.9	1.9	1.9	-924.7	200.2	0	02
2011-02-01-0300	2191.3	5.8	56.9	257.6	4.7	33.7	82.5	63.8	4.4	82.7	1.9	1.8	-891.2	209	0	02
2011-02-01-0400	2131.8	5.6	56.5	257.6	4.7	32.5	83.8	63.4	4.4	88.1	1.9	1.9	-713	261.3	0	02
2011-02-01-0500	2137.1	5.7	56.5	259.3	4.5	32.5	85.3	64.1	4.4	88	1.9	2.1	-658.3	285.5	0	02
2011-02-01-0600	2244.3	6	58.2	274.8	5.3	33.8	86.3	66.1	4.4	92.3	1.9	2.3	-679.2	282.5	0	02
2011-02-01-0700	2500.3	6.8	62.4	286.8	5.5	37.6	91.7	72.1	4.3	103.6	1.9	3.5	-549.8	277.5	0	02
2011-02-01-0800	2682.1	7.2	67.2	271.4	5.6	43	102.2	82.5	4.3	100	1.9	3.5	-768.4	277	0	02
2011-02-01-0900	2691.9	7.1	68.7	287	5.7	40.3	110.7	88.1	4.3	100.7	1.9	3.5	-802.1	259.3	0	02
2011-02-01-1000	2698.6	7	69	273.9	6.1	38.8	111.1	91.6	4.3	100.1	1.9	3.5	-811.1	222.6	0	02
2011-02-01-1100	2693.2	7	68.6	279.1	5.4	38.7	111.1	92.6	4.4	92.6	1.9	3.1	-1025.6	139.2	0	02
2011-02-01-1200	2651	6.9	67.8	248.7	5.9	38.1	111	93.1	4.4	90.2	1.9	3	-973.1	146.9	0	02
2011-02-01-1300	2613.9	6.8	67	275.6	6	37.6	110	93.3	4.4	90.3	1.8	3.2	-891.5	181	0	02
2011-02-01-1400	2572.4	6.7	66.8	272.8	5.7	37.1	108.8	92.7	4.4	85.9	1.8	2.9	-969.7	143.2	0	02
2011-02-01-1500	2589.4	6.6	67.4	265.5	5.9	36.7	111.3	91.2	4.4	86.2	1.8	3.1	-898.7	166	0	02
2011-02-01-1600	2575.3	6.7	66.9	274.1	6.1	36.9	111.4	89.8	4.4	88.3	1.8	3.3	-812.7	181	0	02
2011-02-01-1700	2602.6	6.8	67.8	275.4	6.3	38.4	108.4	87.5	4.4	91.7	1.8	3.4	-803	190.5	0	02
2011-02-01-1800	2624.9	7	68.9	238.4	5.8	41.1	109.3	86.5	4.4	94.1	1.8	3.5	-723.5	205.5	0	02
2011-02-01-1900	2663.8	7.2	69.2	302.1	5.5	43.6	111.1	87.6	4.4	92.3	1.8	3.7	-789.1	204.2	0	02
2011-02-01-2000	2622.6	7.1	68.4	289	5.7	44.3	112.1	87.7	4.4	93.4	1.8	3.6	-713.7	256.7	0	02
2011-02-01-2100	2563.1	7	66.5	273.6	6	43.4	110.2	89.2	4.4	90.2	1.8	3.4	-687.2	282	0	02
2011-02-01-2200	2507.5	6.6	64.8	209.9	6.6	42.3	103.5	89.6	4.4	82.9	1.8	3	-751.7	205	0	02
2011-02-01-2300	2368.7	6.1	61.7	207	6	40.3	99.1	87.9	4.4	79.3	1.8	2.5	-830.1	182.7	0	02
2011-02-02-0000	2254.8	5.7	59.2	259.1	6.1	39.4	100.7	85.1	4.4	67.9	1.8	1.7	-1208.7	5.4	0	02
2011-02-02-0100	2176.4	5.4	57.5	224.2	5	38.8	96.9	81.1	4.4	58.5	1.8	1.6	-1101	62.2	0	02
2011-02-02-0200	2133.6	5.3	56.1	215.2	5.4	41	96.4	79.9	4.4	65.9	1.8	1.8	-950.7	105.5	0	02
2011-02-02-0300	2110	5.4	57.9	216.3	5.3	44.4	98.6	79.9	4.4	68.5	1.8	1.7	-899.7	151.2	0	02
2011-02-02-0400	2176.8	5.7	60.6	227	5.2	47	96.1	79.4	4.4	69.7	1.8	1.8	-955	156	0	02
2011-02-02-0500	2336.8	6.1	63.4	169.1	5	48.8	95.2	80.5	4.4	77.7	1.8	1.9	-1049.8	155.8	0	02
2011-02-02-0600	2567.8	7	68.1	194.7	5.6	52.8	96.9	83.3	4.4	88.2	1.8	2.4	-1133.3	155	0	02
2011-02-02-0700	2924.8	8.1	74.6	226.9	5.4	58.2	102.9	89.2	4.3	112.3	1.9	3.4	-1207.1	154.8	0	02
2011-02-02-0800	3226	9	81.8	238.4	5.4	64.2	113.3	99.3	4.3	124.3	1.9	4.5	-1232.2	149.9	0	02
2011-02-02-0900	3300.9	9	84.2	232.4	6	62.8	119.2	103.1	4.3	126.6	1.9	4.6	-1250.3	142.5	0	02
2011-02-02-1000	3382	9.3	84.9	235.4	6.4	63	121.8	105.2	4.3	133.4	1.9	4.8	-1295.4	137.9	0	02
2011-02-02-1100	3356	9.1	85.9	238.8	6.8	63.9	123.4	106.3	4.3	134.6	1.9	4.8	-1275.6	137.7	0	02
2011-02-02-1200	3363.5	9.1	86.2	239.7	6.6	62.9	123.4	106.9	4.3	136.2	2	4.8	-1235.3	138.5	0	02
2011-02-02-1300	3378.4	9	85.4	236.6	6.5	62.3	123.5	106.1	4.3	141.1	2	4.7	-1315.8	137.3	0	02
2011-02-02-1400	3340.1	8.9	85.3	232.6	7.3	60.8	125.9	104.4	4.3	142.4	2	4.7	-1293.7	137.4	0	02
2011-02-02-1500	3329	8.8	84.5	230.2	6.9	60.1	127.1	103.6	4.3	141.5	2	4.6	-1289.9	137.4	0	02
2011-02-02-1600	3260.3	8.7	83.9	232.4	7.1	60.1	125.4	102.5	4.3	139.7	2	4.5	-1250.9	138.6	0	02
2011-02-02-1700	3267.5	8.6	84.2	237.5	7.4	61.6	110.9	100.9	4.3	142.4	1.9	4.4	-1376.6	138.8	0	02
2011-02-02-1800	3385	9	85	325.2	7.4	64.4	112.4	102.1	4.3	138.9	1.9	4.6	-1384.8	180.4	0	02
2011-02-02-1900	3495.9	9.4	86.9	325.3	6.7	68.5	119	106.7	4.3	143.5	1.9	4.9	-1408.1	233.8	0	02
2011-02-02-2000	3498	9.4	87.8	340	6.3	69.5	122.9	108.5	4.3	146.4	1.9	4.9	-1405.7	260.1	0	02

LGE & KU - CORONA LOSS ESTIMATE

	VOLTAGE (kV)	MILES	CORONA PEAK LOSS FACTOR (MW Mile)	CORONA LOSSES (MW)	CORONA WINTER HOURS & LOSSES (MWH)	CORONA SUMMER HOURS & LOSSES (MWH)	CORONA TOTAL LOSSES (MWH)
A. Fair Weather Corona Losses							
LGE							
1	345	172	0.0032	0.549	5,832	2,928	4,813
2	161	116	0.0000	0.000	0	0	0
3	138	334	0.0000	0.000	0	0	0
4	69	289	0.0000	0.000	0	0	0
5	Subtotal	911		0.549	3,204	1,609	4,813
KU							
6	500	57	0.0060	0.341	5,832	2,928	2,989
7	345	395	0.0032	1.265	1,990	999	11,078
8	161	518	0.0000	0.000	7,375	3,703	0
9	138	888	0.0000	0.000	0	0	0
10	69	2,218	0.0000	0.000	0	0	0
11	Subtotal	4,076		1.606	9,365	4,702	14,067
12	TOTAL	4,987		2.155	12,569	6,311	18,880
B. Unmetered Station Use							
13	Estimated Unmetered Substation Use at			0.0010			

NOTE:

(1) Lines 5 and 11 loss results included in Schedules 3, 4, and 5.

LGE & KU

Voltage by Company	Number of Miles		
	LGE	KU	Total
1 LGE			
2 Overhead			
3 345	171.7		
4 161	116.4		
5 138	329.6		
6 69	286.3		
7 Total Overhead	904.0		904.0
8			
9 Underground			
10 138	4.0		
11 69	2.9		
12 Total Underground	6.9		6.9
13			
14 Total LGE	910.9		910.9
15			
16 KU			
17 500		56.9	
18 345		395.2	
19 161		518.2	
20 138		887.6	
21 69		2,218.4	
22			
23 Total KU		4,076.3	4,076.3
24			
25			
26 Total Pole Miles	910.9	4,076.3	4,987.2

LG&E AND KU SERVICES COMPANY
2010 Analysis of System Losses – LG&E Power System

Appendix B

Results of LG&E
2010 Loss Analysis



LG 2010 LOSS ANALYSIS

LG&E

EXHIBIT 1

SUMMARY OF COMPANY DATA

ANNUAL PEAK	2,852 MW
ANNUAL SYSTEM INPUT	12,966,029 MWH
ANNUAL SALES	12,399,868 MWH
SYSTEM LOSSES @ INPUT	566,161 or 4.37%
SYSTEM LOAD FACTOR	51.9%

SUMMARY OF LOSSES - OUTPUT RESULTS

SERVICE	KV	--- MW ---	% TOTAL	--- MWH ---	% TOTAL
		Input		Input	
TRANS	500,345,138 69	43.5	27.43%	132,516	23.41%
		1.53%		1.02%	
PRIM SUBS	33,12,1	16.2	10.21%	70,977	12.54%
		0.57%		0.55%	
PRIMARY	33,12,1	55.2	34.83%	160,720	28.39%
		1.94%		1.24%	
SECONDARY	120/240,to,477	43.7	27.54%	201,948	35.67%
		1.53%		1.56%	
TOTAL		158.6	100.00%	566,161	100.00%
		5.56%		4.37%	

SUMMARY OF LOSS FACTORS

SERVICE	KV	CUMMULATIVE SALES EXPANSION FACTORS			
		DEMAND (Peak)	ENERGY (Annual)	DEMAND (Peak)	ENERGY (Annual)
		d	1/d	e	1/e
TOT TRANS	500,345,138 69	1.01549	0.98475	1.01033	0.98978
PRIM SUBS	33,12,1	1.02152	0.97894	1.01619	0.98407
PRIMARY	33,12,1	1.04295	0.95882	1.02998	0.97089
SECONDARY	120/240,to,477	1.06325	0.94052	1.05235	0.95025

LG 2010 LOSS ANALYSIS

SUMMARY OF CONDUCTOR INFORMATION

EXHIBIT 2

DESCRIPTION	CIRCUIT MILES	LOADING % RATING	----- LOAD	MW LOSSES NO LOAD	----- TOTAL
--- BULK ----- 500 KV OR GREATER -----					
TIE LINES	0.0	0.00%	0.000	0.000	0.000
BULK TRANS	<u>0.0</u>	<u>0.00%</u>	<u>0.000</u>	<u>0.000</u>	<u>0.000</u>
SUBTOT	0.0		0.000	0.000	0.000
--- TRANS ----- 138 KV TO 500.00 KV -----					
TIE LINES	0	0.00%	0.000	0.000	0.000
TRANS1	345 KV	0.0	0.00%	0.000	0.000
TRANS2	<u>138 KV</u>	<u>0.0</u>	<u>0.00%</u>	<u>0.000</u>	<u>0.000</u>
SUBTOT	0.0		0.000	0.000	0.000
--- SUBTRANS ----- 35 KV TO 138 KV -----					
TIE LINES	0	0.00%	0.000	0.000	0.000
SUBTRANS1	KV	0.0	0.00%	0.000	0.000
SUBTRANS2	KV	0.0	0.00%	0.000	0.000
SUBTRANS3	<u>KV</u>	<u>0.0</u>	<u>0.00%</u>	<u>0.000</u>	<u>0.001</u>
SUBTOT	0.0		0.000	0.001	0.001
PRIMARY LINES	6,278		50.143	2.685	52.828
SECONDARY LINES	3,543		4.845	0.000	4.845
SERVICES	5,656		9.764	0.824	10.587
TOTAL	15,477		64.752	3.509	68.261

----- LOAD	MW LOSSES NO LOAD	----- TOTAL
0	0	0
<u>0</u>	<u>0</u>	<u>0</u>
0	0	0
0	0	0
<u>0</u>	<u>0</u>	<u>0</u>
0	0	0
0	0	0
<u>0</u>	<u>6</u>	<u>6</u>
0	6	6
129,898	23,520	153,418
8,557	0	8,557
26,554	7,214	33,768
165,009	30,739	195,748

LG 2010 LOSS ANALYSIS

SUMMARY OF TRANSFORMER INFORMATION

EXHIBIT 3

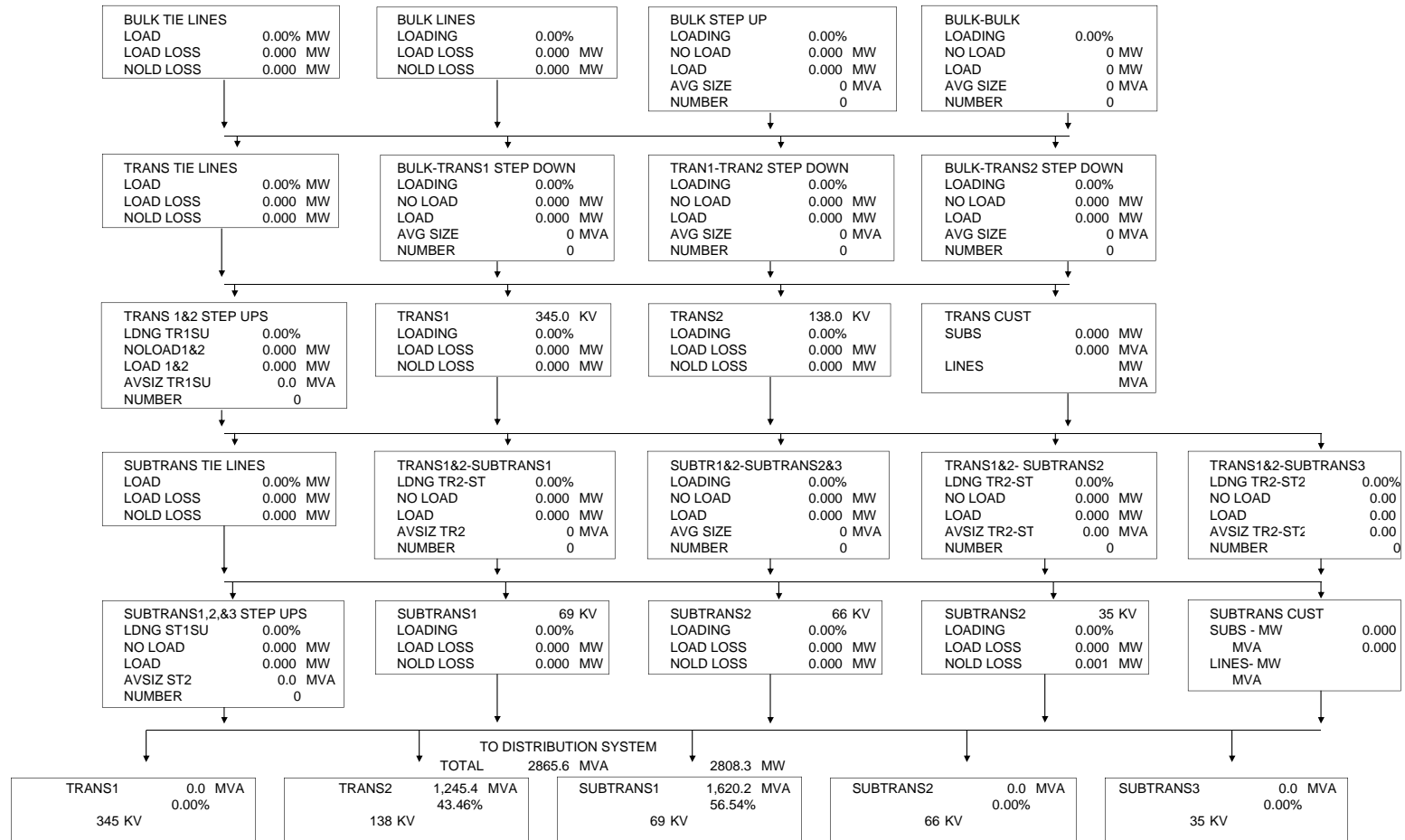
DESCRIPTION	KV CAPACITY		NUMBER TRANSFMR	AVERAGE SIZE	LOADING %	MVA LOAD	MW LOSSES			MWH LOSSES			
	VOLTAGE	MVA					LOAD	NO LOAD	TOTAL	LOAD	NO LOAD	TOTAL	
BULK STEP-UP	500	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
BULK - BULK		0.0	0	0.0	0.00%	0	0	0.000	0.000	0	0	0	
BULK - TRANS1	345	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
BULK - TRANS2	138	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1 STEP-UP	345	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1 - TRANS2	138	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1-SUBTRANS1	69	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1-SUBTRANS2	66	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS1-SUBTRANS3	35	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2 STEP-UP	138	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2-SUBTRANS1	69	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2-SUBTRANS2	66	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
TRANS2-SUBTRANS3	35	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1 STEP-UP	69	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN2 STEP-UP	66	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN3 STEP-UP	35	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1-SUBTRAN2	66	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN1-SUBTRAN3	35	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
SUBTRAN2-SUBTRAN3	35	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0	
DISTRIBUTION SUBSTATIONS													
TRANS1 -	345	33	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
TRANS1 -	345	12	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
TRANS1 -	345	1	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
TRANS2 -	138	33	115.5	4	28.9	60.99%	70	0.209	0.205	0.415	503	1,501	2,004
TRANS2 -	138	12	1,464.0	50	29.3	80.26%	1,175	3.771	2.805	6.576	9,059	19,624	28,683
TRANS2 -	138	1	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN1-	69	33	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN1-	69	12	1,817.3	81	22.4	89.16%	1,620	5.000	3.745	8.745	12,012	25,976	37,988
SUBTRAN1-	69	1	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN2-	66	33	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN2-	66	12	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN2-	66	1	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN3-	35	33	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN3-	35	12	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRAN3-	35	1	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
PRIMARY - PRIMARY			172.7	38	4.5	86.05%	149	0.870	0.307	1.177	2,090	2,687	4,777
LINE TRANSFRMR			5,499.8	86,403	63.7	45.60%	2,508	12.631	14.398	27.028	26,952	126,123	153,074
TOTAL			9,069	86,576				22.481	21.460	43.941	50,615	175,911	226,527

LG 2010 LOSS ANALYSIS

SUMMARY OF LOSSES DIAGRAM - DEMAND MODEL - SYSTEM PEAK

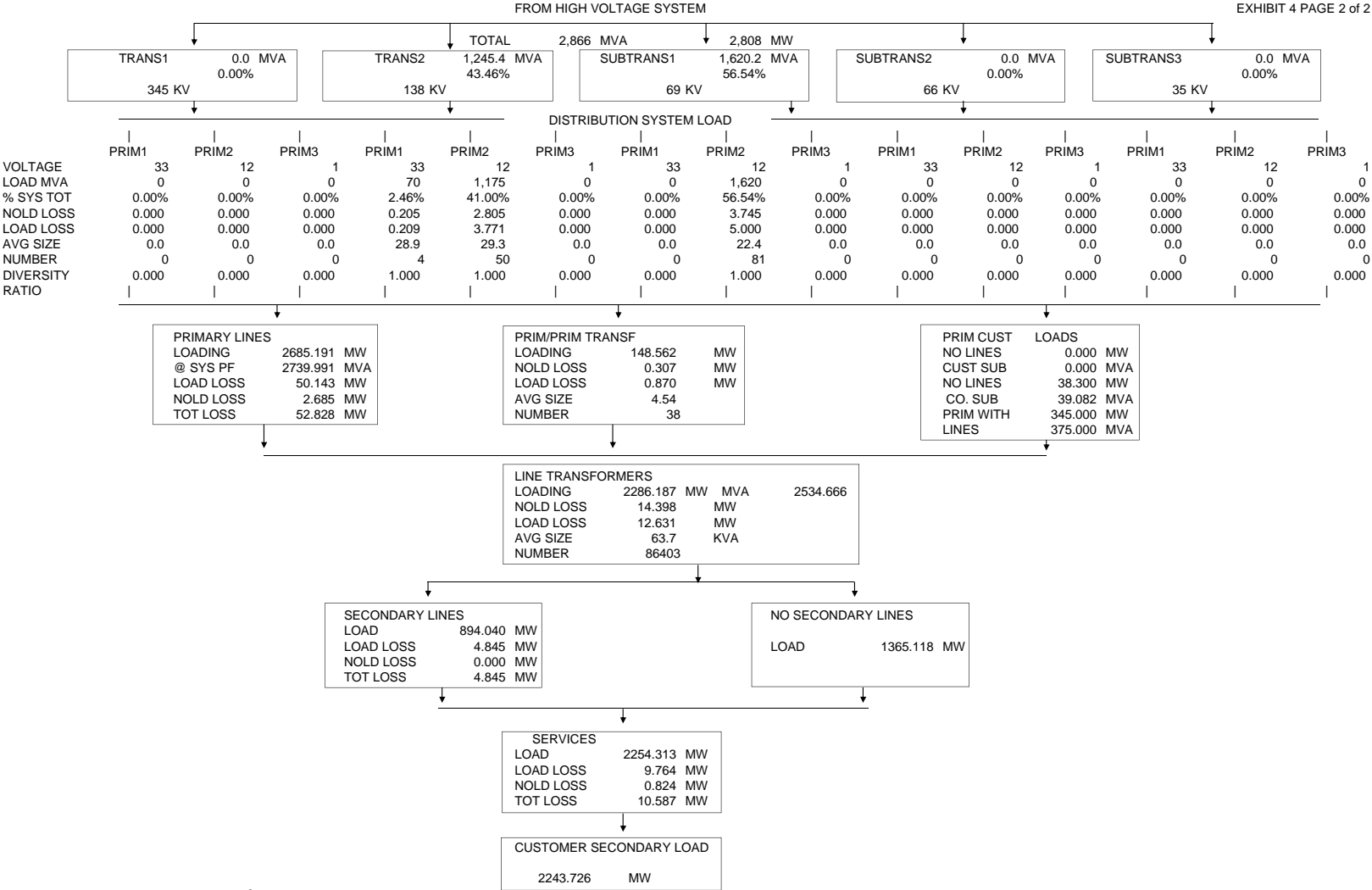
2852 MW

EXHIBIT 4 PAGE 1 of 2



LG 2010 LOSS ANALYSIS

EXHIBIT 4 PAGE 2 of 2



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LG 2010 LOSS ANALYSIS

SUMMARY of SALES and CALCULATED LOSSES

EXHIBIT 5

LOSS # AND LEVEL	MW LOAD	NO LOAD	+	LOAD	=	TOT LOSS	EXP FACTOR	CUM EXP FAC	MWH LOAD	NO LOAD	+	LOAD	=	TOT LOSS	EXP FACTOR	CUM EXP FAC
1 BULK XFMMR	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0	0
2 BULK LINES	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
3 TRANS1 XFMR	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
4 TRANS1 LINES	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
5 TRANS2TR1 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
6 TRANS GSU	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
7 TRANS2 LINES	0.0	4.43		39.07		43.50	0.000000	0.000000	0	29,013		103,503		132,516	0.000000	0.000000
TOTAL TRAN	2,852.0	4.43		39.07		43.50	1.015489	1.015489	12,966,029	29013		103503		132,516	1.0103258	1.0103258
8 STR1BLK SD																
9 STR1T1 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
10 SRT1T2 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
11 SUBTRANS1 LINES	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
12 STR2T1 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
13 STR2T2 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
14 STR2S1 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
15 SUBTRANS2 LINES	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
16 STR3T1 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
17 STR3T2 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
18 STR3S1 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
19 STR3S2 SD	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
20 SUBTRANS3 LINES	0.0	0.00		0.00		0.00	0.000000	0.000000	0	6		0		6	0.000000	0.000000
21 SUBTRANS TOTAL	0.0	0.00		0.00		0.00	0.000000	0.000000	0	6		0		6	0.000000	0.000000
22 TOT TRANS LOSS FAC	2,852.0	4.43		39.07		43.50	1.015489	1.015489	12,966,029	29,013		103,503		132,516	1.010326	1.0103258
DISTRIBUTION SUBST																
TRANS1	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
TRANS2	1,151.5	3.01		3.98		6.99	1.006108	0.000000	5,338,276	21,126		9,562		30,687	1.0057818	0.000000
SUBTR1	1,587.8	3.74		5.00		8.74	1.005538	0.000000	6,944,729	25,976		12,012		37,988	1.0055001	0.000000
SUBTR2	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
SUBTR3	0.0	0.00		0.00		0.00	0.000000	0.000000	0	0		0		0	0.000000	0.000000
WEIGHTED AVERAGE	2,739.2	6.76		8.98		15.74	1.005778	1.021356	12,283,005	47,102		21,574		68,675	1.0056225	1.0160063
PRIMARY INTRCHNGE	0.0						0.000000		0						0.000000	
PRIMARY LINES	2,684.9	2.68		51.01		53.70	1.020408	1.042200	11,989,742	23,520		131,988		155,508	1.0131405	1.0293572
LINE TRANSF	2,286.2	14.40		12.63		27.03	1.011964	1.054669	9,493,517	126,123		26,952		153,074	1.0163883	1.0462266
SECONDARY	2,259.2	0.00		4.84		4.84	1.002149	1.056935	9,340,443	0		8,557		8,557	1.0009169	1.0471860
SERVICES	2,254.3	0.82		9.76		10.59	1.004719	1.061923	9,331,886	7,214		26,554		33,768	1.0036317	1.0509890
TOTAL SYSTEM		29.09		126.30		155.39				232,971		319,127		552,098		

LG 2010 LOSS ANALYSIS

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
DEMAND

EXHIBIT 6

LOSS FACTOR LEVEL	CUSTOMER SALES MW	CALC LOSS TO LEVEL	SALES MW @ GEN	CUM PEAK EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	0.00000	0.00000
TRANS LINES	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS SUBS	0.0	0.0	0.0	0.00000	0.00000
TOTAL TRANS	66.4	1.0	67.4	1.01549	0.98475
PRIM SUBS	38.3	0.8	39.1	1.02136	0.97909
PRIM LINES	345.0	14.6	359.6	1.04220	0.95951
SECONDARY	<u>2,243.7</u>	<u>138.9</u>	<u>2,382.7</u>	1.06192	0.94169
TOTALS	2,693.4	155.3	2,848.8		

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH	CALC LOSS TO LEVEL	SALES MWH @ GEN	CUM ANNUAL EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0	0	0	0.00000	0.00000
TRANS SUBS	0	0	0	0.00000	0.00000
TRANS LINES	0	0	0	0.00000	0.00000
SUBTRANS SUBS	0	0	0	0.00000	0.00000
TOTAL TRANS	536,042	5,535	541,577	1.01033	0.98978
PRIM SUBS	224,991	3,601	228,592	1.01601	0.98425
PRIM LINES	2,340,717	68,717	2,409,434	1.02936	0.97148
SECONDARY	<u>9,298,118</u>	<u>474,102</u>	<u>9,772,220</u>	1.05099	0.95148
TOTALS	12,399,868	551,955	12,951,823		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	0
TRANS LINES	0.00	0
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	67.43	541,577
PRIM SUBS	39.12	228,592
PRIM LINES	359.56	2,409,434
SECONDARY	2,382.66	9,772,220
SUBTOTAL	2,848.77	12,951,823
ACTUAL ENERGY	2,852.00	12,966,029
MISSMATCH	(3.23)	(14,206)
% MISSMATCH	-0.11%	-0.11%

LG 2010 LOSS ANALYSIS

DEVELOPMENT of LOSS FACTORS
ADJUSTED
DEMAND

EXHIBIT 7

LOSS FACTOR LEVEL	CUSTOMER SALES MW a	SALES ADJUST b	CALC LOSS TO LEVEL c	SALES MW @ GEN d	CUM PEAK EXPANSION FACTORS e	f=1/e
BULK LINES	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS LINES	0.0	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
TOTAL TRANS	66.4	0.0	1.0	67.4	1.01549	0.98475
PRIM SUBS	38.3	0.0	0.8	39.1	1.02152	0.97894
PRIM LINES	345.0	0.0	14.8	359.8	1.04295	0.95882
SECONDARY	<u>2,243.7</u>	<u>0.0</u>	141.9	<u>2,385.6</u>	1.06325	0.94052
			158.6			
TOTALS	2,693.4	0.0	158.6	2,852.0		

DEVELOPMENT of LOSS FACTORS
ADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH a	SALES ADJUST b	CALC LOSS TO LEVEL c	SALES MWH @ GEN d	CUM ANNUAL EXPANSION FACTORS e	f=1/e
BULK LINES	0	0	0	0	0.00000	0.00000
TRANS SUBS	0	0	0	0	0.00000	0.00000
TRANS LINES	0	0	0	0	0.00000	0.00000
SUBTRANS SUBS	0	0	0	0	0.00000	0.00000
TOTAL TRANS	536,042	0	5,535	541,577	1.01033	0.98978
PRIM SUBS	224,991	0	3,643	228,634	1.01619	0.98407
PRIM LINES	2,340,717	0	70,184	2,410,901	1.02998	0.97089
SECONDARY	<u>9,298,118</u>	<u>0</u>	486,797	<u>9,784,915</u>	1.05235	0.95025
			566,159			
TOTALS	12,399,868	0	566,161	12,966,027		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	0
TRANS LINES	0.00	0
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	67.43	541,577
PRIM SUBS	39.12	228,634
PRIM LINES	359.82	2,410,901
SECONDARY	2,385.63	9,784,915
	2,852.00	12,966,027
ACTUAL ENERGY	2,852.00	12,966,029
MISSMATCH	0.00	(2)
% MISSMATCH	0.00%	0.00%

LG 2010 LOSS ANALYSIS

Adjusted Losses and Loss Factors by Facility

EXHIBIT 8

Unadjusted Losses by Segment				
	MW	Unadjusted	MWH	Unadjusted
Service Drop Losses	10.59	10.58	33,768	33,756
Secondary Losses	4.84	4.84	8,557	8,554
Line Transformer Losses	27.03	27.02	153,074	153,022
Primary Line Losses	53.70	53.67	155,508	155,455
Distribution Substation Losses	15.74	15.73	68,675	68,652
<u>Transmission System Losses</u>	<u>43.50</u>	<u>43.50</u>	<u>132,516</u>	<u>132,516</u>
Total	155.39	155.34	552,098	551,955

Mismatch Allocation by Segment				
	MW		MWH	
Service Drop Losses	-0.31		-1,143	
Secondary Losses	-0.14		-290	
Line Transformer Losses	-0.78		-5,183	
Primary Line Losses	-1.55		-5,265	
Distribution Substation Losses	-0.45		-2,325	
<u>Transmission System Losses</u>	<u>0.00</u>		<u>0</u>	
Total	-3.23		-14,206	

Adjusted Losses by Segment				
	MW	% of Total	MWH	% of Total
Service Drop Losses	10.89	6.9%	34,899	6.2%
Secondary Losses	4.98	3.1%	8,844	1.6%
Line Transformer Losses	27.80	17.5%	158,205	27.9%
Primary Line Losses	55.22	34.8%	160,720	28.4%
Distribution Substation Losses	16.18	10.2%	70,977	12.5%
<u>Transmission System Losses</u>	<u>43.50</u>	<u>27.4%</u>	<u>132,516</u>	<u>23.4%</u>
Total	158.57	100.0%	566,161	100.0%

Loss Factors by Segment		MW	MWH	
Retail Sales from Service Drops		2,243.726	9,298,118	
<u>Adjusted Service Drop Losses</u>		<u>10.888</u>	<u>34,899</u>	
Input to Service Drops		2,254.614	9,333,017	
Service Drop Loss Factor		1.00485	1.00375	
Output from Secondary		2,254.614	9,333,017	
<u>Adjusted Secondary Losses</u>		<u>4.983</u>	<u>8,844</u>	
Input to Secondary		2,259.597	9,341,861	
Secondary Conductor Loss Factor		1.00221	1.00095	
Output from Line Transformers		2,259.597	9,341,861	
<u>Adjusted Line Transformer Losses</u>		<u>27.796</u>	<u>158,205</u>	
Input to Line Transformers		2,287.393	9,500,066	
Line Transformer Loss Factor		1.01230	1.01694	
Retail Sales from Primary		345.000	2,340,717	
Req. Whls Sales from Primary		0.000	0	
<u>Input to Line Transformers</u>		<u>2,287.393</u>	<u>9,500,066</u>	
Output from Primary Lines		2,632.393	11,840,783	
<u>Adjusted Primary Line Losses</u>		<u>55.224</u>	<u>160,720</u>	
Input to Primary Lines		2,687.617	12,001,503	
Primary Line Loss Factor		1.02098	1.01357	
Output PI from Distribution Substations		2,687.617	12,001,503	
Req. Whls Sales from Substations		0.000	0	
Retail Sales from Substations		38.300	224,991	
Total Output from Distribution Substations		2,725.917	12,226,494	
<u>Adjusted Distribution Substation Losses</u>		<u>16.183</u>	<u>70,977</u>	
Input to Distribution Substations		2,742.100	12,297,471	
Distribution Substation Loss Factor		1.00594	1.00581	
Retail Sales at from SubTransmission		66.400	536,042	
Req. Whls Sales from SubTransmission		0.000	0	
Non-Req. Whls Sales from SubTransmission		0.000	0	
Losses		0.000	0	4457
<u>Input to Distribution Substations</u>		<u>2,742.100</u>	<u>12,297,471</u>	
Output from SubTransmission		2,808.500	12,833,513	2,852,000
<u>SubTransmission System Losses</u>		<u>43.500</u>	<u>132,516</u>	43,500
Input to Transmission		2,852.000	12,966,029	43,500
TotTransmission System Loss Factor		1.01549	1.01033	43,500

DEMAND MW		SUMMARY OF LOSSES AND LOSS FACTORS BY DELIVERY VOLTAGE						EXHIBIT 9
SERVICE LEVEL		SALES MW	LOSSES	SECONDARY	PRIMARY	SUBSTATION	SUBTRANS	TRANSMISSION
1	SERVICES							
2	SALES	2,243.7		2,243.7				
3	LOSSES		10.9	10.9				
4	INPUT			2,254.6				
5	EXPANSION FACTOR	1.00485						
6	SECONDARY							
7	SALES							
8	LOSSES		5.0	5.0				
9	INPUT			2,259.6				
10	EXPANSION FACTOR	1.00221						
11	LINE TRANSFORMER							
12	SALES							
13	LOSSES		27.8	27.8				
14	INPUT			2,287.4				
15	EXPANSION FACTOR	1.01230						
16	PRIMARY							
17	SECONDARY			2,287.4				
18	SALES	345.0			345.0			
19	LOSSES		55.2	48.0	7.2			
20	INPUT			2,335.4	352.2			
21	EXPANSION FACTOR	1.02098						
22	SUBSTATION							
23	PRIMARY			2,335.4	352.2			
24	SALES	38.3				38.3		
25	LOSSES		16.2	13.9	2.1	0.2		
26	INPUT			2,349.2	354.3	38.5		
27	EXPANSION FACTOR	1.00594						
28	SUB-TRANSMISSION							
29	DISTRIBUTION SUBS							
30	SALES							
31	LOSSES							
32	INPUT							
33	EXPANSION FACTOR							
34	TRANSMISSION							
35	SUBTRANSMISSION							
36	DISTRIBUTION SUBS			2,349.2	354.3	38.5		
37	SALES	66.4					66.4	
38	LOSSES		43.5	36.4	5.5	0.6	1.0	
39	INPUT			2,385.6	359.8	39.1	67.4	
40	EXPANSION FACTOR	1.01549						
41	TOTALS		158.6	141.9	14.8	0.8	1.0	
42	% OF TOTAL		100%	89.49%	9.34%	0.52%	0.65%	
43	SALES	2,693.4		2,243.7	345.0	38.3	66.4	
44	% OF TOTAL	100.00%		83.30%	12.81%	1.42%	2.47%	
45	INPUT	2,852.0		2,385.6	359.8	39.1	67.4	
46	CUMMULATIVE EXPANSION LOSS FACTORS			1.06325	1.04295	1.02152	1.01549	
	(from meter to system input)							

ENERGY MWH		SUMMARY OF LOSSES AND LOSS FACTORS BY DELIVERY VOLTAGE						EXHIBIT 9
SERVICE LEVEL		SALES	LOSSES	SECONDARY	PRIMARY	SUBSTATION	SUBTRANS	TRANSMISSION
1	SERVICES							
2	SALES	9,298,118			9,298,118			
3	LOSSES		34,899		34,899			
4	INPUT				9,333,017			
5	EXPANSION FACTOR	1.00375						
6	SECONDARY							
7	SALES							
8	LOSSES		8,844		8,844			
9	INPUT				9,341,861			
10	EXPANSION FACTOR	1.00095						
11	LINE TRANSFORMER							
12	SALES							
13	LOSSES		158,205		158,205			
14	INPUT				9,500,066			
15	EXPANSION FACTOR	1.01694						
16	PRIMARY							
17	SECONDARY				9,500,066			
18	SALES	2,340,717.000			2,340,717			
19	LOSSES		160,720		128,948		31,772	
20	INPUT				9,629,014		2,372,489	
21	EXPANSION FACTOR	1.01357						
22	SUBSTATION							
23	PRIMARY				9,629,014		2,372,489	
24	SALES	224,991				224,991		
25	LOSSES		70,977		55,898		13,773	
26	INPUT				9,684,912		2,386,261	226,297
27	EXPANSION FACTOR	1.00581						
28	SUB-TRANSMISSION							
29	DISTRIBUTION SUBS							
30	SALES							
31	LOSSES							
32	INPUT							
33	EXPANSION FACTOR							
34	TRANSMISSION							
35	SUBTRANSMISSION							
36	DISTRIBUTION SUBS				9,684,912	2,386,261	226,297	
37	SALES	536,042						536,042
38	LOSSES		132,516		100,004	24,640	2,337	5,535
39	INPUT				9,784,917	2,410,901	228,634	541,577
40	EXPANSION FACTOR	1.01033						
41	TOTALS		566,161		486,799	70,184	3,643	5,535
42	% OF TOTAL		100%		85.98%	12.40%	0.64%	0.98%
43	SALES	12,399,868			9,298,118	2,340,717	224,991	536,042
44	% OF TOTAL	100.00%			74.99%	18.88%	1.81%	4.32%
45	INPUT	12,966,029			9,784,917	2,410,901	228,634	541,577
46	CUMMULATIVE EXPANSION LOSS FACTORS			1.05235	1.02998	1.01619		1.01033
	(from meter to system input)							

LG&E AND KU SERVICES COMPANY
2010 Analysis of System Losses – LG&E Power System

Appendix C

Discussion of Hoebel Coefficient



COMMENTS ON THE HOEBEL COEFFICIENT

The Hoebel coefficient represents an established industry standard relationship between peak losses and average losses and is used in a loss study to estimate energy losses from peak demand losses. H. F. Hoebel described this relationship in his article, "Cost of Electric Distribution Losses," Electric Light and Power, March 15, 1959. A copy of this article is attached.

Within any loss evaluation study, peak demand losses can readily be calculated given equipment resistance and approximate loading. Energy losses, however, are much more difficult to determine given their time-varying nature. This difficulty can be reduced by the use of an equation which relates peak load losses (demand) to average losses (energy). Once the relationship between peak and average losses is known, average losses can be estimated from the known peak load losses.

Within the electric utility industry, the relationship between peak and average losses is known as the loss factor. For definitional purposes, loss factor is the ratio of the average power loss to the peak load power loss, during a specified period of time. This relationship is expressed mathematically as follows:

$$\frac{(1) F_{LS} \cdot A_{LS}}{P_{LS}} \quad \text{where: } F_{LS} = \text{Loss Factor}$$

$$A_{LS} = \text{Average Losses}$$

$$P_{LS} = \text{Peak Losses}$$

The loss factor provides an estimate of the degree to which the load loss is maintained throughout the period in which the loss is being considered. In other words, loss factor is the ratio of the actual kWh losses incurred to the kWh losses which would have occurred if full load had continued throughout the period under study.

Examining the loss factor expression in light of a similar expression for load factor indicates a high degree of similarity. The mathematical expression for load factor is as follows:

$$\frac{(2) F_{LD} \cdot A_{LD}}{P_{LD}} \quad \text{where: } F_{LD} = \text{Load Factor}$$

$$A_{LD} = \text{Average Load}$$

$$P_{LD} = \text{Peak Load}$$

This load factor result provides an estimate of the degree to which the load loss is maintained throughout the period in which the load is being considered. Because of the similarities in definition, the loss factor is sometimes called the "load factor of losses." While the definitions are similar, a strict equating of the two factors cannot be made. There does exist, however, a relationship between these two factors which is dependent upon the shape of the load duration curve. Since resistive losses vary as the square of the load, it can be shown mathematically that the loss factor can vary between the extreme limits of load factor and load factor squared. The relationship between load factor and loss factor has become an industry standard and is as follows:

$$\underline{(3) F_{LS} \cdot H \cdot F_{LD}^2 + (1-H) \cdot F_{LD}}$$

where: F_{LS} = Loss Factor
 F_{LD} = Load Factor
 H = Hoebel Coeff

As noted in the attached article, the suggested value for H (the Hoebel coefficient) is 0.7. The exact value of H will vary as a function of the shape of the utility's load duration curve. In recent years, values of H have been computed directly for a number of utilities based on EEI load data. It appears on this basis, the suggested value of 0.7 should be considered a lower bound and that values approaching unity may be considered a reasonable upper bound. Based on experience, values of H have ranged from approximately 0.85 to 0.95. The standard default value of 0.9 is generally used.

Inserting the Hoebel coefficient estimate gives the following loss factor relationship using Equation (3):

$$\underline{(4) F_{LS} \cdot 0.90 \cdot F_{LD}^2 + 0.10 \cdot F_{LD}}$$

Once the Hoebel constant has been estimated and the load factor and peak losses associated with a piece of equipment have been estimated, one can calculate the average, or energy losses as follows:

$$\underline{(5) A_{LS} \cdot P_{LS} \cdot [H \cdot F_{LD}^2 + (1-H) \cdot F_{LD}]}$$

where: A_{LS} = Average Losses
 P_{LS} = Peak Losses
 H = Hoebel Coefficient
 F_{LD} = Load Factor

Loss studies use this equation to calculate energy losses at each major voltage level in the analysis.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 8

Responding Witness: Christopher M. Garrett

Q.1-8. Please provide in excel spreadsheet format, by month, by Company, by rate class, the following information for each of the past 3 years:

- a. actual kWh sales
- b. weather normalized kWh sales using the same weather normalization methodology that is used by the Companies and PPL in the Quarterly Earnings Call Presentations
- c. the number of customers

A.1-8. See the attachment being provided in Excel format. Some customers have multiple Contracts and are reflected in multiple rate codes. The duplications are removed in the Duplicate Customers lines.

The attachment is
provided in a separate
file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 9

Responding Witness: David S. Sinclair

Q.1-9. Please provide, in excel spreadsheet format, the electric sales forecast, by month, by rate class, by Company that supports the 2019 Business Plan Electric Forecast (807 KAR 5:001 Sec. 16(7)(c)C).

A.1-9. See the attachment being provided in Excel format.

The attachment is
provided in a separate
file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 10

Responding Witness: David S. Sinclair

Q.1-10. Please provide a complete explanation of the methodology that is used to develop weather normalized sales, by rate class. For the 12 months ending July 2018, provide the analysis, including excel spreadsheets with formulas intact, that was used to weather normalize actual sales by rate class for each Company.

A.1-10. Weather normalized adjustments are calculated using a cubic smoothing spline methodology on hourly weather data. Hourly weather data is particularly important to capture the true impact on sales of sudden changes in temperature due to events like afternoon summer storms where cooling load declines quickly. The cubic smoothing splines capture the non-linear relationship between load and temperature which can cause significant differences compared to a linear model at extreme temperatures. This process is done in the R language for statistical computing and graphics so no spreadsheets with formulas are available. The process used to produce the forecast of normal weather is described in the Electric Sales and Demand Forecast Process (807 KAR 5:001 Sec. 16(7)(c)B).

See attachment being provided in Excel format with weather normalization adjustments by rate for August 2017 – July 2018.

In addition, a number of R files are being provided in response to this request. The Company is providing them on separate electronic storage media subject to a motion to deviate because the files cannot be uploaded to the Commission's website. The Company will supply copies on electronic storage media to the Commission, the Attorney General, and all parties who have already requested copies of all responses filed. The Company will provide the files to any other party to this proceeding upon request.

The attachment is
provided in a separate
file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 11

Responding Witness: David S. Sinclair

- Q.1-11. For each Company, please identify any large customer loads expected in the Future Test Year on rates RTS, TOD-PRI, and TOD-SEC) that the Company is currently aware of but were not included in the test year projected mWh and revenues. For each such customer, provide the customer's name, the rate class on which the customer is expected to take service, the mWh expected by month during the test year the base revenues expected by month during the test year.
- A.1-11. For LG&E, the Companies are not aware of any large customer loads that were not included in the Future Test Year.

For KU, the Companies are aware of one potential increase in a TOD-PRI customer load that was not explicitly included in the Future Test Year. A transmission service request for 27 MW beginning April 1, 2019 has been submitted for this customer. Whether this customer will ultimately take service at this level and at that time is unknown. The Companies are also aware of some potential small changes to other TOD-PRI customers, both positive and negative, but these potential changes would not have a material impact on the forecast. Thus, the TOD-PRI forecast remains a reasonable forecast.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 12

Responding Witness: David S. Sinclair / Elizabeth J. McFarland

- Q.1-12. With respect to the Company's response to the previous question, please indicate whether the Company has provided any incentives and/or discounts (e.g., discounted contracts) associated with such customer. If there were such incentives and/or discounts provided, please provide the specific incentives/discount provisions associated with such customer.
- A.1-12. No incentives or discounts were provided to any of the customers referenced in the previous response.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 13

Responding Witness: William Steven Seelye

Q.1-13. With regard to Att_KU_PSC_1_53_ElecSchedM_Forecasted, Schedule M-2.2 and Att_LGE_PSC_1_53_ElecSchedM_Forecasted, Schedule M-2.2, please provide:

- a. an excel spreadsheet that shows the monthly kWh for each rate class for the forecasted test year corresponding to the kWh shown in column "Total kWh."
- b. to the extent that this sales forecast (Schedule M-2.2) is different for any rate class from the Financial Forecast GWh shown in 807 KAR 5:001 Section 16(7)(h)(5), page 1 of 2, please provide a reconciliation and an explanation for any differences.
- c. to the extent that this sales forecast (Schedule M-2.2) is different for any rate class from the 2019 Business Plan Electric Forecast GWh, please provide a reconciliation and an explanation for any differences.

A.1-13.

- a. See the attachment being provided in Excel format.
- b. There are no differences. However, note that the sales forecast (Schedule M-2.2) is for the forecasted test year (May 2019 – April 2020) while the Financial Forecast GWh in 807 KAR 5:001 Section 16(7)(h)(5), page 1 of 2 is calendar year.
- c. There are no differences.

The attachment is
provided in a separate
file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 14

Responding Witness: David S. Sinclair

Q.1-14. With regard to the LOLP analysis used in the class cost of service study, please provide the following:

- a. an explanation of how tie line capacity to other utilities was treated in the analysis.
- b. an explanation of whether there were any adjustments to hourly loads in the development of the LOLP analysis.
- c. a detailed description of the methodology used to calculate the hourly LOLP results. Provide an illustration of the LOLP methodology using a simplified hypothetical.

A.1-14.

- a. Purchases up to 558 MW per hour were included in the analysis.
- b. There were no adjustments to the hourly loads developed for the 2019 Business Plan.
- c. See the response to AG 1-139.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 15

Responding Witness: William Steven Seelye

Q.1-15. Please provide any information available to Mr. Seelye, the Prime Group or LG&E/KU regarding the following:

- a. Any regulatory jurisdiction that has adopted the LOLP cost of service method used by Mr. Seelye in this case.
- b. For each such jurisdiction, please provide a copy of a Commission Order addressing this issue.
- c. Identification of any electric utility that supported the LOLP method in testimony before a state regulatory commission. Please identify the name of the utility, the case number and a copy of the testimony.
- d. Identification of any electric utility in KY that has presented testimony before the KPSC in support of the LOLP cost of service method. For each such utility, please provide the name of the utility, the case number and a copy of the testimony.

A.1-15.

- a. Mr. Seelye is unaware of any regulatory jurisdiction that has adopted the LOLP cost of service method used in this case.
- b. See the response to part a.
- c. KU and LG&E supported the LOLP methodology in Case No. 2016-00370 and Case No. 2016-00371, respectively.
- d. See the response to part c.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 16

Responding Witness: William Steven Seelye

- Q.1-16. Please provide any testimony, papers or presentations prepared by Mr. Seelye or any other employee of the Prime Group in the past ten years which addresses the LOLP cost of service methodology. This would include all testimony, papers or presentations supporting the LOLP method and testimony opposing the LOLP method.
- A.1-16. Mr. Seelye submitted testimony supporting the LOLP methodology in KU's and LG&E's last rate case proceedings (Case No. 2016-00370 and Case No. 2016-00371, respectively).

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 17

Responding Witness: David S. Sinclair

Q.1-17. With regard to Mr. Sinclair's testimony on page 6, please provide the following in excel format, with formulas.

- a. Copies of the 30-year demand and energy forecast prepared in the years 2015 through 2018 (it is our understanding that the "2019 Load Forecast" was prepared in 2018). Include rate class detail, as described in Mr. Sinclair's testimony on page 6, lines 12 through 18.
- b. With regard to Mr. Sinclair's testimony at page 13, line 11 to page 14, line 4, provide an analysis of the actual base period kWh energy sales for the first six months of 2018 on a weather normalized basis for each rate class.
- c. With reference to 807 KAR 5:001 Sec. 16(7)(c)B Page 4 of 38 ("The final part of the forecast process includes validating and documenting the forecast results. To ensure results are reasonable,", please provide any analyses, including internal only reports, that have been prepared by, or are available to the Company that perform an assessment of the Company's load and energy forecasts. Include any such documents that have been developed in the past 5 years.
- d. With reference to 807 KAR 5:001 Sec. 16(7)(c)B Page 4 of 38 "Software Tools," please explain the "@Risk" model and provide a copy of the analysis used to assess the sales forecast used to develop the projected test year sales, by rate class, in this case.

A.1-17.

- a. See attachment being provided in Excel format.
- b. See attachment being provided in Excel format.
- c. See attached. Certain information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

See Filing Requirement 807 KAR 5:001 Sec. 16(7)(c) – Item C “2019 Business Plan Electric Sales Forecast.” The confidential version of this document was filed as part of the Company’s application in this proceeding and can be provided upon request to any party that enters into a confidentiality agreement with the Company.

- d. The @Risk model is a top-down econometric model that uses weather and economic factors to predict Company-level energy requirements. The model is unable to account for rate-specific factors but provides a good assessment of the reasonableness of the bottom-up rate-level forecasts. The primary function of the @Risk technology is to provide a quantitative assessment of economic and weather-related risk to the aggregate load forecast using Monte Carlo simulation.

See attachment being provided in Excel format. Certain information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

The attachment is
provided in a separate
file in Excel format.

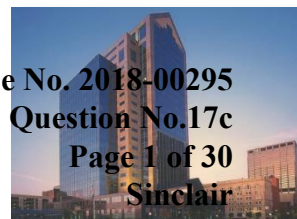
The attachment is
provided in a separate
file in Excel format.



PPL companies

2015 Business Plan Electric Sales Forecast

July 24, 2014



Major assumptions and changes vs. 2014 Plan

- Unfavorable inputs
 - *Further decline in eastern Kentucky mining*
 - *Departure of 10 KU municipal customers by 2019*
 - *Lower household growth rate for KU*
 - *More rapid adoption of high efficiency lighting*
- Favorable inputs
 - *Personal income and wholesale employment slightly higher*
 - *Major account forecasts higher*
- Overriding theme
 - *Economic growth still slow*

Municipal terminations result in ~320 MW load reduction in May 2019

- 2015 Plan assumes that [REDACTED] and [REDACTED] remain KU customers
- Significant load impact occurs in May 2019 with departure of eight larger municipal customers; two prior departures have less impact

— [REDACTED]

— [REDACTED]

Balance of year 2014 forecast 240 GWh below 2014 Plan

2014 Combined Company Plan to Plan					
Period	2013 WN		2015 Plan	Variance	
	Actuals	2014 Plan		2014-2015 Plan	Pct Var
	(GWh)	(GWh)	(GWh)	(GWh)	
Jan - May (WN Actuals)	13,360	13,302	13,327	25	0.2%
June*	2,742	2,984	2,919	(65)	-2.2%
July	3,105	3,303	3,245	(58)	-1.8%
August	3,150	3,331	3,293	(38)	-1.1%
September	2,668	2,764	2,704	(59)	-2.1%
October	2,516	2,525	2,492	(33)	-1.3%
November	2,561	2,551	2,522	(29)	-1.1%
December	2,892	2,922	2,900	(22)	-0.7%
Total	32,994	33,681	33,401	(280)	-0.8%

* June 2014 is actual value non-WN in 2015 Plan

2015 Plan with and without municipal customers

- Energy forecast with municipal customers (all years)

	Total Company Sales (GWh)				KU/ODP Sales (GWh)				LG&E Sales (GWh)			
	2015 Plan*	2014 Plan	Delta	% Change	2015 Plan	2014 Plan	Delta	% Change	2015 Plan	2014 Plan	Delta	% Change
2014	33,442	33,681	(239)	-0.7%	21,585	21,774	(189)	-0.9%	11,857	11,908	(50)	-0.4%
2015	33,394	33,845	(451)	-1.3%	21,416	21,860	(445)	-2.0%	11,978	11,985	(6)	-0.1%
2016	33,634	34,092	(459)	-1.3%	21,544	22,016	(472)	-2.1%	12,090	12,077	13	0.1%
2017	33,918	34,307	(390)	-1.1%	21,706	22,159	(452)	-2.0%	12,211	12,148	63	0.5%
2018	34,254	34,593	(340)	-1.0%	21,924	22,340	(416)	-1.9%	12,330	12,253	77	0.6%
2019	34,559	34,888	(329)	-0.9%	22,123	22,537	(413)	-1.8%	12,436	12,351	85	0.7%

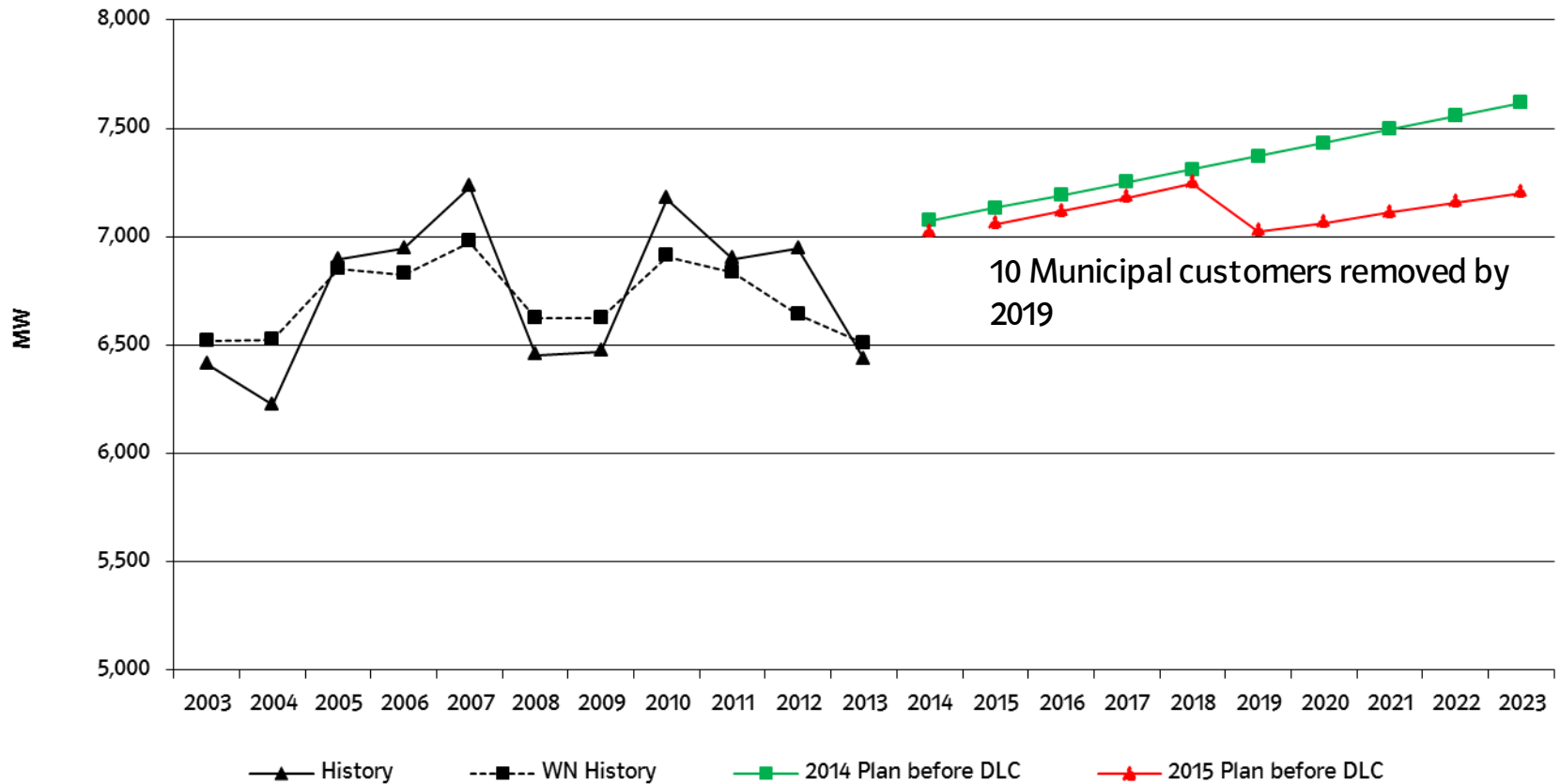
- 2015 BP: Municipals exit per schedule in 2016-2019

	Total Company Sales (GWh)				KU/ODP Sales (GWh)				LG&E Sales (GWh)			
	2015 Plan*	2014 Plan	Delta	% Change	2015 Plan	2014 Plan	Delta	% Change	2015 Plan	2014 Plan	Delta	% Change
2014	33,442	33,681	(239)	-0.7%	21,585	21,774	(189)	-0.9%	11,857	11,908	(50)	-0.4%
2015	33,394	33,845	(451)	-1.3%	21,416	21,860	(445)	-2.0%	11,978	11,985	(6)	-0.1%
2016	33,632	34,092	(461)	-1.4%	21,542	22,016	(474)	-2.2%	12,090	12,077	13	0.1%
2017	33,868	34,307	(439)	-1.3%	21,656	22,159	(502)	-2.3%	12,211	12,148	63	0.5%
2018	34,181	34,593	(412)	-1.2%	21,852	22,340	(489)	-2.2%	12,330	12,253	77	0.6%
2019	33,514	34,888	(1,374)	-3.9%	21,078	22,537	(1,459)	-6.5%	12,436	12,351	85	0.7%

* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

Uncurtailed peak forecast decreases 55-77 MW consistent with lower energy forecast

Combined Company Summer Peak Demand - 10 Year View

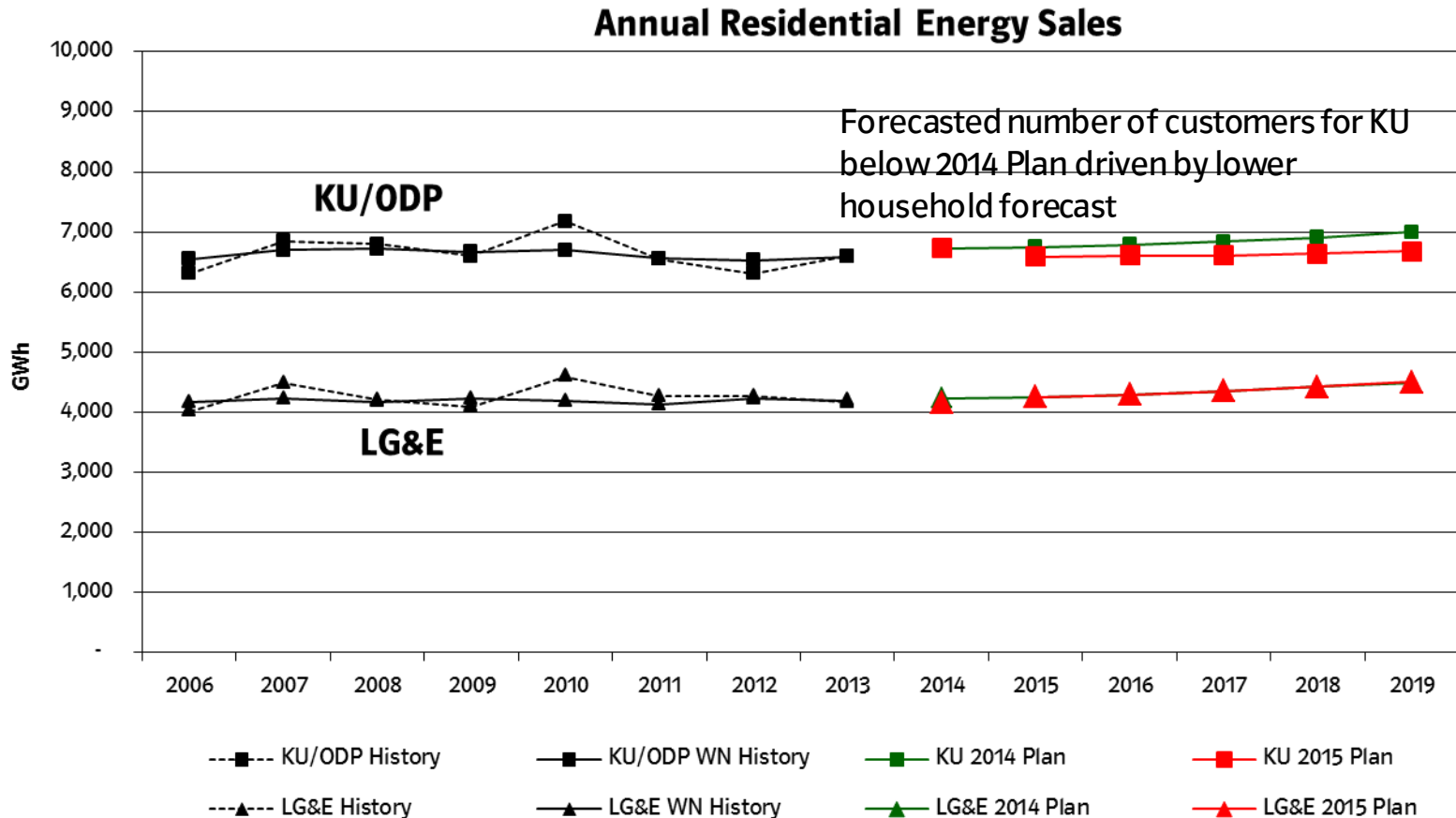


10 Municipal customers removed by 2019

* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

** In 2015 Plan forecast, peak forecast is adjusted ~20 MW higher to cover [redacted] obligation.

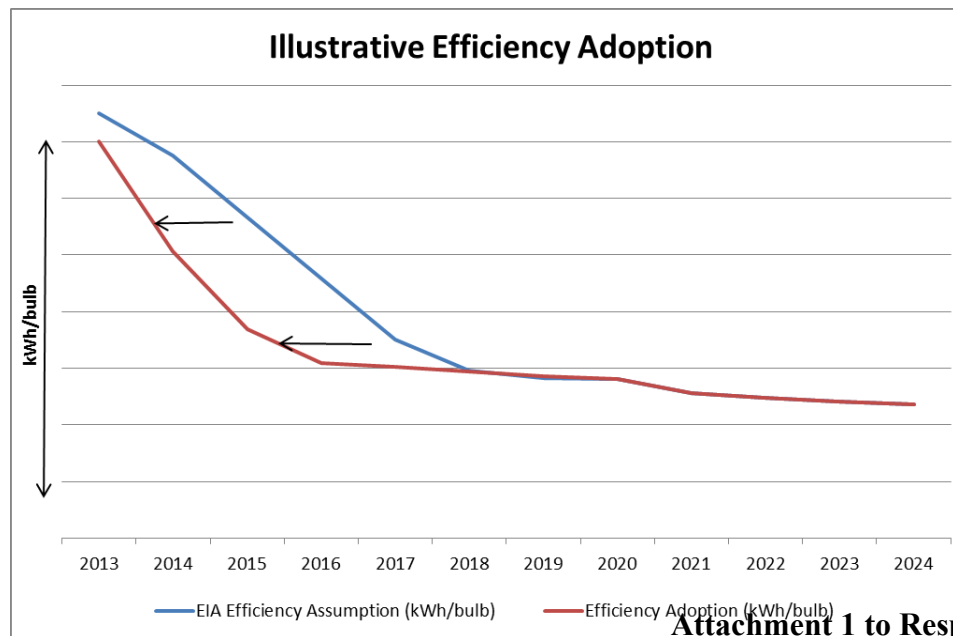
Residential sales forecast is slightly lower for KU



* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

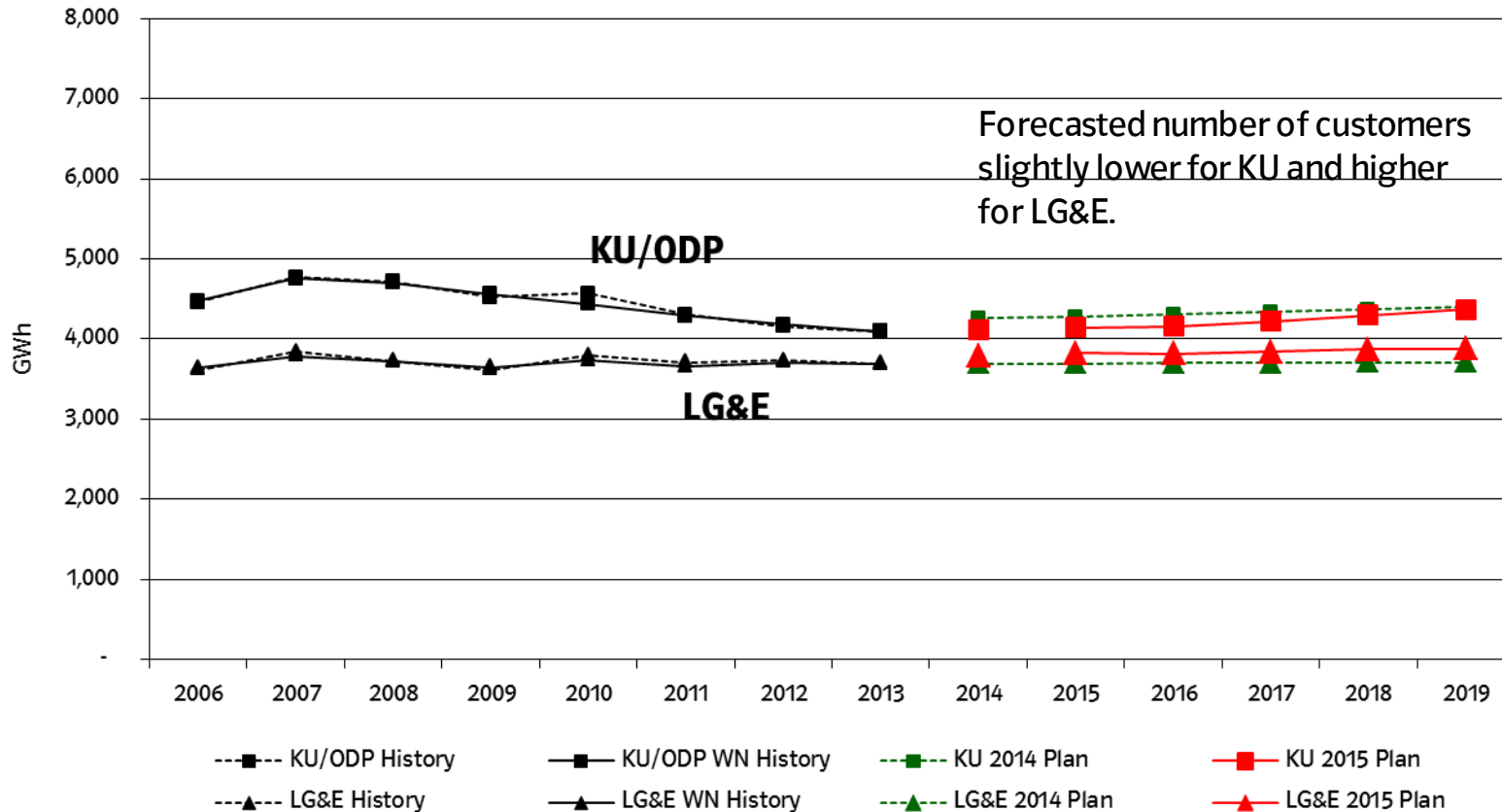
Residential lighting - faster adoption of LED lighting reduces residential energy consumption

- 35% of LG&E residential customers surveyed have at least one LED bulb in service
- Plan assumes 55% of LG&E customers add 5 additional LED bulbs each year, resulting in an average annual energy reduction of 118 GWh.



Combined Company commercial sales largely consistent with prior plan

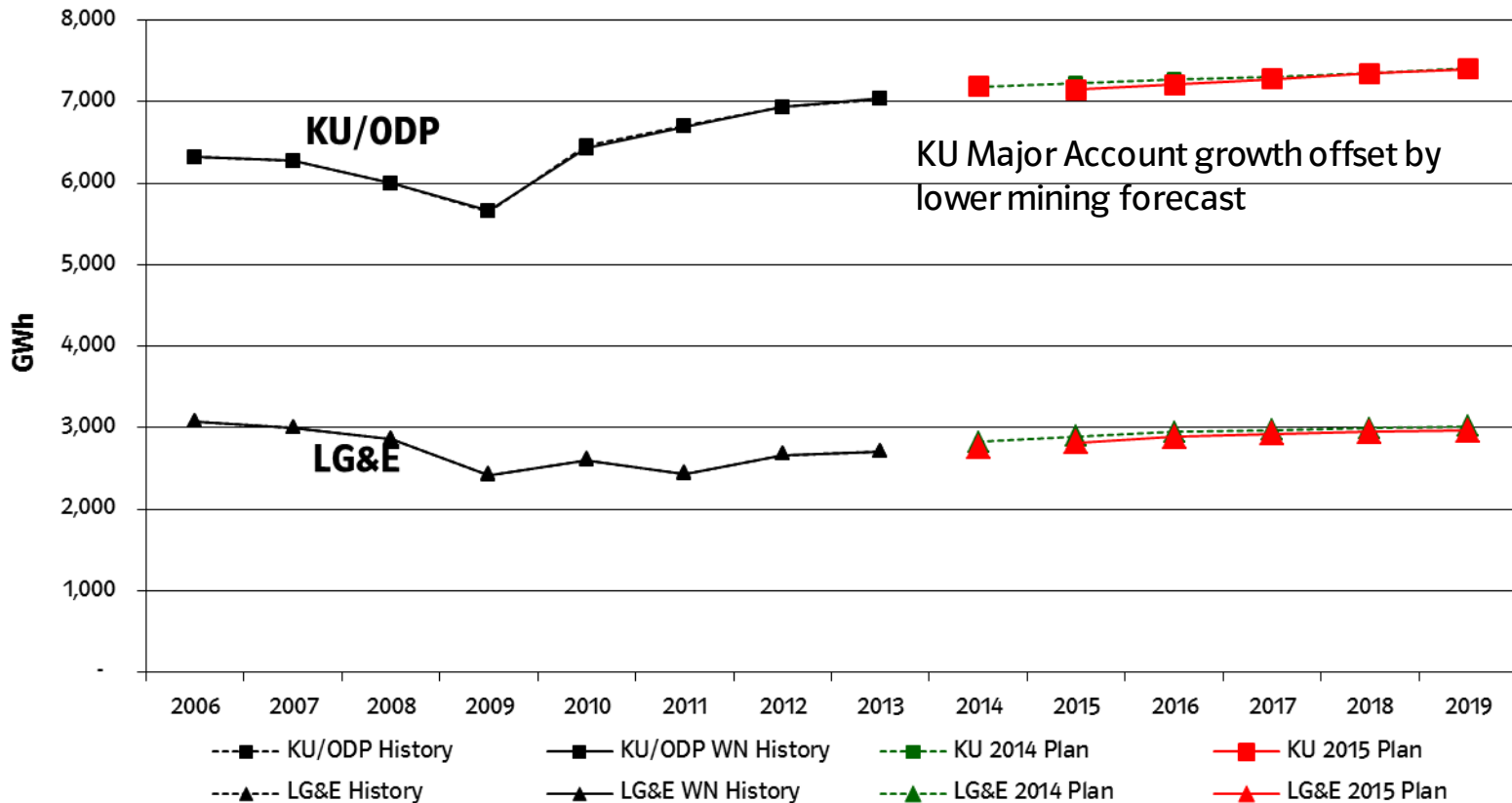
Annual Commercial Energy Sales



* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

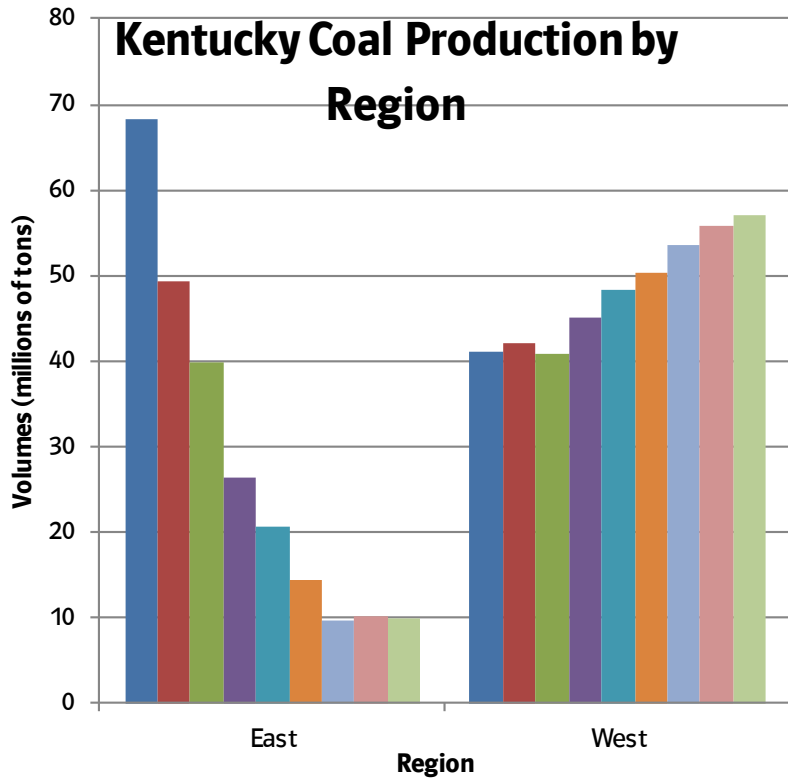
Slow growth expected in industrial class consistent with prior Plan

Annual Industrial Energy Sales



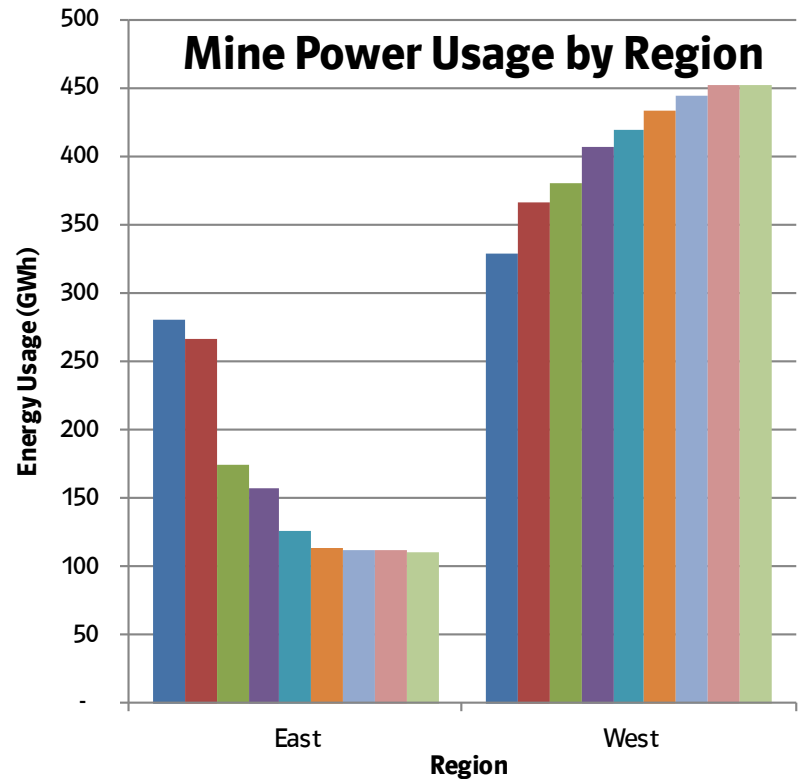
* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

Eastern KY coal production expected to fall by 85% from 2011 to 2019



■ 2011 ■ 2012 ■ 2013 ■ 2014 ■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019

Source: 2014 Spring Wood Mackenzie LTFP Forecast (updated May '14)

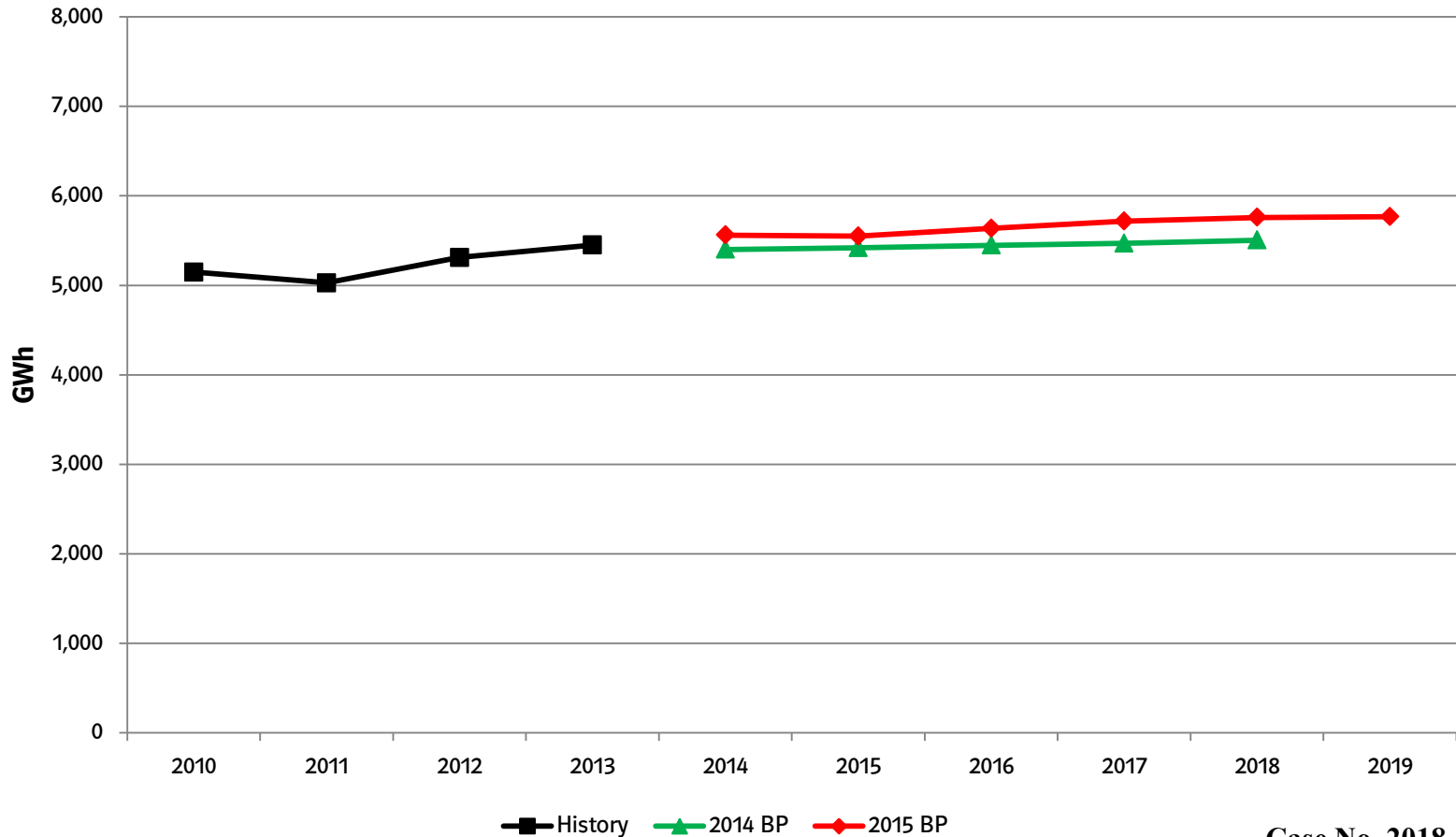


■ 2011 ■ 2012 ■ 2013 ■ 2014 ■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019

2011 – 2013 data is Billed actual. 2014 are billed actuals for Jan-May + June-Dec from 2015 BP.

2015 Plan Major Account sales increase slightly from prior Plan

Major Accounts History and Forecast

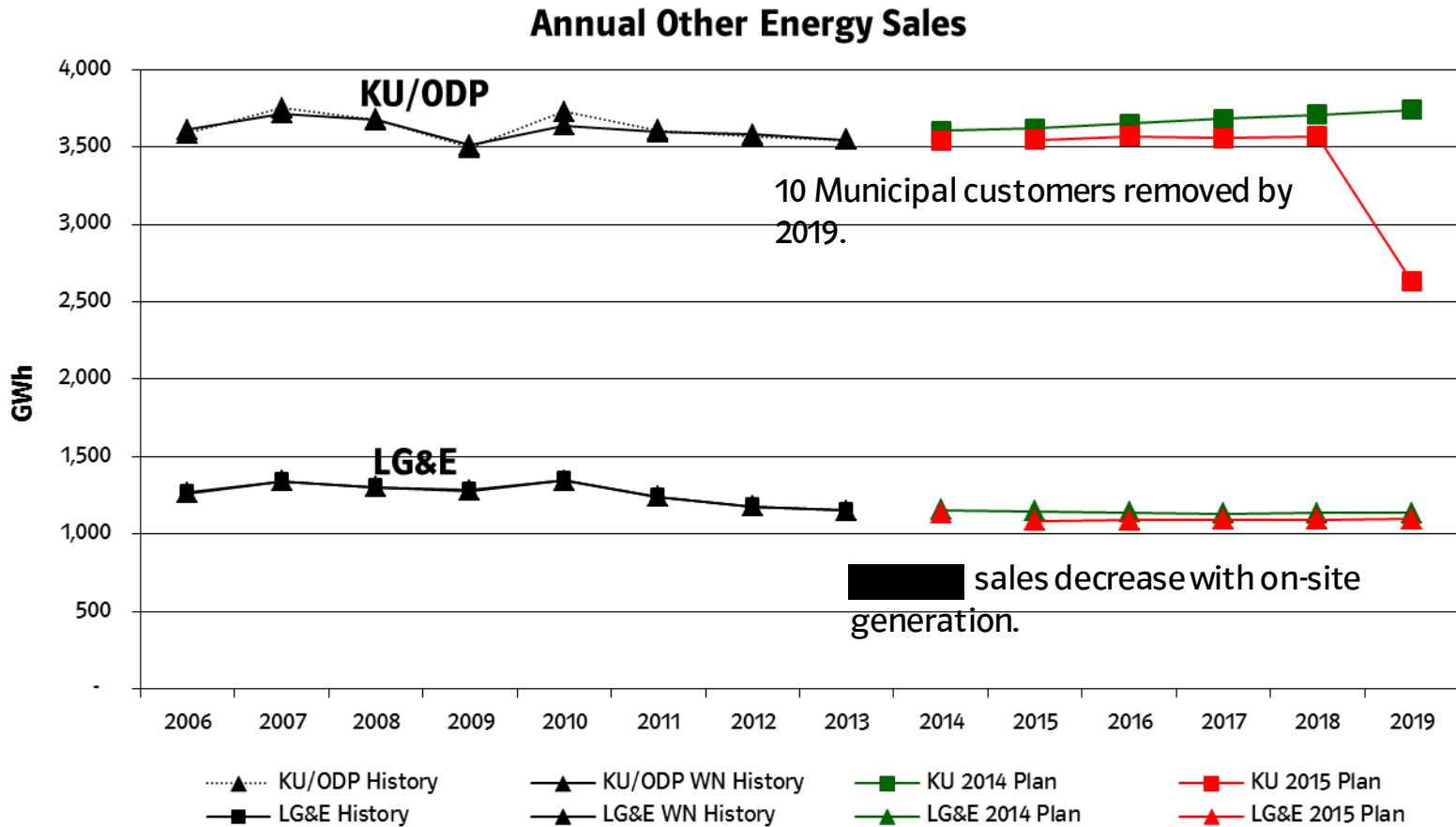


Changes in 26 Major Account sales for 2015: 132 GWh higher than 2014 BP

- Significant changes for 2015

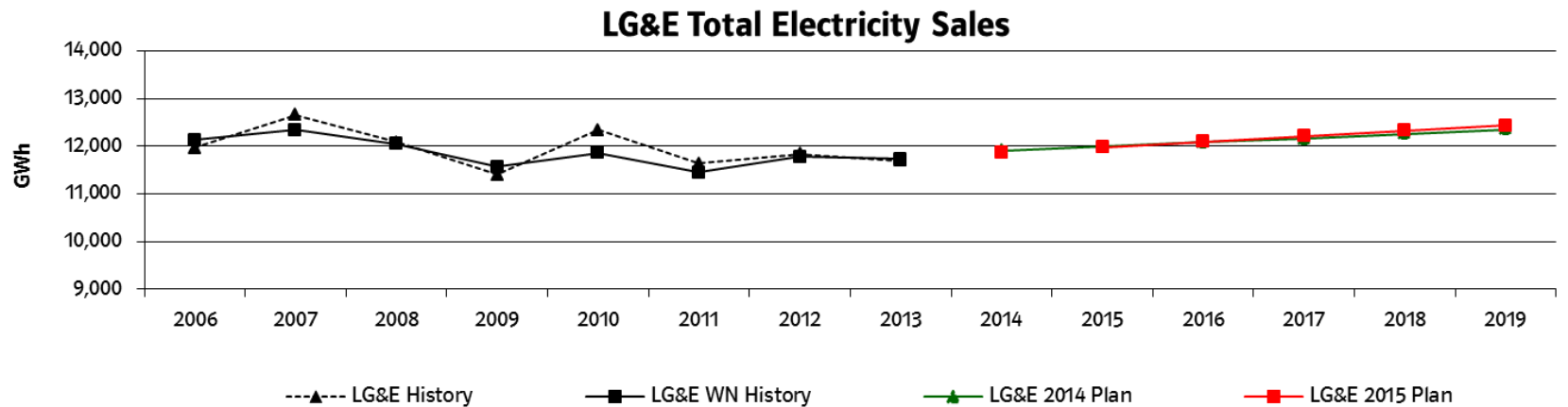
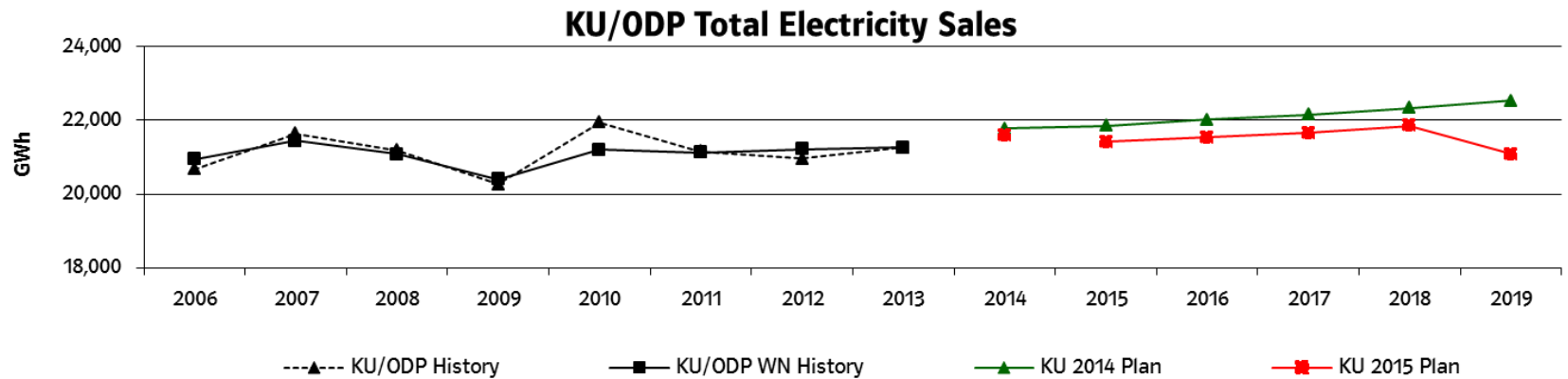
Customer	Energy Change	Driver
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Public Authority sales impacted by lower [REDACTED] forecast in LG&E and lower Muni forecast in KU



* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast. Attachment 1 to Response to KIFUC-1 Question No. 17c

KU energy sales reflect lower commercial and residential usage



* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

2015 Plan energy forecast growth rate below EIA regional forecasts

- 2015 Plan growth rates are less than EIA regional projections
 - *East South Central (ESC): Kentucky, Tennessee, Alabama, Mississippi*
 - *East North Central (ENC): Indiana, Illinois, Ohio, Michigan, Wisconsin*

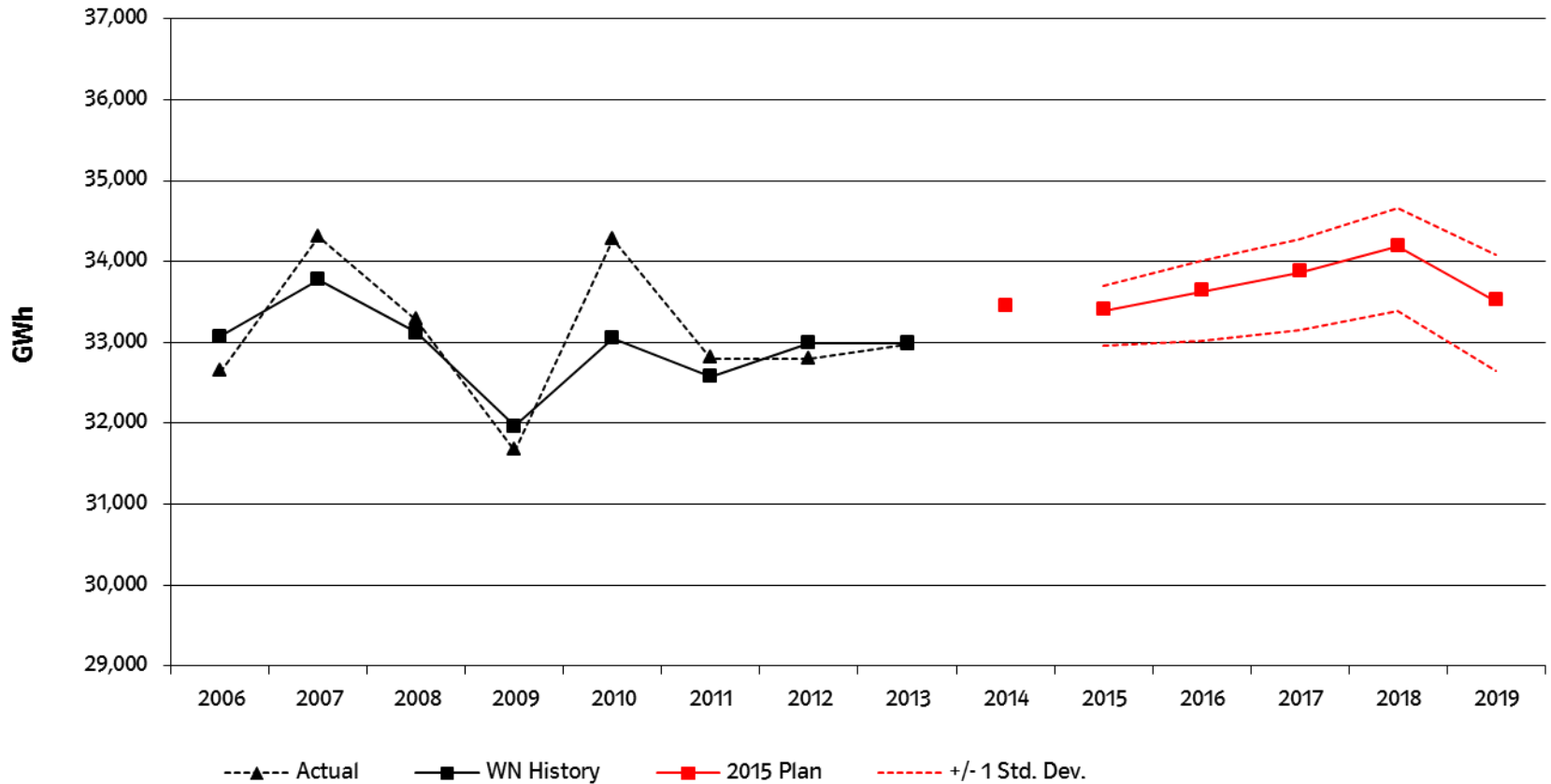
	CAGR	
	2014-2019	2014-2040
2015 BP (excl Munis)	0.6%	0.5%
2014 AEO ESC region	1.9%	1.0%
2014 AEO ENC region	1.1%	0.6%

Plan risks: weather continues to be a significant near term risk

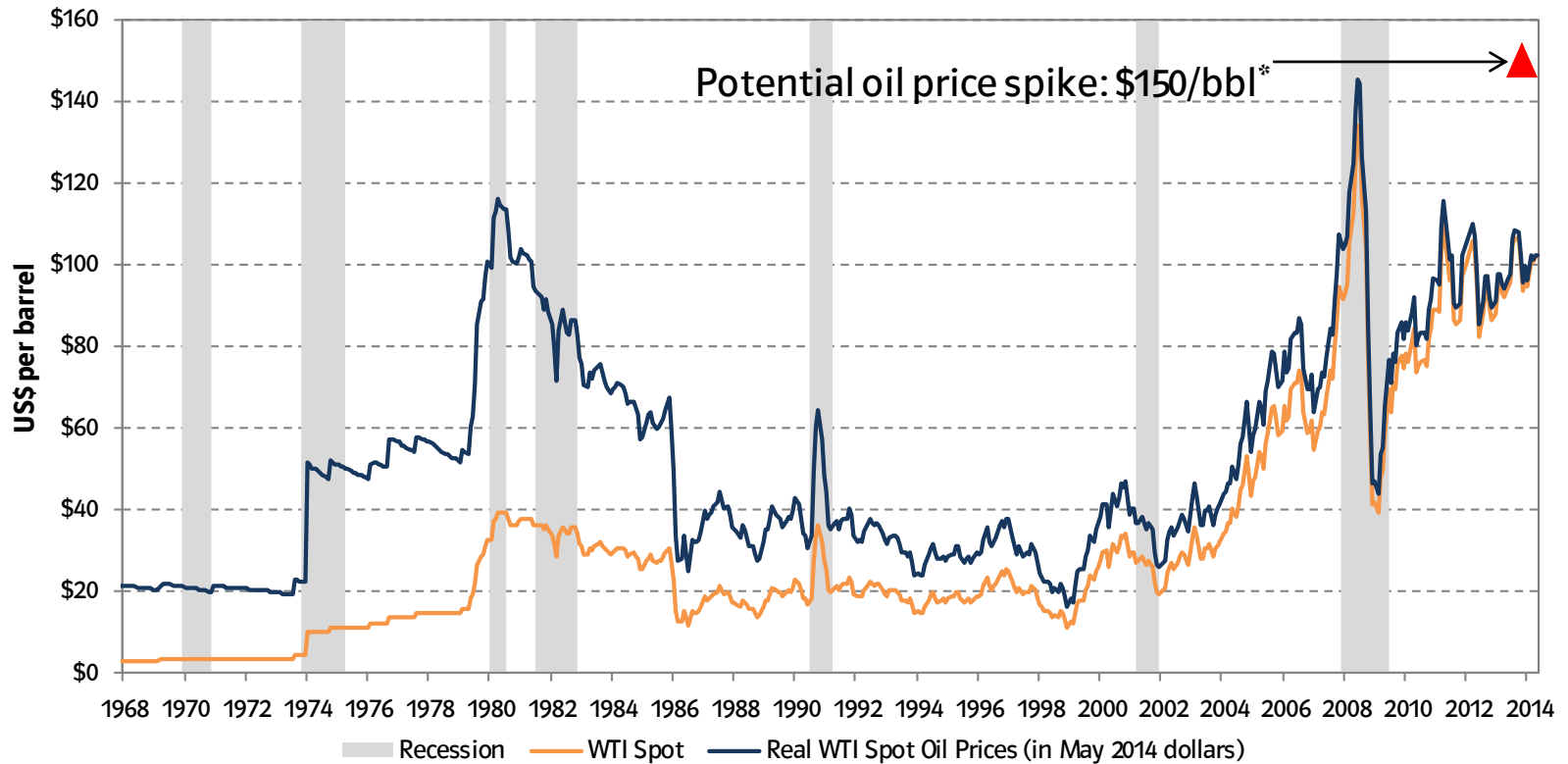
- Near term (2015)
 - *Weather - winter/summer extremes (+/- 400 GWh)*
 - *Economic downturn related to potential oil price spike (-500 GWh)*
- Medium term (2015-2019)
 - *Continued slower than forecasted economic growth (200 GWh /year; 1,000 GWh by 2019)*
 - *More rapid adoption of efficiency measures (40 GWh/year; 200 GWh by 2019)*

Sales risk based on IHS GSP risk scenario

Combined Company Total Electricity Sales



Historical risk of recession with spike in oil prices



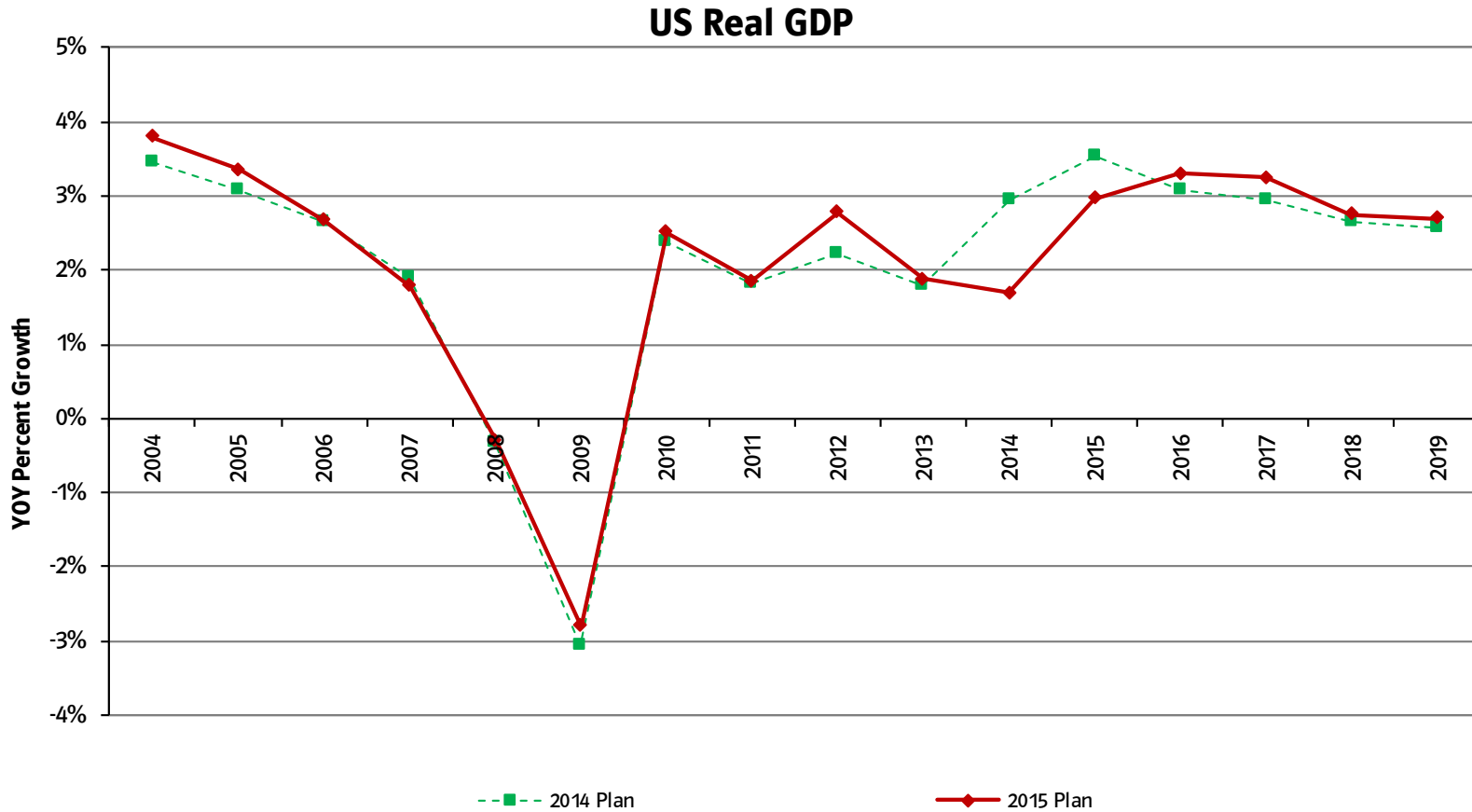
*Source: International Monetary Fund "World Economic Outlook", October 2013

Major Account recession risk of 500 GWh based on 2008-09 downturn

Customer	2010 History (GWh)	2015 2015 BP (GWh)	Delta (GWh)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total	2,682	3,215	533

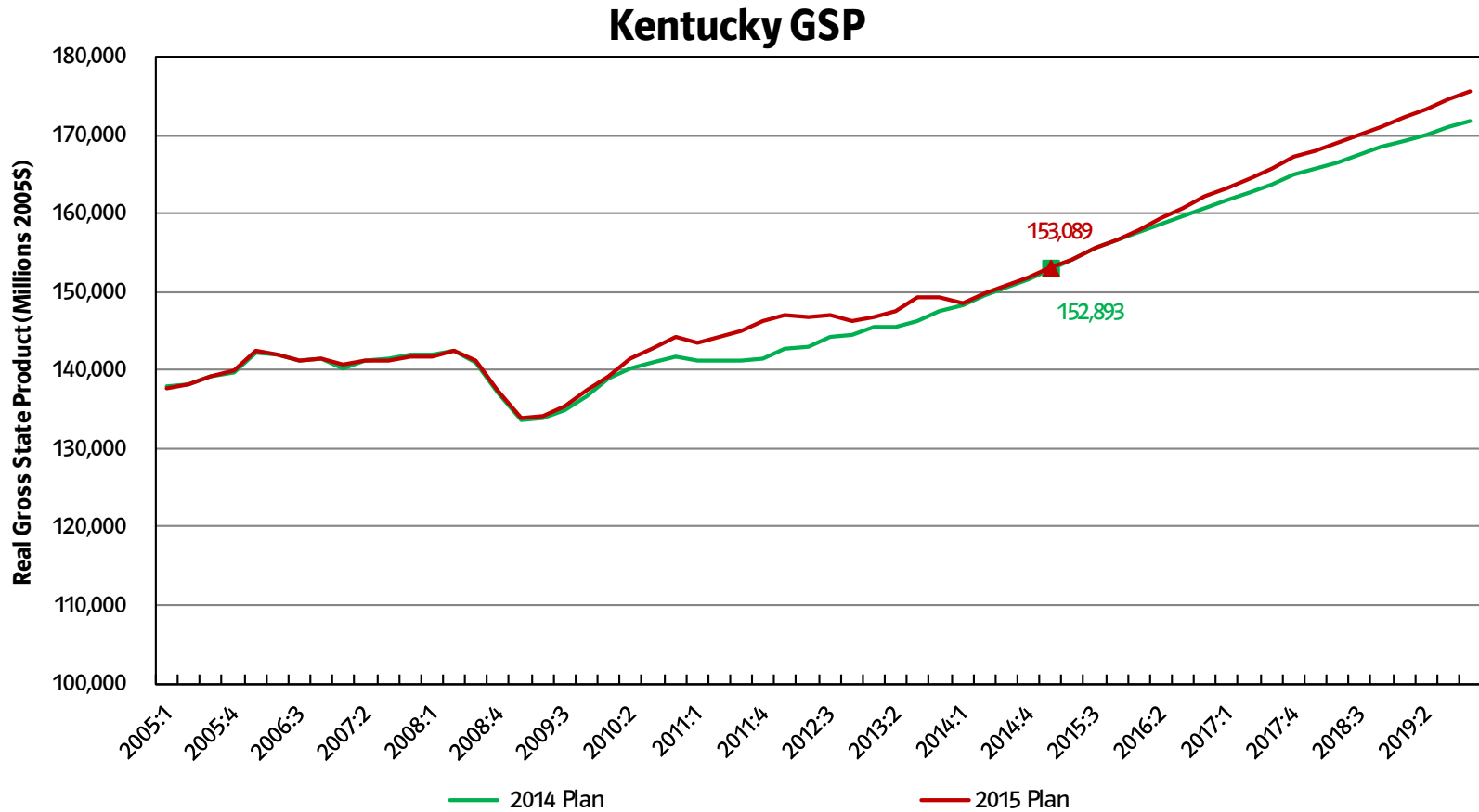
Appendix A – Macroeconomic Inputs

Slower near-term US GDP Growth Expected



Source: IHS Global Insight

Near-term Kentucky GSP forecast unchanged



Source: IHS Global Insight

Appendix B - Customer Data

Customers by Rate

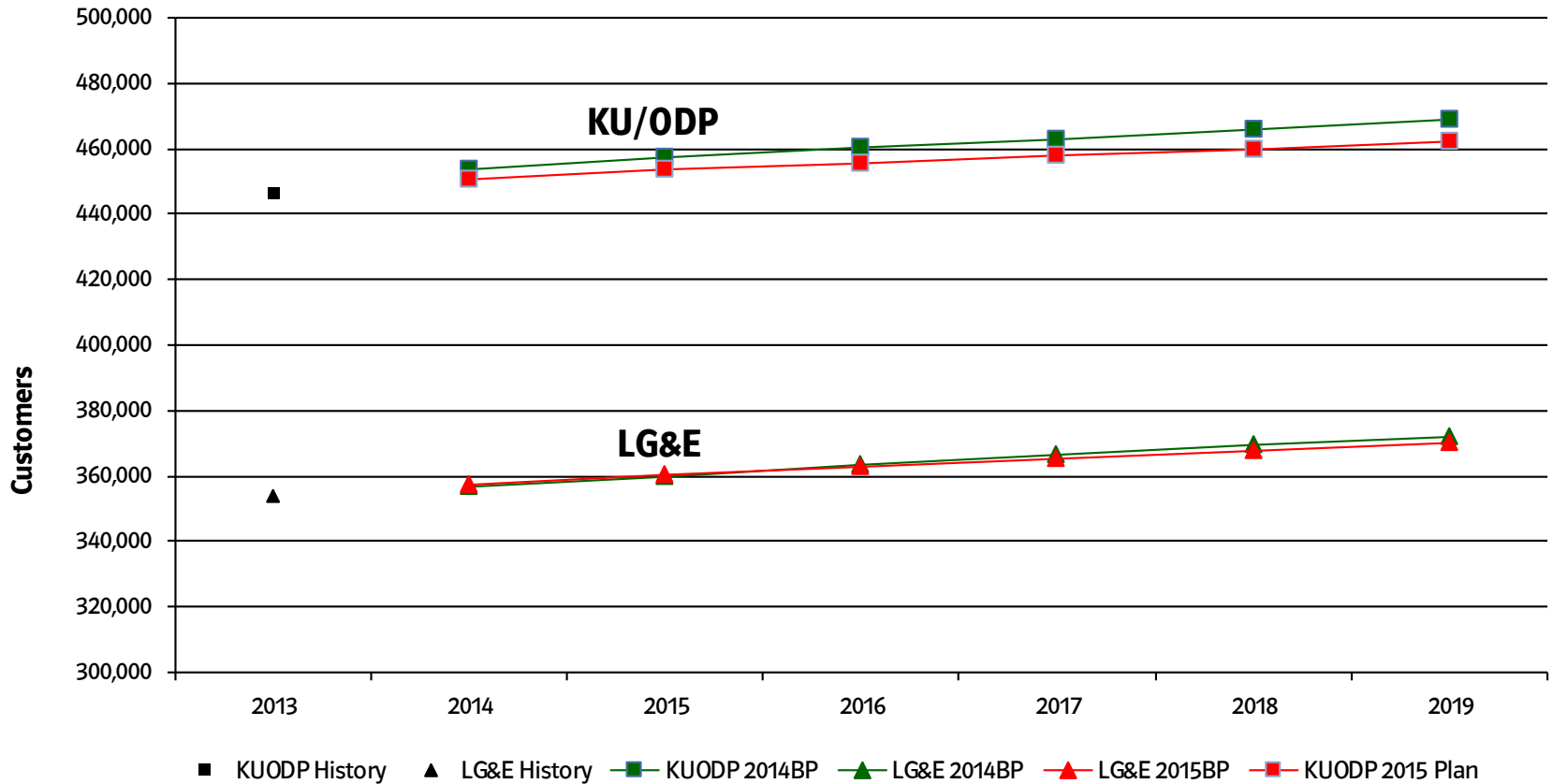
	Rate Category	Current Contract Count*	Forecast for 2015
KU/ODP	AES	779	774
	GS	86,210	86,376
	LTOD-Pri	54	52
	PS-Pri	270	238
	PS-Sec	5,459	5,304
	RS	448,376	453,478
	RTS	42	43
	TOD-Pri	159	184
	TOD-Sec	422	416
	FLS	1	1
	Muni Pumping	13	13
	Municipals	12	12
			<u>541,797</u>

	Rate Category	Current Contract Count*	Forecast for 2015
LG&E	CPS-Pri	57	53
	CPS-Sec	2,592	2,580
	CTOD-Pri	35	37
	CTOD-Sec	202	214
	GS	44,362	44,497
	IPS-Pri	22	21
	IPS-Sec	251	221
	ITOD-Pri	66	68
	ITOD-Sec	74	90
	RS	356,308	360,289
	RTS	12	12
		<u>403,979</u>	<u>408,080</u>

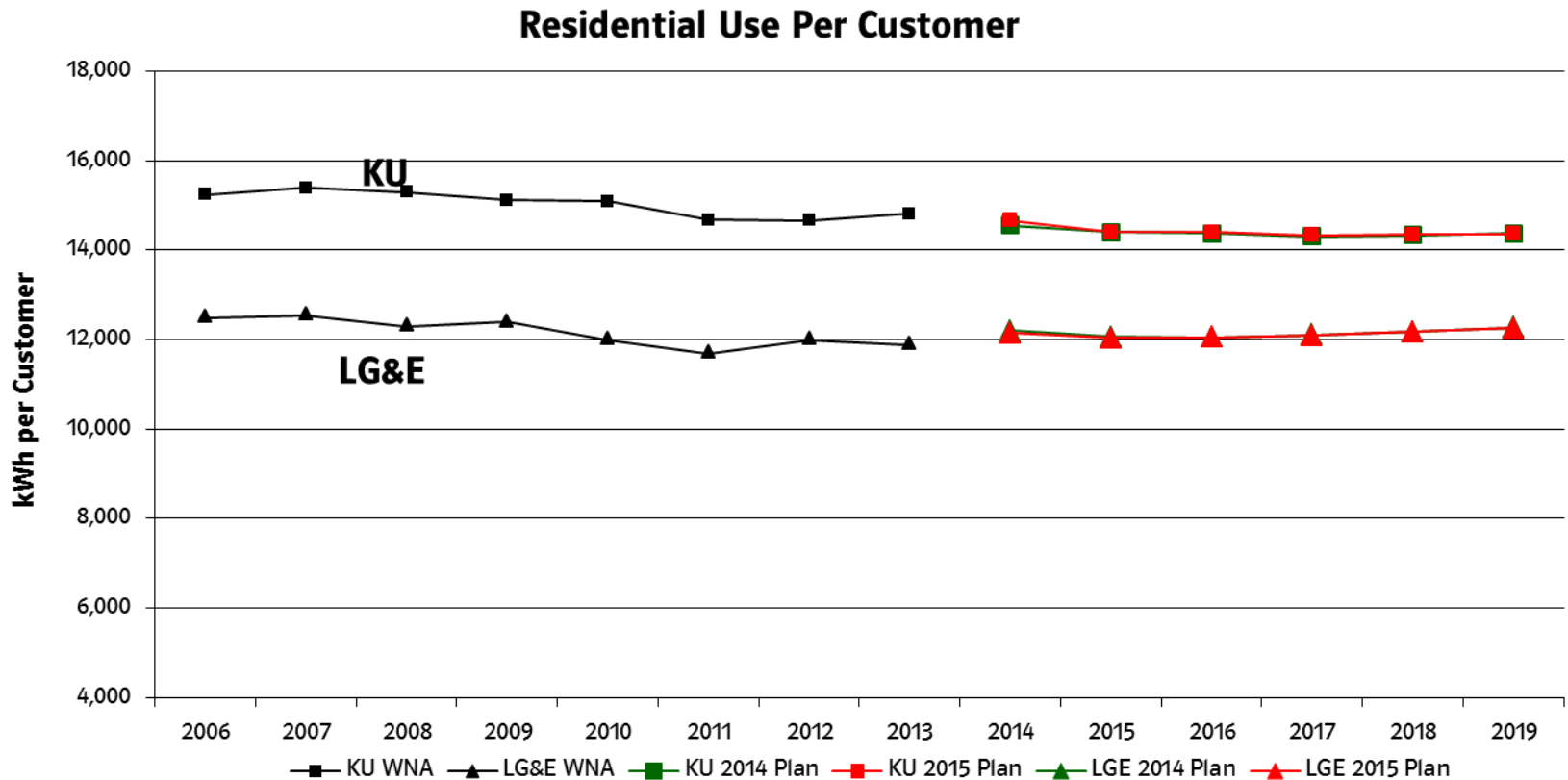
* Average of Jan-May 2014

KU Residential customer growth slightly below 2014 Plan

Residential Customer Forecast Comparison



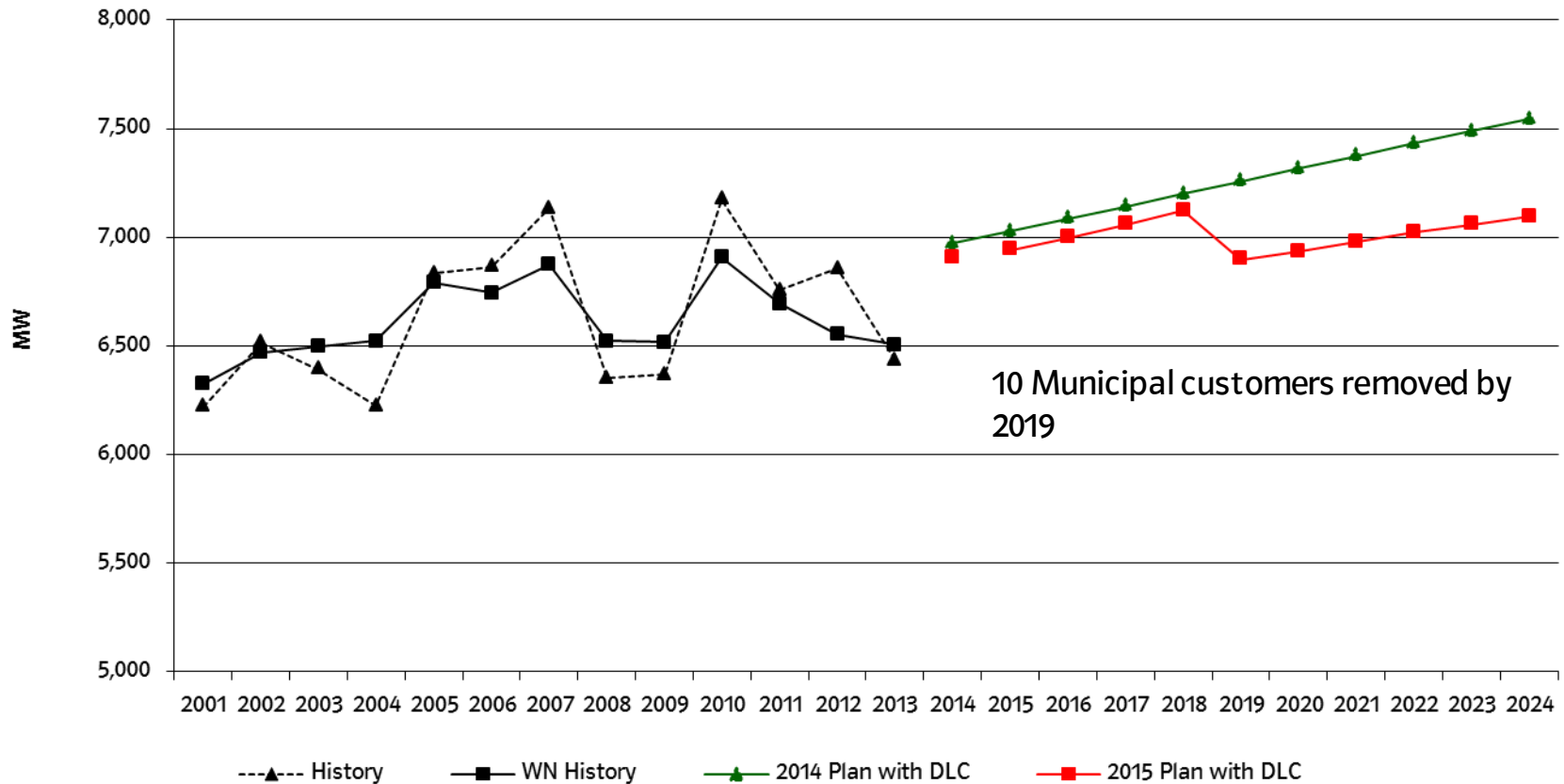
Use per customer for both KU and LG&E largely consistent with 2014 Plan



* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

Uncurtailed peak forecast after DLC slightly lower consistent with lower energy forecast and higher DLC customer forecast

Combined Company Summer Peak Demand - 10 Year View

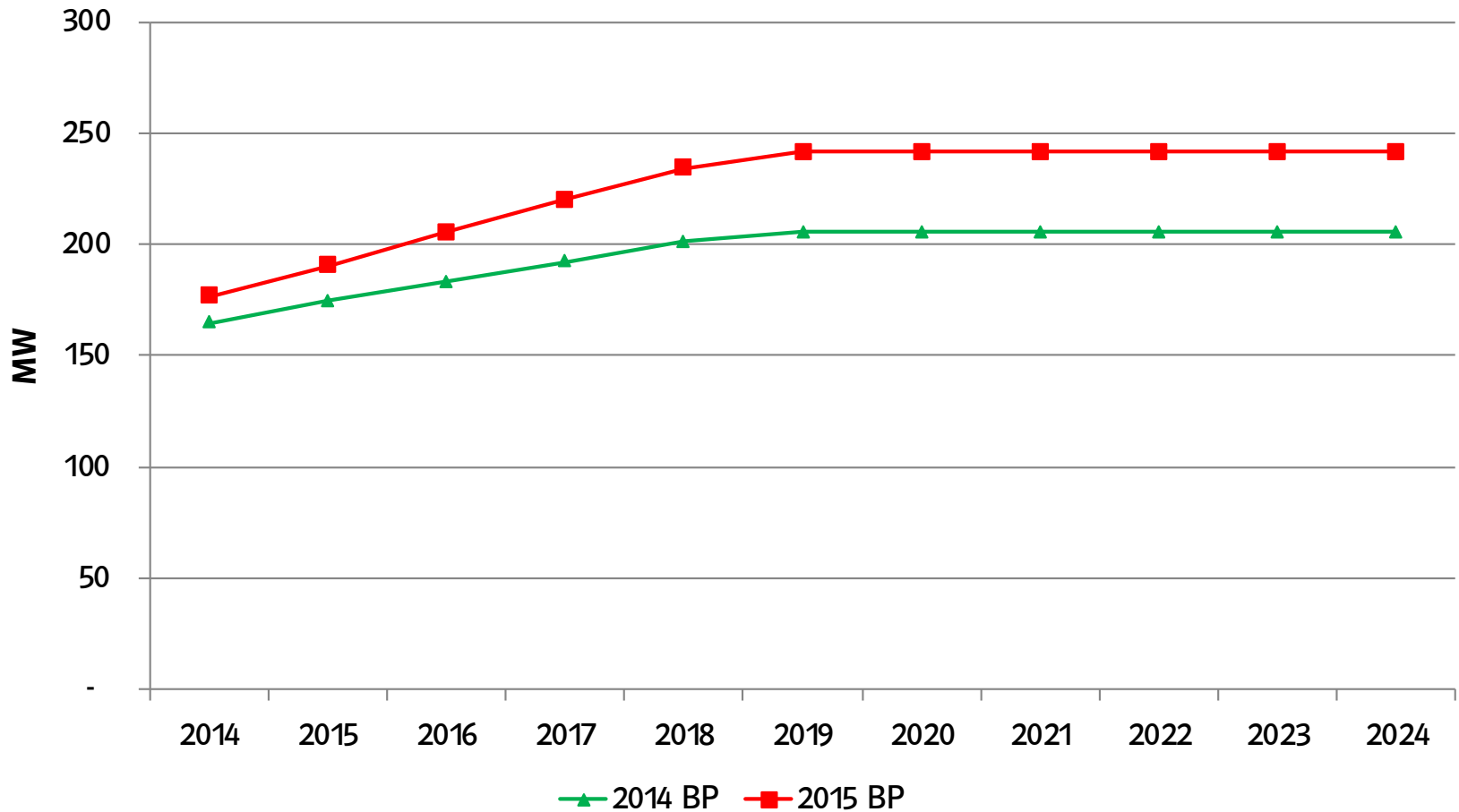


10 Municipal customers removed by 2019

* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

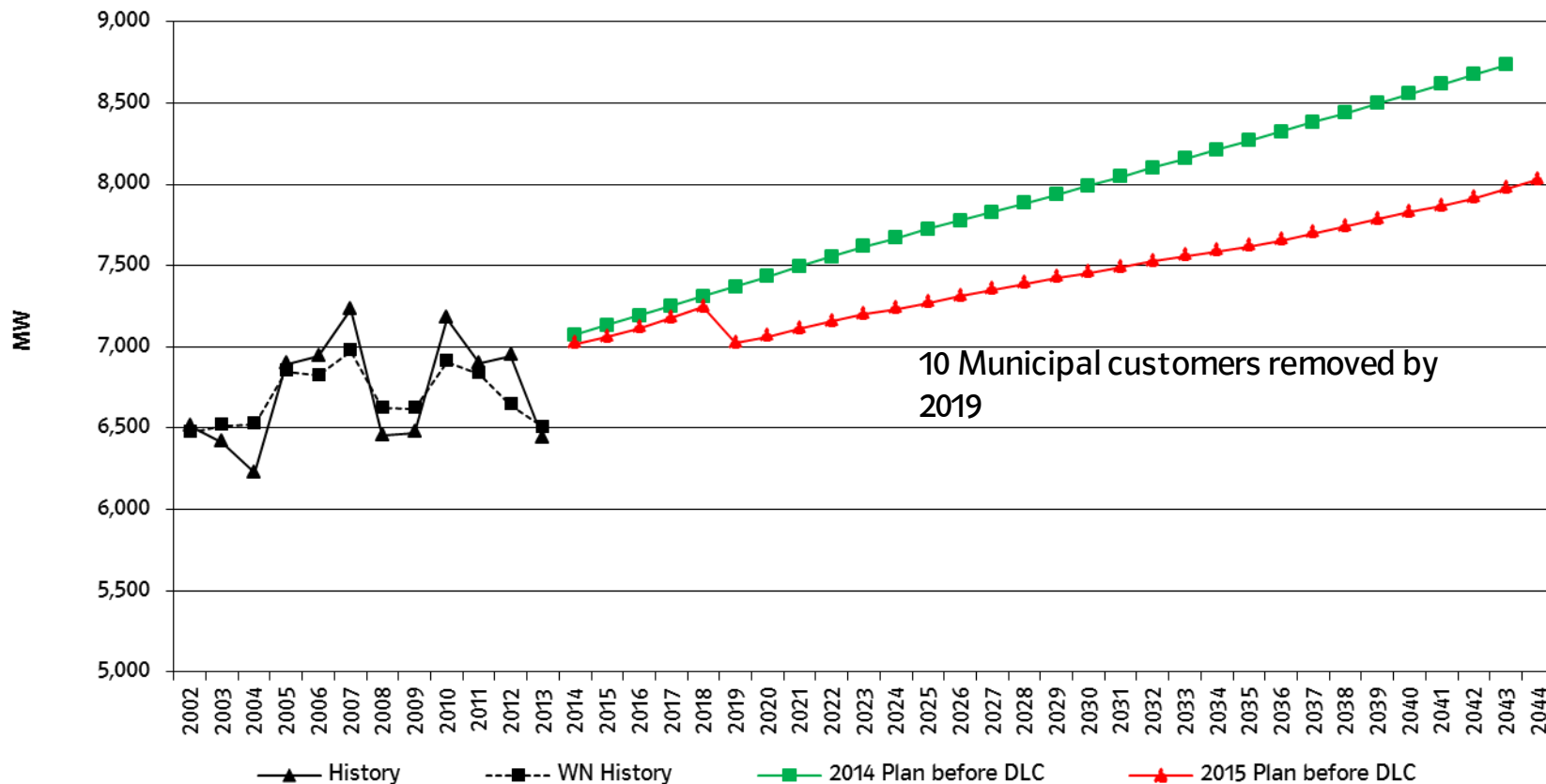
** In 2015 Plan forecast, peak forecast is adjusted ~20 MW higher to cover [redacted] obligation.

Additional DLC of 36 MW by 2019 due to higher customer participation forecast



Uncurtailed peak forecast slightly lower consistent with lower energy forecast and reduction in municipal load

Combined Company Summer Peak Demand - 30 Year View



* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

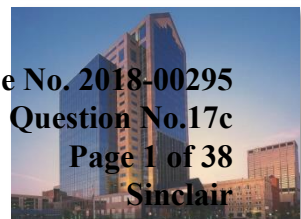
** In 2015 Plan forecast, peak forecast is adjusted ~20 MW higher to cover [redacted] obligation.



PPL companies

2016 Business Plan Electric Sales Forecast

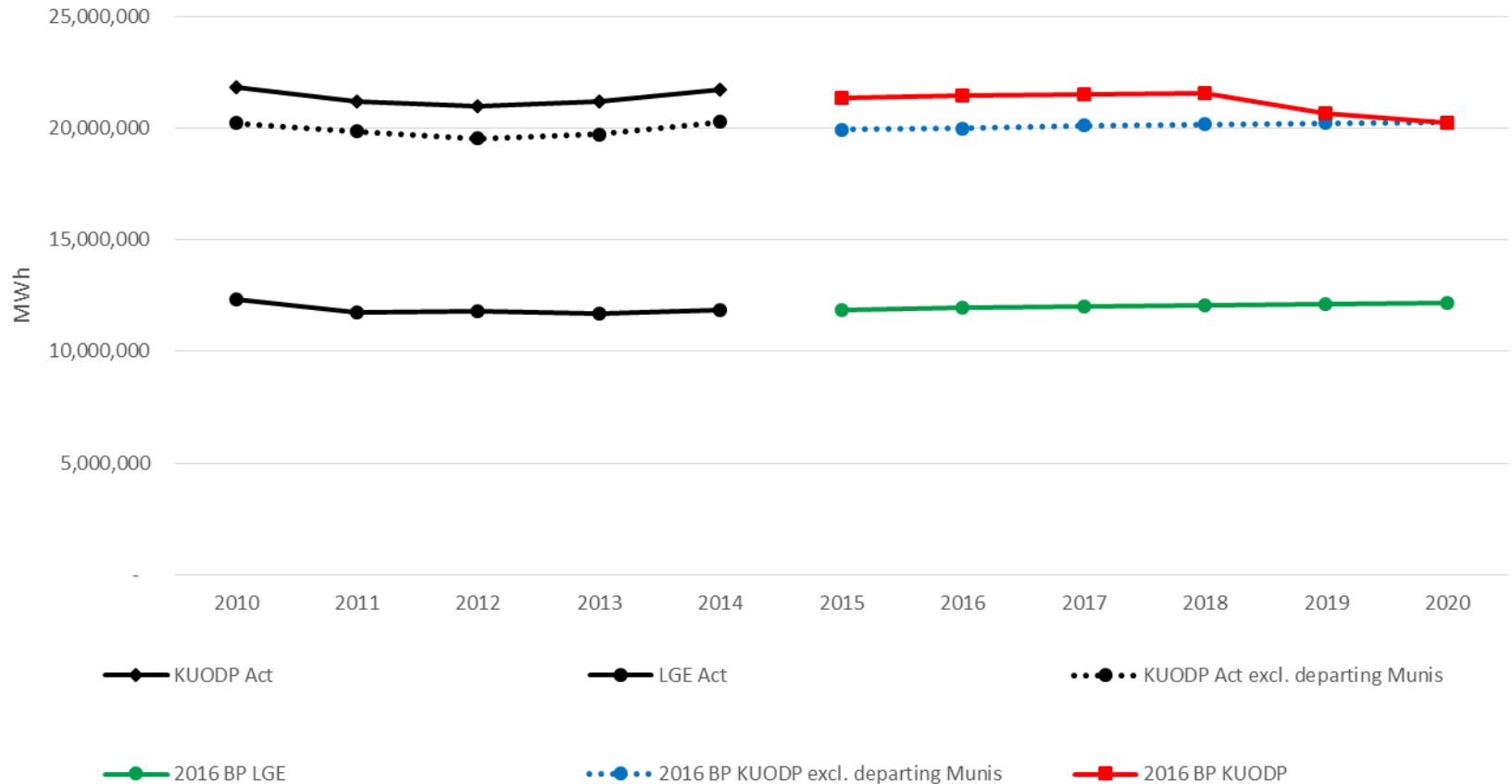
July 10, 2015



Major assumptions and changes vs. 2015 Plan

- Unfavorable inputs
 - *Lower population growth rate*
 - *EIA forecasts more rapid adoption of high efficiency appliances*
- Favorable inputs
 - *Major account forecasts slightly higher*
- Overriding theme
 - *Continuing slow economic growth*

Slow growth - the future looks like the recent past



Balance of year 2015 forecast 141 GWh below 2015 Plan

Period	2015 Combined Company Plan to Plan					Variance	
	2014 WN	2015 Plan	2016	Variance	Pct Var	2014 WN -	Pct Var
	Actuals		Plan/2015	2015-2016		2016 Plan	
	(GWh)	(GWh)	(GWh)	(GWh)	(GWh)	(GWh)	
January	3,152	3,033	3,077	44	1.5%	(75)	-2.4%
February	2,638	2,717	2,694	(23)	-0.9%	55	2.1%
March	2,655	2,644	2,634	(9)	-0.4%	(21)	-0.8%
April	2,380	2,366	2,318	(48)	-2.0%	(63)	-2.6%
May	2,500	2,617	2,524	(93)	-3.5%	24	1.0%
June	2,811	2,969	2,946	(23)	-0.8%	135	4.8%
July	3,173	3,196	3,171	(26)	-0.8%	(2)	-0.1%
August	3,131	3,262	3,239	(23)	-0.7%	107	3.4%
September	2,630	2,689	2,671	(18)	-0.7%	42	1.6%
October	2,440	2,477	2,462	(16)	-0.6%	22	0.9%
November	2,538	2,509	2,495	(14)	-0.6%	(43)	-1.7%
December	2,889	2,915	2,893	(21)	-0.7%	4	0.1%
Total	32,939	33,394	33,124	(270)	-0.8%	185	0.6%

2016 Plan has slightly lower growth rate compared to 2015 Plan

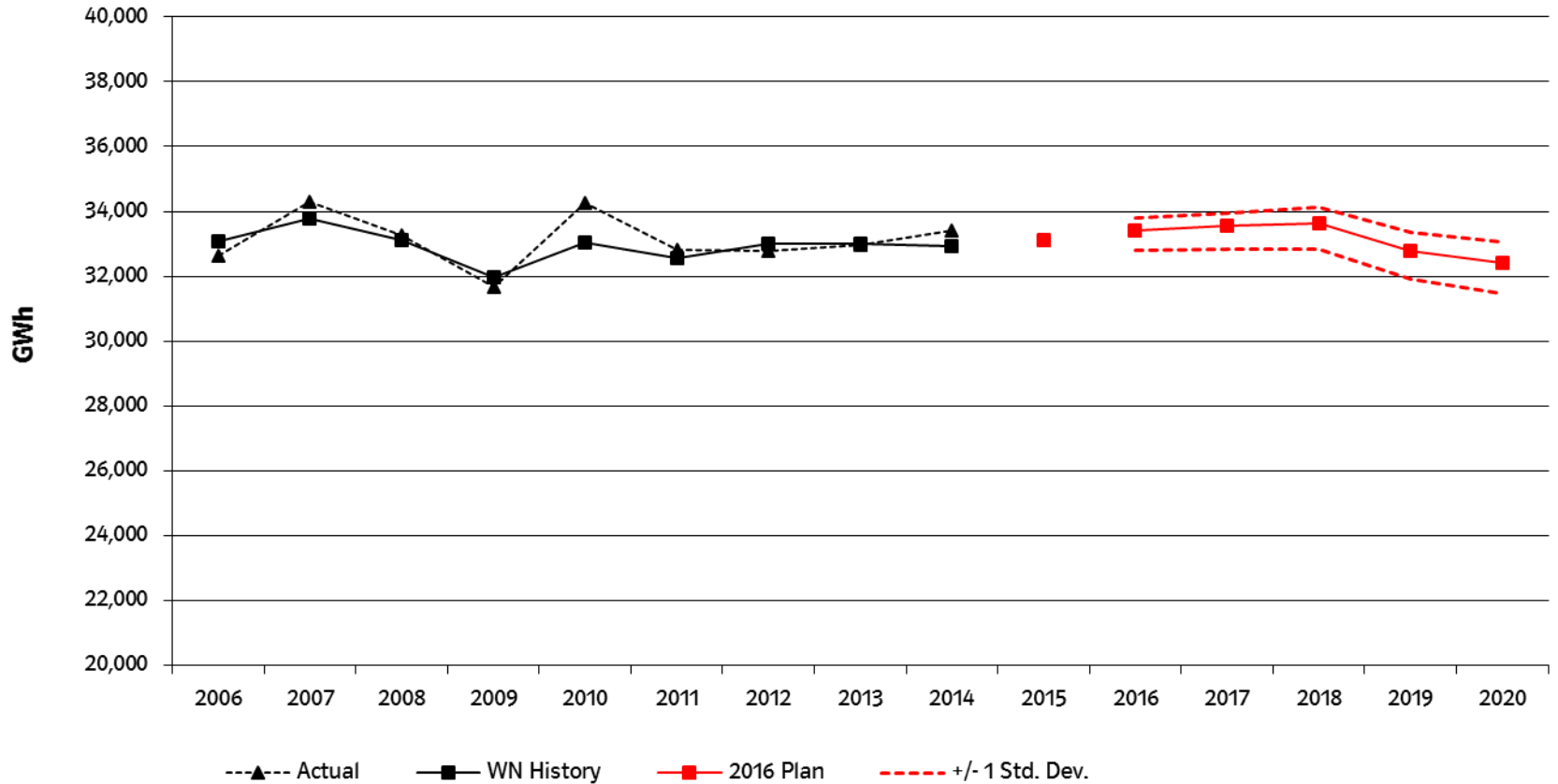
- Large weather adjustments impacting actuals in 2015

	Total Company Sales (GWh)				KU/ODP Sales (GWh)				LG&E Sales (GWh)			
	2016 Plan*	2015 Plan	Delta	% Change	2016 Plan*	2015 Plan	Delta	% Change	2016 Plan*	2015 Plan	Delta	% Change
2010	33,054				21,200				11,854			
2011	32,578				21,133				11,444			
2012	32,991				21,216				11,775			
2013	32,994				21,262				11,732			
2014	32,939				21,253				11,686			
2015	33,124	33,394	(270)	-0.8%	21,285	21,416	(131)	-0.6%	11,839	11,978	(139)	-1.2%
2016	33,413	33,632	(219)	-0.7%	21,434	21,542	(108)	-0.5%	11,979	12,090	(111)	-0.9%
2017	33,545	33,868	(323)	-1.0%	21,525	21,656	(131)	-0.6%	12,020	12,211	(192)	-1.6%
2018	33,632	34,181	(550)	-1.6%	21,567	21,852	(284)	-1.3%	12,064	12,330	(266)	-2.2%
2019	32,782	33,514	(732)	-2.2%	20,664	21,078	(414)	-2.0%	12,118	12,436	(318)	-2.6%
2020	32,426	33,265	(839)	-2.5%	20,248	20,746	(498)	-2.4%	12,178	12,520	(342)	-2.7%

* In 2016 Plan forecast, 2010 – 2014 is WN Actuals and 2015 value is a weather-normalized 5+7 forecast.

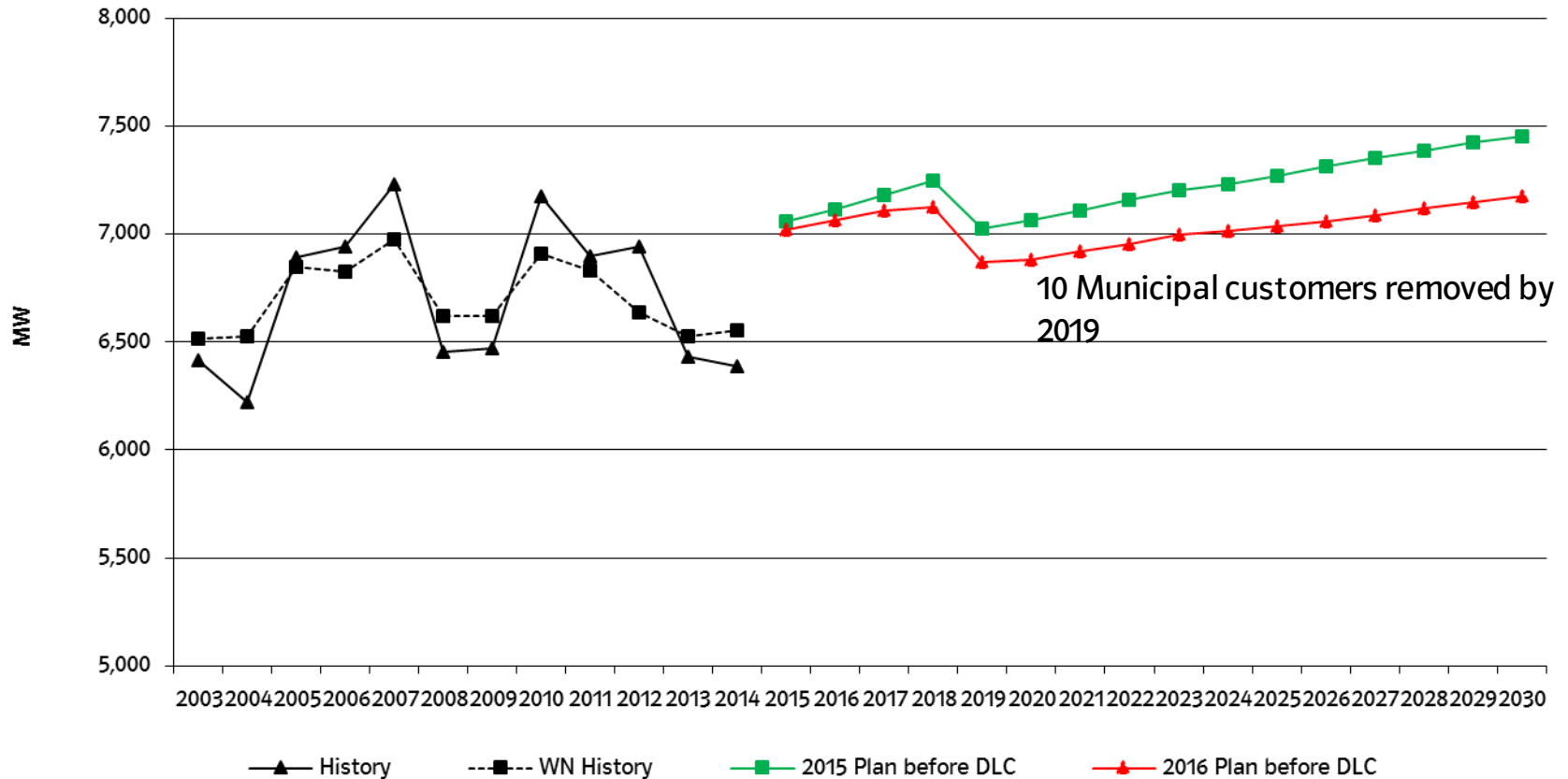
Sales risk based on IHS Gross State Product risk scenario - downside flat

Combined Company Total Electricity Sales



Uncurtailed peak forecast decreases consistent with lower energy forecast

Combined Company Summer Peak Demand - 15 Year View

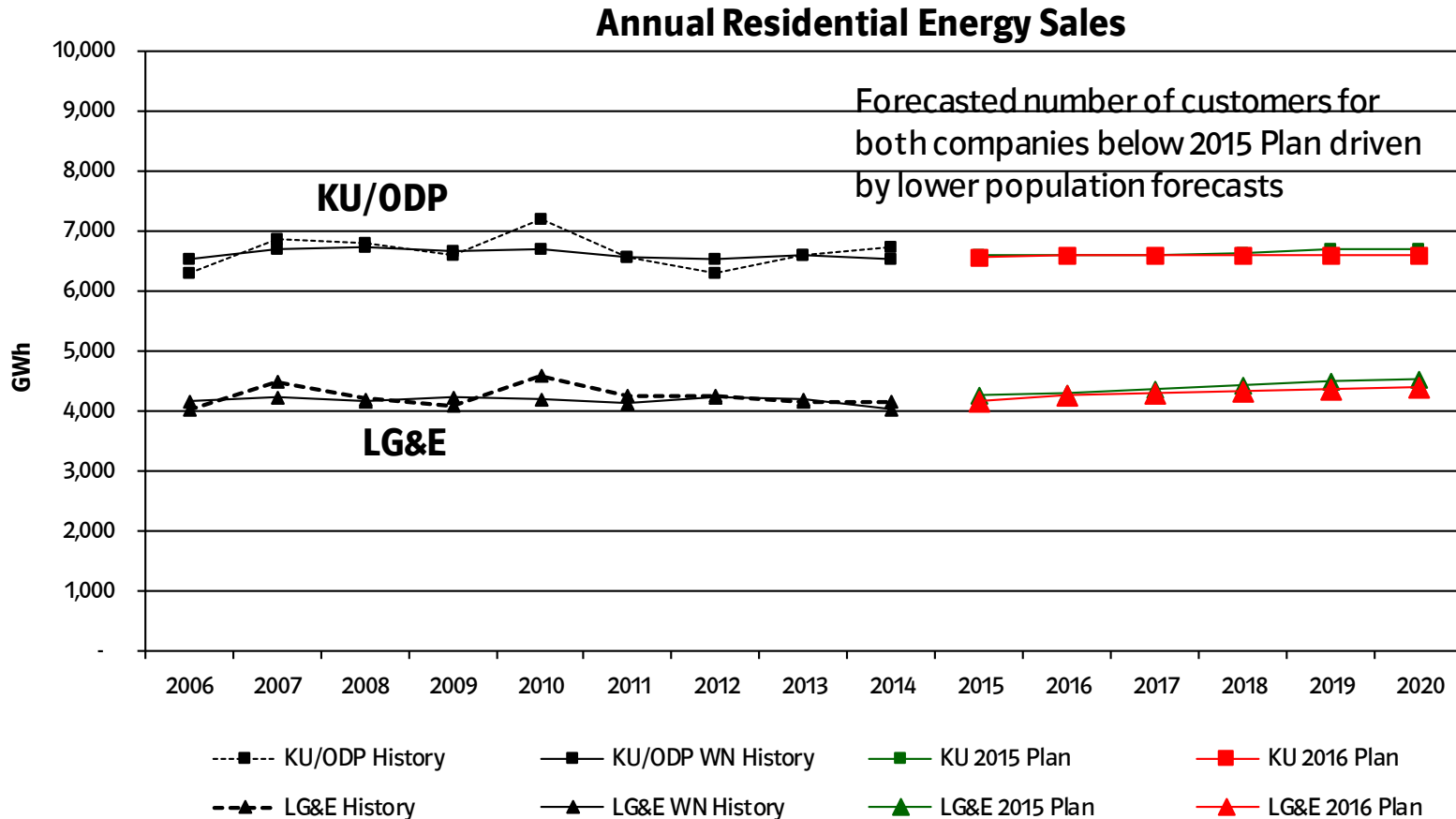


10 Municipal customers removed by 2019

* In 2016 Plan forecast, 2015 value is a weather-normalized 5+7 forecast.

** In 2016 Plan forecast, peak forecast is adjusted ~20 MW higher to cover [redacted] obligation.

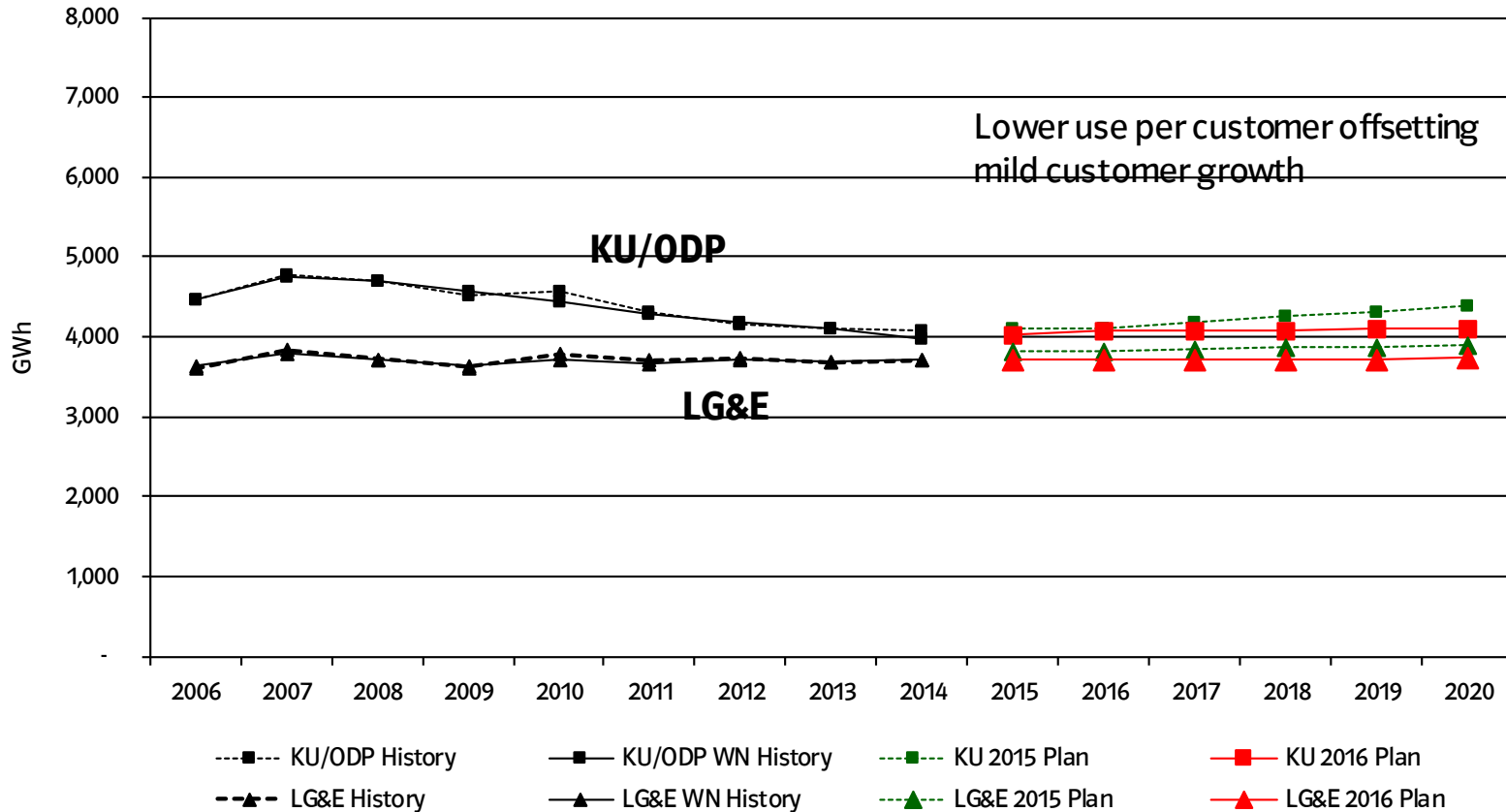
Residential sales forecast is slightly lower



* In 2016 Plan forecast, 2015 value is a weather-normalized 5+7 forecast.

Commercial sales have slightly lower growth rates

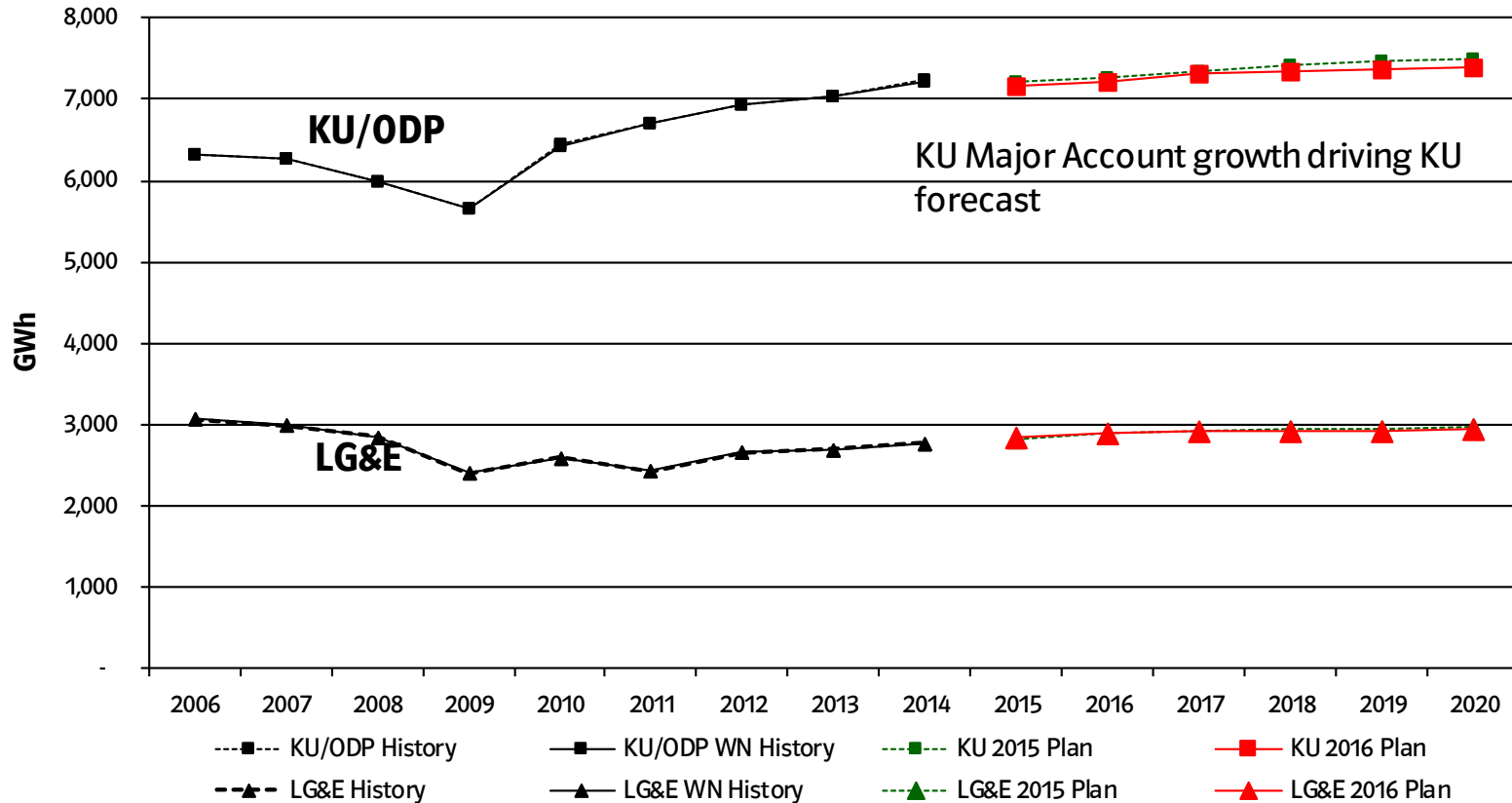
Annual Commercial Energy Sales



* In 2016 Plan forecast, 2015 value is a weather-normalized 5+7 forecast.

Industrial class largely consistent with prior Plan

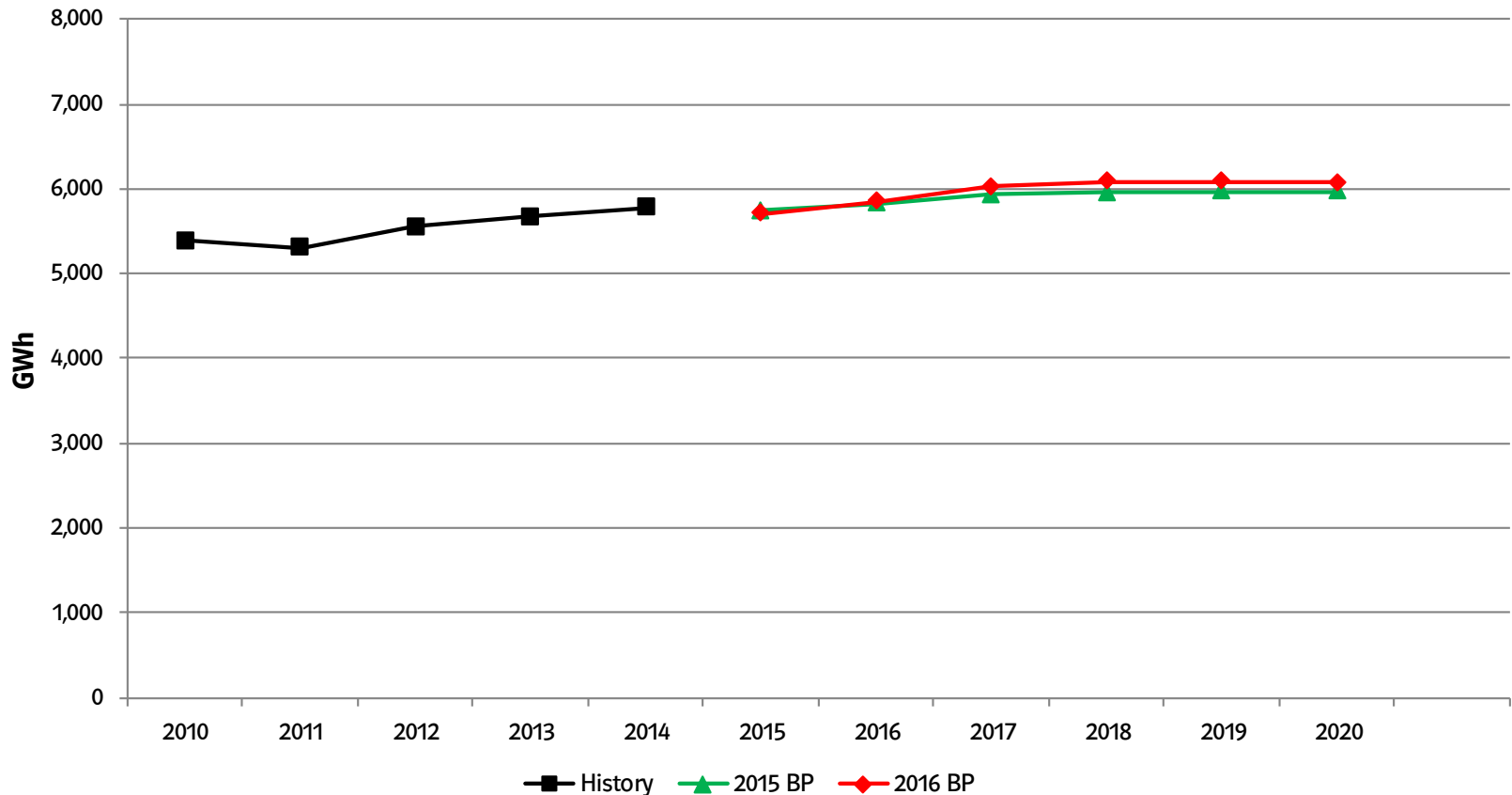
Annual Industrial Energy Sales



* In 2016 Plan forecast, 2015 value is a weather-normalized 5+7 forecast.

2016 Plan Major Account sales increase slightly from prior Plan

Major Accounts History and Forecast

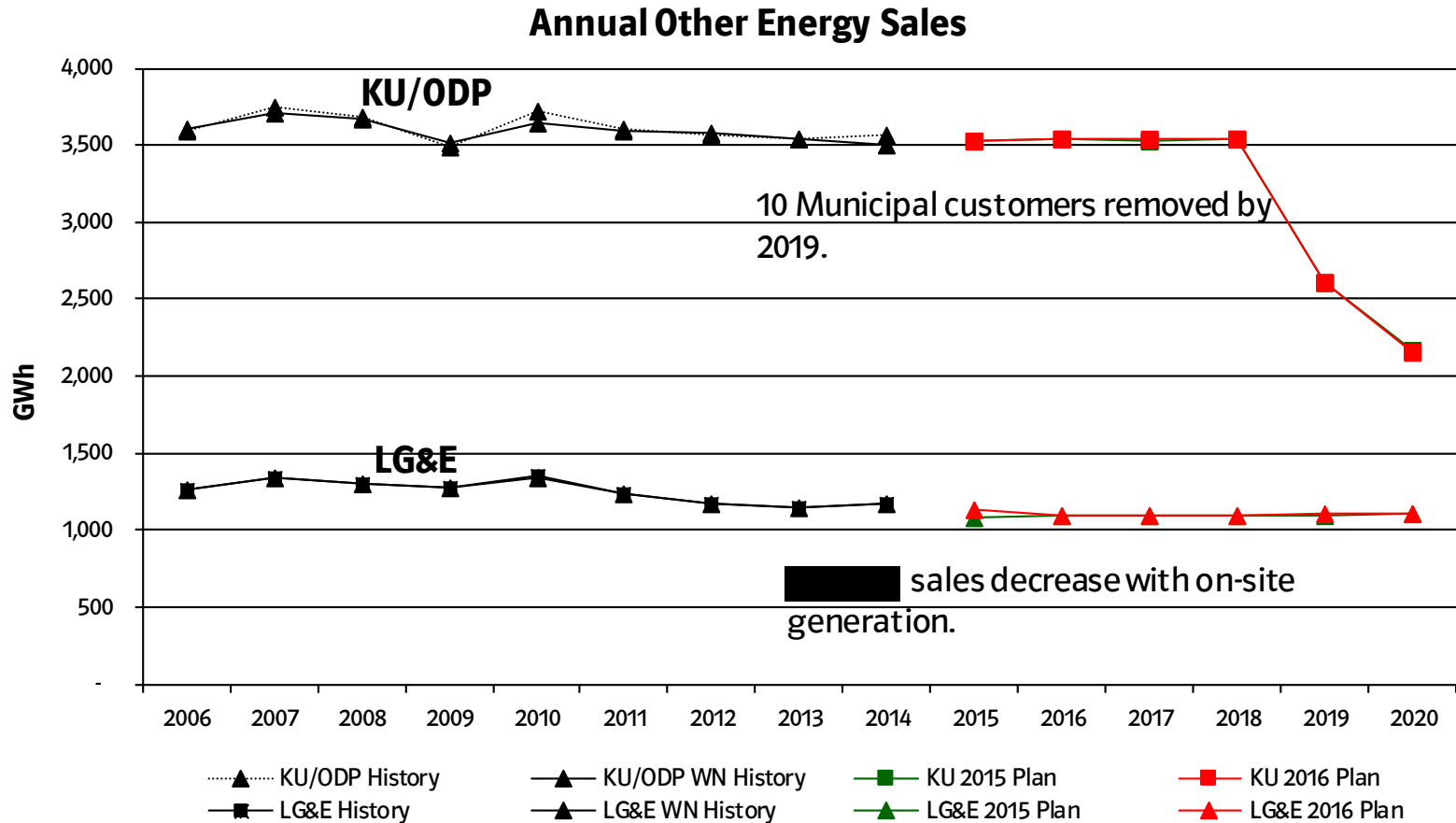


Expansions from late 2015 thru early 2017 driving major account sales

Energy Change by Year (GWh)				Driver
Customer	2016	2017	2018	
[REDACTED]	45	74	34	[REDACTED]
[REDACTED]	6	72	14	[REDACTED]
[REDACTED]	19	19	-	[REDACTED]
[REDACTED]	33	-	-	[REDACTED]
[REDACTED]	15	-	-	[REDACTED]

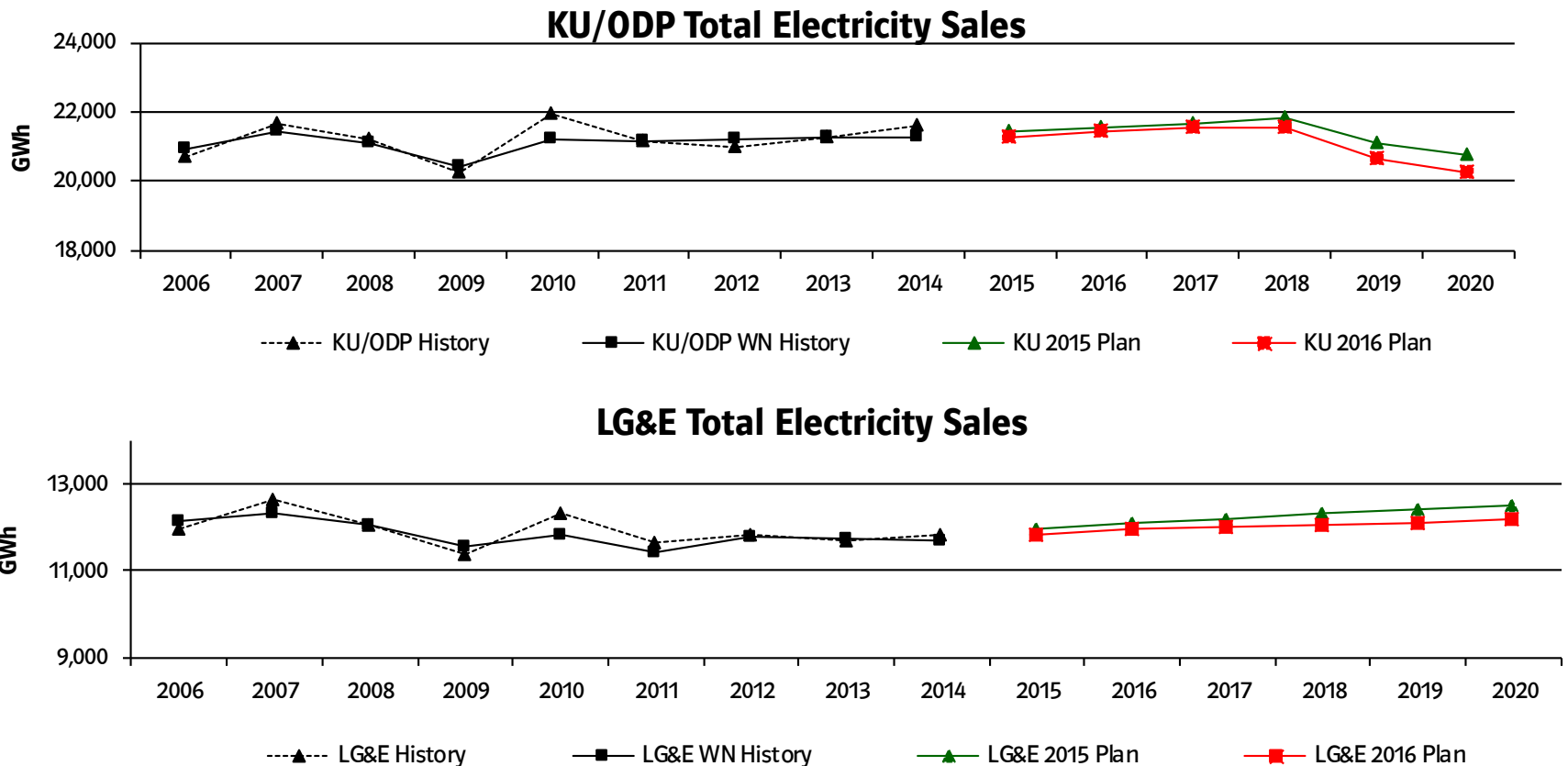
Public Authority sales slightly lower than 2015

Plan for KU



* In 2016 Plan forecast, 2015 value is a weather-normalized 5+7 forecast.

2016 Plan reflects slightly lower commercial and residential growth rates



* In 2016 Plan forecast, 2015 value is a weather-normalized 5+7 forecast.

Plan risks: weather continues to be a significant near term risk

- Near term (2016)
 - *Weather - winter/summer extremes (+/- 450 GWh)*
- Medium term (2016-2020)
 - *Flat industrial growth: 326 GWh by 2020*

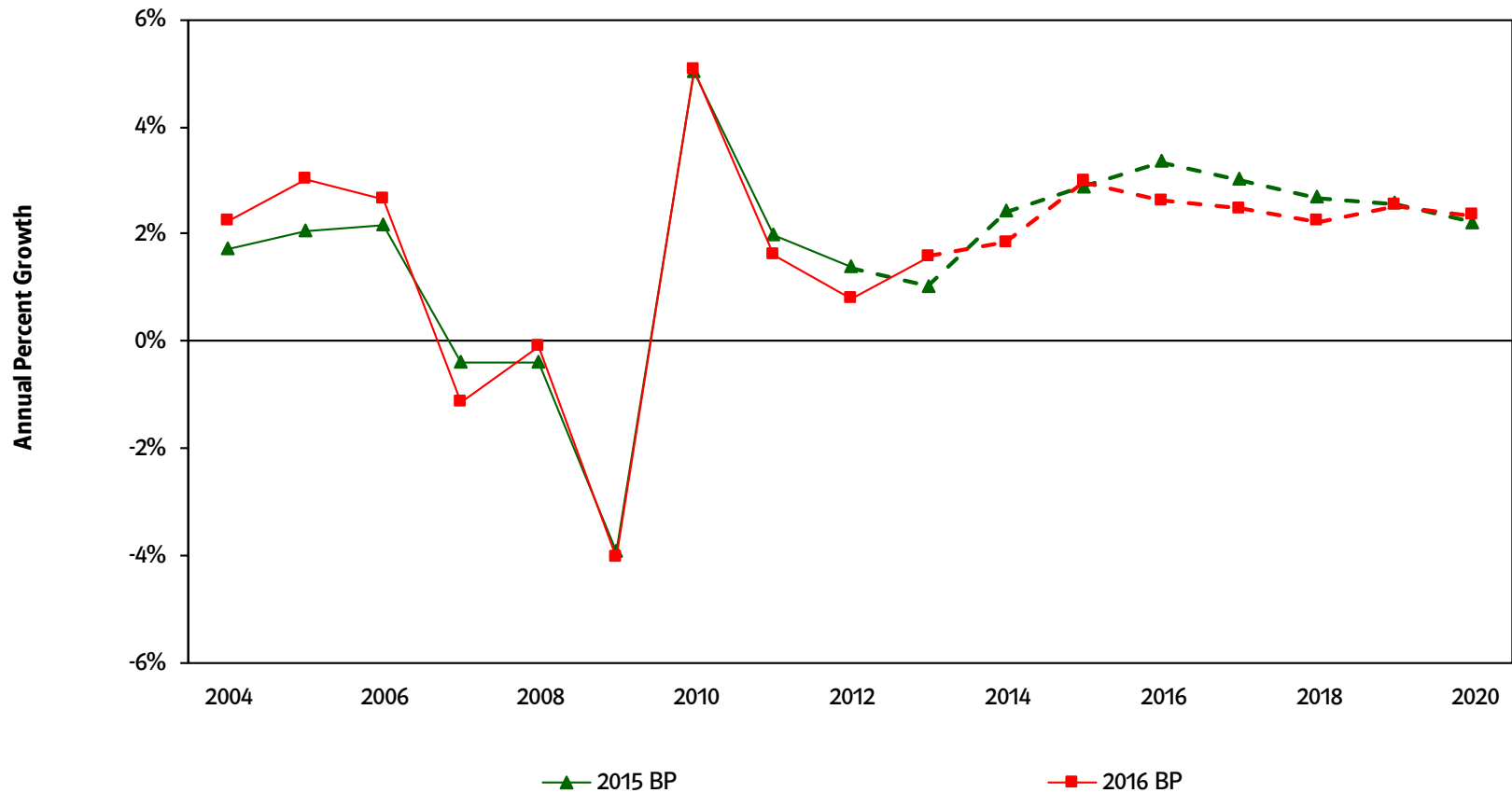
Summary: Slow load growth continues

- Load growth since 2010 has been relatively flat
- Customer growth in residential and commercial classes is mostly offset by improving efficiencies
- US GDP growth and KY GSP growth has consistently fallen below expectations in recent years
- Electricity sales growth is not keeping up with economic growth to the same degree as in the past as the Kentucky economy becomes less energy intensive

Appendix A – Macroeconomic Inputs

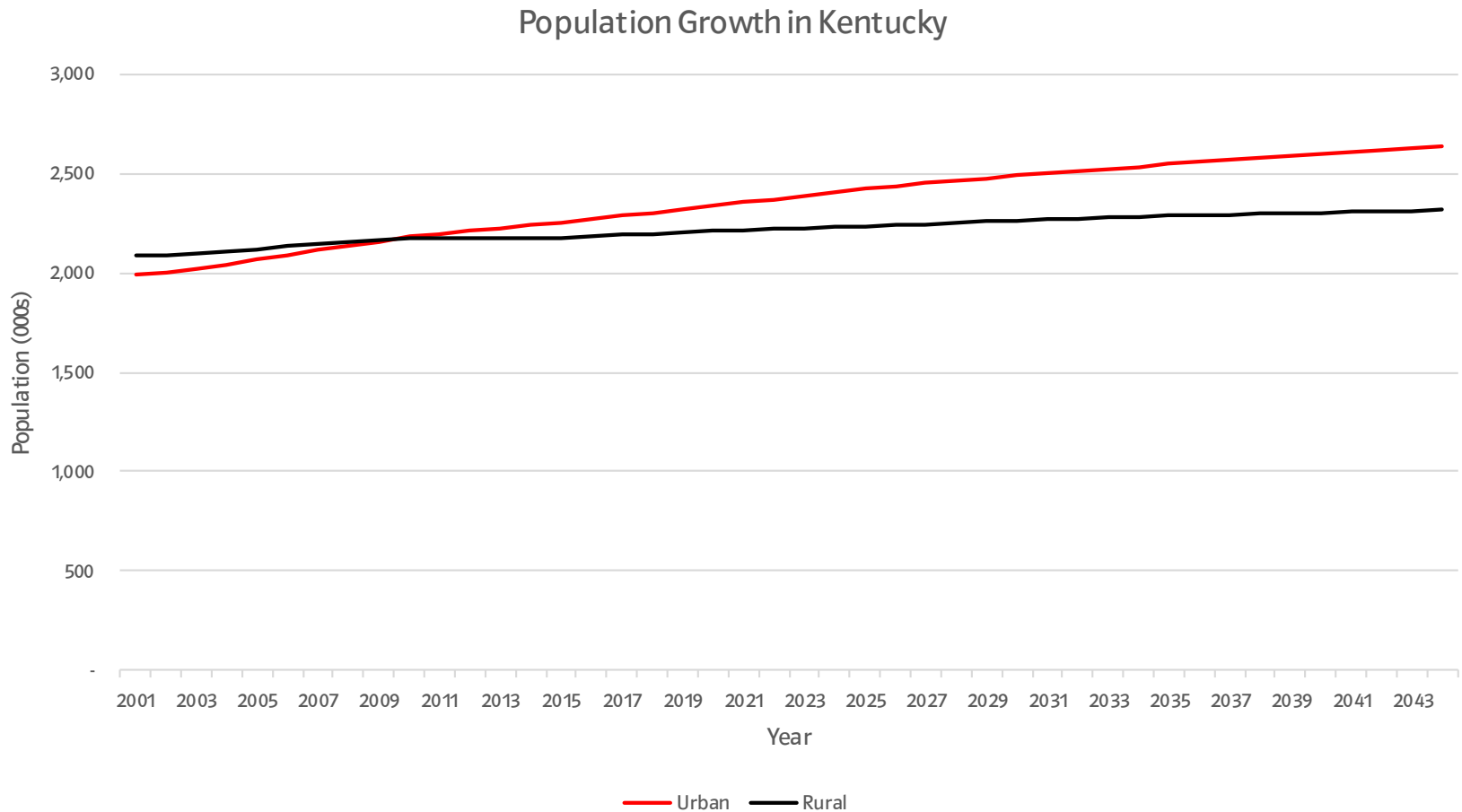
Near-term Kentucky GSP slightly lower than 2015 Plan

KY Real GSP Growth



Source: IHS Global Insight

Population growth in rural areas much slower than urban areas of the state



- Urban represents Louisville and Lexington economic regions, rural all remaining
- Source: [Kentucky Chamber Analysis](#)

Appendix B - Customer Data

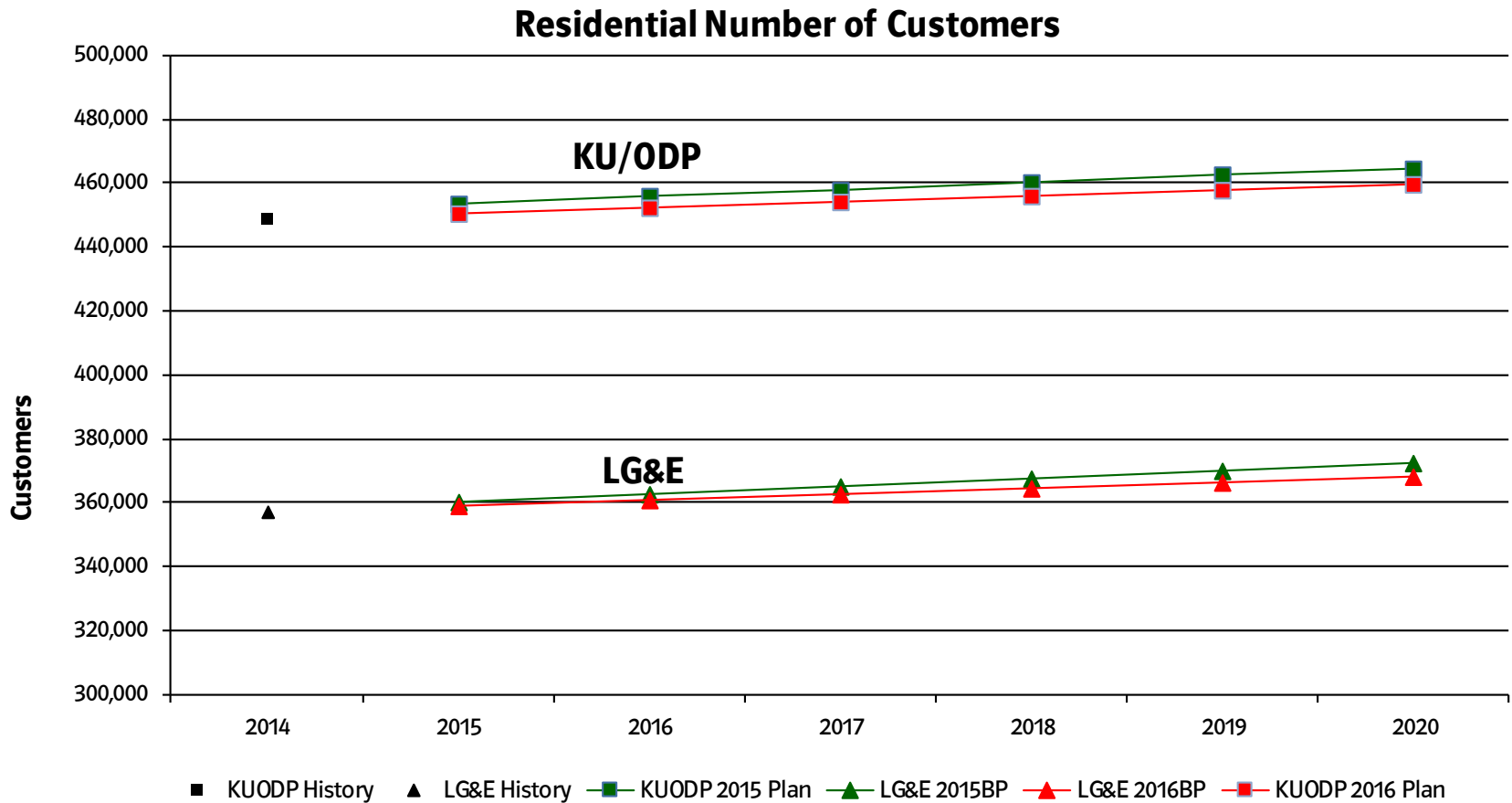
Customers by Rate

	Rate Category	Current Contract Count*	Forecast for 2016
KU/ODP	AES	743	735
	GS	86,311	87,194
	LTOD-Pri	55	55
	PS-Pri	244	224
	PS-Sec	4,970	4,947
	RS	449,823	452,954
	RTS	38	39
	TOD-Pri	190	211
	TOD-Sec	581	587
	FLS	1	1
	Muni Pumping	15	15
	Municipals	12	12
			<u>542,983</u>

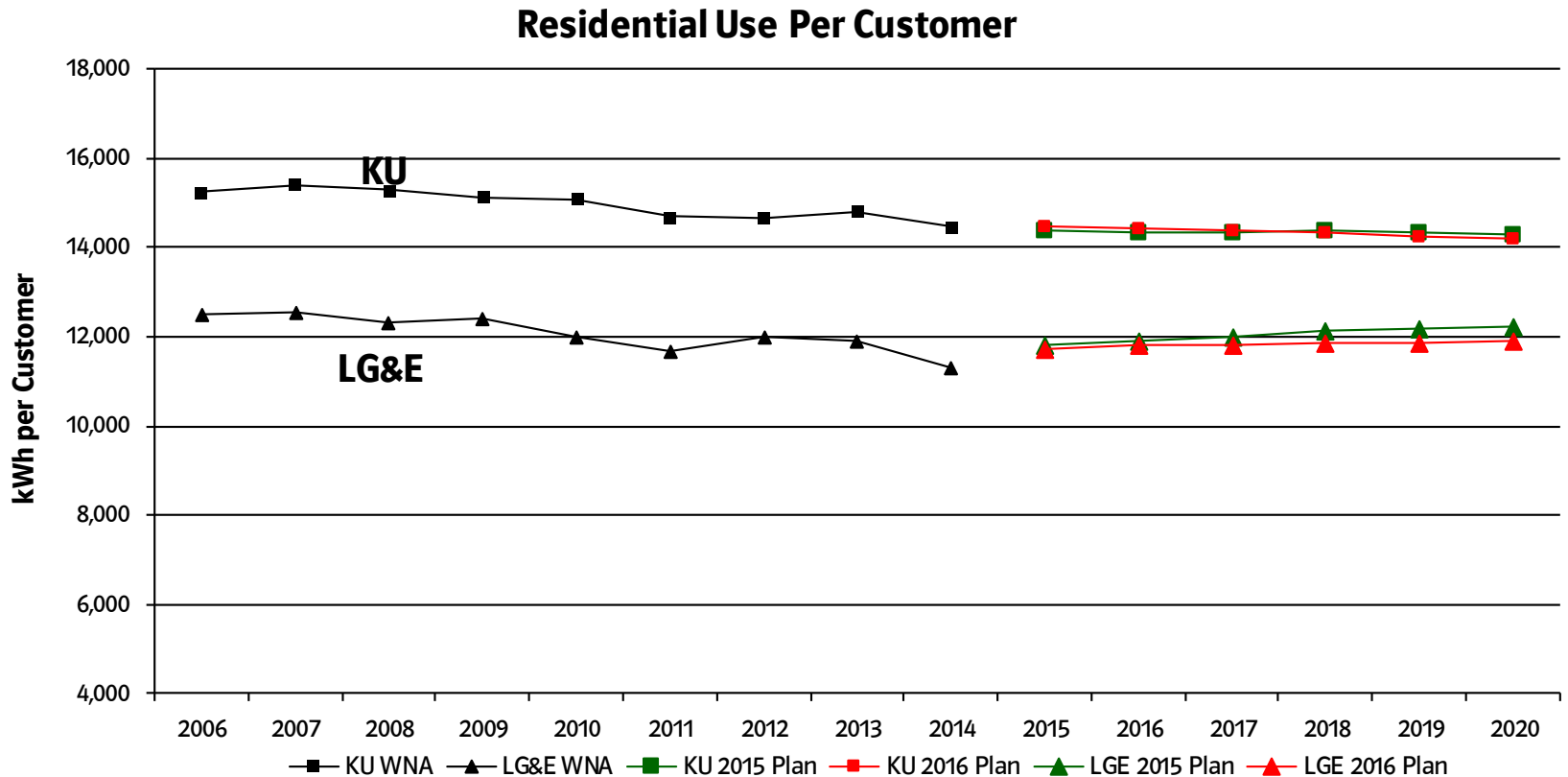
	Rate Category	Current Contract Count*	Forecast for 2016
LG&E	CPS-Pri	54	52
	CPS-Sec	2,621	2,598
	CTOD-Pri	37	41
	CTOD-Sec	246	246
	GS	44,703	44,839
	IPS-Pri	23	23
	IPS-Sec	236	234
	ITOD-Pri	66	70
	ITOD-Sec	85	85
	RS	357,719	358,705
	RTS	13	13
		<u>405,803</u>	<u>406,906</u>

* Average of Jan-May 2015

Residential number of customers slightly below 2015 Plan



Use per customer for both KU and LG&E largely consistent with 2015 Plan

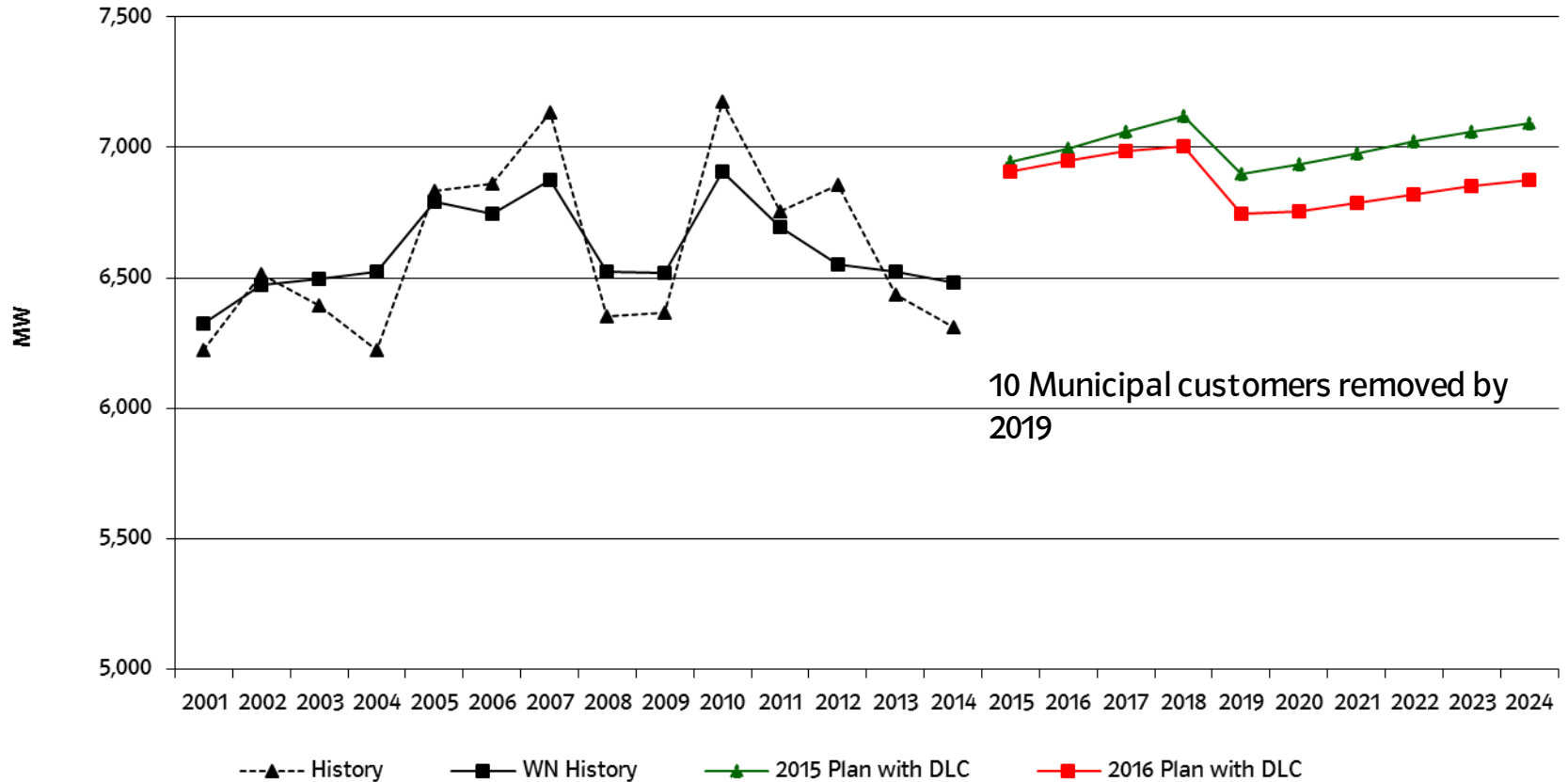


* In 2015 Plan forecast, 2014 value is a weather-normalized 5+7 forecast.

Attachment 2 to Response to KUC-1 Question No. 17c

Uncurtailed peak forecast after DLC slightly lower consistent with lower energy forecast

Combined Company Summer Peak Demand - 10 Year View

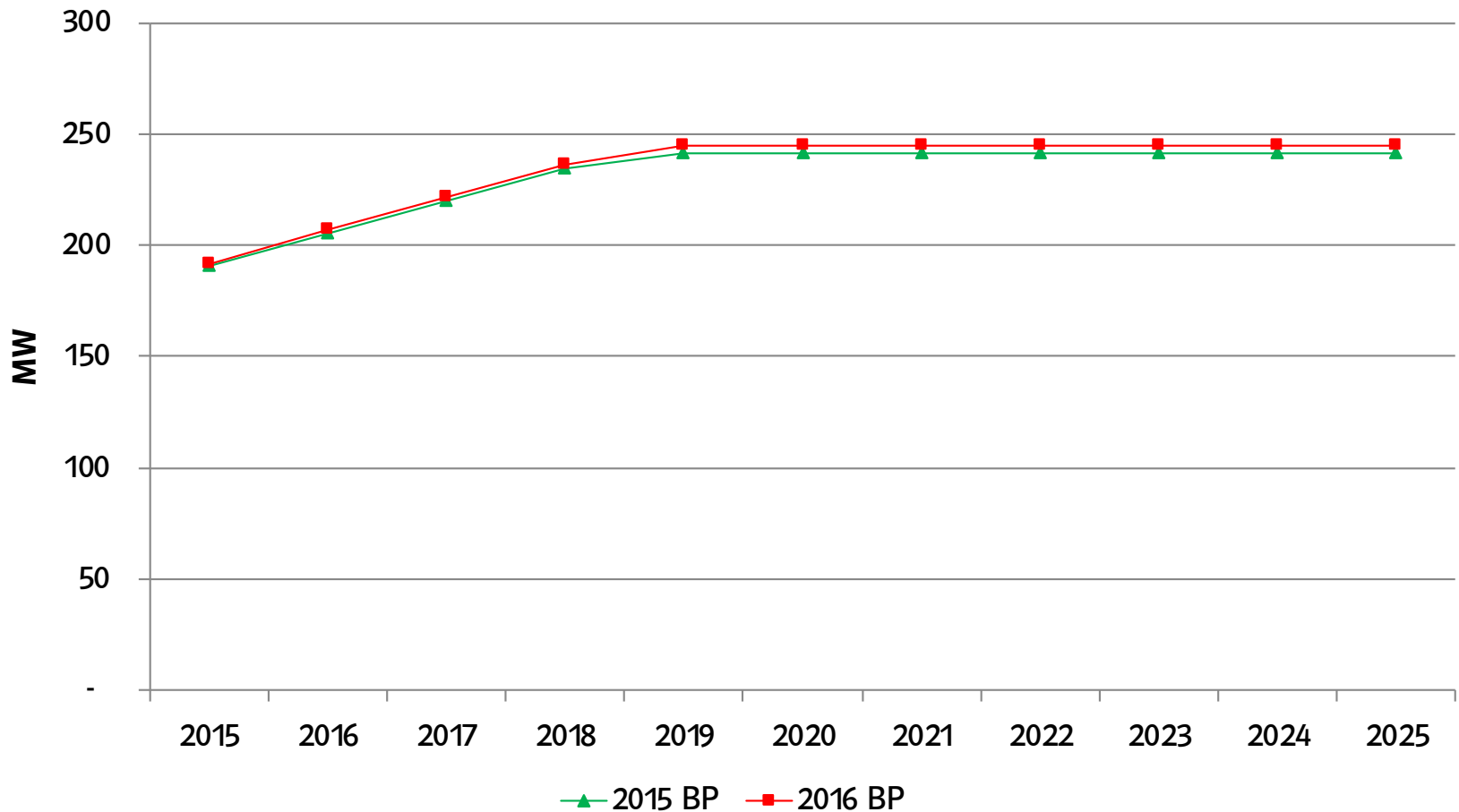


10 Municipal customers removed by 2019

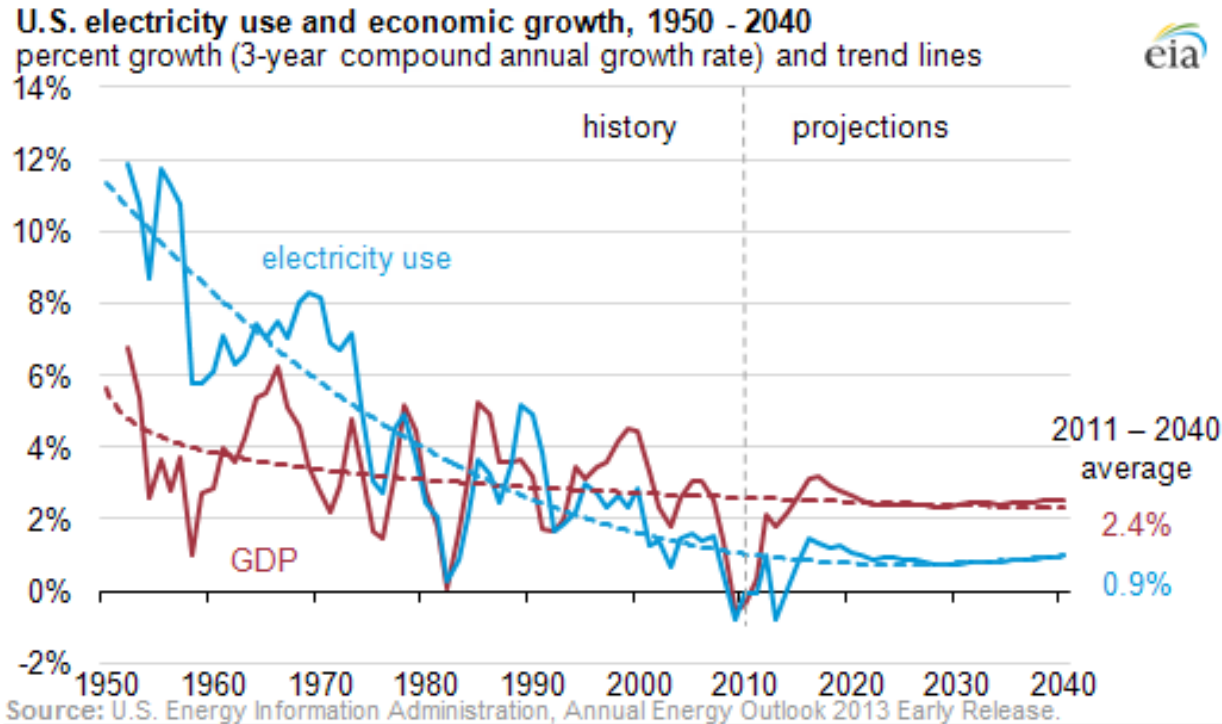
* In 2016 Plan forecast, 2015 value is a weather-normalized 5+7 forecast.

** In 2016 Plan forecast, peak forecast is adjusted ~20 MW higher to cover [redacted] obligation.

Additional DLC of 3 MW by 2020 due to higher customer participation forecast



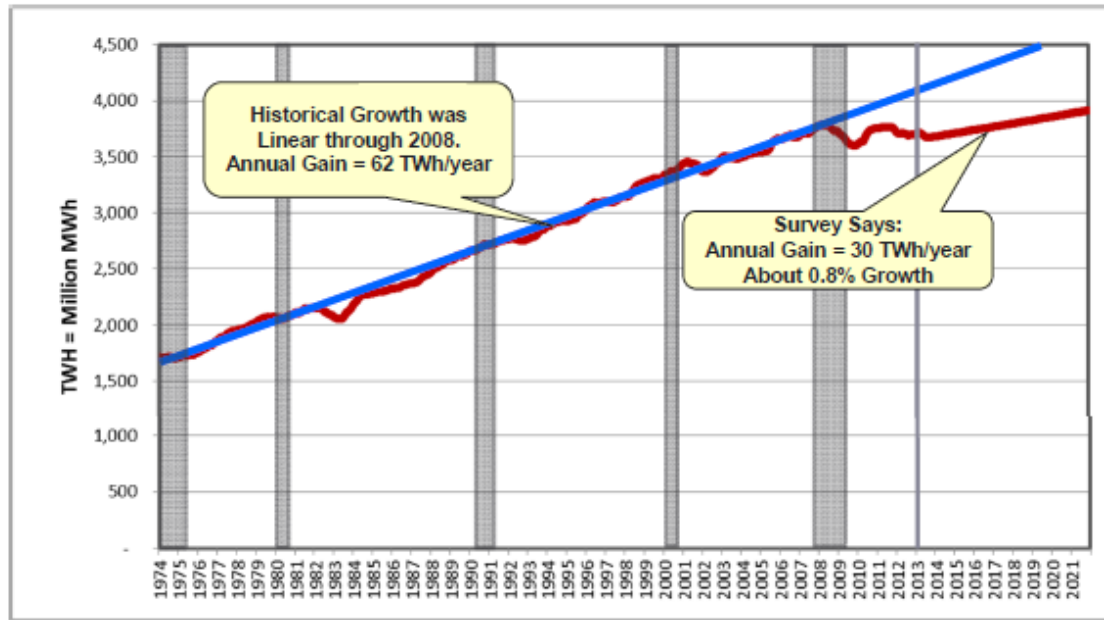
Economy growing at a faster pace than electricity usage



Note: AEO 2015 now shows 0.8% growth compared to the 0.9% in 2013 AEO chart.

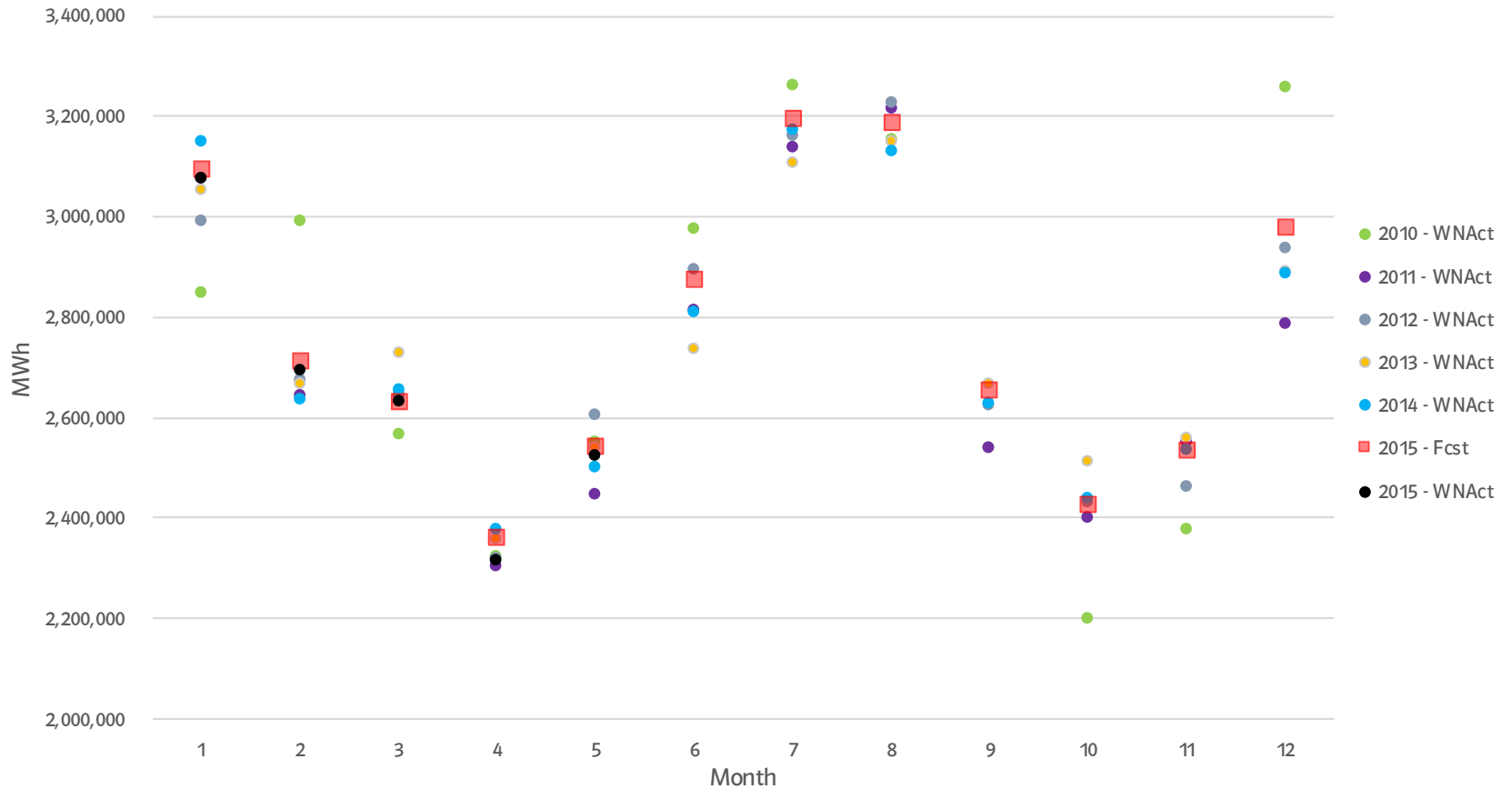
U.S. electricity growth slowing since 2008

Living in a 1% World

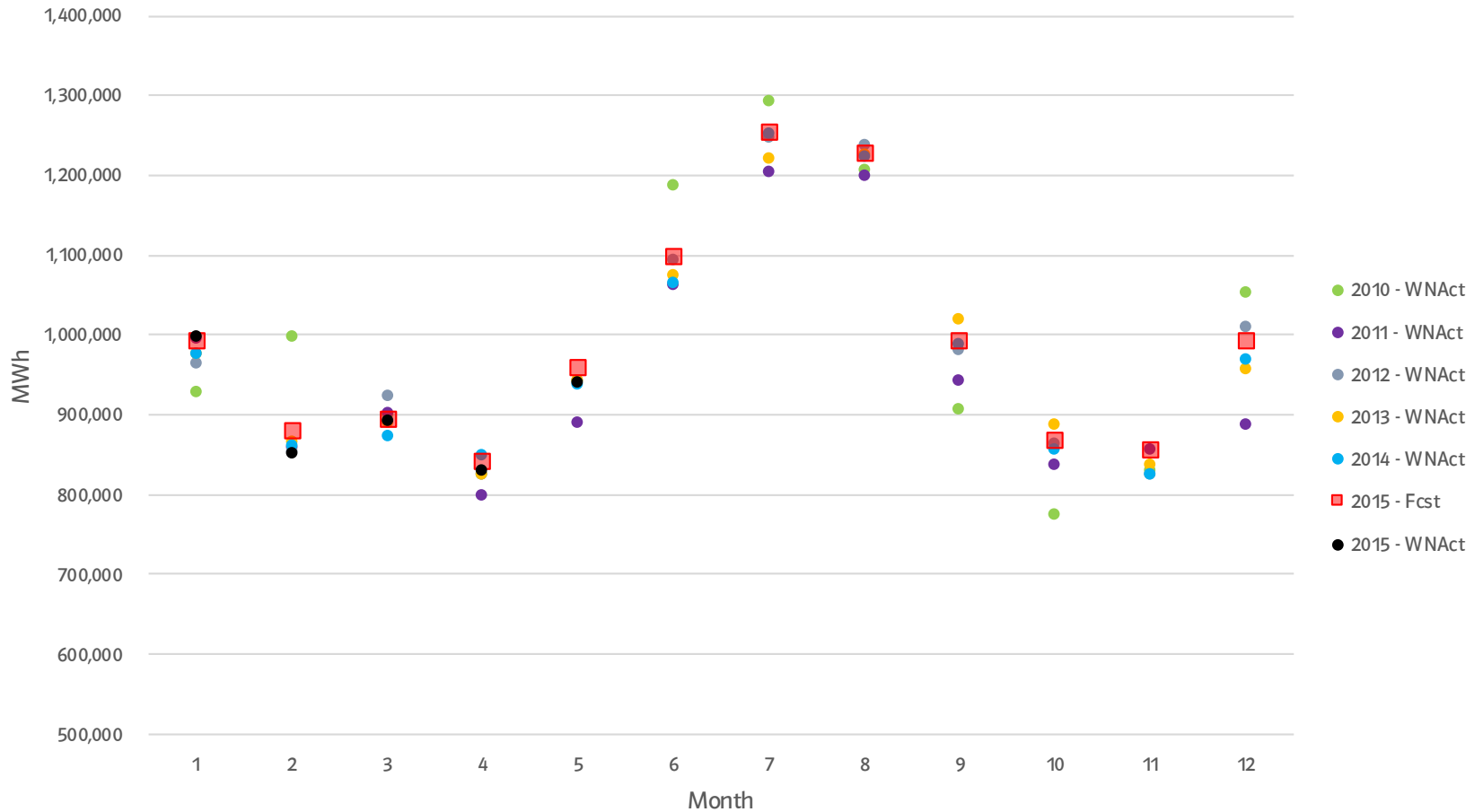


Iron

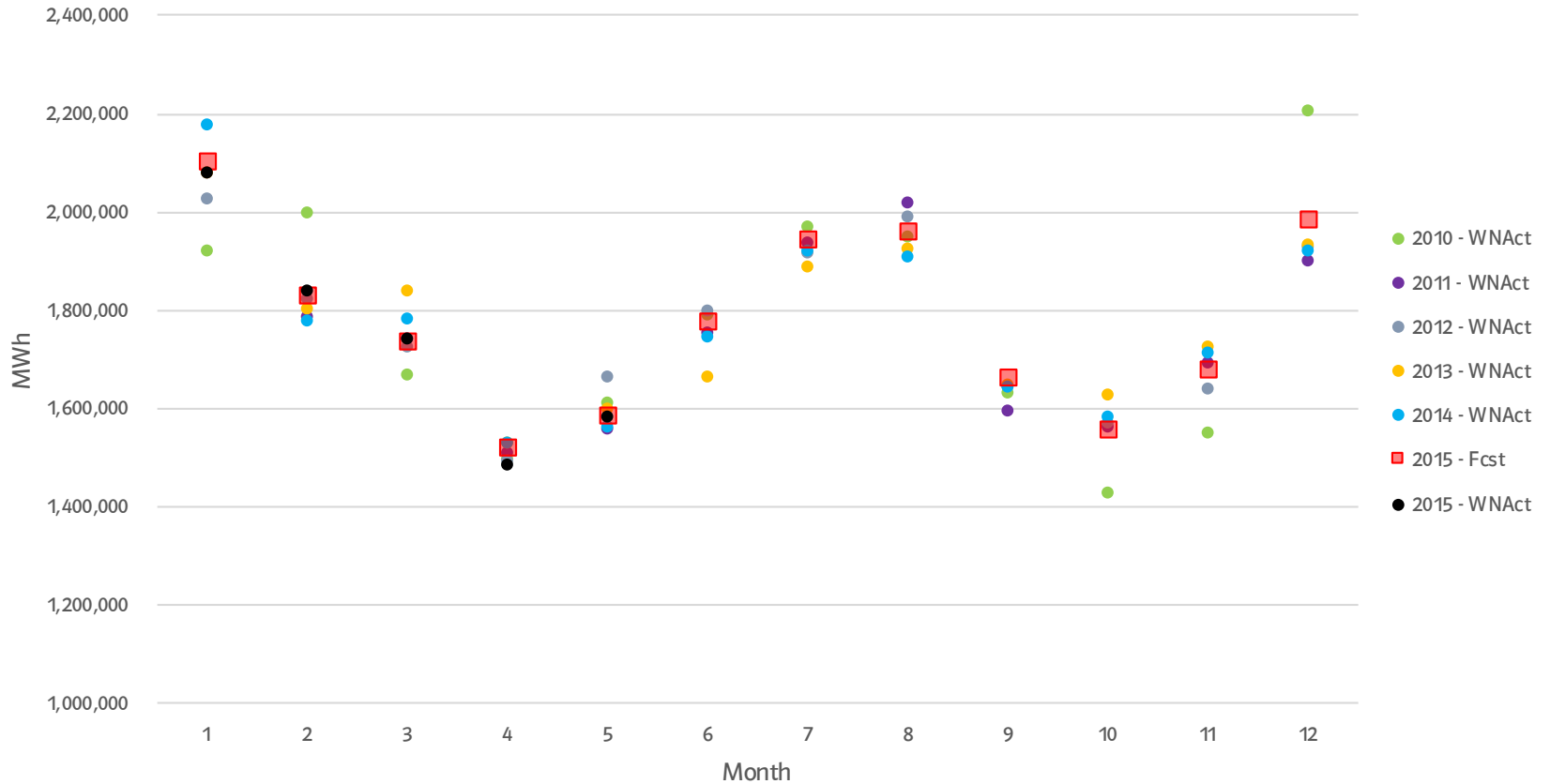
CC Total Sales



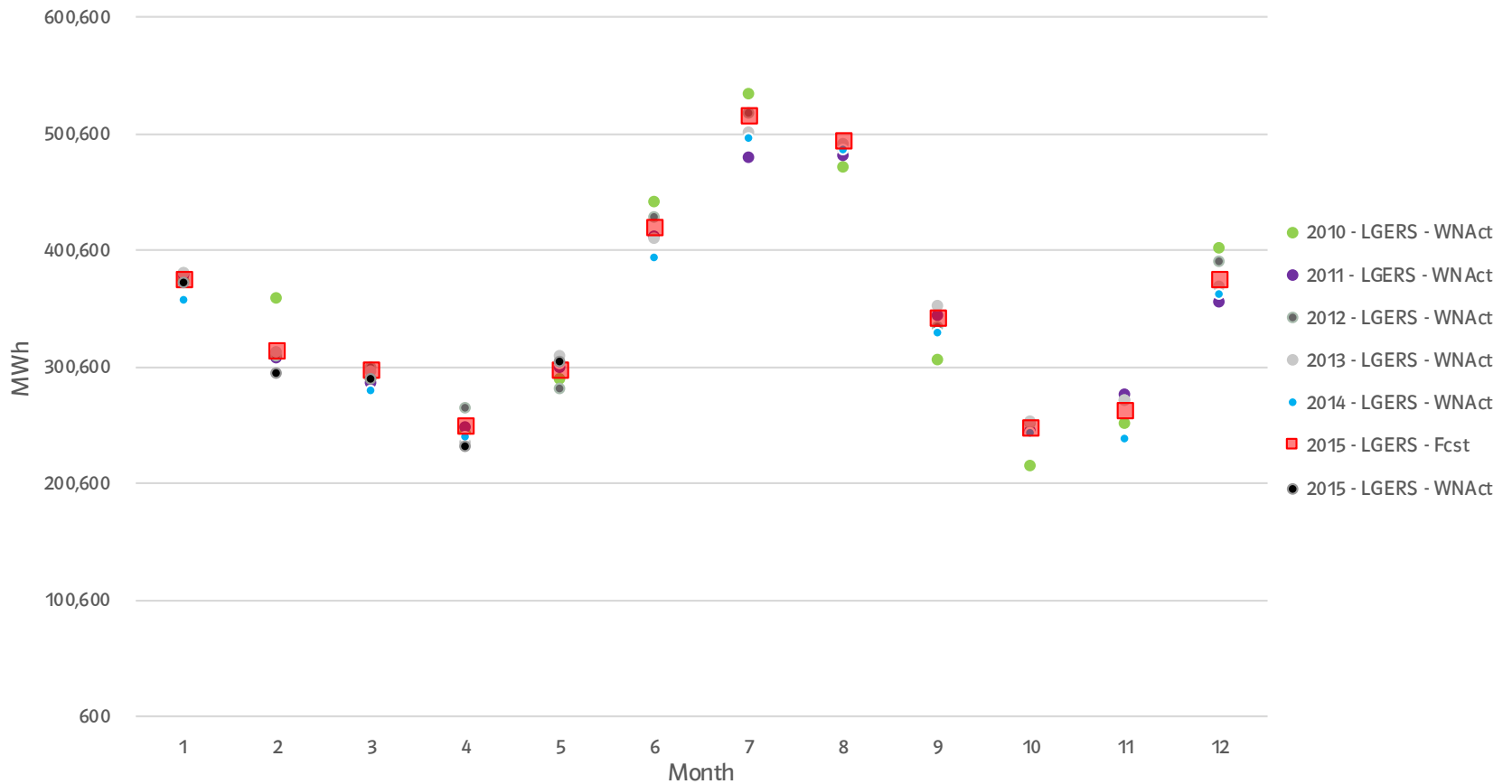
LGE Total Sales



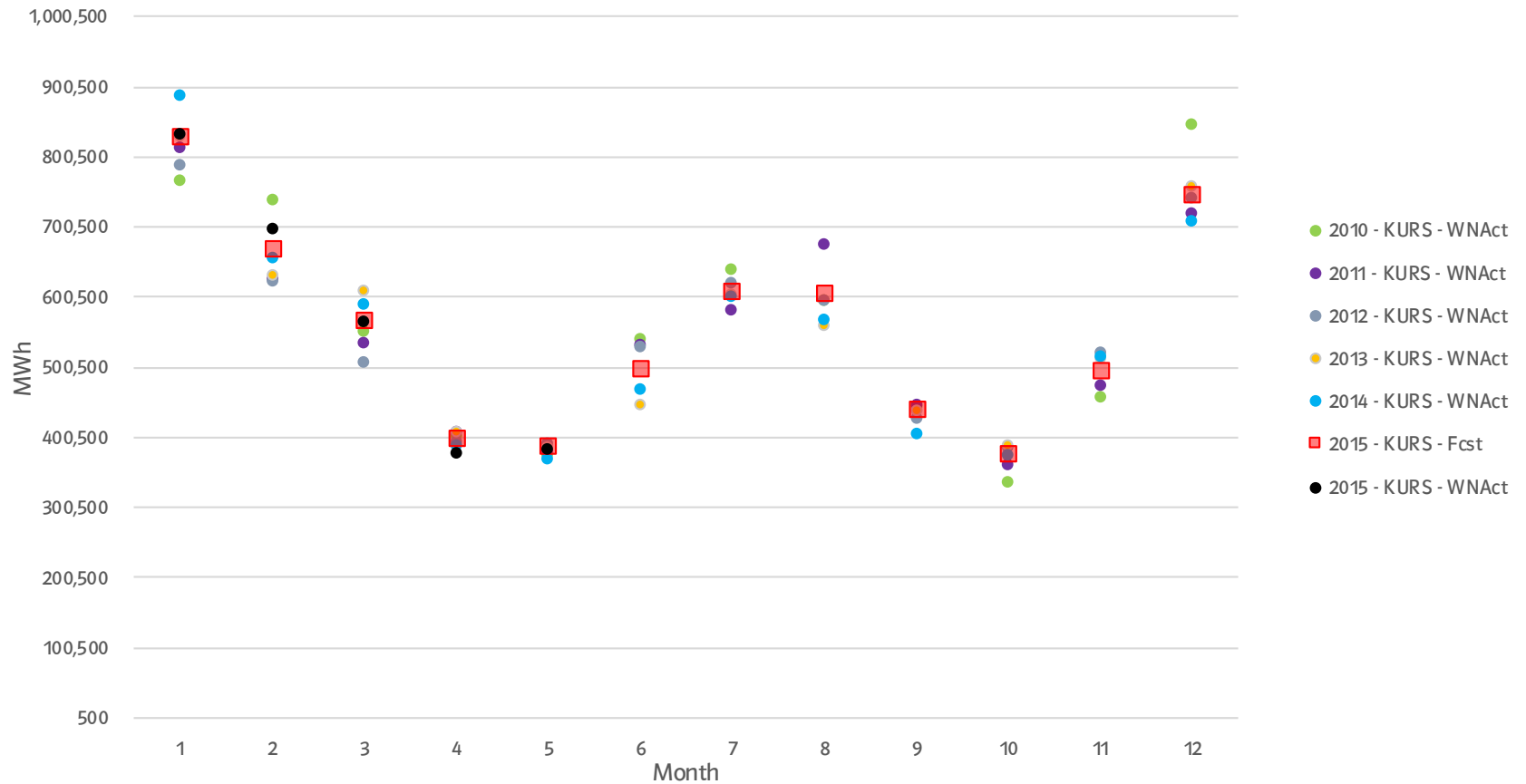
KU Total Sales



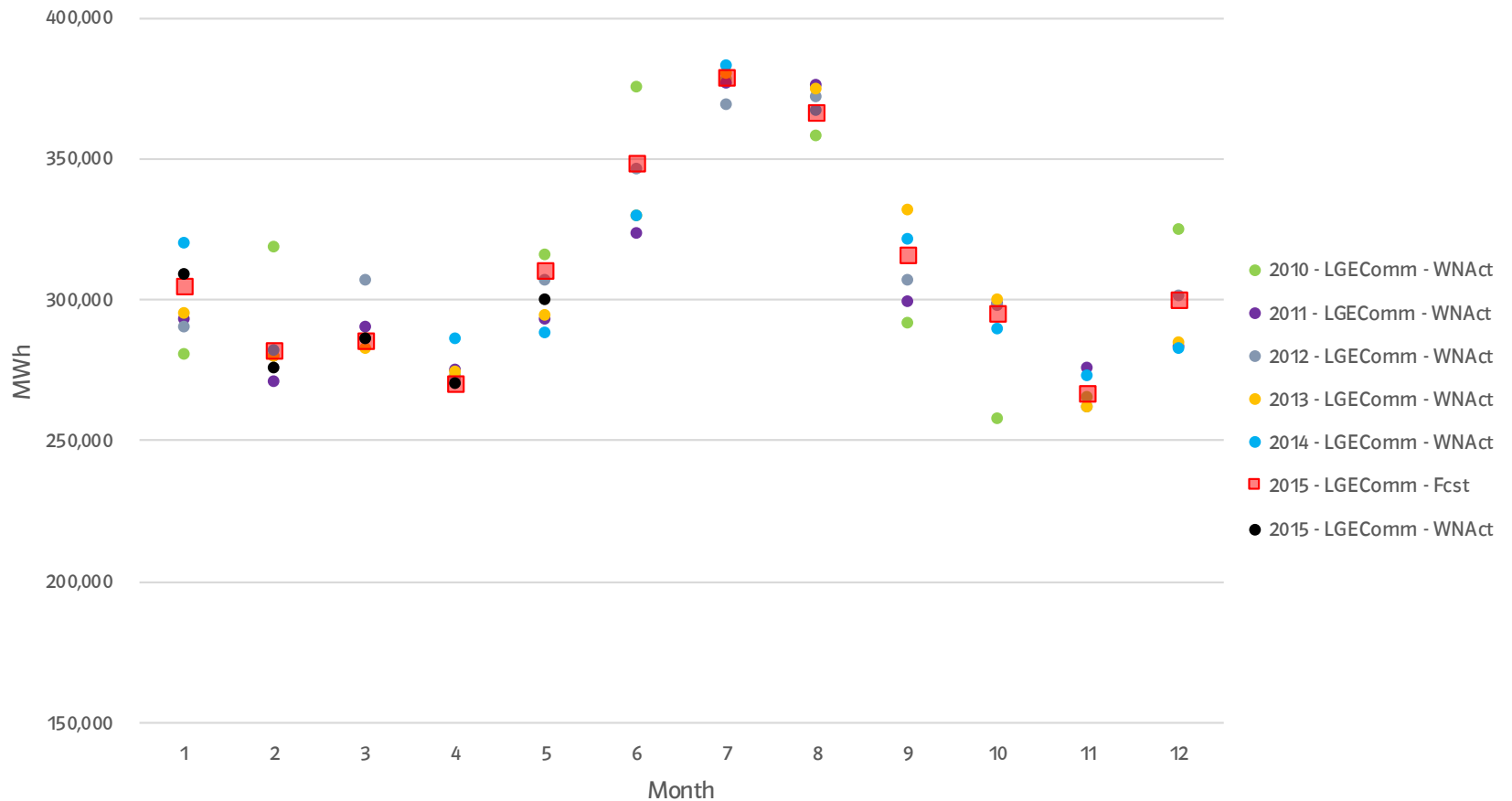
LGE Residential Sales



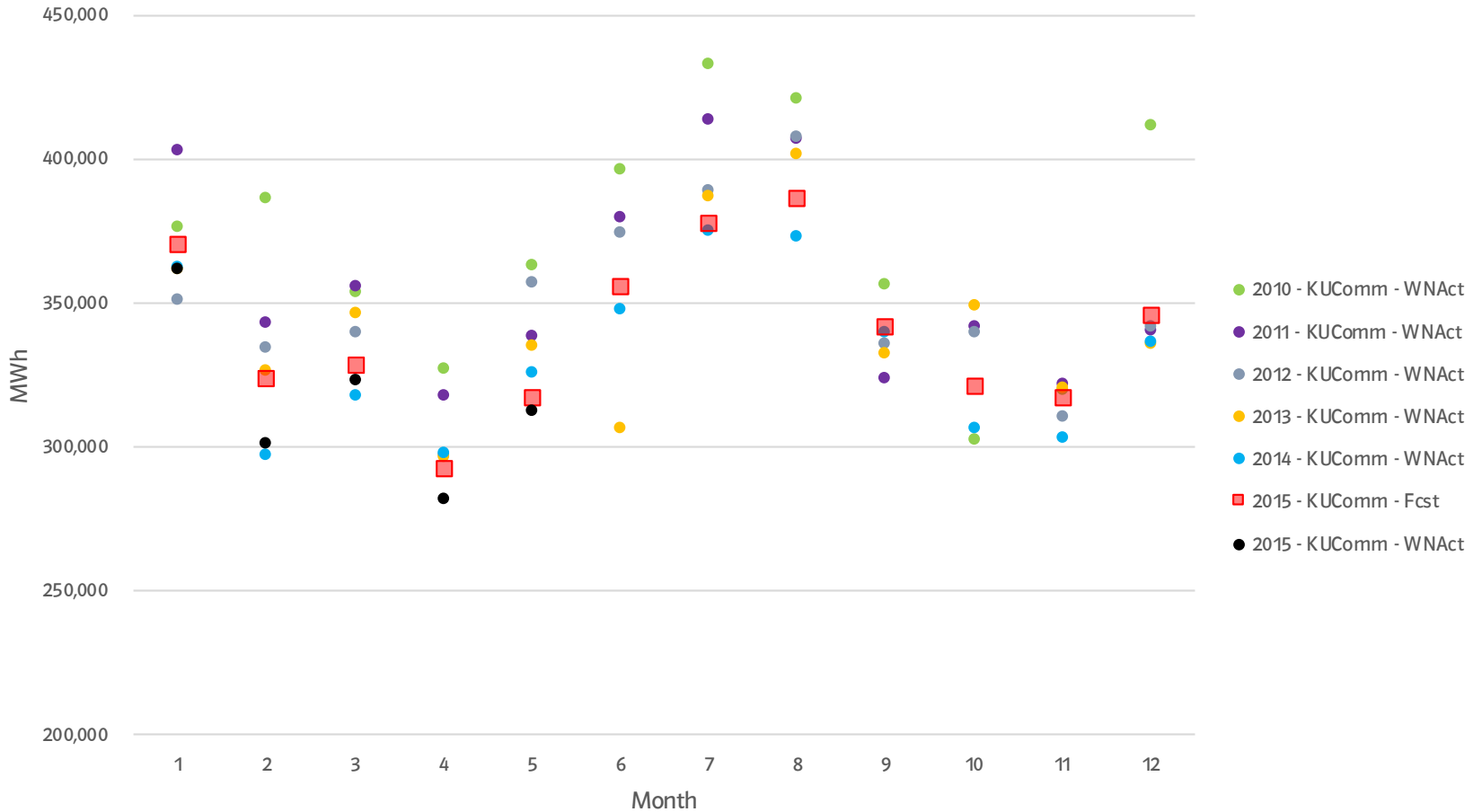
KU Residential Sales



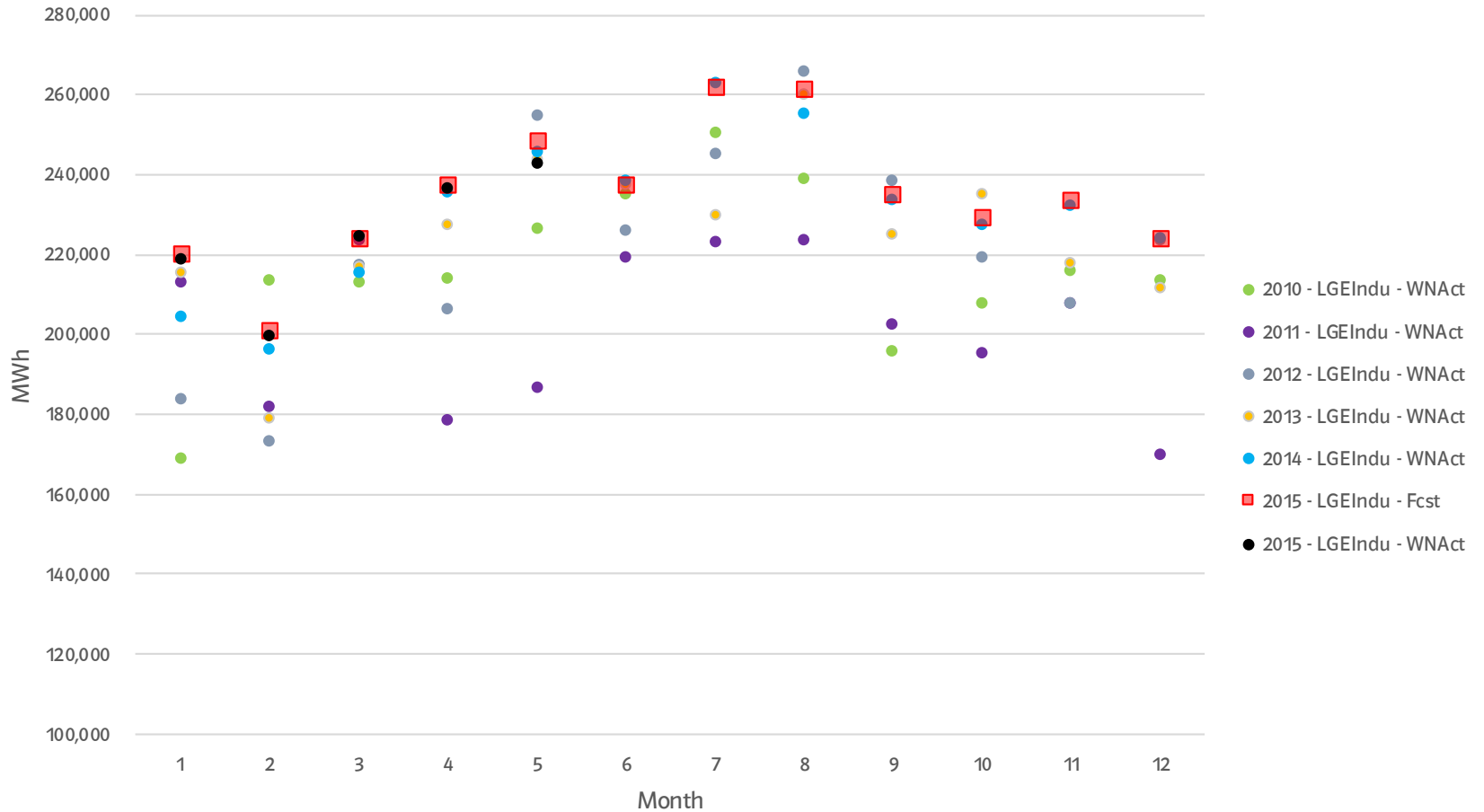
LGE Commercial Sales



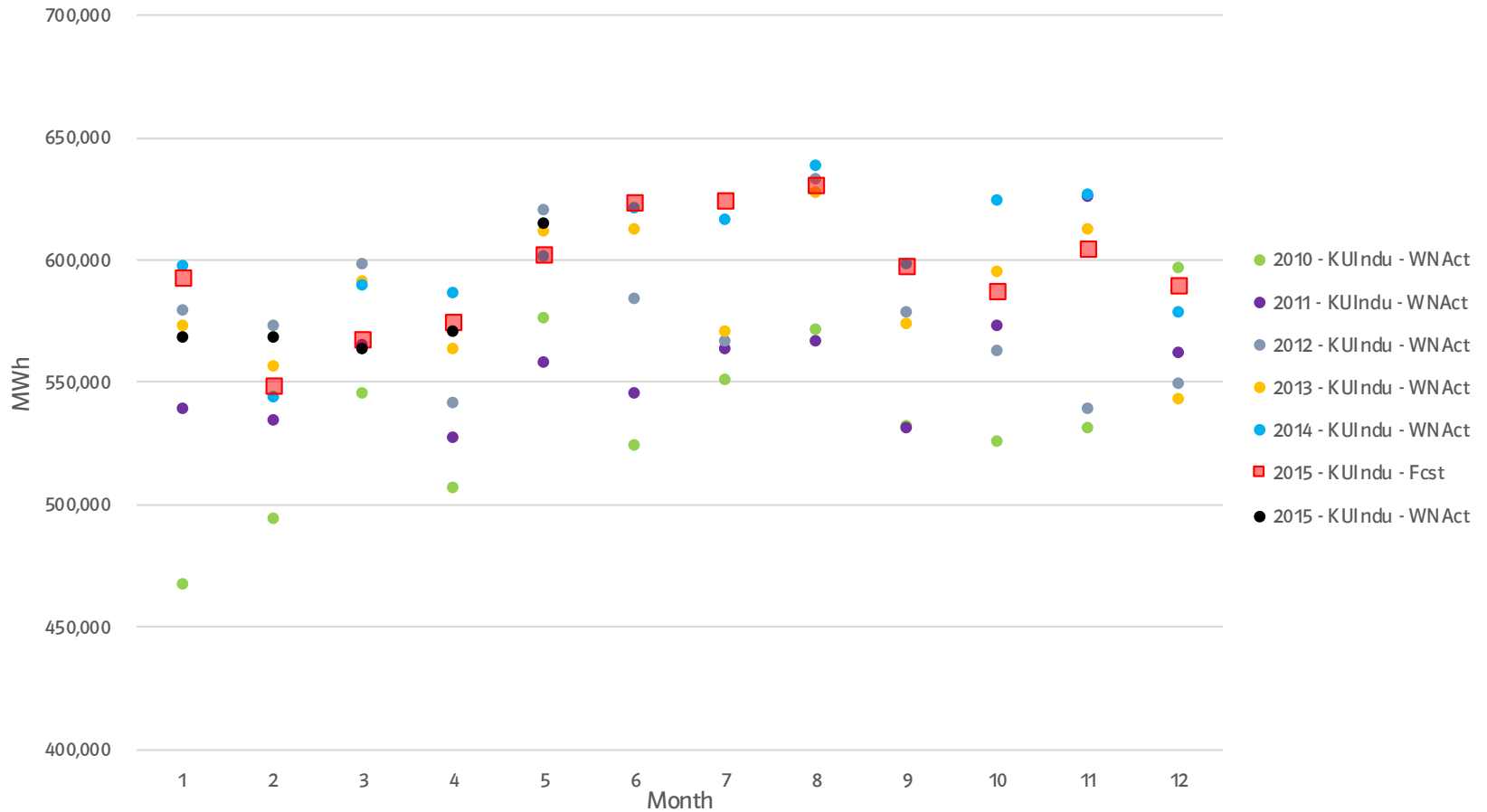
KU Commercial Sales



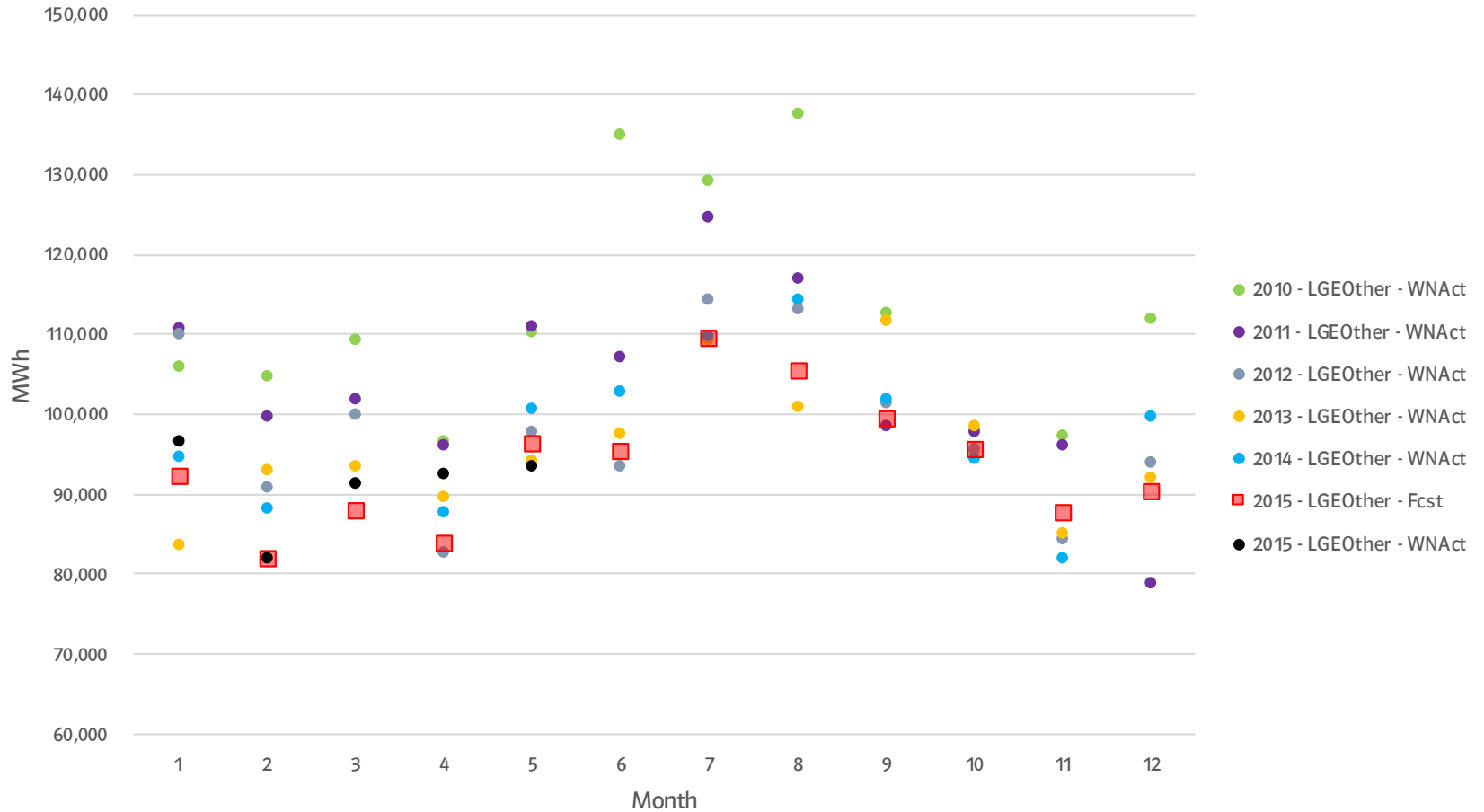
LGE Industrial Sales



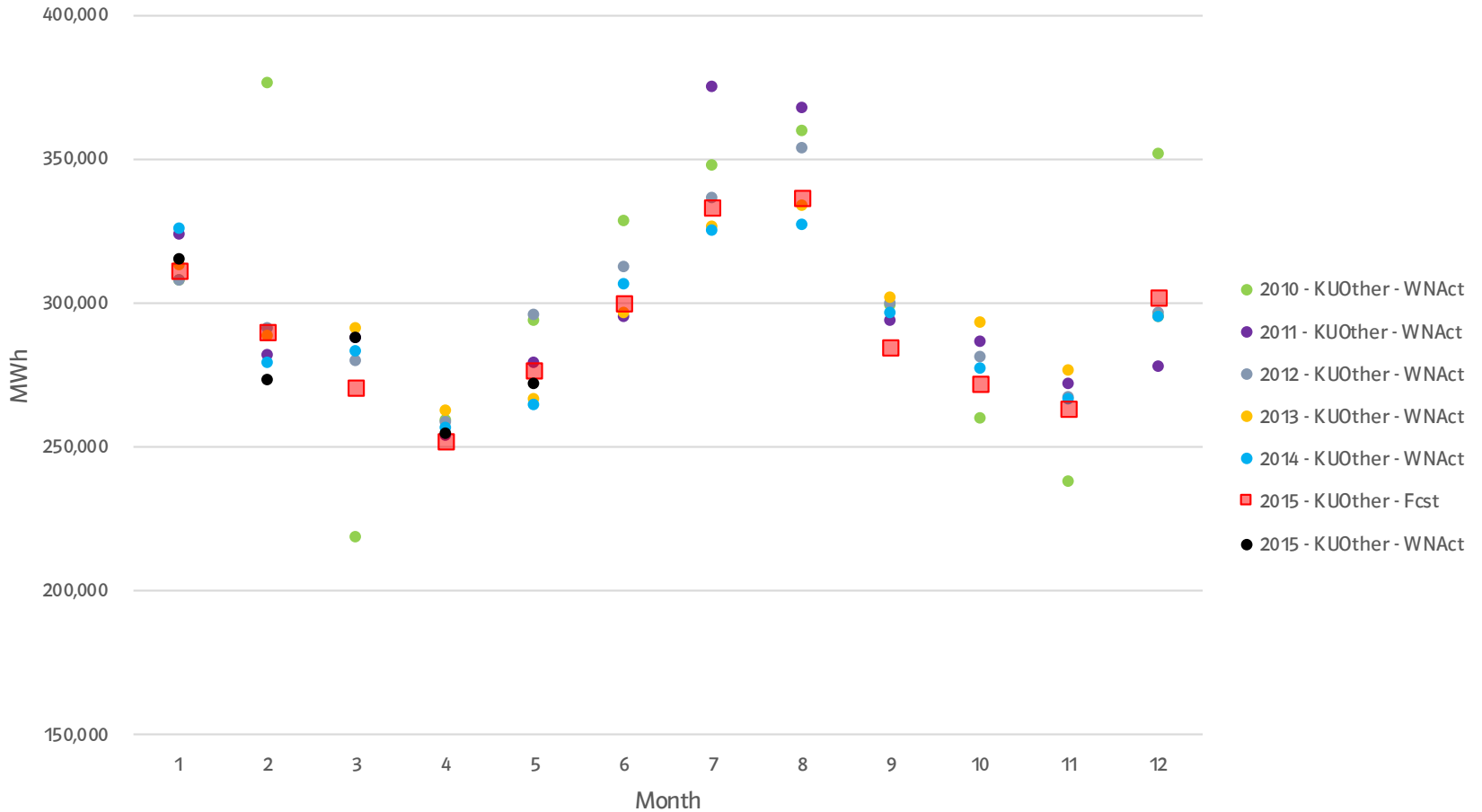
KU Industrial Sales



LGE Other (Public Authority/Lighting) Sales



KU Other (Muni, Public Authority/Lighting) Sales

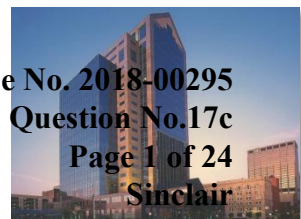




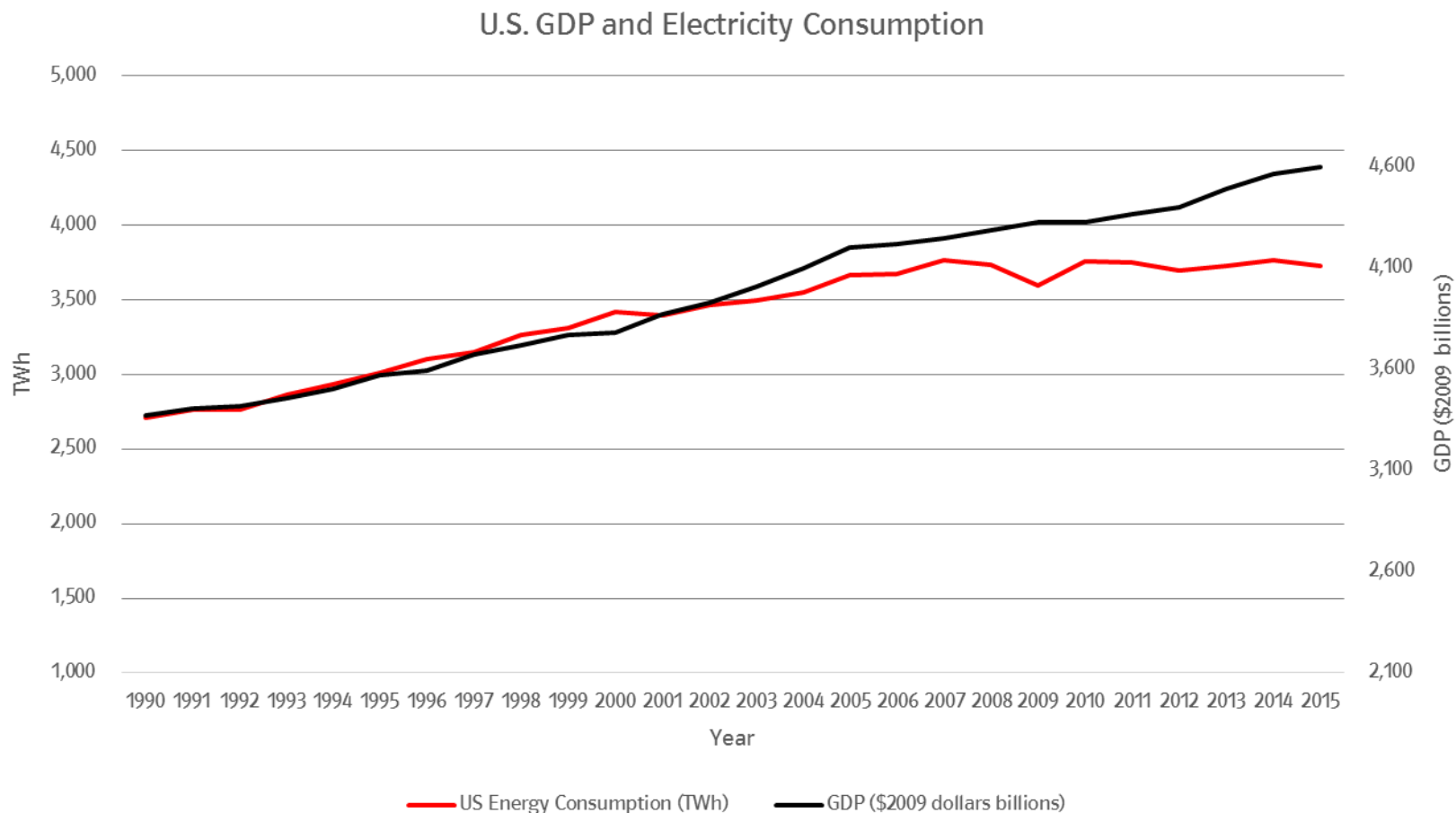
PPL companies

2017 Business Plan Electric Sales Forecast

July 11, 2016



US electricity demand has remained flat from 2010-2015

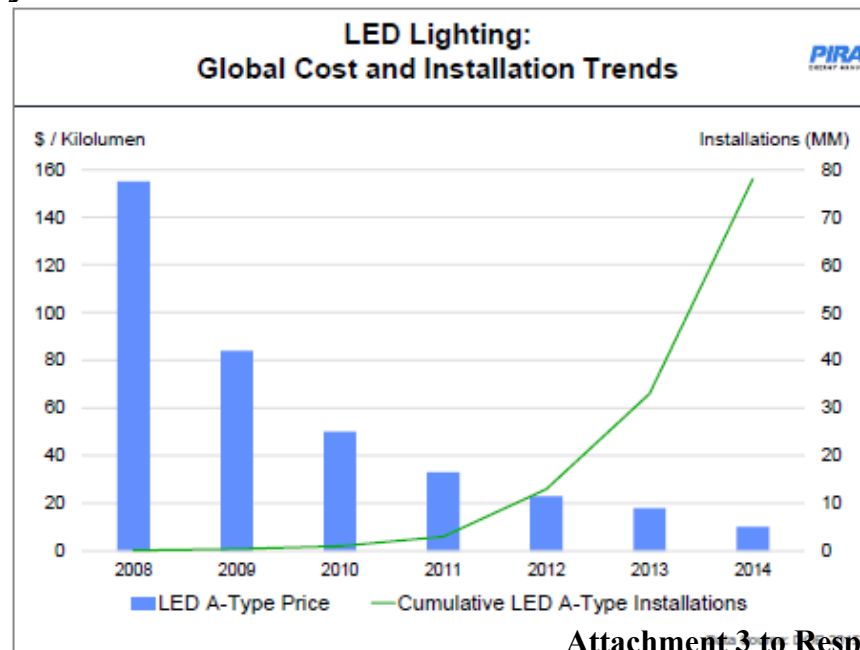


Structural headwinds may lead to declining US electricity growth

- Morgan Stanley forecasts US electricity consumption to decrease by ~0.3% annually over the next decade
 - *Forecast risk skewed to the downside given the potential for efficiency breakthroughs and / or incremental government regulations*
 - *GDP, population, computing, and electric vehicles provide the most upside*
- 0.3% CAGR 2015-2040 residential sales (EIA)
 - *Reduced from 0.5% in previous AEO*
- 0.54% CAGR in electricity sales through 2035 (PIRA)
 - *Reduced from 0.83% in previous forecast*

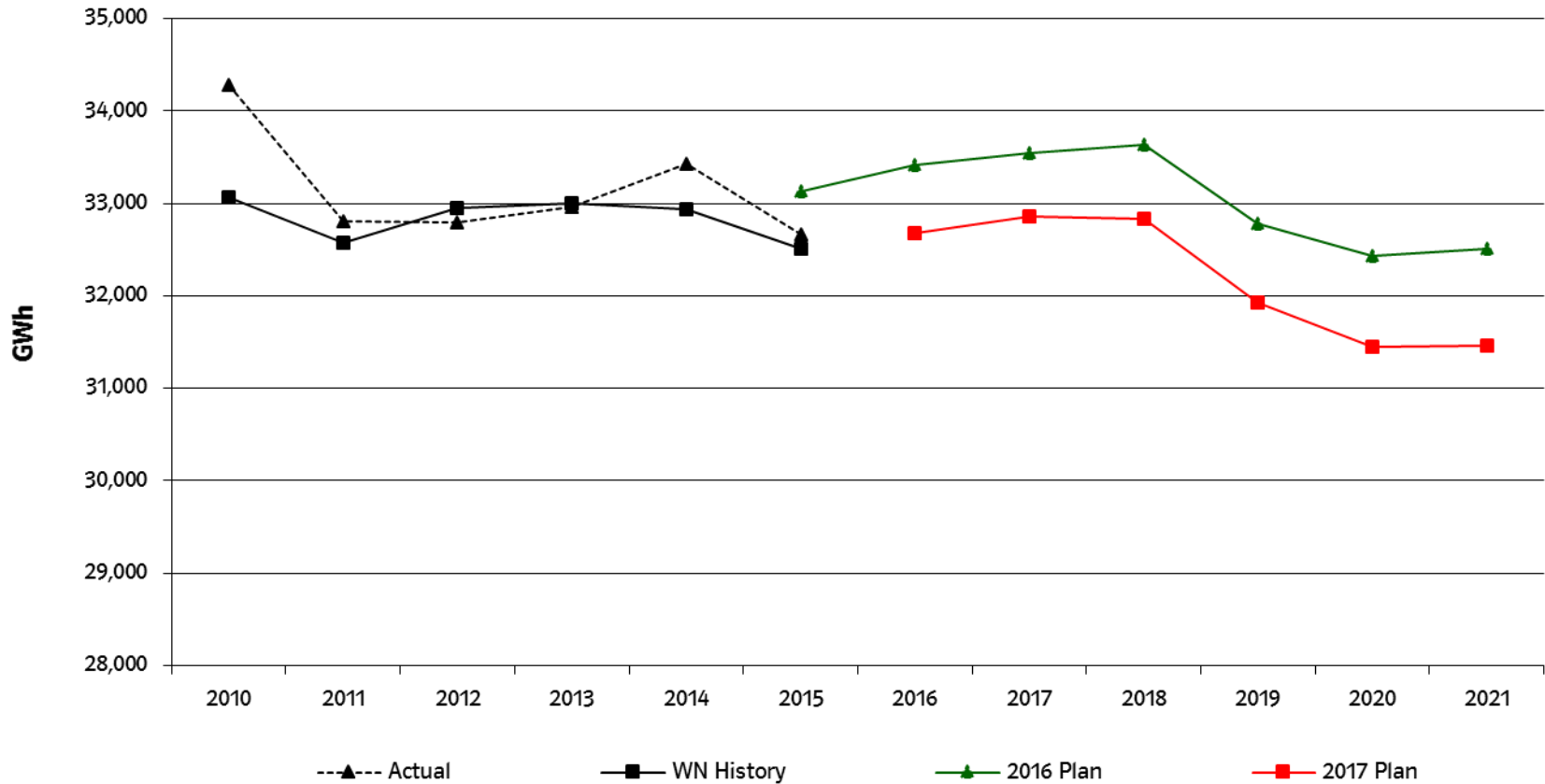
Greater anticipated end-use efficiencies drive reductions in PIRA electricity sales forecast

- LED Lighting
 - Costs have fallen 90% since 2008; efficiency expected to double by 2025.
 - DOE forecasts 48% market share by 2020 and 84% in 2030, up from 2% in 2013. This would reduce lighting consumption by 15% in 2020 and 40% in 2030.
- Space Cooling
 - New standard for commercial rooftop air conditioners in 2018 expected to cut consumption by 30%.



2017 Plan 2-3% lower through 2021

Combined Company Total Electricity Sales

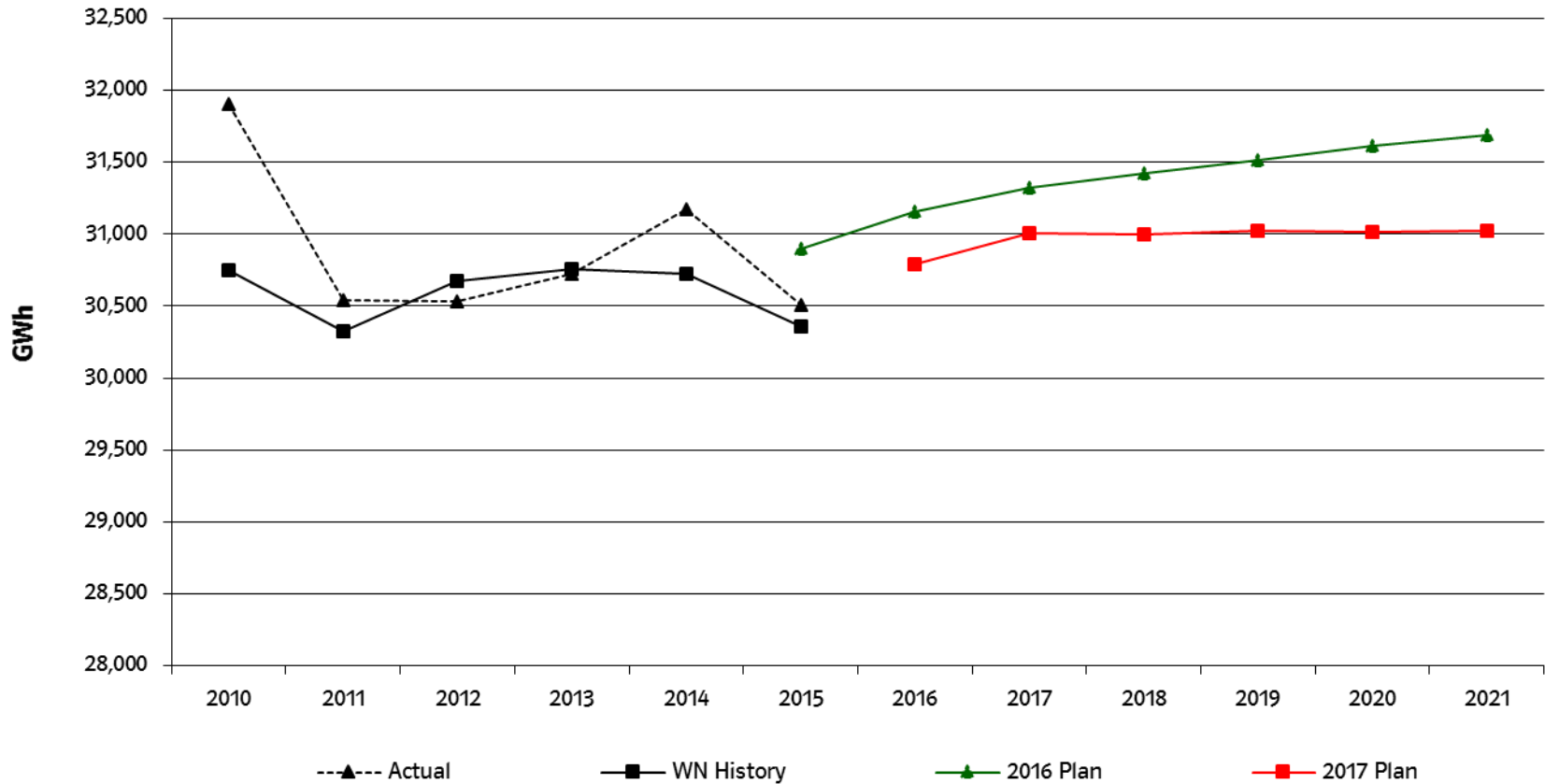


In 2017 Plan forecast, 2016 value is a weather-normalized 5+7 forecast.

██████ and Municipal customers included

2017 Plan lower than 2016 Plan with slower growth

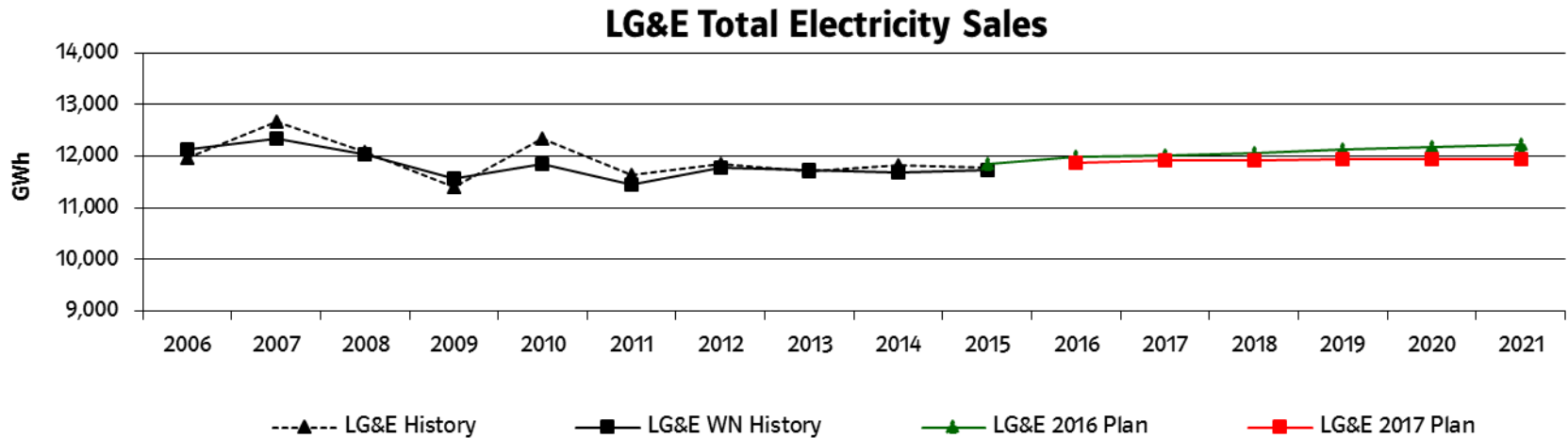
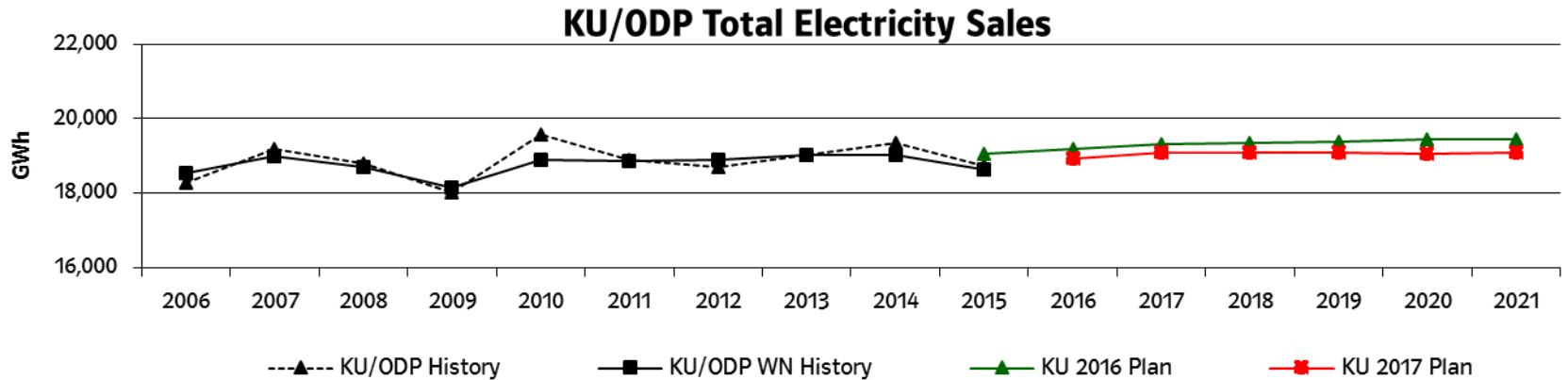
Combined Company Total Electricity Sales



In 2017 Plan forecast, 2016 value is a weather-normalized 5+7 forecast.

██████████ and Municipal customers have been excluded.

Sales forecasts decreased for both LG&E and KU

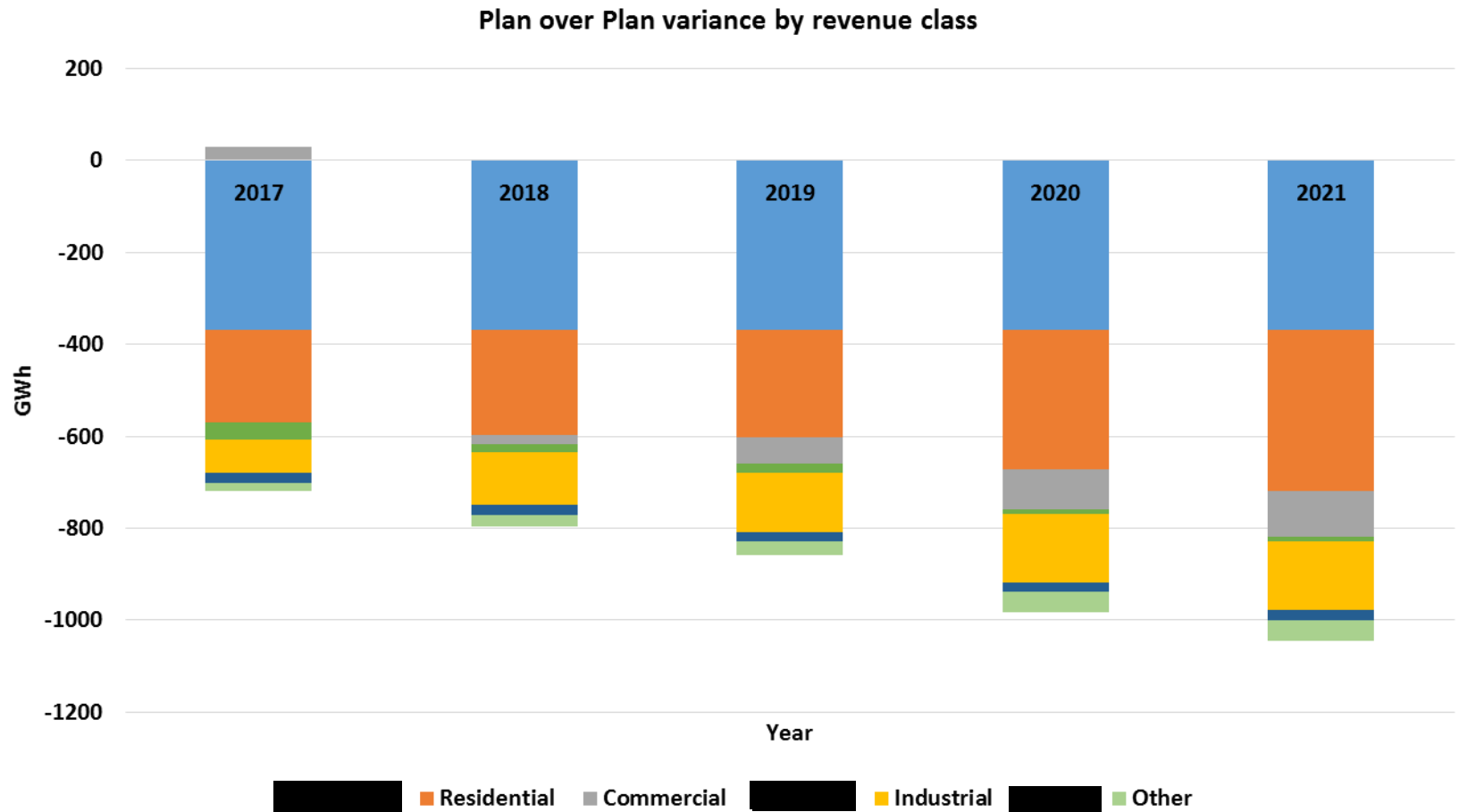


In 2017 Plan forecast, 2016 value is a weather-normalized 5+7 forecast.

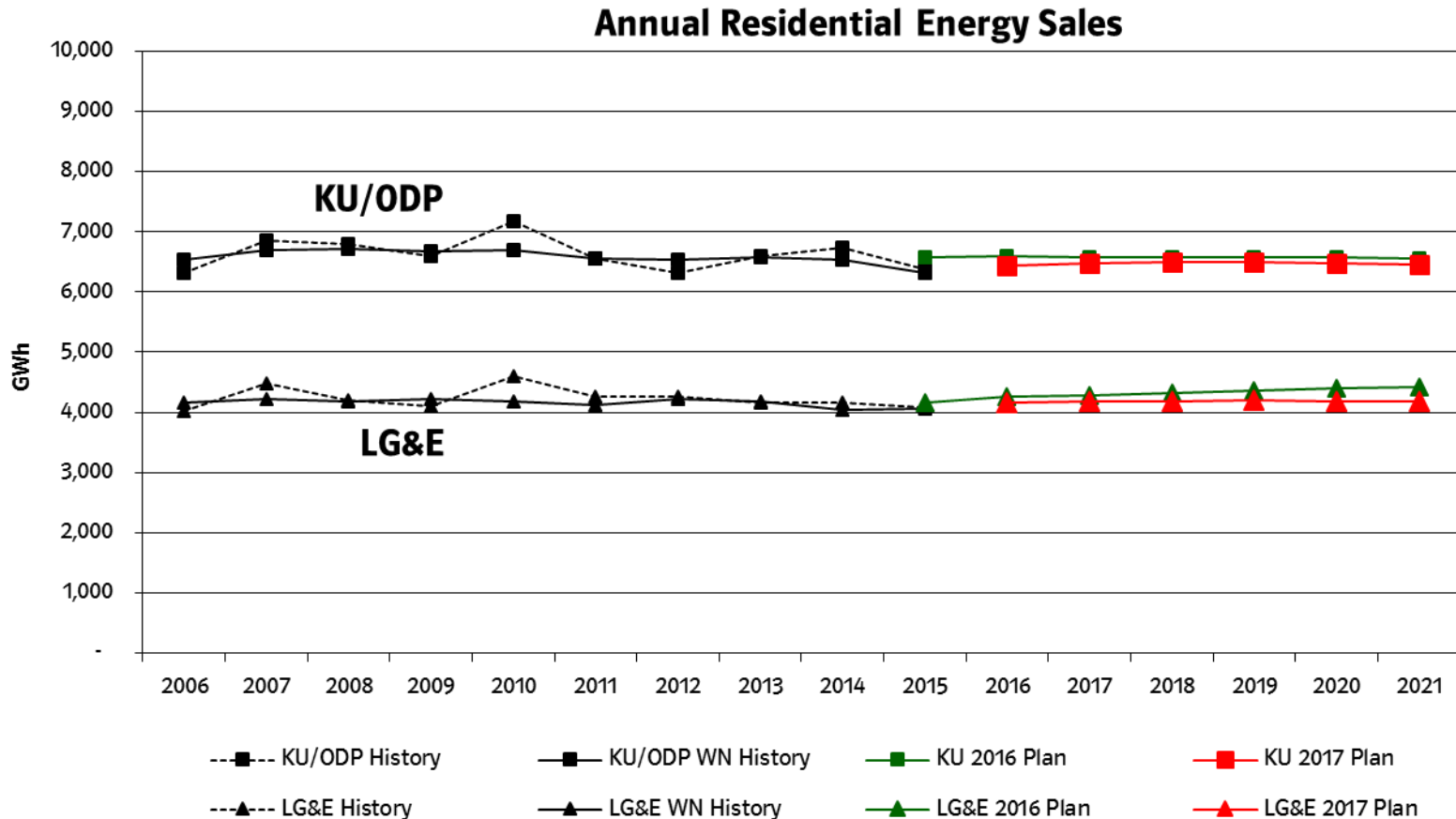
█ and Municipal customers have been excluded.

Case No. 2018-00295
Attachment 3 to Response to KUUC-1 Question No. 17c

Loss of [REDACTED] and reductions to Residential and Industrial forecasts drive forecast variances

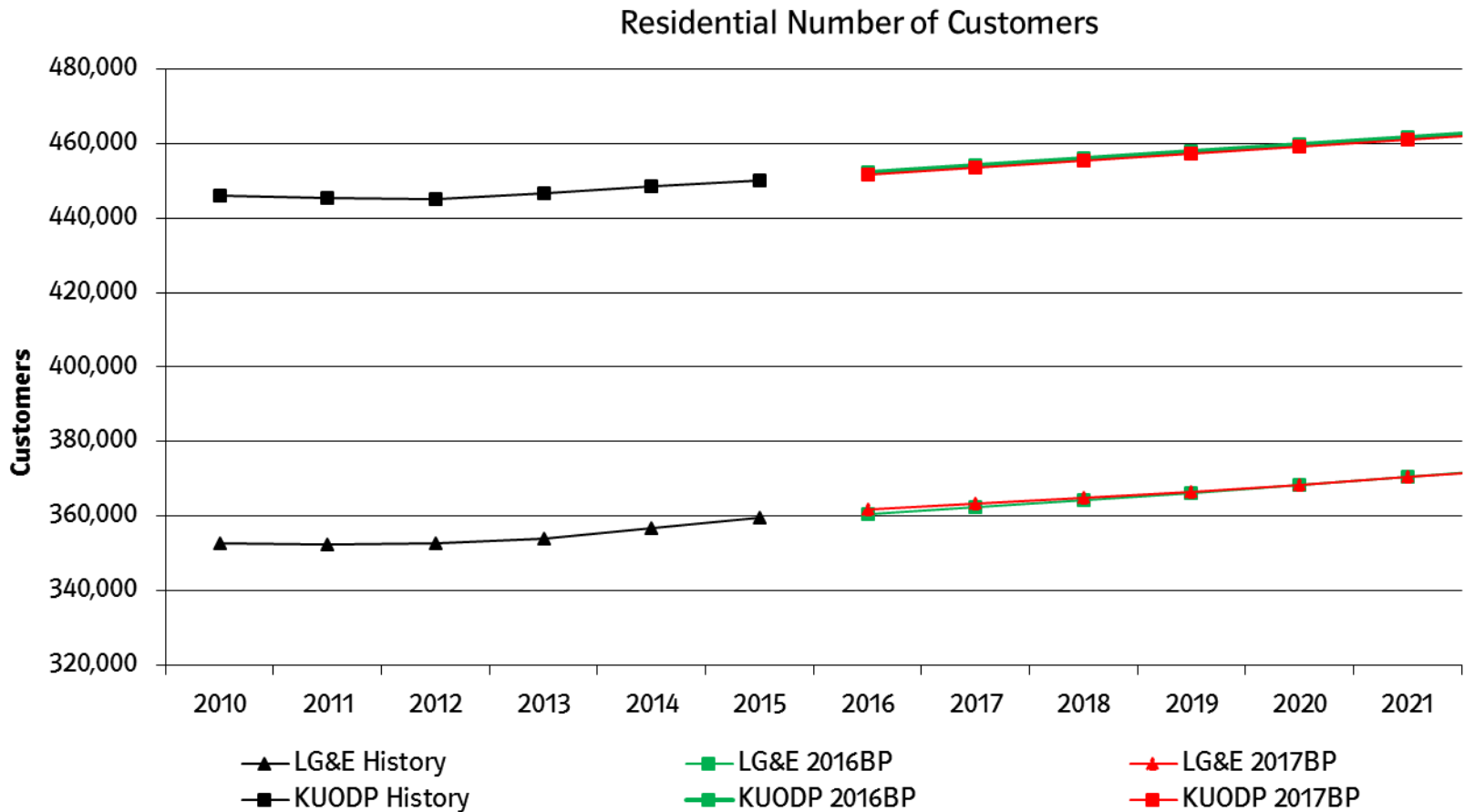


Residential Sales remain flat as increased efficiency offsets customer growth

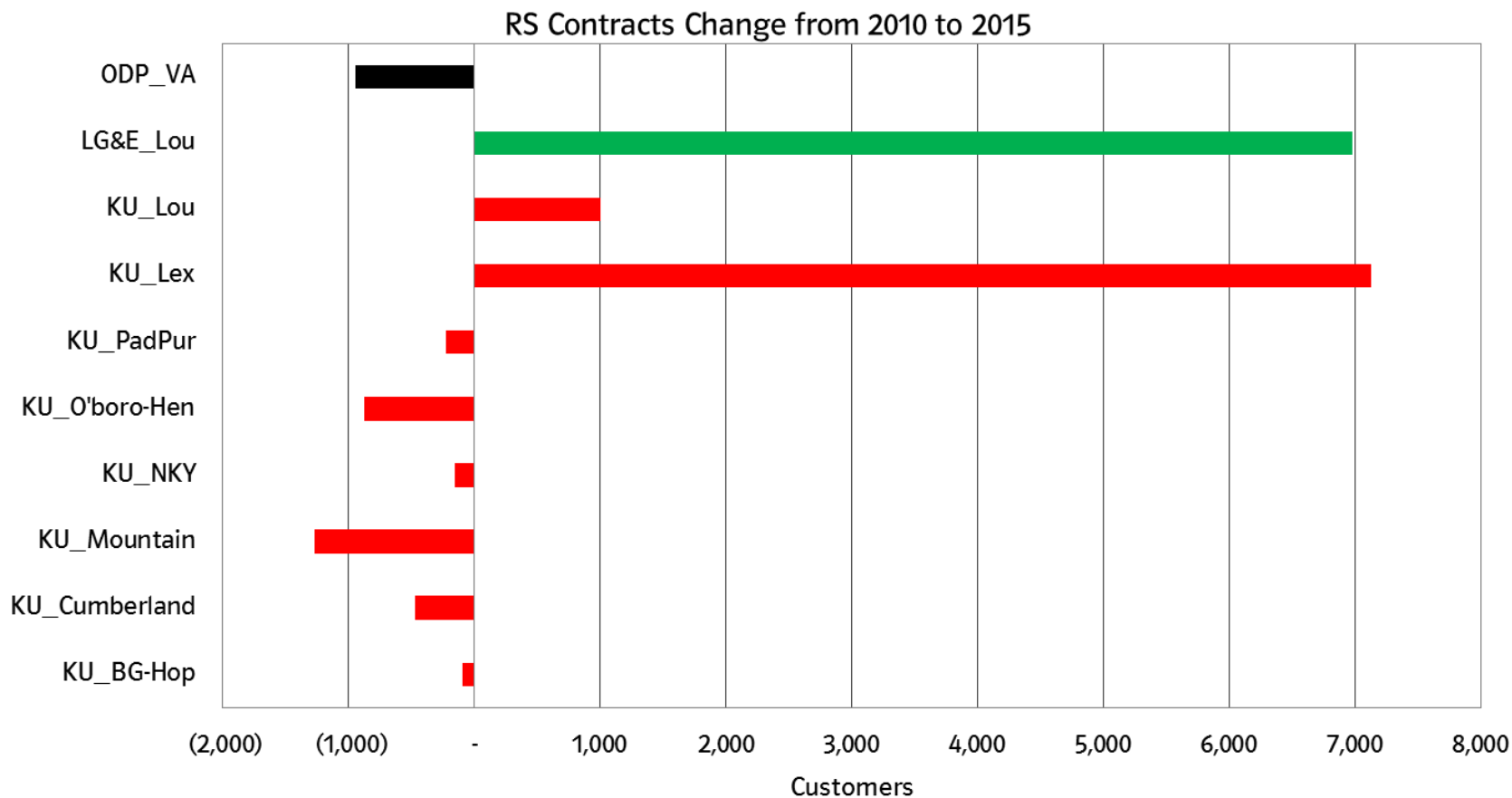


In 2017 Plan forecast, 2016 value is a weather-normalized 5+7 forecast.

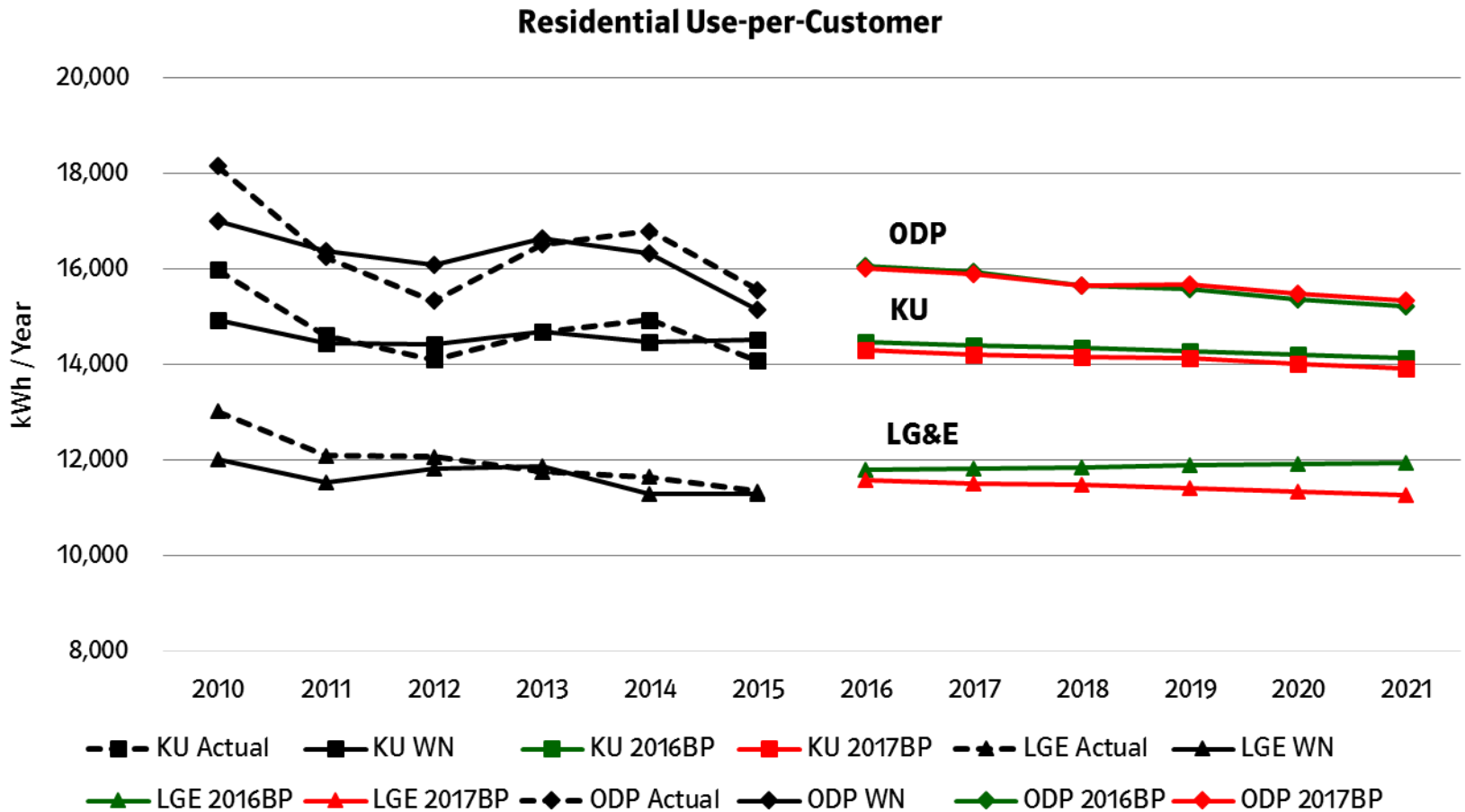
0.4% Annual Residential Customer Growth



Residential customer growth tempered by reductions in rural regions

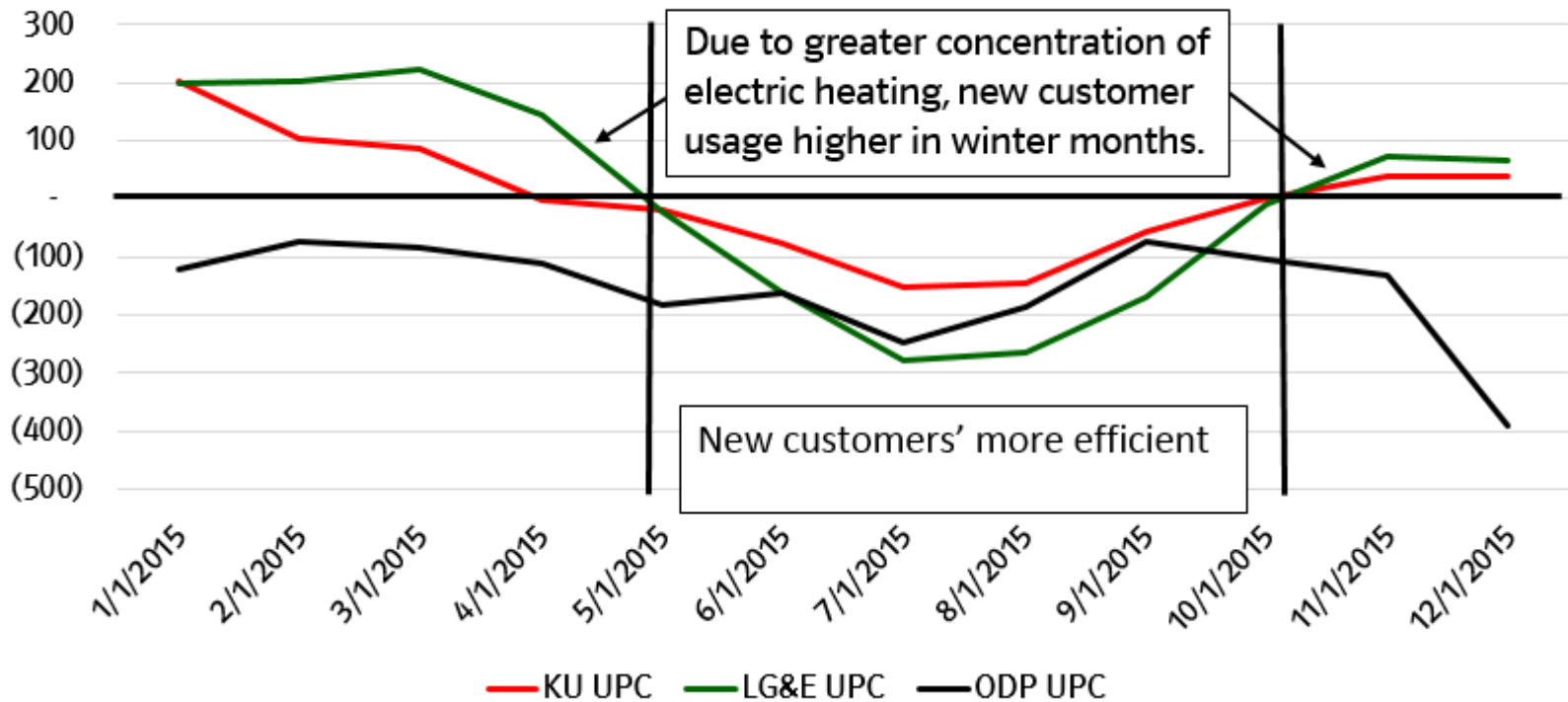


Consistent with history, residential usage per customer declining in all service territories



Electric heating offsetting efficiency impacts at LG&E

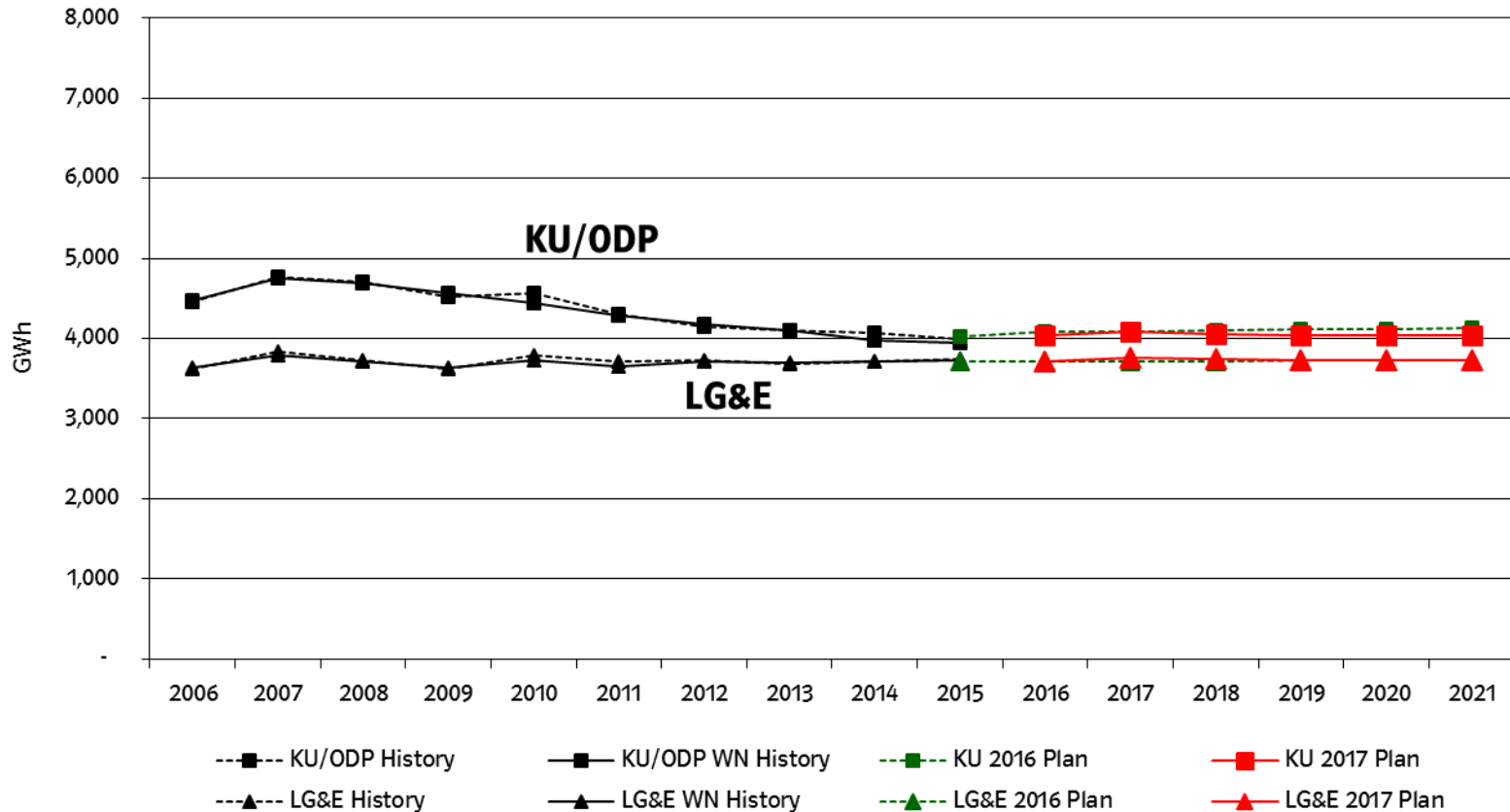
UPC Variance: New Customers less Existing Customers



	Existing UPC	New Premise UPC	% Change
KU	14,251	14,269	0%
LG&E	11,461	11,465	0%
ODP	15,782	13,917	-12%

KU Commercial remains flat after post-recessionary decline

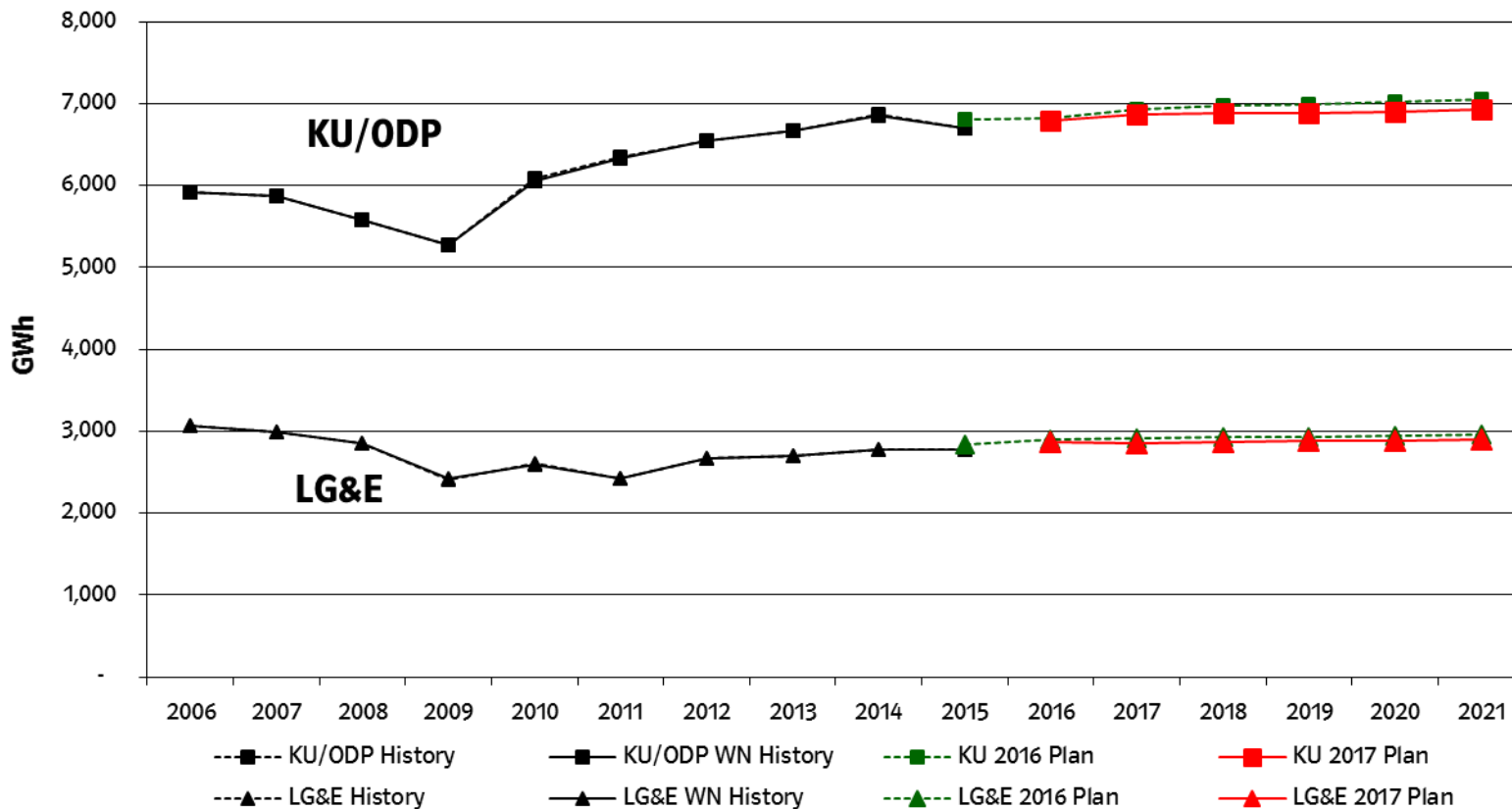
Annual Commercial Energy Sales



In 2017 Plan forecast, 2016 value is a weather-normalized 5+7 forecast.

Major accounts drive short-term Industrial growth

Annual Industrial Energy Sales

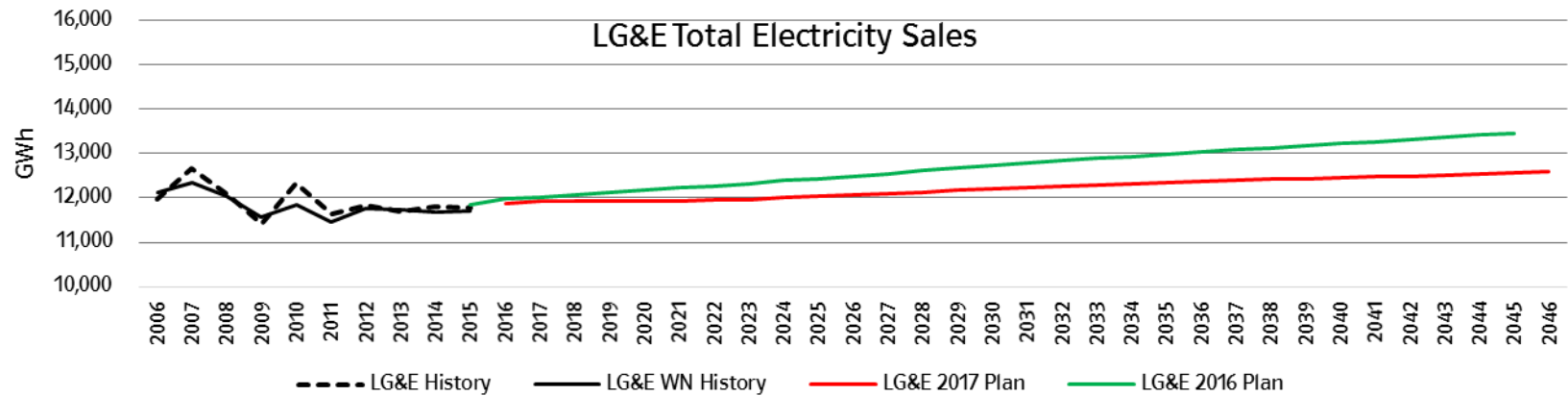
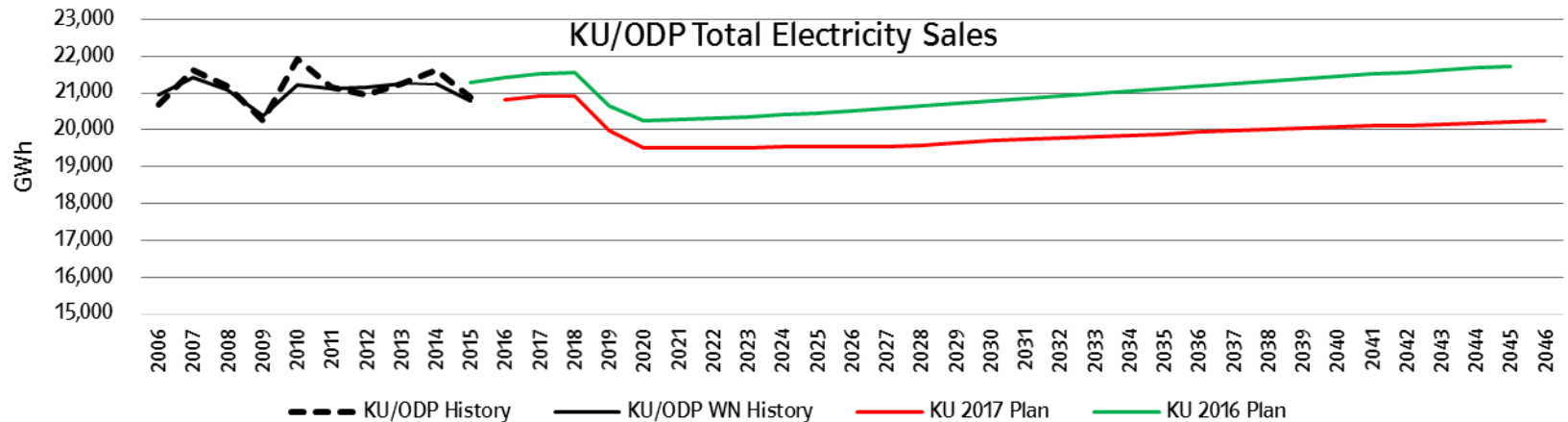


In 2017 Plan forecast, 2016 value is a weather-normalized 5+7 forecast.

██████ has been excluded.

Attachment 3 to Response to KUC-1 Question No. 17c

Consistent with national forecasts, 2017 Plan long-term growth rate is lower than 2016 Plan



Downside risks likely outweigh upside risks in 2017 Plan forecast

- Downside risk
 - *Faster LED adoption*
 - *Faster coal decline*
 - *Auto industry recession*
 - *General US recession*
- Upside risk
 - *Rapid EV expansion*
 - *Major economic development*

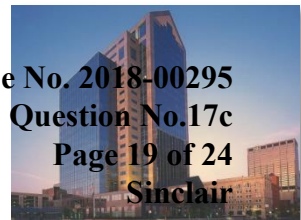
Conclusion

- Consistent with national forecasts, 2017 Plan lower than 2016 Plan
- Modest growth in near-term due to major account expansions
- Loss of [REDACTED] and slower growth in Residential sales will also reduce peak demand



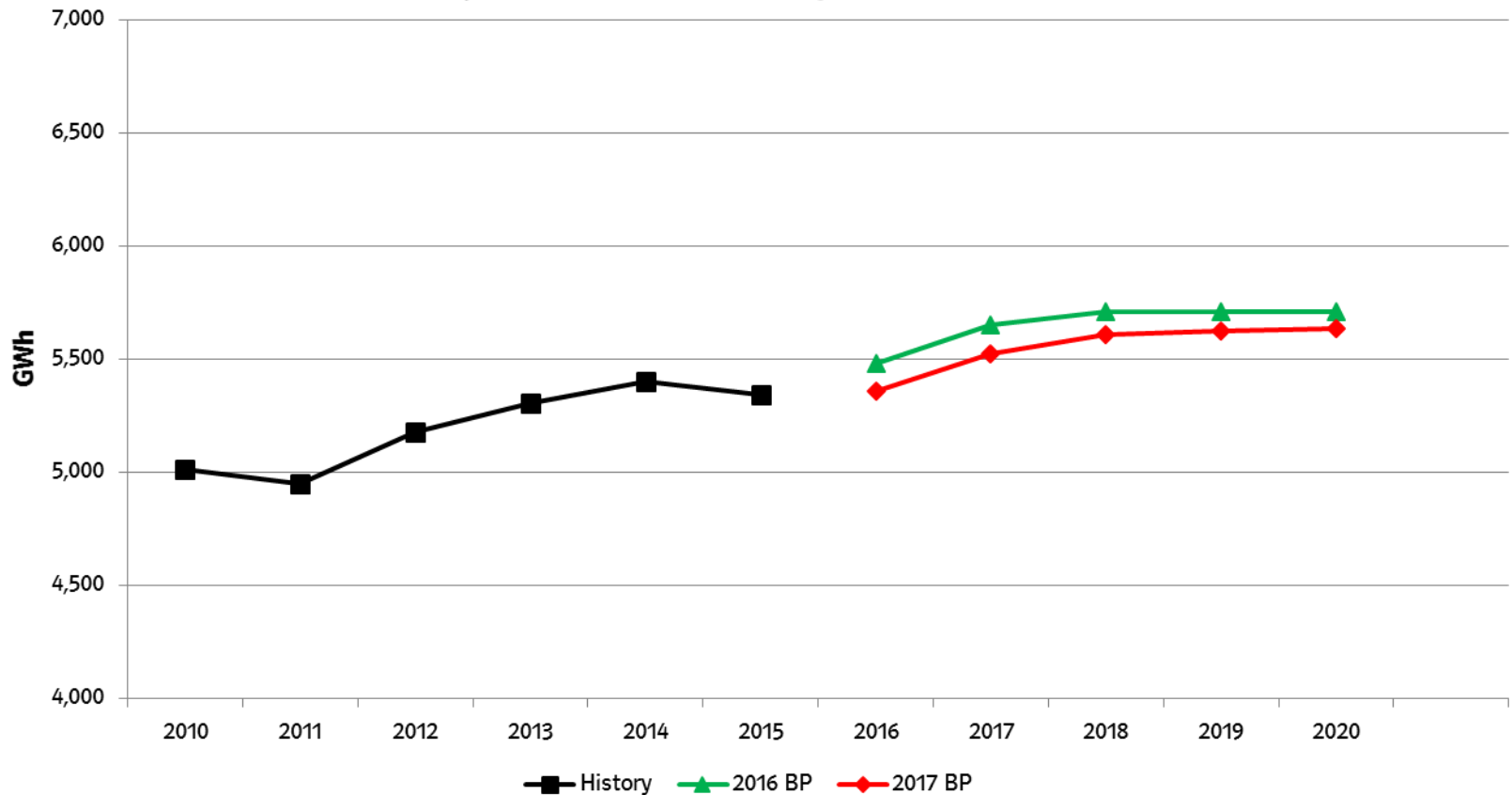
PPL companies

Appendix



Major Accounts below 2016 Plan; growth through 2018 led by [REDACTED] and [REDACTED]

Major Accounts History and Forecast

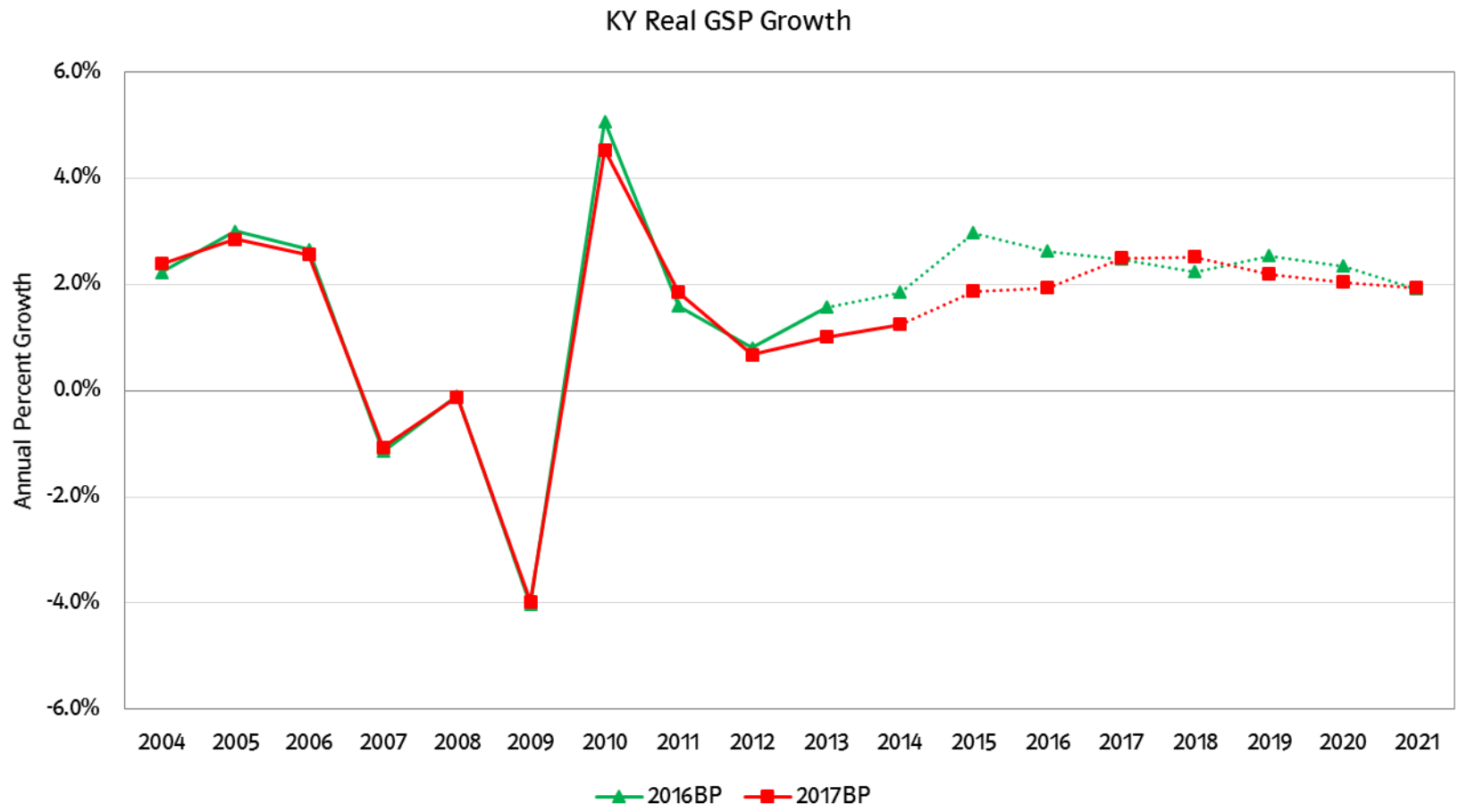


[REDACTED] removed from history and 2016 Plan

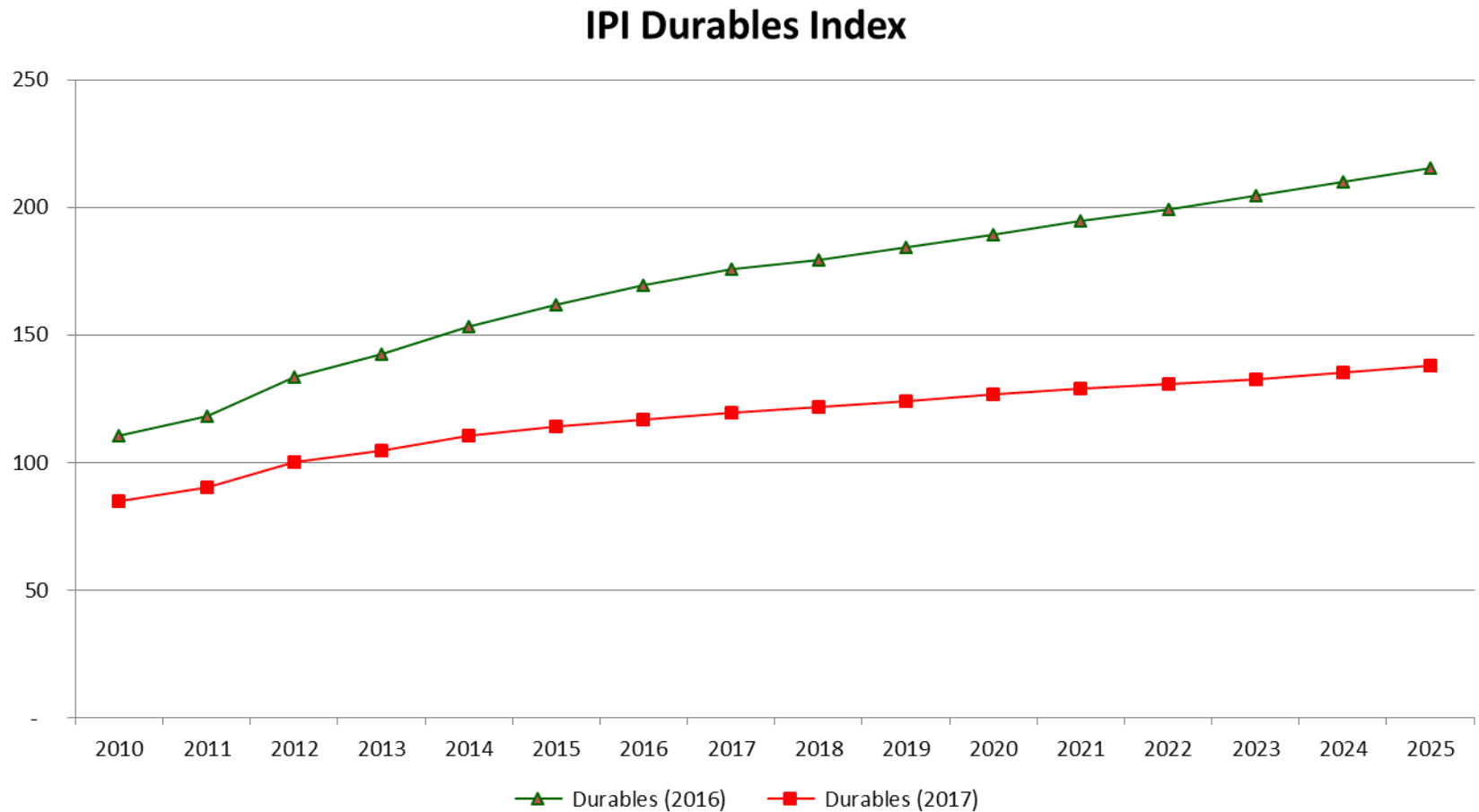
Plan over plan Major Account changes in 2017

Major Account	2017 Plan (GWh)	2016 Plan (GWh)	Delta (GWh)	Notes
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

GSP recent history revised downwards

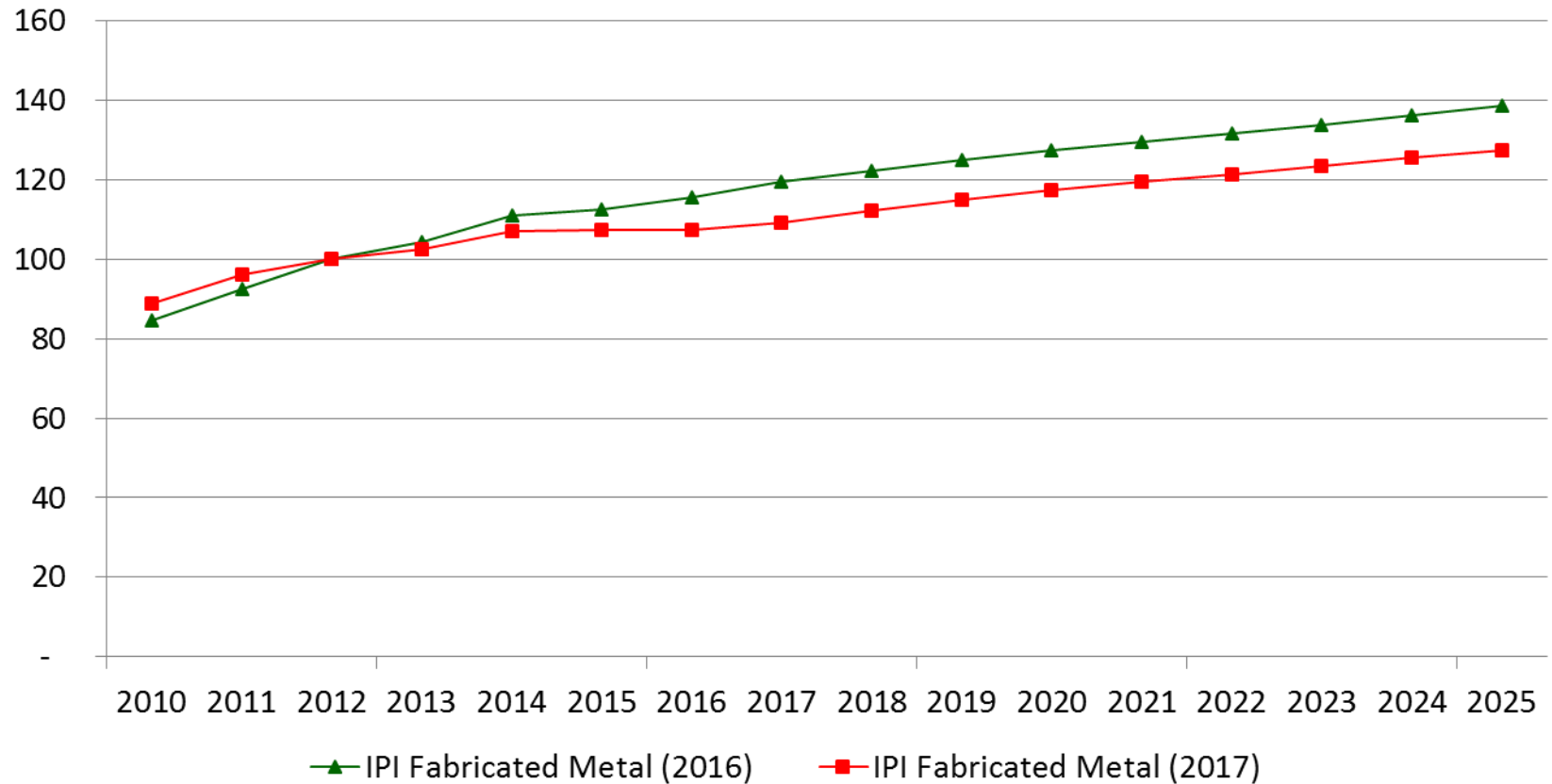


IPI Durables lower than 2016 Plan



Fabricated Metals Index lowered in near term

IPI Fabricated Metals Index



2018 Business Plan Electric Sales Forecast



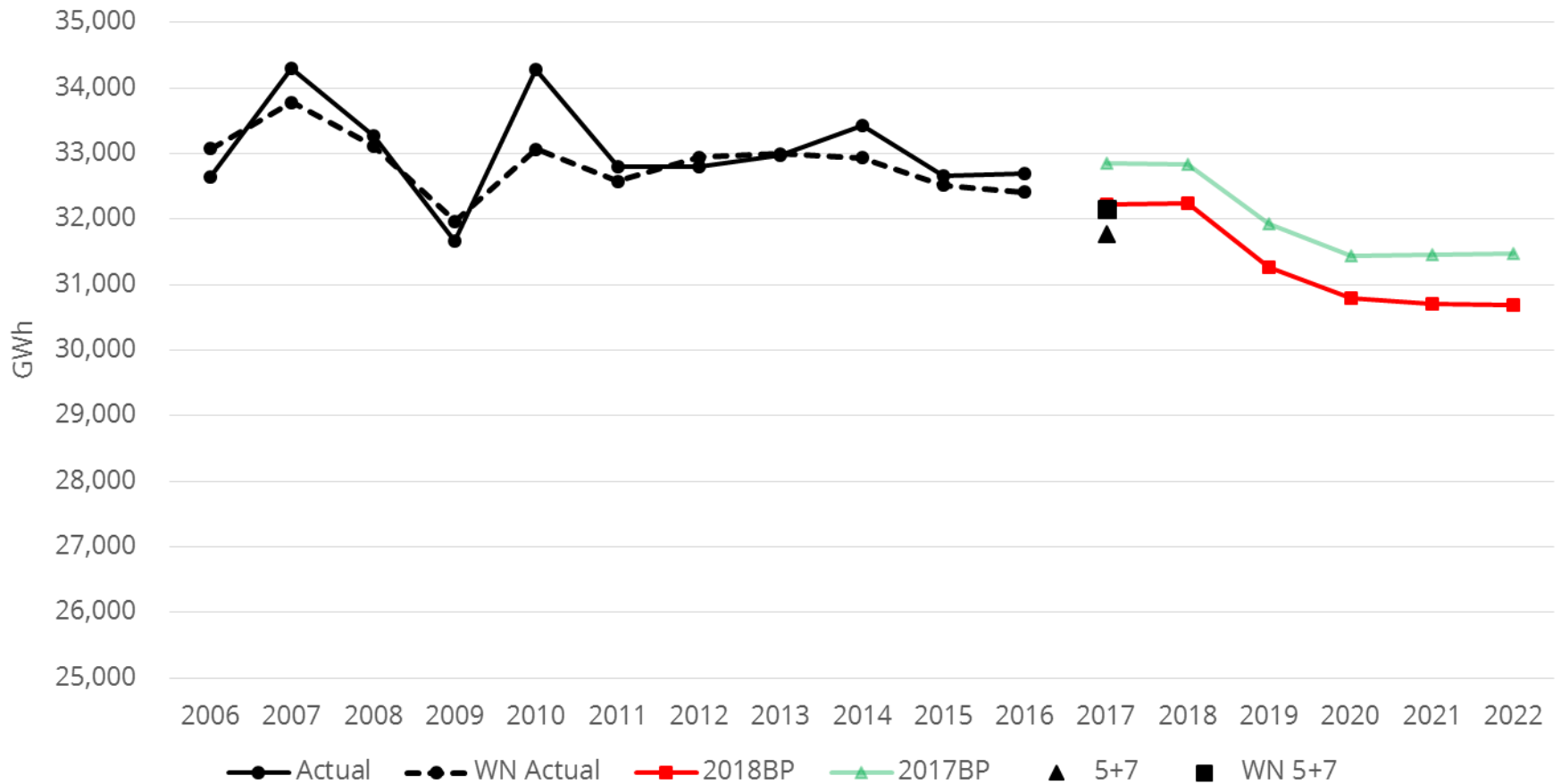
Sales Analysis & Forecasting
July 11, 2017

Forecast Summary

- 2018 Plan sales forecast is 597 GWh (1.8%) lower in 2018 vs. 2017 Plan; 2-2.5% lower through 2022
 - 316 GWh lower in Q3 and Q4 of 2017
 - Decrease driven by residential, commercial, and industrial efficiency gains
- Increasing penetration of distributed solar generation reduces energy requirements by 947 GWh in 2040
 - Impact is small through 2022
- Ignoring likelihood of extreme weather, annual sales can vary by over 1,000 GWh due to weather

Municipal departure dominates near-term trend in Combined Company sales forecast

Combined Company Calendar Sales



Case No. 2018-00295

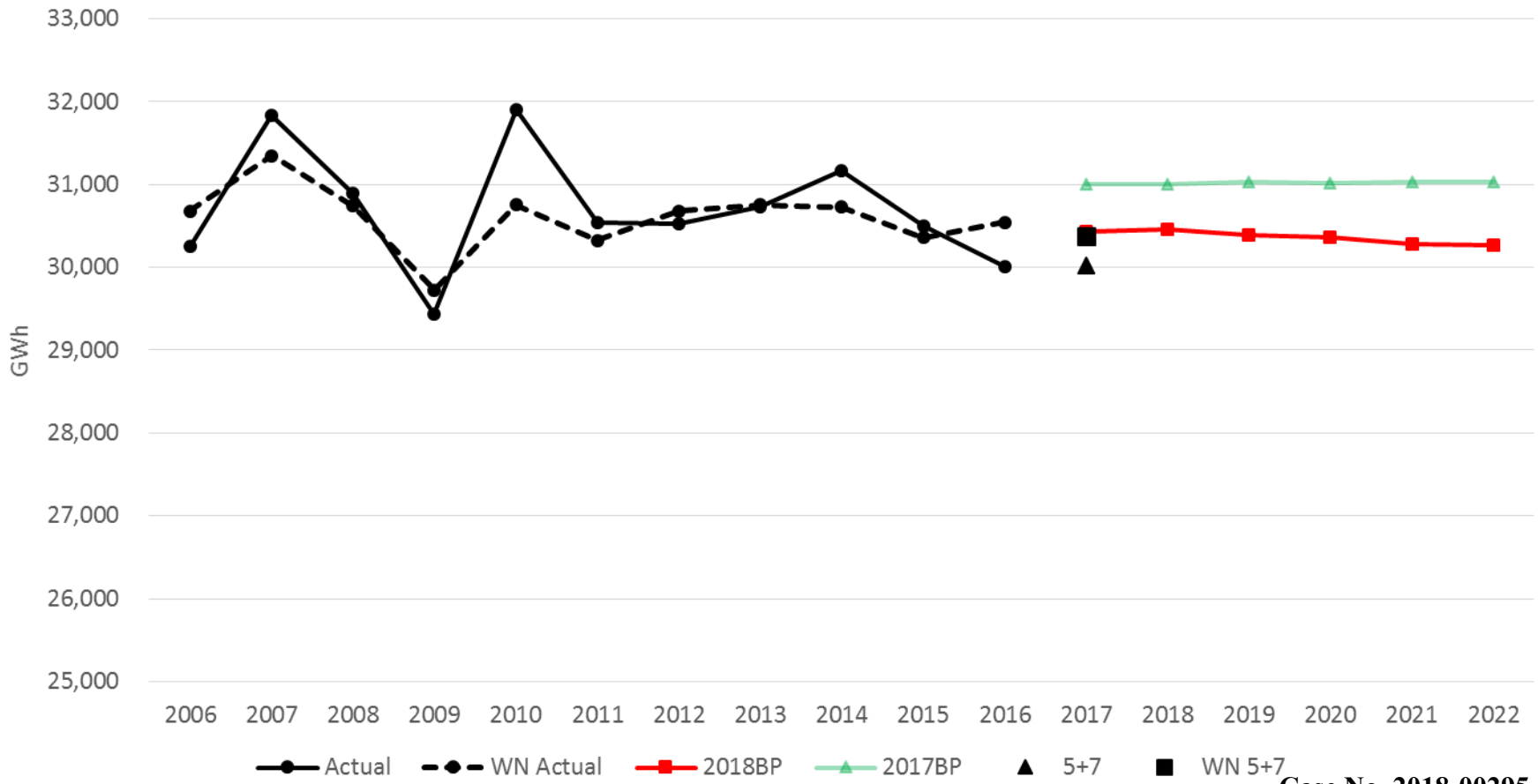
Attachment 4 to Response to KIUC-1 Question No.17c

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Sinclair

Excluding municipals, plan-over-plan decline in 2018 is 541 GWh

Combined Company Calendar Sales Excl. Municipals/ [REDACTED]



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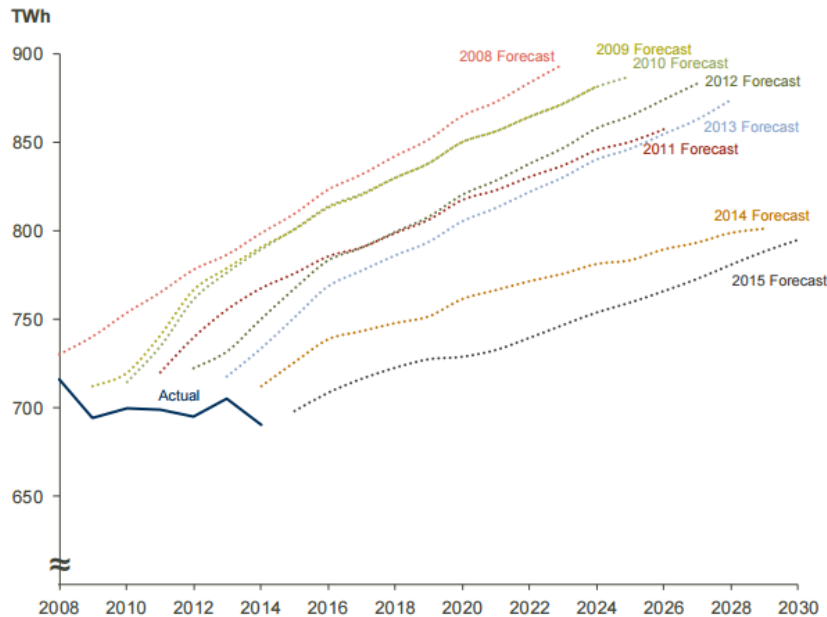
Attachment 4 to Response to KIUC-1 Question No.17c

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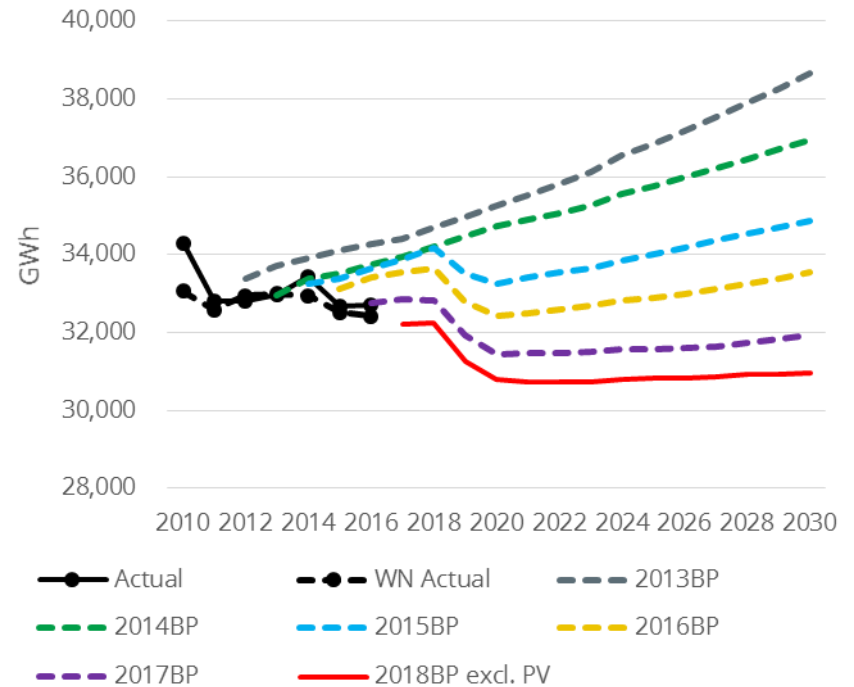
Sinclair

Load forecasts have been progressively lowered over past 5-10 years

PJM Long Term Energy Forecasts



LKE Combined Company Sales



Case No. 2018-00295

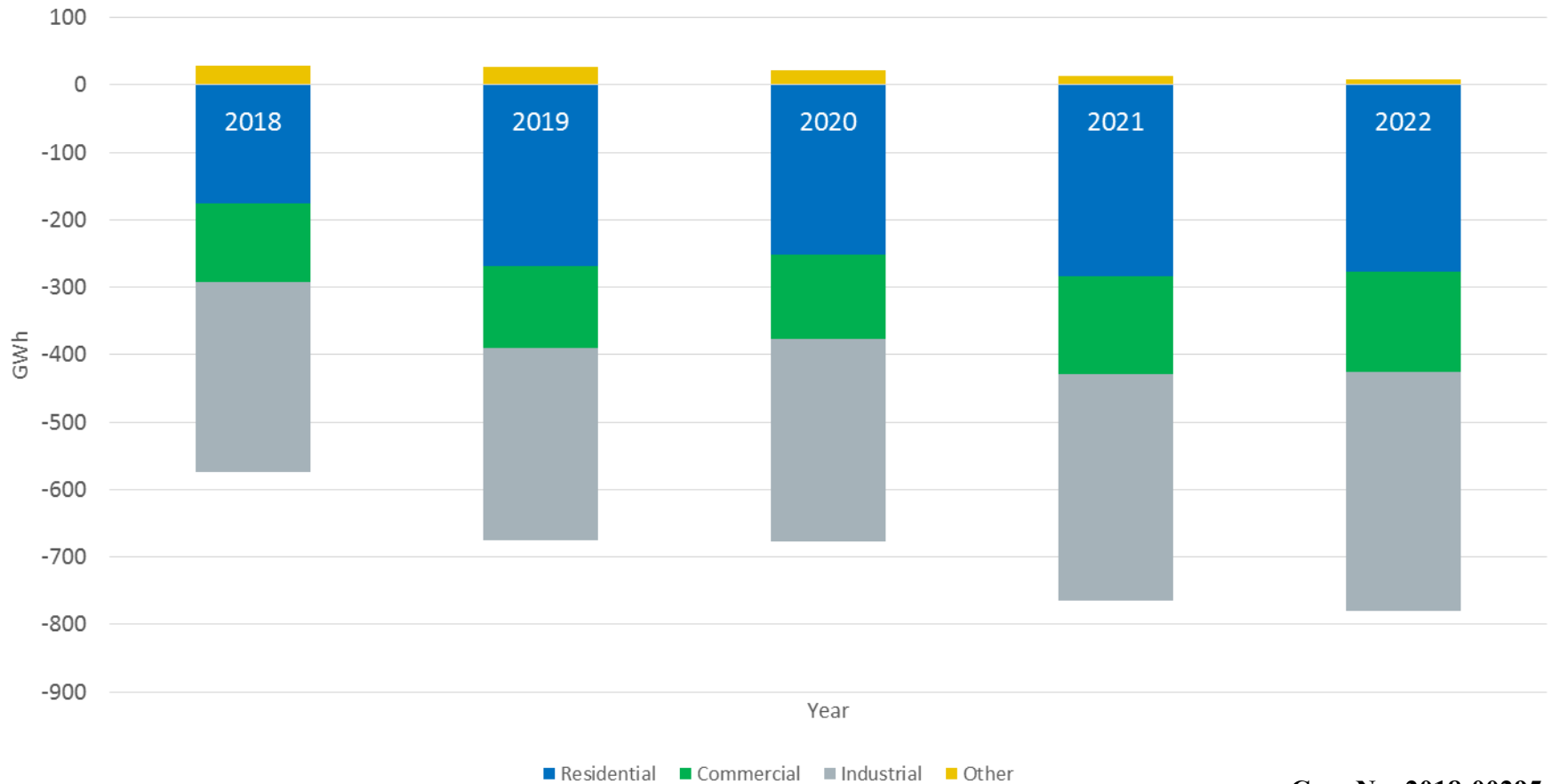
Attachment 4 to Response to KIUC-1 Question No.17c

Page 5 of 23

Sinclair

Residential and Industrial decreases drive plan-over-plan variance

Plan over Plan variance by revenue class



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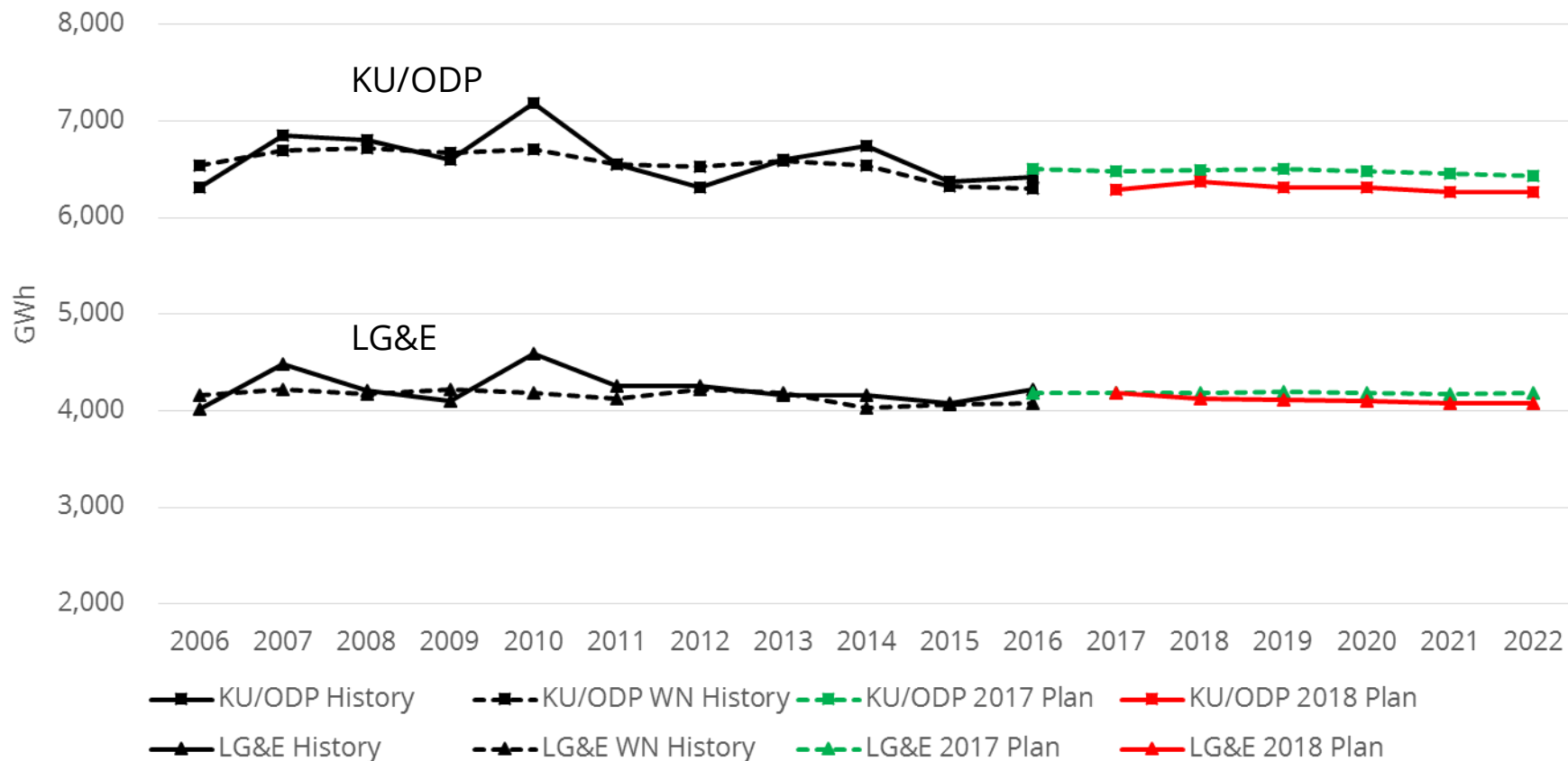
Attachment 4 to Response to KIUC-1 Question No.17c

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Sinclair

Residential use-per-customer decreases outweigh customer growth through 2022

Annual Residential Energy Sales



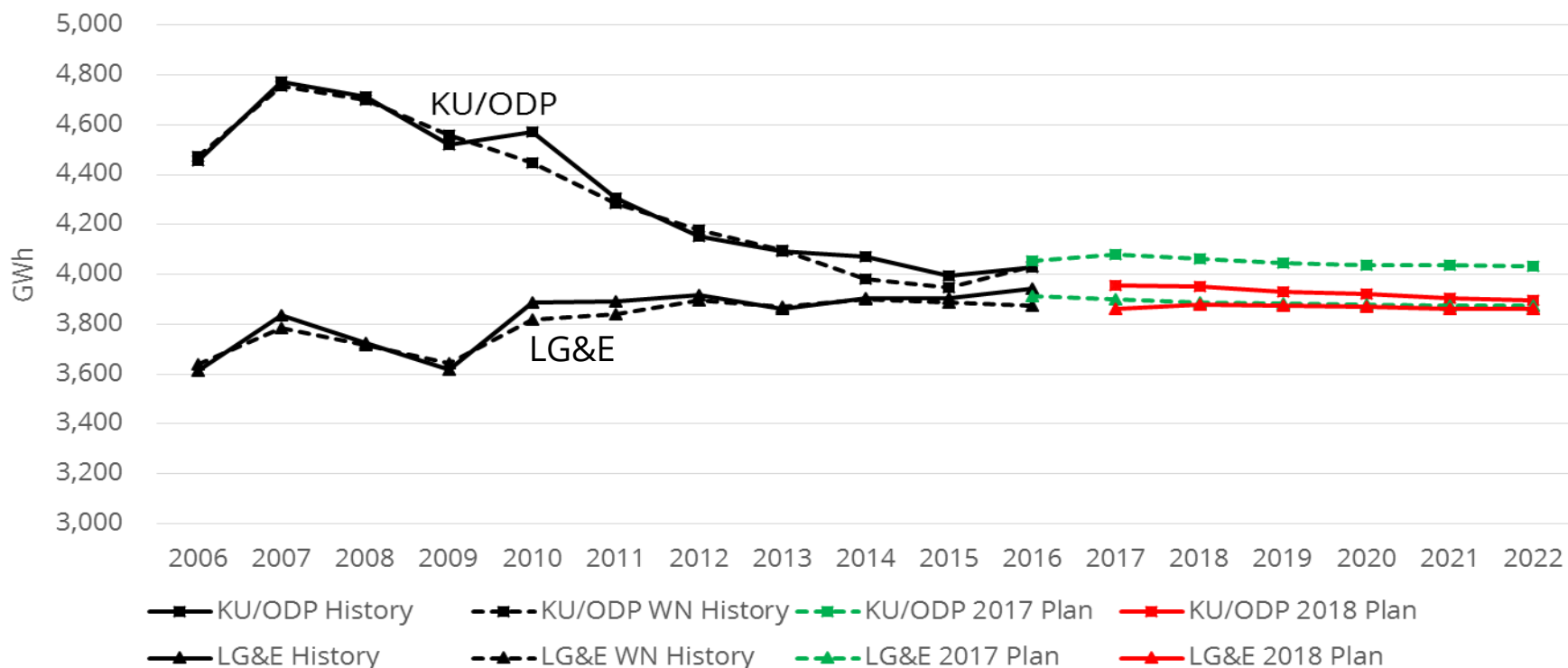
In 2018 Plan forecast, 2017 value is a weather-normalized 5+7 forecast

Case No. 2018-00295

Attachment 4 to Response to KIUC-1 Question No.17c

Cooling and lighting efficiencies continue to drive Commercial sales lower through 2022

Annual Commercial Energy Sales



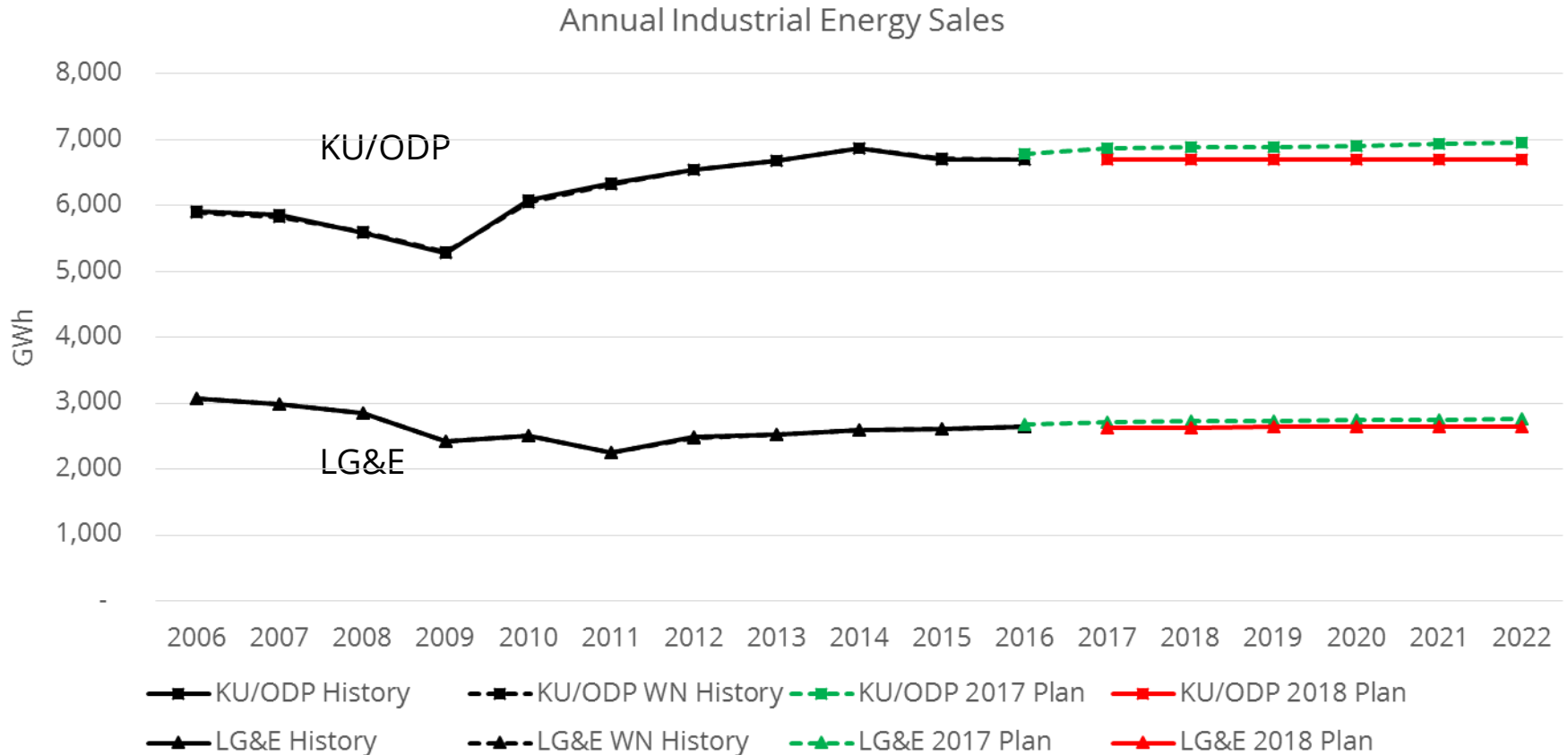
In 2018 Plan forecast, 2017 value is a weather-normalized 5+7 forecast
 Historical ████ volumes included in Commercial

Case No. 2018-00295

Attachment 4 to Response to KIUC-1 Question No.17c

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 Sinclair

Industrial sales remain flat



In 2018 Plan forecast, 2017 value is a weather-normalized 5+7 forecast

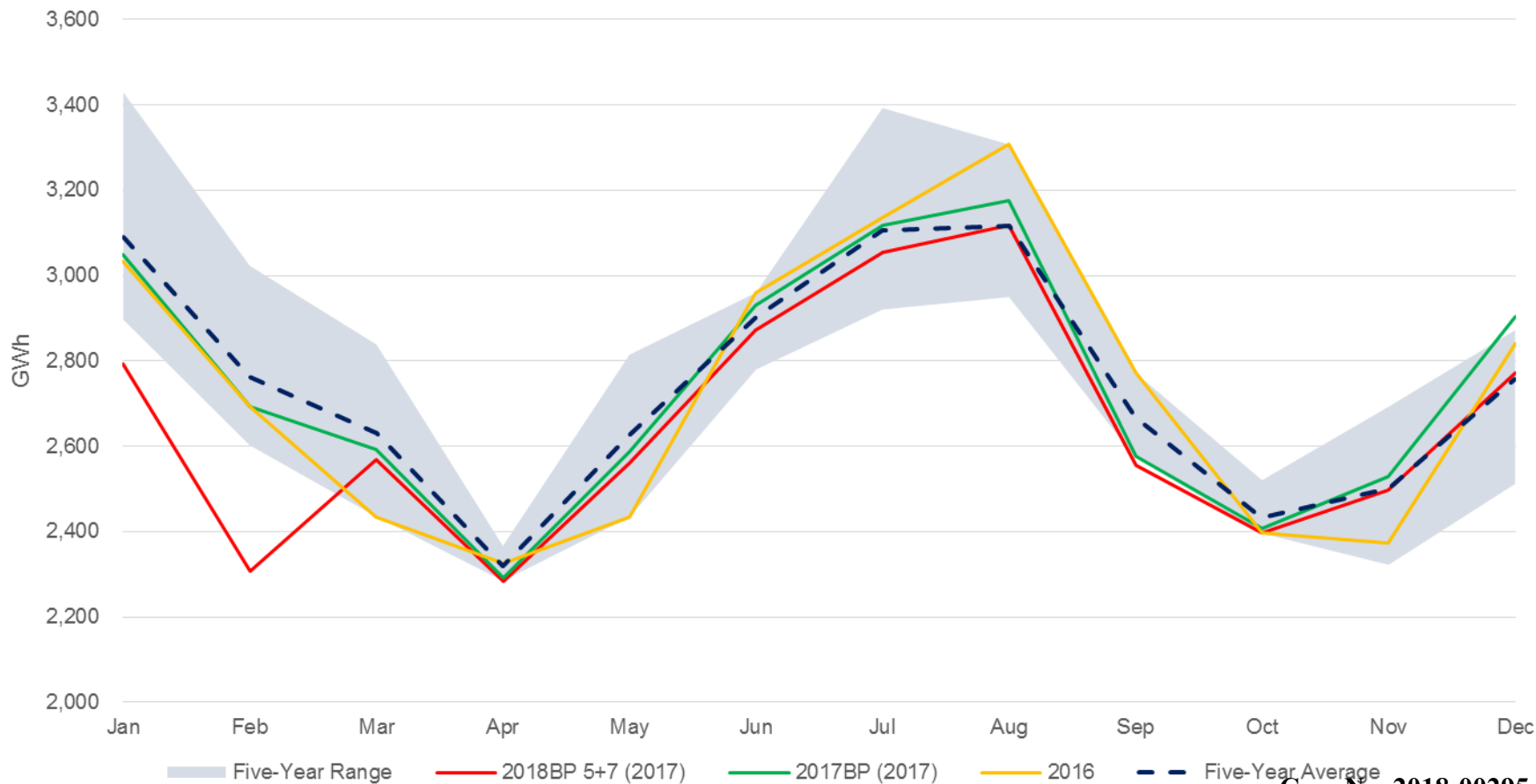
██████████ excluded from history; Historical ██████████ volumes moved to Commercial

Case No. 2018-00295

Attachment 4 to Response to KIUC-1 Question No.17c

316 GWh Plan over Plan reduction in Q3 & Q4 2017

2018BP 5+7 Fcast (2017) vs Historical Actual Sales



Case No. 2018-00295

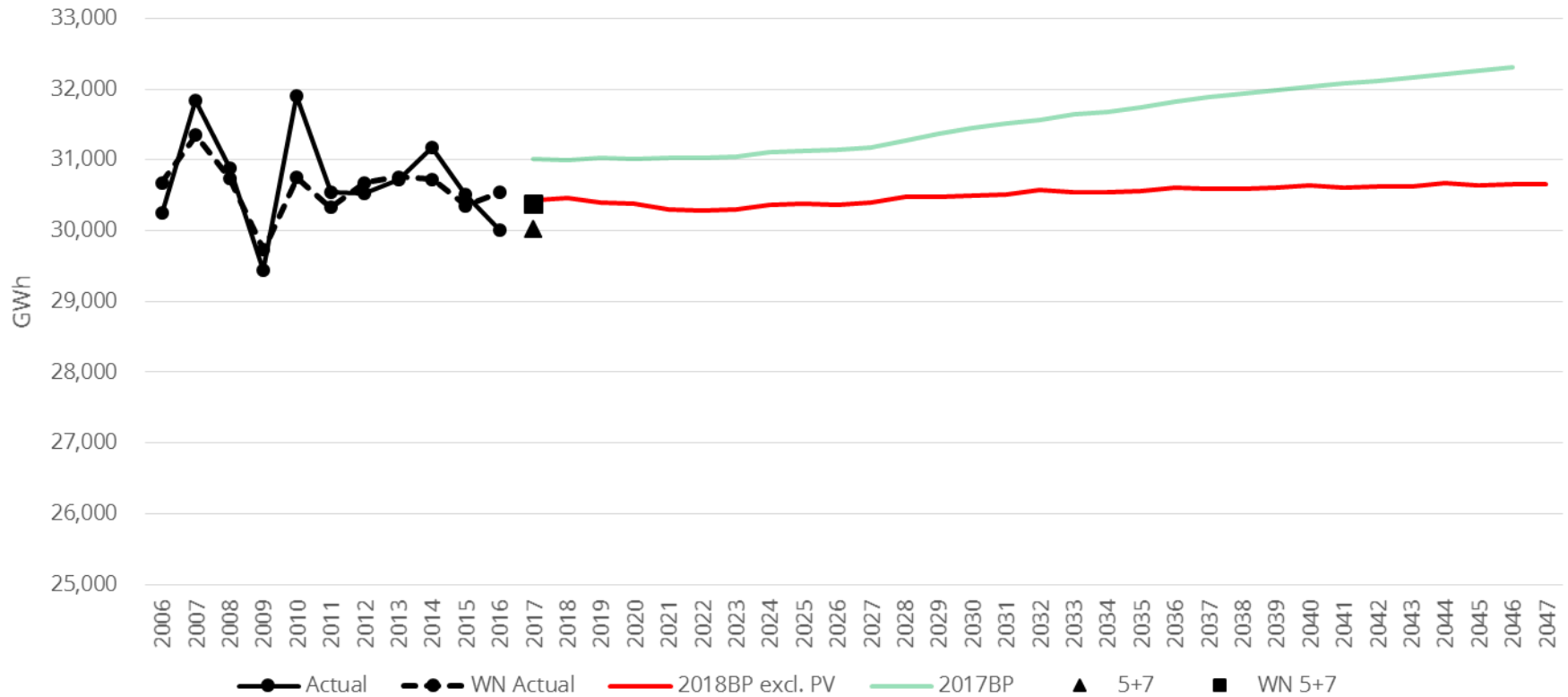
Attachment 4 to Response to KIUC-1 Question No.17c

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Sinclair

Customer growth begins to outweigh efficiency gains after 2022

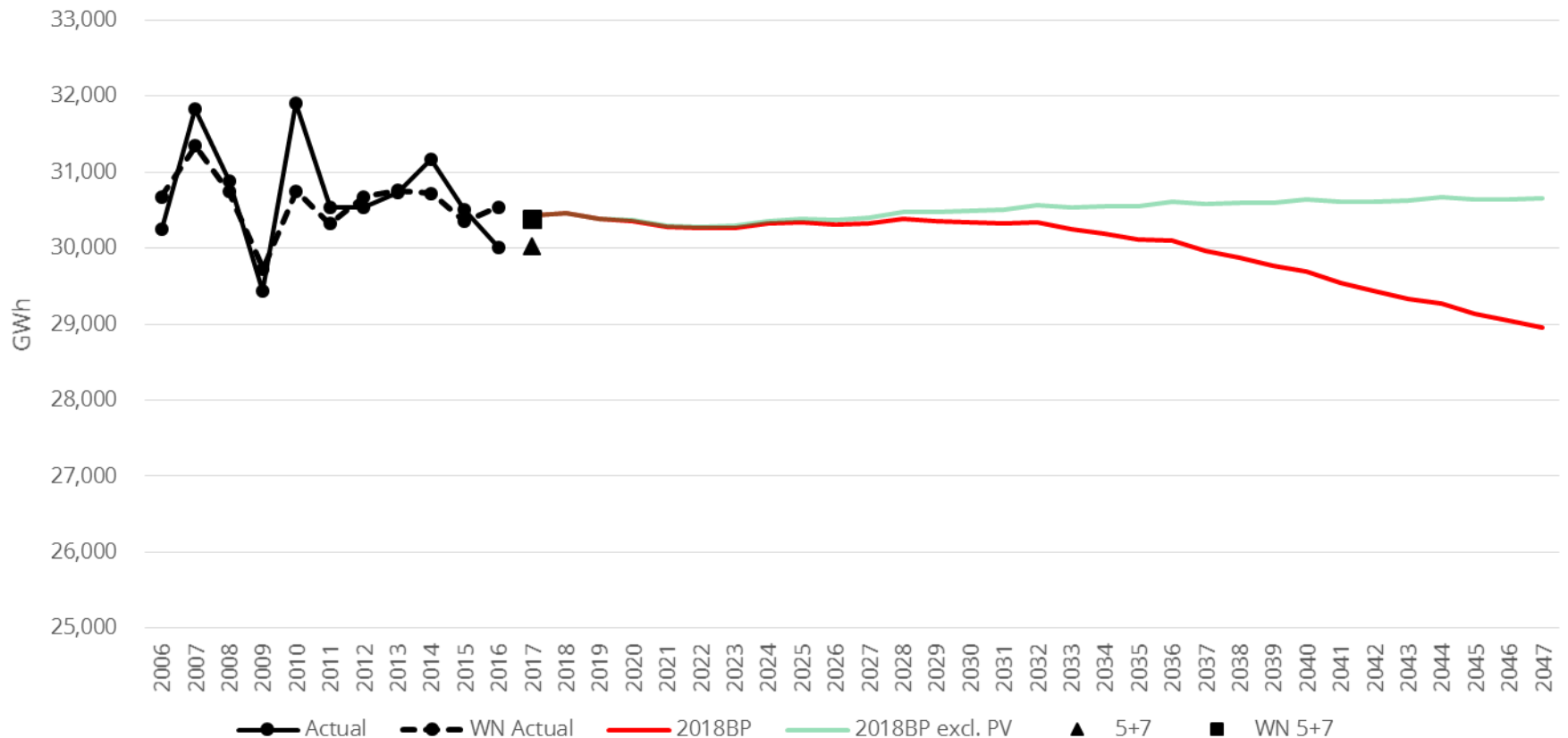
Combined Company Sales Excluding Municipals



excluded from history

Distributed solar PV generation (PV) reduces sales by 947 GWh in 2040

Combined Company Sales Excluding Municipals



excluded from history

Case No. 2018-00295

Attachment 4 to Response to KIUC-1 Question No.17c

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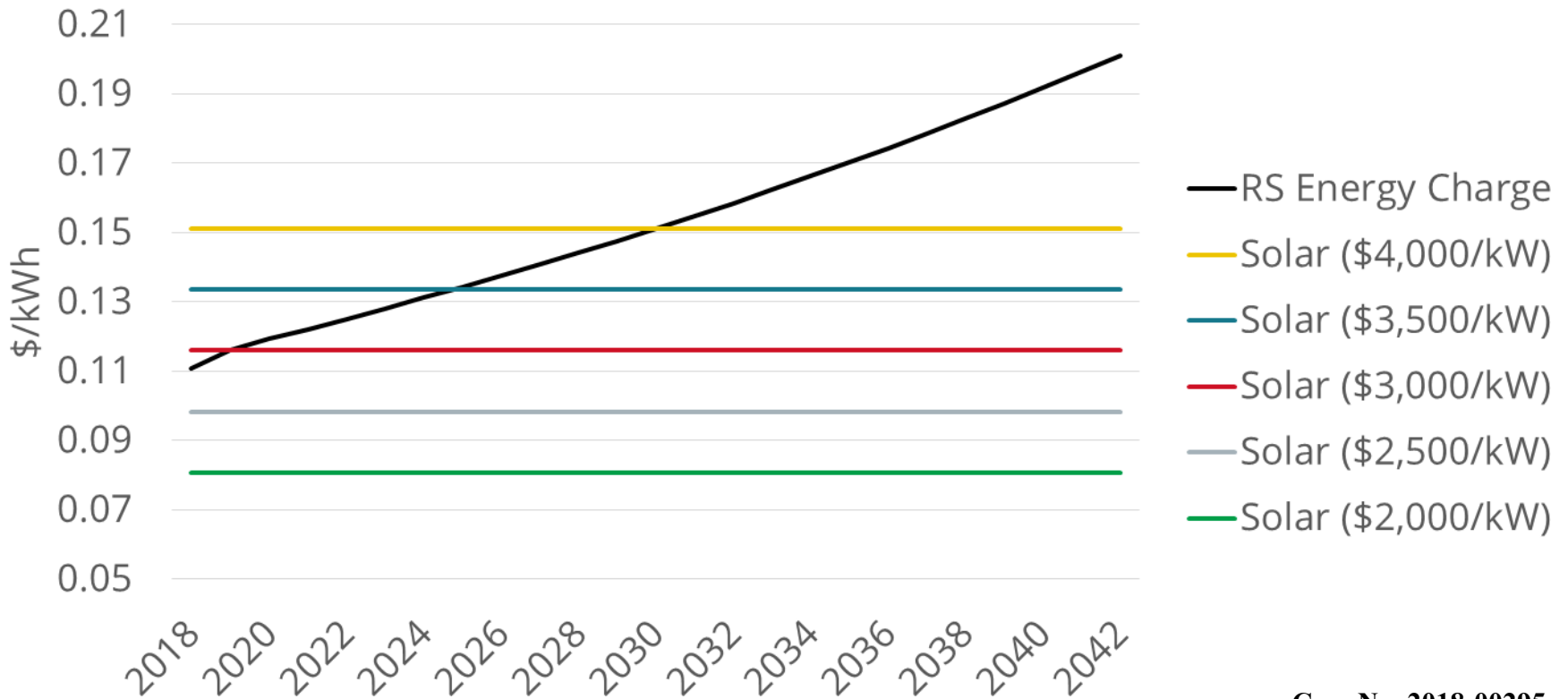
Sinclair

Solar assumptions

- PV adoption projections from NREL (National Renewable Energy Laboratory) for the state of Kentucky at the utility service territory level
- Adjusted to match current net metering installations
- Sized to provide 95% of annual consumption; constrained by available roof area
- 16% Capacity Factor, 0.5%/year Module Degradation
- Full retail net metering is assumed through the duration of the analysis

Penetration of distributed solar generation largely depends on cost of solar, variable energy charge, customer's opinion about future rate increases, and customer's appetite for owning solar array

Levelized Cost of Solar vs. LG&E/KU Residential Energy Charge



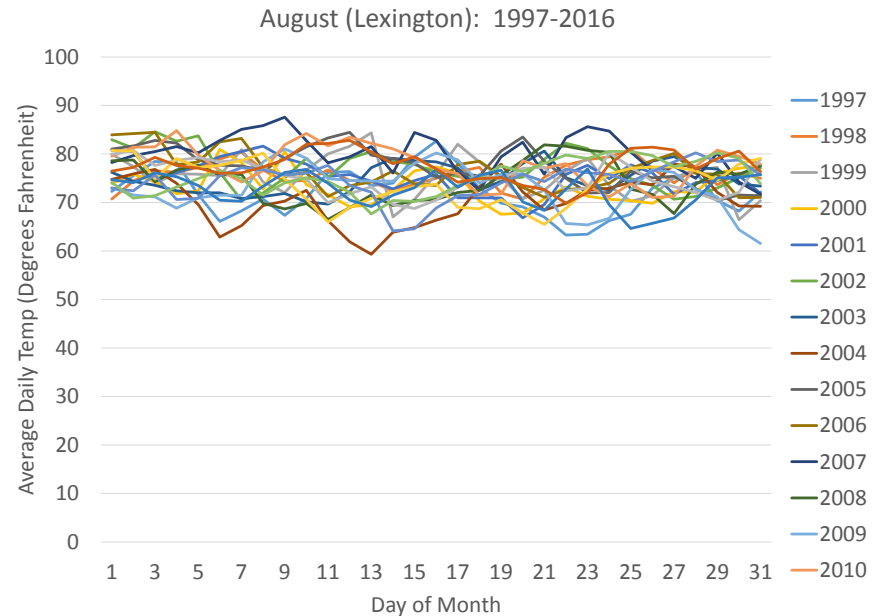
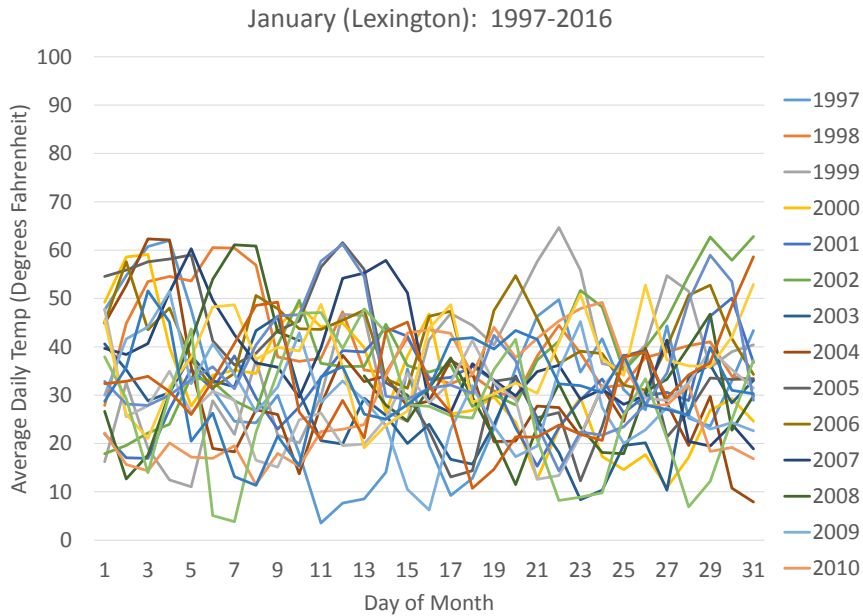
Case No. 2018-00295

Attachment 4 to Response to KIUC-1 Question No.17c

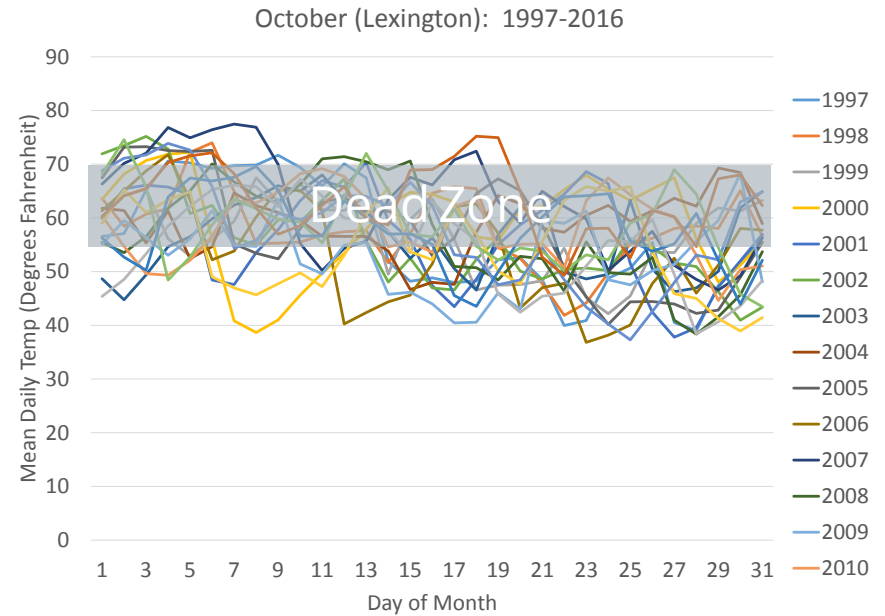
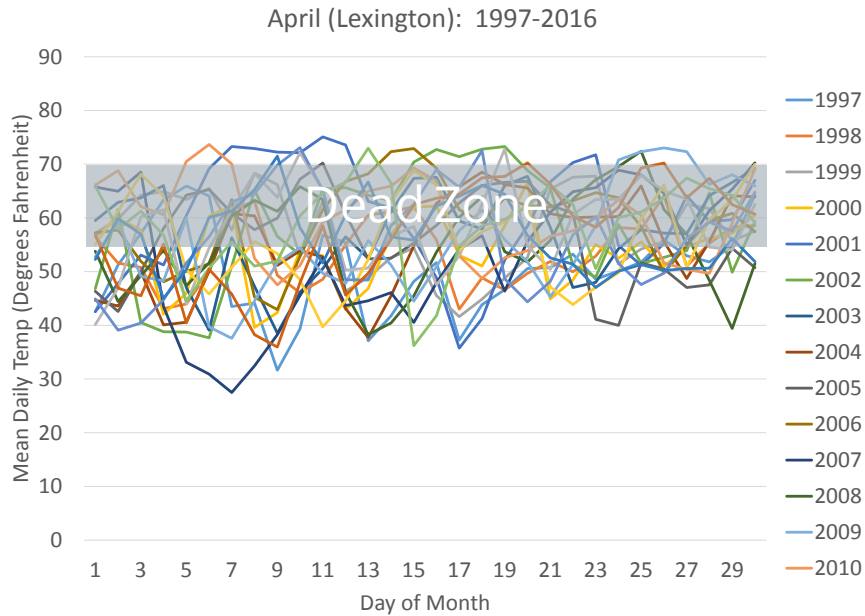
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Sinclair

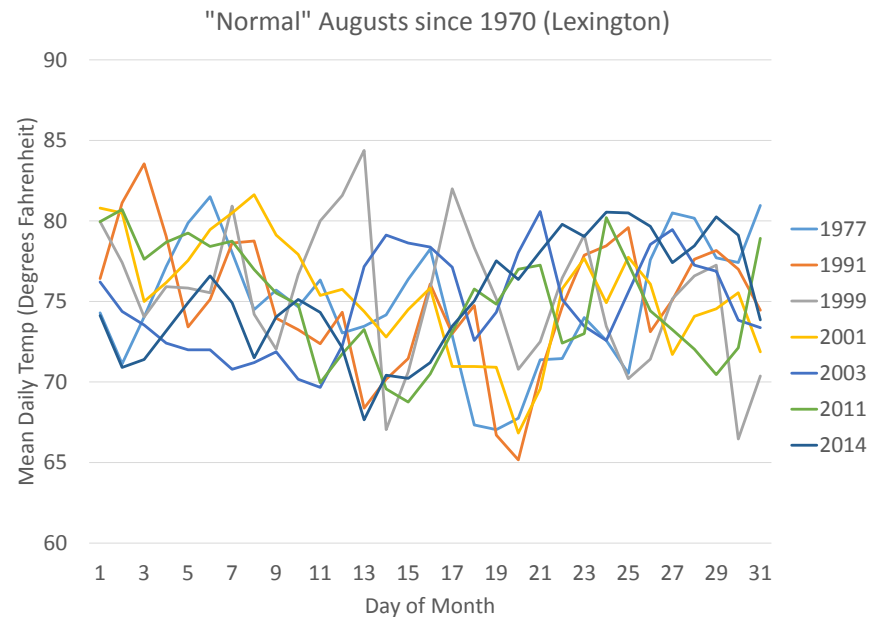
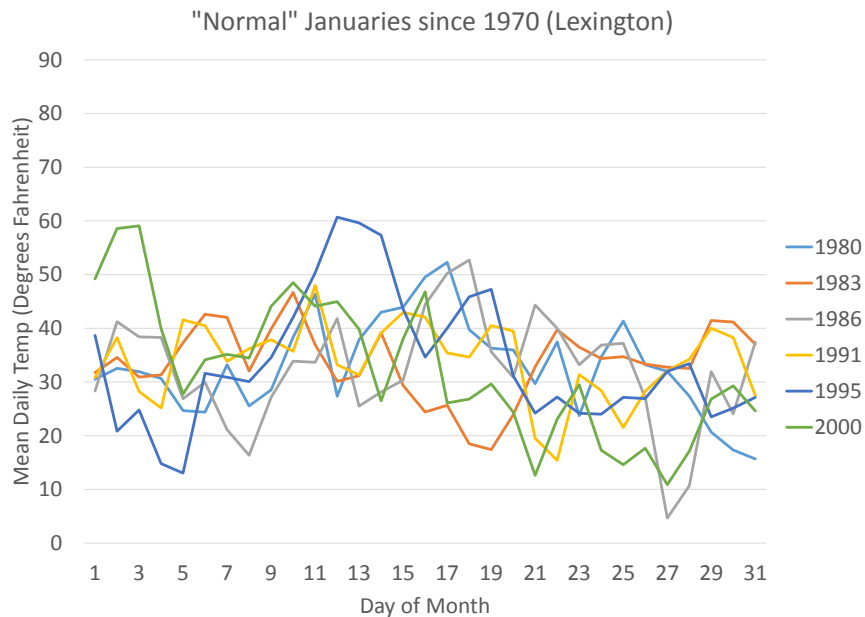
Daily weather can take many paths; variability of weather in winter is greater than variability of weather in summer



Warmer-than-normal temperatures in shoulder months fall into “dead zone” where load’s sensitivity to weather is limited



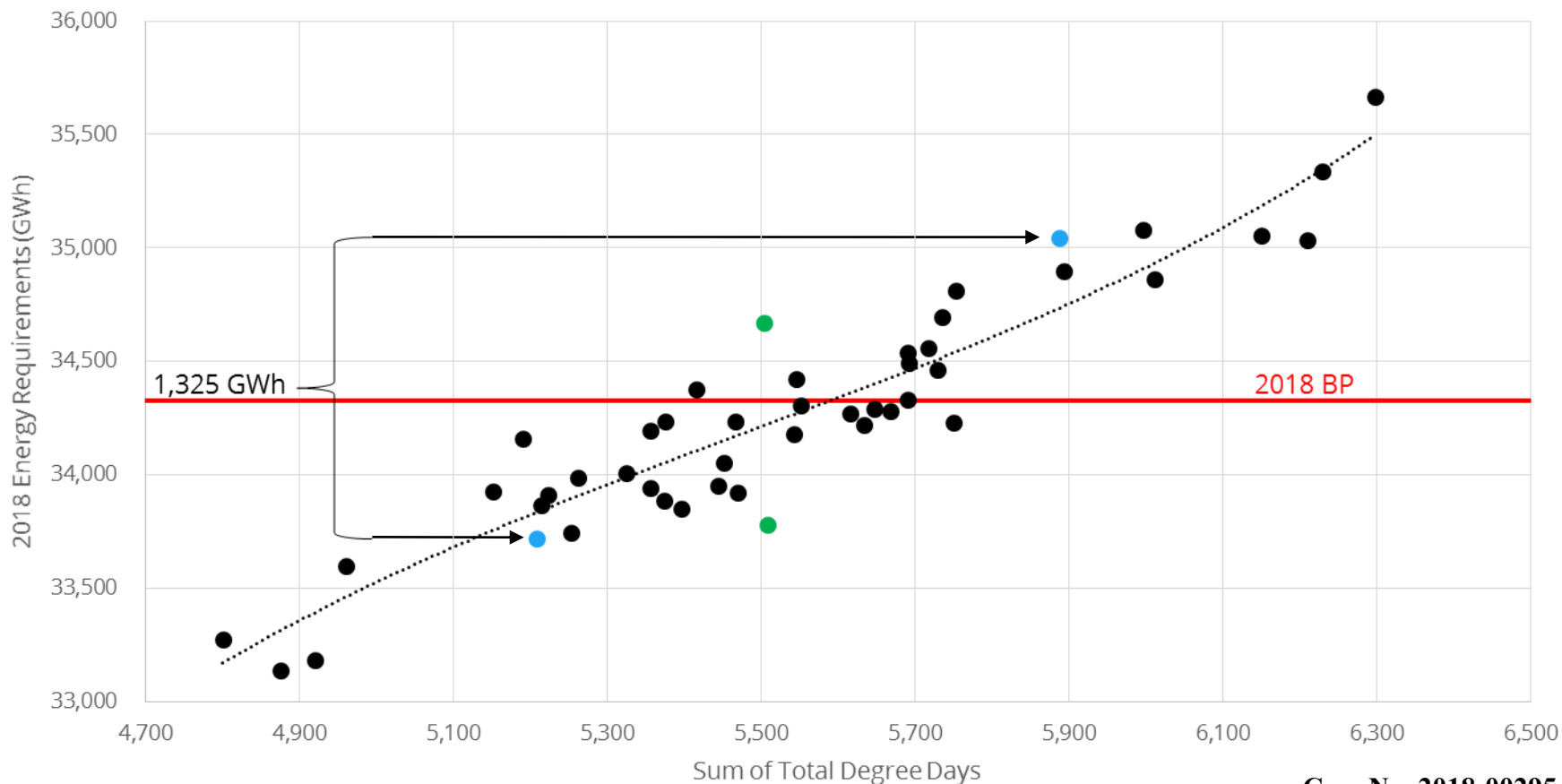
Daily temperature trends in “normal” months can also be very different



“Normal” defined as months with monthly average temperature within 0.25 standard deviations of 20-year average temperature.

Ignoring likelihood of extreme weather, annual energy requirements can vary by over 1,000 GWh due to weather

Modeled 2018 Energy Requirements Based on Last 40+ Annual Weather Patterns



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Sinclair

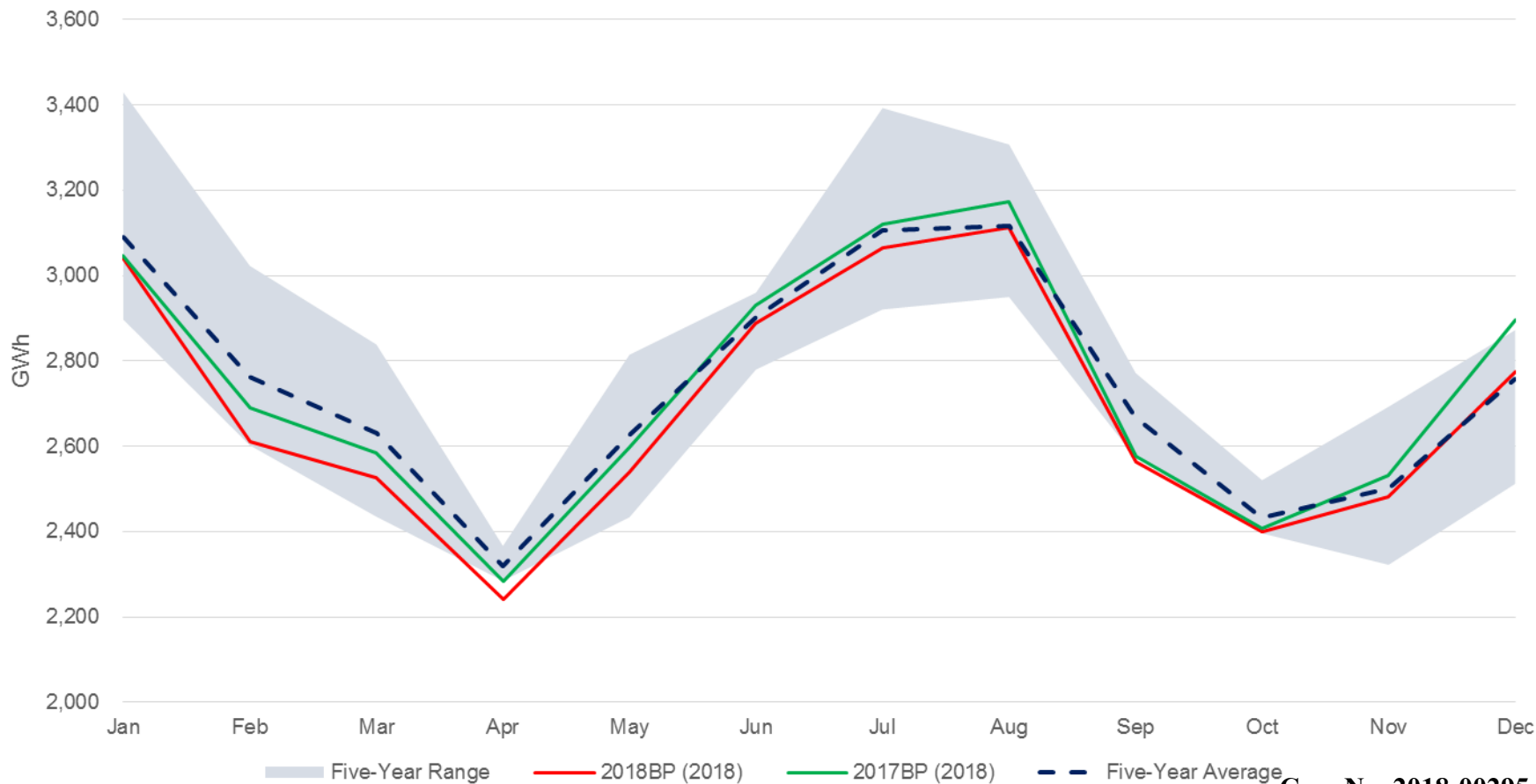
Conclusion

- Decreases in Residential and Commercial forecasts in line with recent trends
- Distributed solar PV generation becomes increasingly economic with rising residential energy charges
- Weather risk remains a significant source of short-term volatility

Appendix

Future summer cooling load expectations reduced

2018BP Fcast (2018) vs Historical Actual Sales



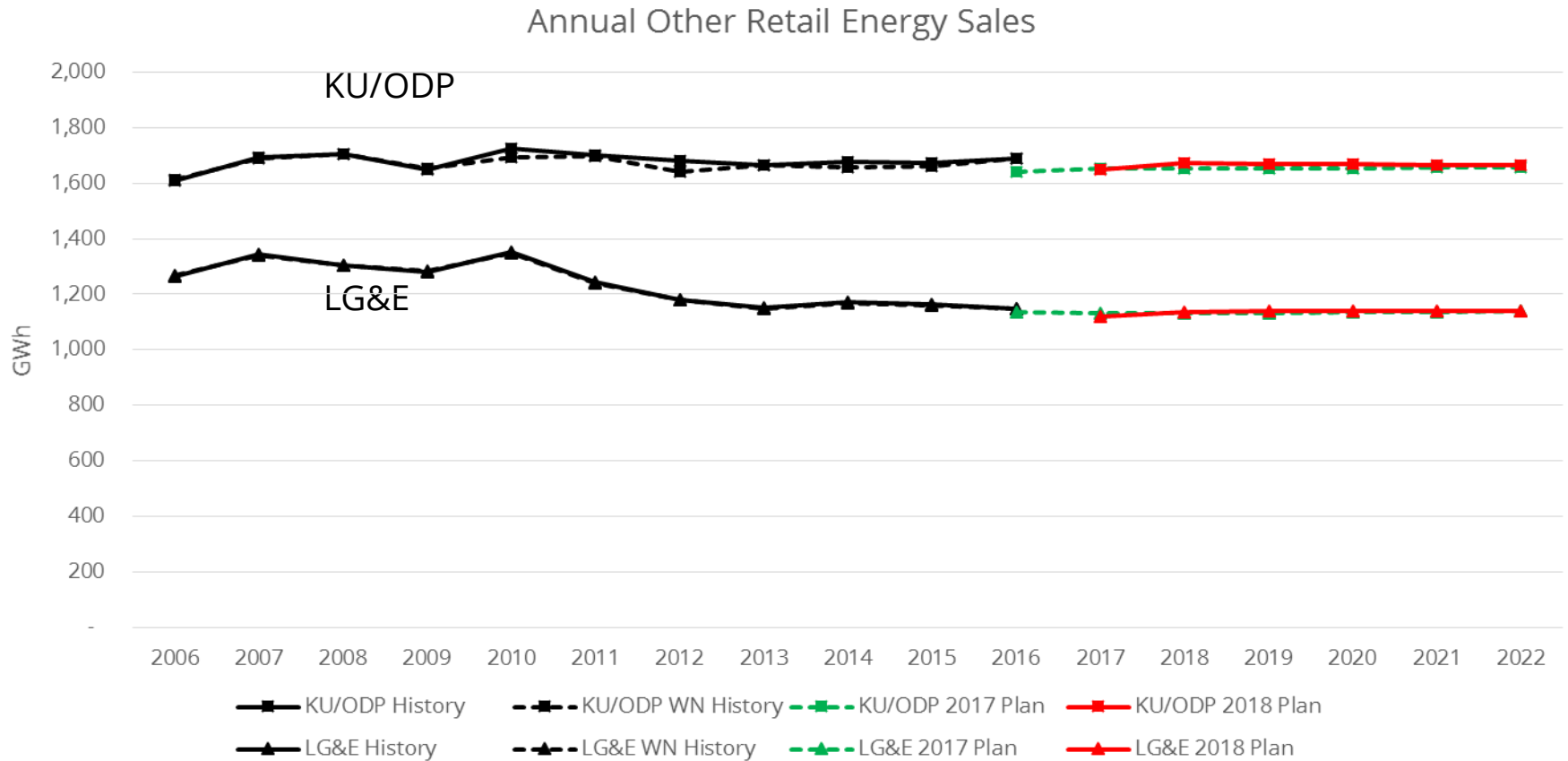
Case No. 2018-00295

Attachment 4 to Response to KIUC-1 Question No.17c

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Sinclair

Other sales remain flat



In 2018 Plan forecast, 2017 value is a weather-normalized 5+7 forecast

Case No. 2018-00295

Attachment 4 to Response to KIUC-1 Question No.17c

The attachment is
provided in a separate
file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 18

Responding Witness: David S. Sinclair

Q.1-18. With regard to Mr. Sinclair's testimony on page 6 at line 21, please provide any analyses, reports, emails or other writings that discuss the need to "improve our models."

- a. What criteria do the Companies' utilize to assess the need to improve its models?
- b. What criteria do the Companies' utilize to determine if their models have been improved?

A.1-18.

Load forecast models are reviewed throughout each month. In addition to the attachments to KIUC 1-17 c., see attached monthly reports and key performance indicators. Monthly meetings with Energy Supply and Analysis and Finance provide in-person review of forecast performance.

See attached being provided in Excel format.

See attached. Certain information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.

- a. The Companies utilize a number of traditional metrics to assess the need to improve its forecasting models. These include metrics such as Mean Absolute Percent Error (MAPE), R-squared values, and Durbin Watson tests for serial correlation. Recent model residuals are assessed to determine model accuracy in the most recent timeframe. Further, forecasts of exogenous variables are analyzed to determine if forecasting errors were a result of model specification or variation in forecasts of explanatory variables.
- b. The Companies analyze potential improvements in the aforementioned forecasting metrics as one way to determine model improvement. However, model overfitting is not desired so improvement in these metrics are only considered if supported by sound theoretical underpinnings. Additionally,

the Companies hold forecasting data out of sample to assess model predictions. For example, for the 2019 Load Forecast, 2017 data was held out of sample and predicted using the new model specifications as one part of the analysis. Last, the Companies rely on subject matter expertise to thoroughly assess the reasonableness of both model inputs and outputs.

The attachment is
provided in a separate
file in Excel format.

Sales Analysis & Forecasting Monthly Report



Jul-Aug 2017

In this Issue...

Feature Article — 2018 Business Plan Sales Forecast Overview Page 1,5-10

- Sales forecasts have been revised lower for the new Business Plan

Weather Statistics and Outlook Page 2

- Extremely mild temperatures have reduced load thus far in September

Economic Outlook Page 3

- Kentucky housing growth remains strong in urban areas

Sales Growth Trends Page 4

- Sales were below budget in both July and August

2018 Business Plan Sales Forecast Overview

This article will provide an overview of the 2018 Business Plan forecast of electricity sales. Total sales are expected to increase marginally in 2018 from weather-normalized 2017 levels, but then are expected to decline by three percent in 2019 and 1.5 percent in 2020 due to the termination of eight wholesale contracts with Municipal customers April 30, 2019. Despite persistent strong customer growth in the residential and commercial classes, retail sales are expected to show a small decline over the first five years, a change from last year's plan. Key factors causing a plan over plan decline in retail load through 2022 are:

- Faster adoption of LED Lighting among residential and commercial customers
- A flattening of load for miscellaneous usage moving forward, particularly in the LG&E portion of the service territory
- Greater efficiency projections in commercial office spaces due to the release of a new EIA benchmarking study
- A slower pace of customer growth in the secondary rate classes (large commercial/small industrial) as compared to previous forecasts.

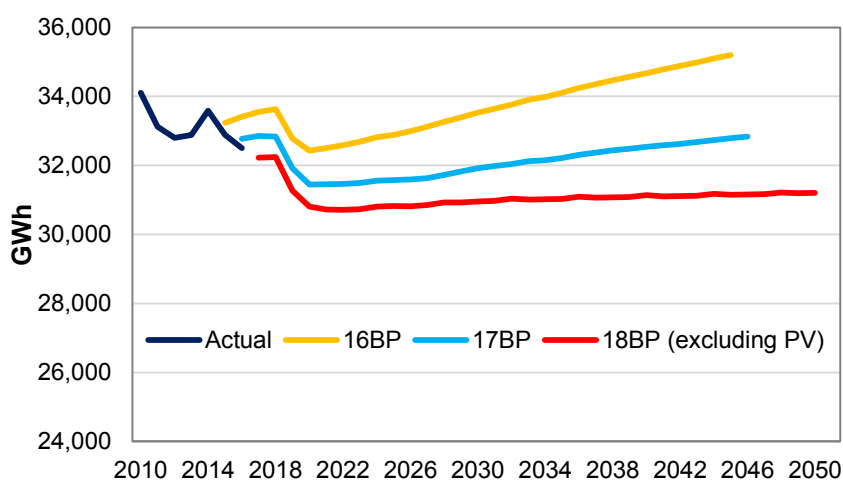
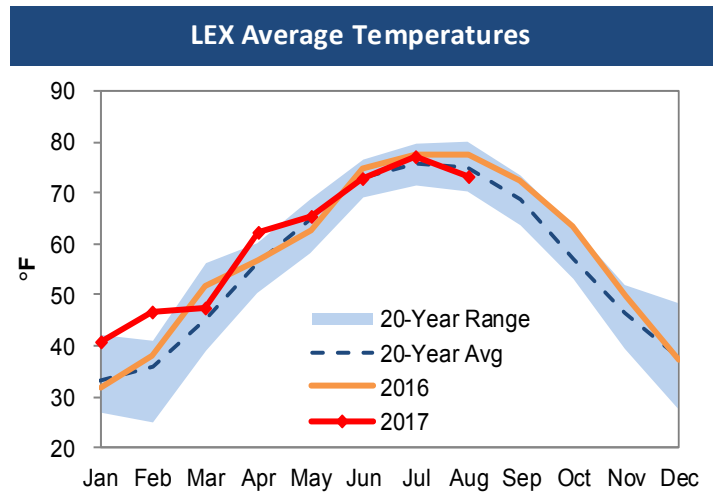
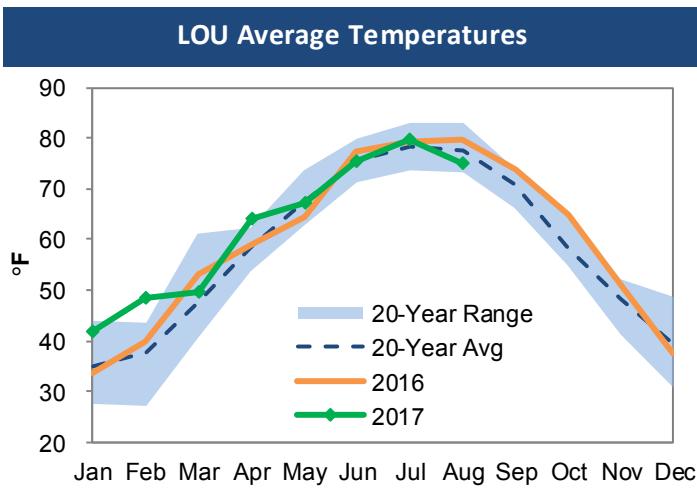


Figure 1: Electricity Sales Forecast in 2018BP Compared to Prior Plans

Note: 2017 data is forecasted with normal weather (no actual volumes)

After 2022, sales trend higher at a compound annual growth rate (CAGR) of just 0.08 percent through 2040. This compares to CAGRs of 0.34 percent in the 2016BP and 0.19 percent in the 2017BP over the same time period.

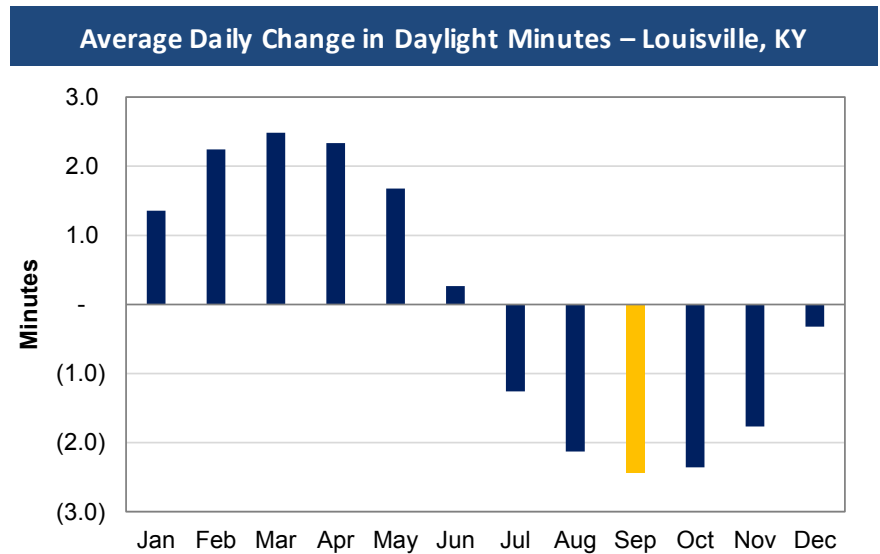
Weather Statistics and Outlook



- The average hourly temperature at Louisville’s Bowman field was 79.7°F in July, 1.3 degrees above the 20-year average and 0.5 degrees below last year’s average temperature in July. The average hourly temperature at Lexington’s Blue Grass Airport (LEX) was 77.0°F in July, 1.2 degrees above the 20-year average and 0.4 degrees below last July.
- The average hourly temperature at Louisville’s Bowman field was 74.9°F in August, 2.7 degrees below the 20-year average and nearly five degrees below last year’s average temperature in August. The average hourly temperature at Lexington’s Blue Grass Airport (LEX) was 73.1°F in August, 2.1 degrees below the 20-year average and 4.5 degrees below last August.

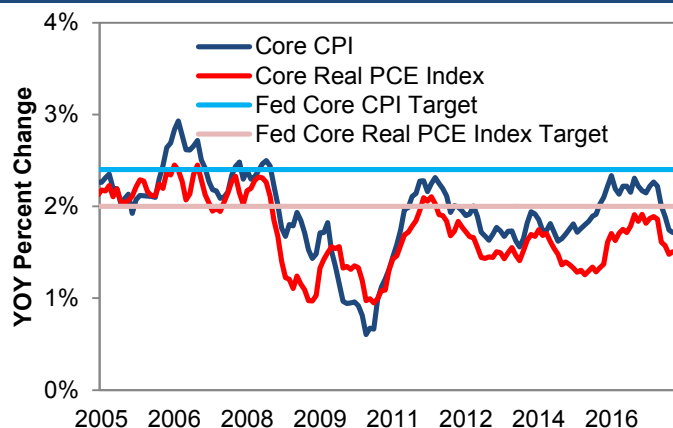
Temperature Outlook

- The trend of colder-than-normal temperatures in August has continued in September. During the first half of the month, temperatures are on pace to average eight degrees below average in Louisville and Lexington, resulting in a negative budget variance of approximately 230 GWh.
- The aftermath of Hurricane Irma helped keep temperatures seasonally cool of late, but warmer-than-normal temperatures are on tap for the coming weeks according to [short-term NOAA forecasts](#).
- However, the impact on load from above-normal temperatures is typically much lower by this time of year as compared to the prior summer months. Daylight hours decline faster in September than any other time of the year, and cooler overnight lows quash any potential for significant heat buildup. As a result, energy sales typically fall off sharply between the first and second half of September.



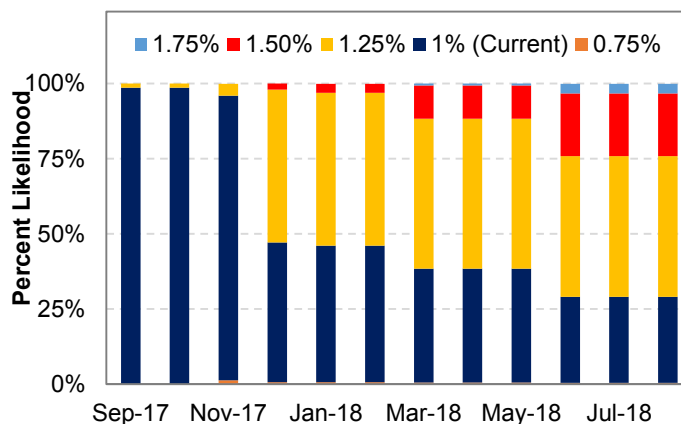
Economic Outlook

US Inflation Metrics



Source: Federal Reserve Economic Data (FRED)

Market Implied Benchmark Interest Rate Odds



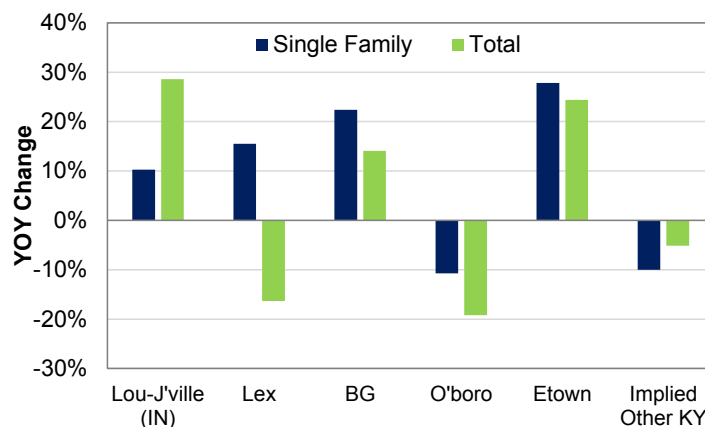
Source: CME (9/14/17)

- The US economy added 156k jobs during August, below the Bloomberg consensus estimate of 180k. Further, the July number was revised lower by 20k jobs.
- There is growing concern among some Federal Reserve [members](#) that interest rate increases over the past year may be [slowing the pace of growth](#) in the US economy. Additionally, inflation remains well below target, providing little reason to hike rates further in the immediate future. As a result, no increases to the benchmark rate are expected until December at the earliest.
- Tax reform has finally moved towards the top of the agenda in Washington, with President Trump scheduled to tour the country over the next several weeks to promote the plan. Odds of a corporate or individual tax cut by the end of 2017 currently stand at around 35 percent in both PredictIt markets.

Kentucky and Service Territory

- Housing growth has been strong in the urban portion of the LG&E and KU service territory in recent years, precipitating a material increase in residential customers.
- The graph (right) shows year-over-year growth (Jan-July year to date) in single-family and total housing permits in Kentucky's metro areas as well as an implied figure for the rest of Kentucky (state total minus metros). Housing permits are a forward indicator for housing and typically result in a higher number of new starts in future months.
- As has been the case in the past, growth in most metro areas* has been much stronger than in the rest of Kentucky as a whole.

YOY (Jan-Jul) Housing Permit Growth



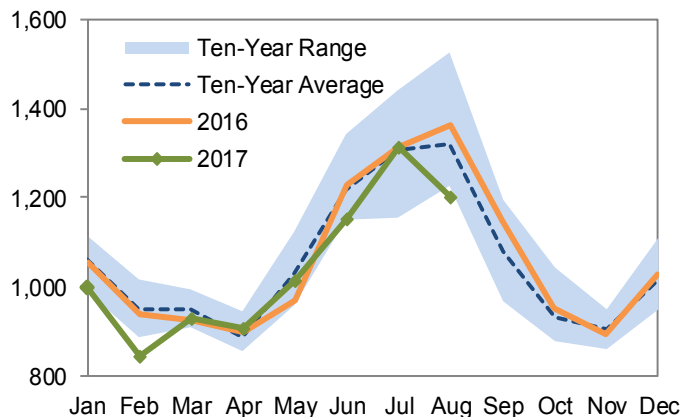
Source: State of the Cities Data Systems (SOCDS)

- The continued strength in new housing and customer growth in the urban regions remains a key assumption in our 2018BP forecast. As a result, any slowdown in this pace of growth could present a downside risk to our residential consumption forecast.

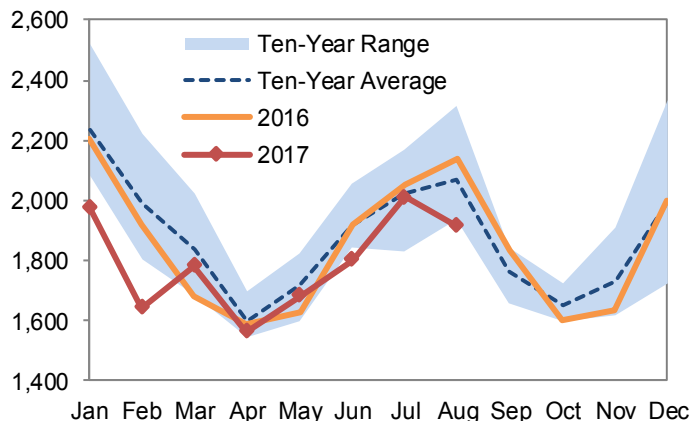
*: LG&E and KU have little-to-no presence in Owensboro and Bowling Green; The decline in Lexington total permit growth this year has been the result of declines in multi-family units. This series is quite volatile as filings for large complexes may be registered all at once.

Sales Trends

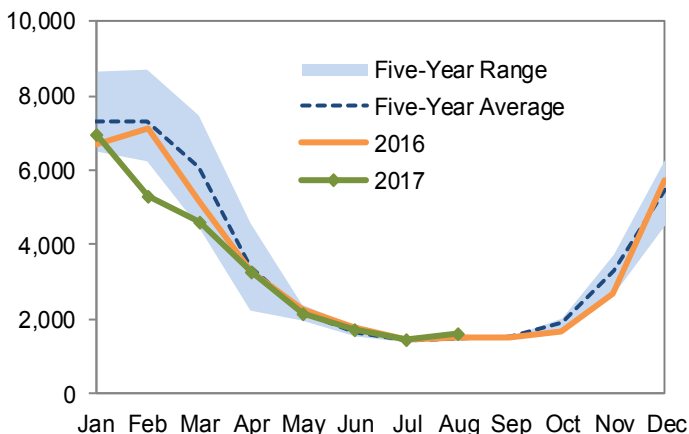
LGE EMS Energy Requirements (GWh)



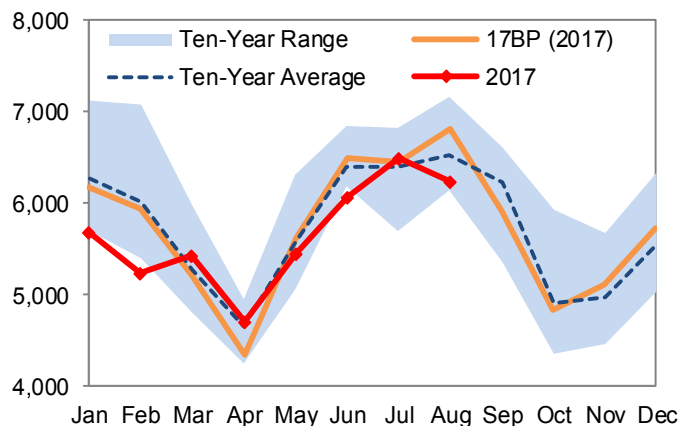
KU EMS Energy Requirements (GWh)



LGE Gas Sales and Transportation (Mcf)



Combined Company Peak Demand (MW)



- July Combined Company EMS energy requirements were 0.3 percent below the 10-year average, with KU/ODP 0.7 percent below and LGE 0.3 percent above. Compared to budget, KU/ODP was 0.3 percent below while LGE was 1.9 percent below. Combined Company EMS requirements were one percent below budget.
- July Combined Company load peaked at 6,503 MW, the highest summer peak since 2012. This was above both the ten-year average of 6,408 MW and the 2017 Plan of 6,453 MW.
- August Combined Company EMS energy requirements were eight percent below the 10-year average, with KU/ODP 7.4 percent below and LGE 8.9 percent below. Compared to budget, KU/ODP was 7.5 percent below while LGE was 11.1 percent below. Combined Company EMS requirements were nine percent below budget.
- August Combined Company load peaked at 6,233 MW, significantly below both the ten-year average of 6,535 MW and the 2017 Plan of 6,806 MW.
- Billed LGE Gas Sales and Transport volumes were two percent above the five-year average in July and 7.3 percent above in August. There is no gas weather-normalization adjustment during the peak summer months (June—August).

2018 Business Plan Sales Forecast Overview (continued)

Residential

A relatively quick pace of efficiency gains and technology adoption precipitates annual declines in residential electricity consumption over the first five years of the forecast period in the 2018BP forecast. For the remainder of the forecast horizon (2023-2050), residential sales trend ever-so-slightly higher (0.03 percent CAGR) due to saturation of current technologies and persistently strong customer growth. The risk remains to the downside if there are additional technological breakthroughs that further increase end-use efficiencies.

Customers

Residential customer growth is projected to remain strong in the LG&E and KU service territories for the foreseeable future due to urban [household growth in Louisville and Lexington](#). However, in recent years new customer growth has been somewhat offset by an increase in multi-family units, which typically result in lower electricity usage than single-family homes. The rural portion of the Companies' service territory (KU service territory excluding Lexington region and ODP) is expected to continue to see customer declines. While these numbers are much smaller than the gains expected in the urban centers, the customers in these regions are the largest electricity users in the service territory on average.

Use per Customer

Efficiency gains in the cooling and lighting sectors have a large impact on the decline in residential use-per-customer forecasts in the 2018BP.

The reduction in air conditioning energy intensity was seen in the 2017BP, resulting in a large drop in summertime load projections. These changes were larger for the LG&E portion of the service territory due to the high saturation of natural gas as a winter heating fuel. This year, the forecast has been revised lower as the EIA projections have fallen. This reduction in load during the summer months has the impact of moving the utility closer to dual peaking.

In 2009, lighting was the second largest end use* for electricity in the average US home after miscellaneous consumption. This has changed significantly over time with the rapid price decline in LEDs and subsequent growth in saturation levels. We expect electricity consumption for lighting to continue to decline at a relatively rapid pace during the first five years of the forecast before slowing thereafter.

The last major factor in lower use per customer is a projection for plateauing electricity sales for miscellaneous consumption. Miscellaneous consumption is by far the largest component of demand in the average US household, consisting of pool pumps, cable boxes, security systems, dehumidifiers, plug-in gadgets, and many more. The Energy Information Agency (EIA) continues to project growth in miscellaneous consumption for the East South Central region (of which Kentucky is a part) moving forward, but this is largely due to the rural nature of the region. We have adjusted this in the case of LG&E. Since this part of the service territory is heavily urbanized, we expect this area to behave much more like the US as a whole, resulting in flat rather than increasing growth in the sector moving forward. For KU, the growth projection has been revised lower as well (but still slightly increasing) due to the importance of Lexington as a proportion of KU load overall.**

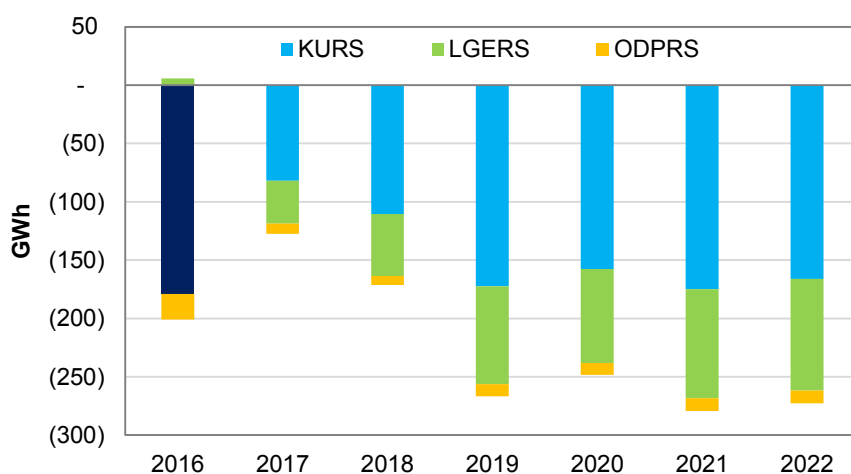


Figure 2: Plan-over-Plan Change in Residential Electricity Sales Forecast

Note: 2016 Data is Actual

* Cooling and heating end-use intensities are broken out into subcomponents

** Fayette County accounted for 28 percent of total KU residential sales in 2016; the Lexington economic region (includes many surrounding counties) accounted for 59 percent of KU sales in 2016

2018 Business Plan Sales Forecast Overview (continued)

EV/PV

The potential growth in electric vehicle (EV) and solar photovoltaic (PV) adoption provides significant risk in both directions to the 2018 Plan. The forecast shown in Figure 1 assumes only marginal impact from either, but scenario analysis shows a significant potential.

EV

Electric vehicles are currently not competitive on an economic basis, and the infrastructure for mass market consumption remains underdeveloped. As a result, there is much uncertainty regarding the pace of EV growth. An analysis to measure the potential impact of EVs uses an adoption curve provided by BNEF (Bloomberg New Energy Finance), adjusted for the fact that EV adoption is lagging in the service territory as compared to the national average. Under this scenario, the increase in sales from electric vehicle adoption measures 15 GWh in 2018, 976 GWh in 2035, and 3,819 GWh in 2050.

PV

Contrary to EVs, PV adoption has a negative impact on electricity sales. SAF uses NREL's (National Renewable Energy Laboratory) forecast for installed capacity into the LG&E and KU service territory to create our forecast for PV electricity volumes. The rate and company splits are apportioned by current installs (75/25 split between residential/commercial, 57/42/1 split between LG&E/KU/ODP on residential). Total lost sales due to PV energy consumed in the territory is projected at a modest 6 GWh in 2018, rising to 327 GWh in 2035, and 1,449 GWh in 2050. By 2050, approximately a quarter of the residential service territory would have solar PV installed (at a current national average of 5 kWdc) to account

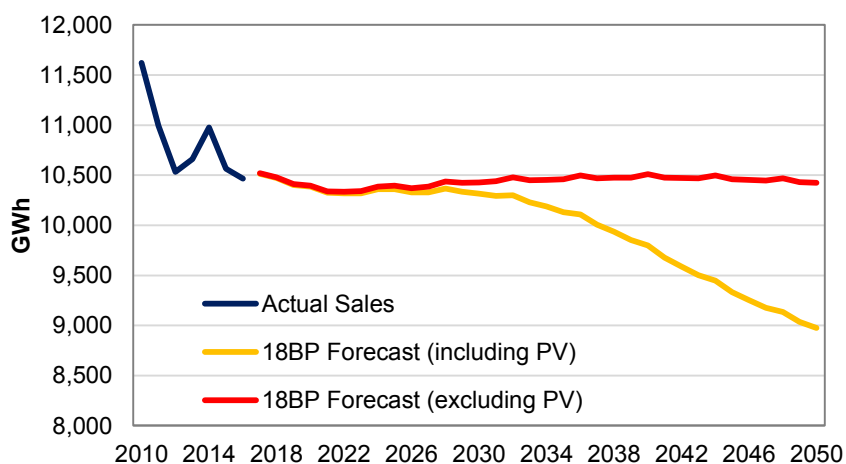


Figure 3: Potential Impact of Solar PV on Residential Sales Forecast

Note: 2017 volumes are forecasted with normal weather (no actual volumes); Potential EV load is not included

for this volume. This is the base case NREL scenario, so there is risk to both the upside and downside. Additionally, this projection assumes that net metering rate structures will remain the same as they are today, which is more favorable for customers as compared to the new post-net metering rate structure soon to be [implemented in Arizona](#).

Commercial

Similar to last year's plan, customers on commercial rates are expected to increase moving forward. Despite this, the billed sales forecast for commercial rates has declined versus the previous forecast. This continues the downward trend seen since the recession and is primarily the result of increases in lighting and cooling efficiencies. Prices for the commercial rates are forecasted to be slightly higher than in the previous plan, so that also contributes to lower sales plan-over-plan.

Small Commercial

Approximately 95% of commercial customers are on a General Service (GS) rate, but the GS rates (single-phase and three-phase) combine to account for only one-third of the commercial revenue class usage. Because of this, it is important to look at trends in end-use efficiencies and customer count when forecasting billed sales for the GS rates.

SAF uses end-use efficiency indices, both historical and projected, from EIA's Annual Energy Outlook (AEO). The EIA's projections for commercial end-uses by region are based upon the Commercial Buildings Energy Consumption Survey (CBECS) that is conducted every 5 to 10 years. The 2016 AEO was based upon the 2003 CBECS, while the 2017 AEO is based upon the most recent CBECS of 2012. While this "new" survey is already 5 years old, it conveys changes in how commercial buildings

2018 Business Plan Sales Forecast Overview (continued)

are using energy. Most notably, lighting’s contribution to commercial energy consumption has decreased significantly with LEDs and CFLs taking the place of incandescent bulbs. For the commercial sector nationally, lighting’s share of total electricity consumption has decreased from 38% to 17% survey to survey (Figure 4).

Like the RS forecasts, another key component that contributed to the reduction in the GS sales forecasts is the impact of PV adoptions. Of the current net metering installs in the service territory, the split is approximately 75% residential and 25% commercial. While the GS billed sales reduction due to PVs is minimal in the next 15 years, it becomes much more significant in the back half of the forecast.

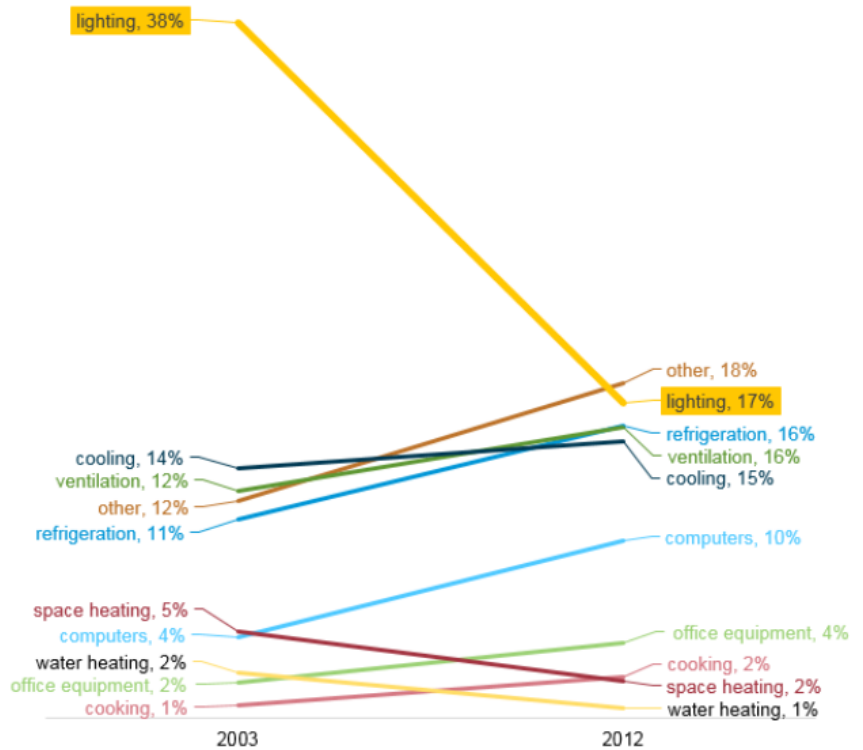


Figure 4: Lighting as a Percent of US Commercial Electricity Usage

Source: EIA

Large Commercial

In contrast to GS, the secondary rates are made up of fewer and more diverse customers as discussed in [last year’s monthly article](#). At the secondary level, the most significant changes versus last year’s forecast were on the KU side. Due to company efforts over recent years to ensure commercial customers were on the correct rate, there has been a lot of switching between the Primary Service (PS) and Time-of-Day (TOD) rates in the past. As a result, SAF forecasted these rates combined for each Company for the 2018BP. As mentioned previously, this methodology did not lead to a significant change for LG&E and ODP, but it decreased KU secondary significantly as the previous year’s forecast attributed the decline in PS-Sec more to switching than UPC declines (Figure 5).

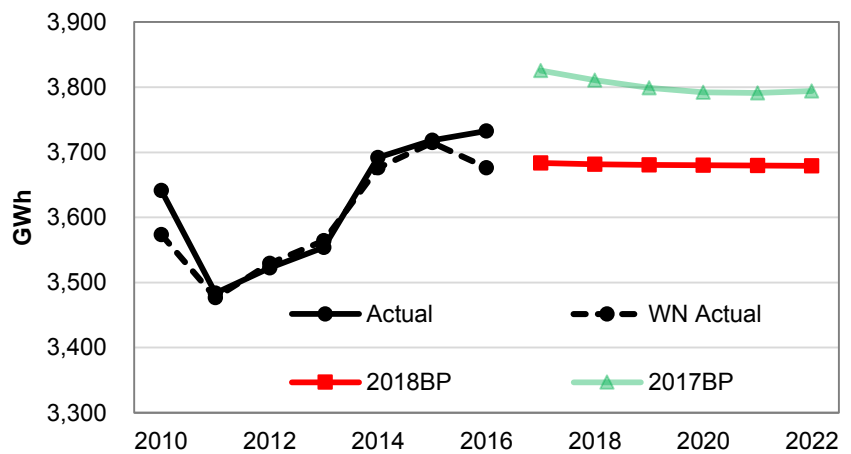


Figure 5: 2018BP KU Secondary Rate Forecast

Note: Secondary rates include PS-Secondary and TOD Secondary

Figure 6 shows how each commercial rate breaks down to revenue class. The small commercial rates primarily go to the commercial class with the remainder going to public authority. While the secondary rates are still predominantly commercial as a whole, a decent portion go to industrial and public authority as well, particularly in KU. Because KU secondary rates declined a material amount in this year’s forecast, many of those losses are attributed to the industrial sector on a revenue class basis.

2018 Business Plan Sales Forecast Overview (continued)

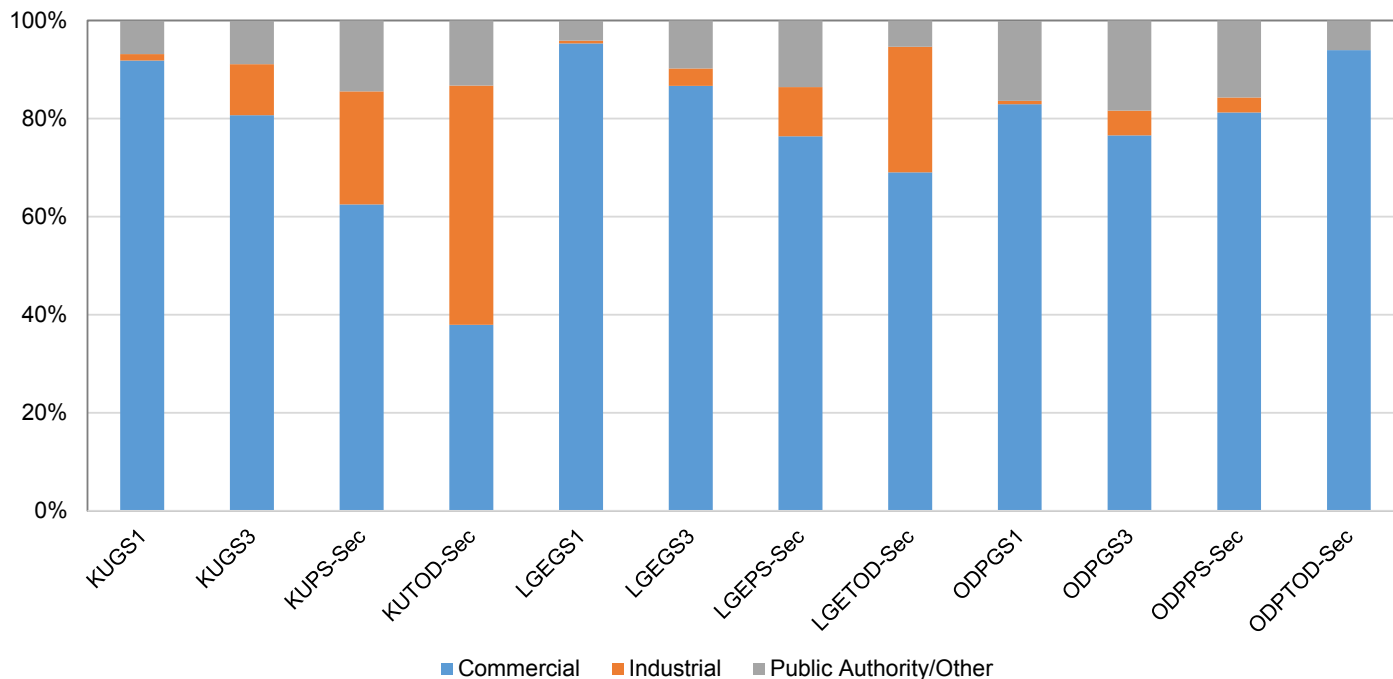


Figure 6: Rate to Revenue Class Allocation—GS and Secondary Rates

Industrial

Industrial customers, hereby defined as those on primary and transmission rates, account for about 30% of total energy sales. Major Accounts, the largest 27 customers that SAF individually forecasts, are almost exclusively on these rates and make up over 50% of industrial volumes. Overall, Major Account volumes are forecast at 5,559 GWh in 2018, a decrease of 1% compared to the 2017 BP. Even with the plan-over-plan decrease, Major Accounts are contributing rising volumes; the 2018 total is a 2.9% forecasted increase over the most recent full year of 2016. Most of the increase can be attributed to KU RTS (Retail Transmission Service) and KU TOD-Primary in the near term, with LG&E TOD-Primary contributing in the intermediate.

Plan over plan, some areas of expected sales growth are as follow:

- [REDACTED]
- an increase in load at [REDACTED] enabled by an upgrade in wiring KU is performing throughout the service territory
- several new buildings at [REDACTED] that were added in 2016 but not fully incorporated into the 2017 BP
- the strong performance of [REDACTED]

On the negative side,

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED] while increasing production did not increase energy usage concurrently

2018 Business Plan Sales Forecast Overview (continued)

LG&E RTS is negative plan over plan due to the aforementioned declines at ██████████. ██████████ KU RTS, on the other hand, is a mixed bag. Together, the KU RTS Major accounts are slightly negative in the near term plan over plan and the opposite in the intermediate, but positive to history. ██████████ are pulling the Major Accounts lower while ██████████ and ██████████ are counteracting them. On the non-Major Account side of KU RTS, coal is the main driver in both the western and eastern parts of the state. Compared to the 2017 BP the 2018 BP incorporates a more precipitous decline in near term coal production and does not display the small bounce back in coal production seen in the 2017 BP between 2027 and 2030. Adding all these parts together results in a lower KU RTS forecast the next ten years and a higher one thereafter.

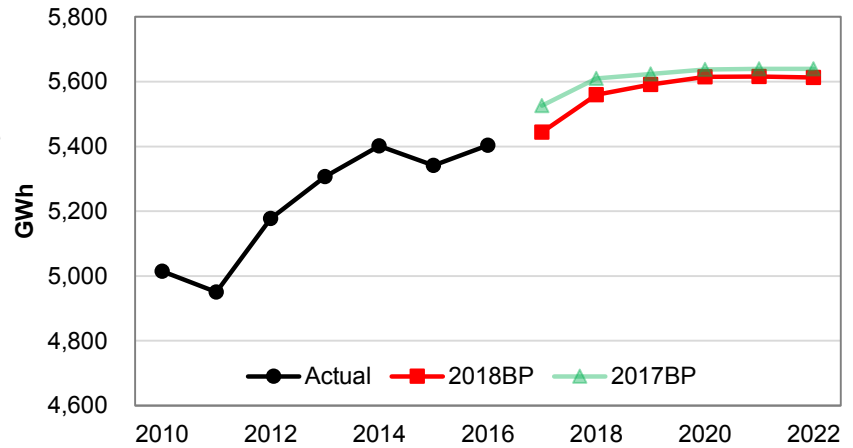


Figure 7: 2018BP Major Accounts Sales Forecast

Little has changed for LG&E primary rates in the 2018 BP. Long-term volumes are about 99.5% of the 2017 BP, with around 0.5% of growth forecasted per year. ██████████, is in the process of a major expansion at ██████████ that will see an expected increase of 10 MVA. The KU primary forecast looks significantly different from the prior plan due to a change in the forecast methodology. For the 2018 BP, Major Accounts were forecasted separately from the rest of the primary customers. Removing the Major Accounts from the influence of the economic driver in the model resulted in lower forecasted growth in the long term, eventually getting down to 89% of the 2017 BP at the end of the plan. The next couple years have the greatest growth in primary KU Major Accounts, with energy volumes tailing off afterwards. The main driver of that near-term growth is ██████████, whose addition of load is expected to be mostly complete at the beginning of 2020. Despite the lower forecast plan over plan, a 30-year compound annual growth rate of 0.13% is still forecasted.

When considering the aforementioned industrial rates on a billed basis, it is important to keep in mind that over 50% of PS-Primary for both KU and LG&E are classified as non-industrial revenue class, and the same is true of over 40% of LG&E TOD-Primary.

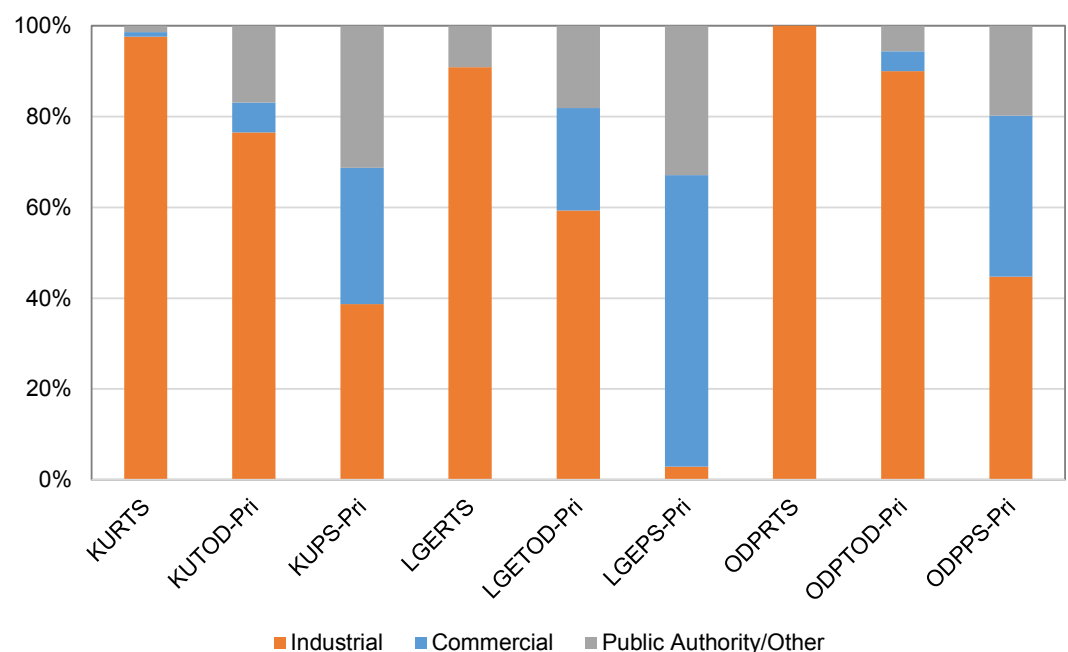


Figure 8: Rate to Revenue Class Allocation — Primary/Transmission Rates

2018 Business Plan Sales Forecast Overview (continued)

Conclusion

The sales forecast used in this year's business plan is similar to last year's with a few key changes, namely:

- Retail sales are expected to show a small decline over the first five years of the forecast
- The long-term growth rate for sales has declined further and is now only marginally positive
- Scenarios assessing the potential impact of EV and PV adoption are now available

Short-term risks are weighted to the downside due to the potential for a slowdown in residential customer growth, continued faster-than-expected efficiency gains, and the potential for a slowdown in the economy. Longer term, risks are more evenly weighted due to the potential for significant adoption of electric vehicles (positive for sales) and residential/commercial solar (negative). The difficulty in projecting the impacts these new technologies will have results in a high level of uncertainty in the long-term portion of the sales forecast.

Sales Analysis & Forecasting

Monthly Report



Dec 2017-Jan 2018

In this Issue...

Feature Article — Class-Level Customer Growth in the Service Territory Page 1,5-8

- An analysis of recent customer growth trends and projections

Weather Statistics and Outlook Page 2

- Significantly warmer-than-normal temperatures on tap for back half of February

Economic Outlook Page 3

- Volatility returns to US equity markets in February

Sales Growth Trends Page 4

- Sales were above budget during January due to well below-normal temperatures

Class-Level Customer Growth in the Service Territory

While sales forecasts have continued to decline in recent years due to improved efficiencies and lower use-per-customer projections, strong customer growth has helped stem the decline to some degree. This can largely be seen in the urban areas of the service territory, where strong population growth has precipitated increases in residential customers and commercial businesses. Total industrial customers have increased as well, with the majority of growth in the LG&E service territory. This article discusses Sales Analysis and Forecasting's (SAF) class-level customer forecasts from the 2018 Business Plan (BP), what has transpired since these forecasts were finalized, and provides a preliminary glimpse of what to expect in the 2019BP forecast.

Residential

Trend

Overall, the trend of strong residential customer growth conveyed in the 2018BP remains in place. Residential customer growth is projected to remain strong in the LG&E and KU service territories for the foreseeable future due to urban [household growth in Louisville and Lexington](#). However, in recent years new customer growth has been somewhat offset by an increase in multi-family units, which typically result in lower electricity usage than single-family homes. The rural portion of the Companies' service territory (ODP and the KU service territory excluding the Lexington region) is expected to see continued customer declines. While these numbers are much smaller than the gains expected in the urban centers, the customers in these regions are the largest electricity users in the service territory on average.

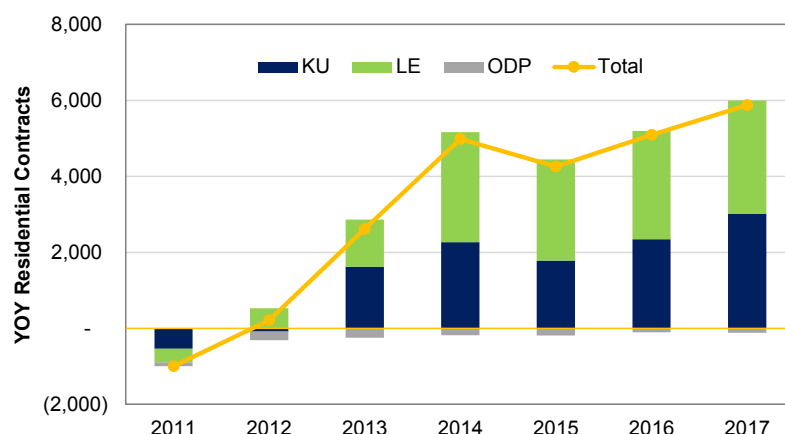
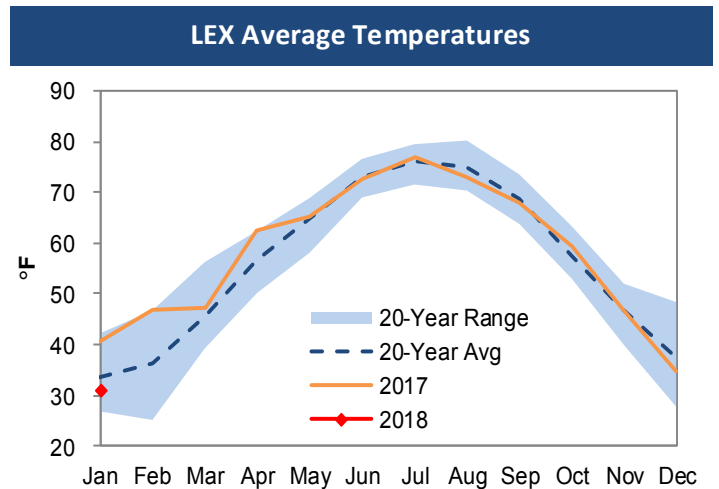
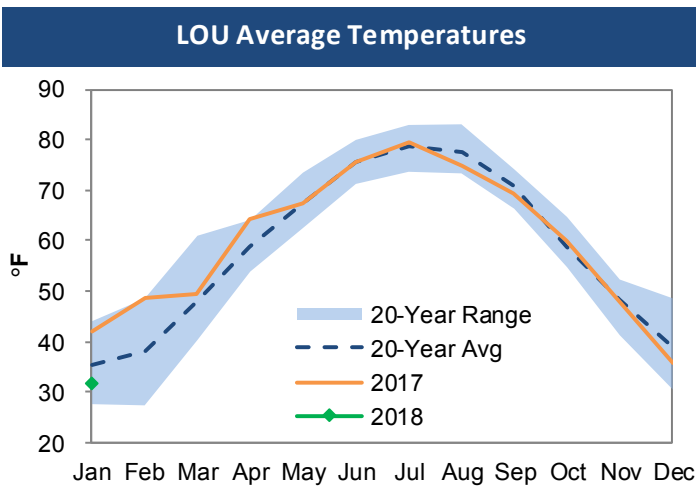


Figure 1: Annual Customer Growth by Company

Continued on page 5

Weather Statistics and Outlook



- The average hourly temperature at Louisville’s Bowman Field was 35.7°F in December, 3.7 degrees below the 20 -year average and 1.8 degrees below last year. The average hourly temperature was 31.6°F in January, 3.7 degrees below the 20-year average and 10.3 degrees below last year.
- The average hourly temperature at Lexington’s Blue Grass Airport (LEX) was 34.9°F in December, 2.9 degrees below the 20-year average and 2.2 degrees below last December. The average hourly temperature was 31.0°F in January, 2.7 degrees below the 20-year average and 9.8 degrees below last January.

Temperature Outlook

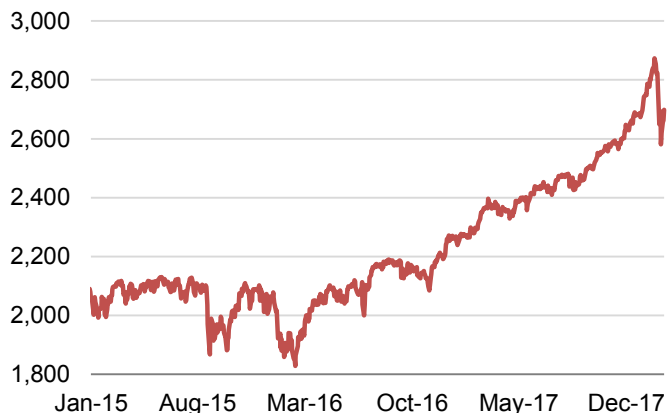
- Temperatures have been more than three degrees below normal thus far in February at Louisville’s Bowman Field. However, near-term outlooks have turned much warmer, and temperatures are expected to average nearly ten degrees above normal for the remainder of the month.

- [Redacted text]

[Large redacted area containing multiple lines of blacked-out text]

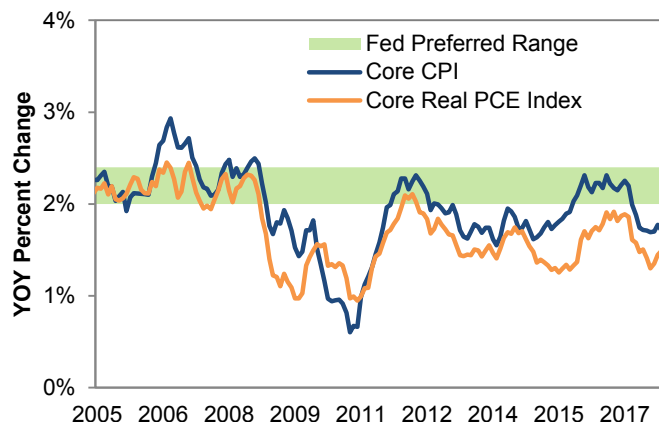
Economic Outlook

S&P 500 Index



Source: S&P Dow Jones Indices LLC

US Consumer Price Index



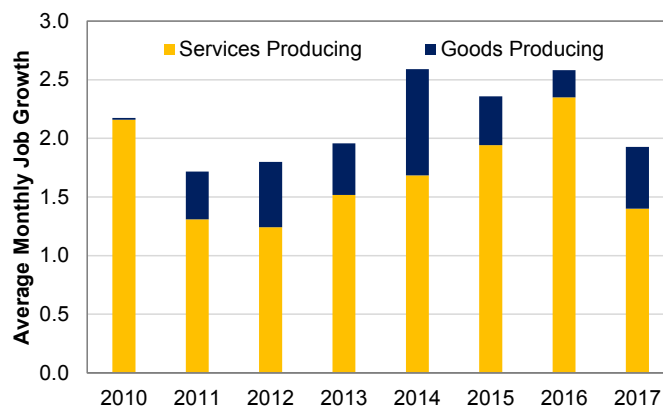
Source: Federal Reserve Economic Data

- US equity markets have experienced a degree of turmoil over the last two weeks. The Dow Jones Industrial Average and S&P 500 both made all-time highs January 26, but entered corrections (a drop of 10 percent or more) on February 8. The sell-off was prompted by a number of factors: an employment report showing wages were rising, [sparking inflation concerns](#); rising treasury yields, which have reduced the attractiveness of equities as compared to bonds; and a huge increase in the volatility index as a result of the initial stock market decline, wiping out short positions in this [“fear gauge” index](#), and likely exacerbating the downward move by spurring additional selling.
- The outlook for the US economy overall remains positive. The unemployment rate is low, industrial production has been rather strong ([though the latest print was disappointing](#)), and consumer purchases of goods and services has been robust. The market is currently pricing in three interest rate hikes from the Federal Reserve this year, though rising inflation metrics could spur additional increases. In addition to the employment report showing rising wages, the consumer price index report for January showed much larger monthly increases in both the headline and core rates than expected (though both remain shy of the Federal Reserve target on a year-over-year basis). As a result, the market implied odds for four or more rate hikes in 2018 sits near 24 percent as of February 16 as compared to 16.5 percent a month ago.

Kentucky and Service Territory

- Kentucky added 1.9k jobs per month during 2017 overall (subject to an end-of-year benchmark revision), below the post-Great Recession average of 2.2k. Goods-producing job growth was above average over this period, driven largely by gains in Construction. This sector gained 0.4k jobs in 2017, the third largest increase of any major employment category (Professional and Business Services and Leisure and Hospitality each added 0.5k jobs).
- This [post](#) by Eric Yussman contains a list of construction projects currently ongoing in the Louisville area, which will help to augment commercial and residential customer growth. However, many of these buildings will incorporate new HVAC and lighting technology, so the impact on sales will likely be smaller than in the past from each new

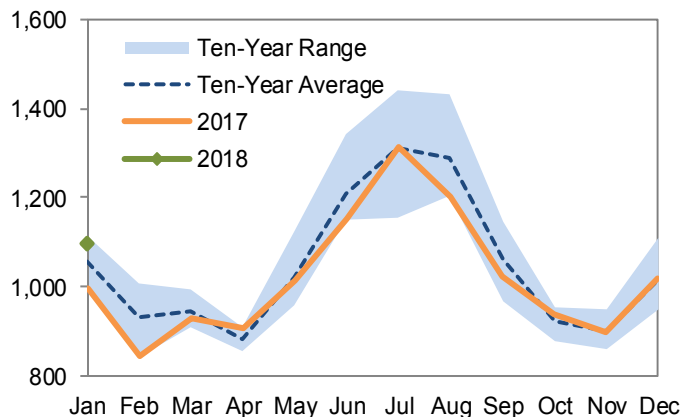
Kentucky Non-Farm Job Growth



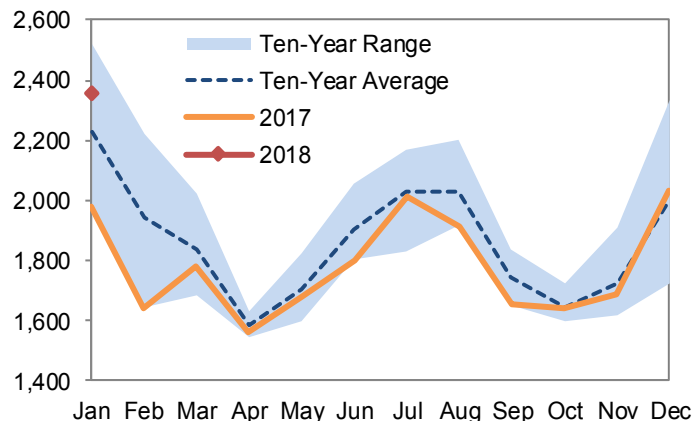
Source: US Bureau of Labor Statistics

Sales Trends

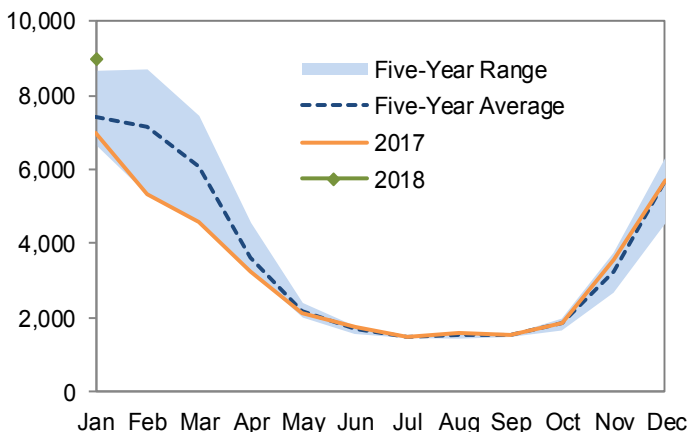
LGE EMS Energy Requirements (GWh)



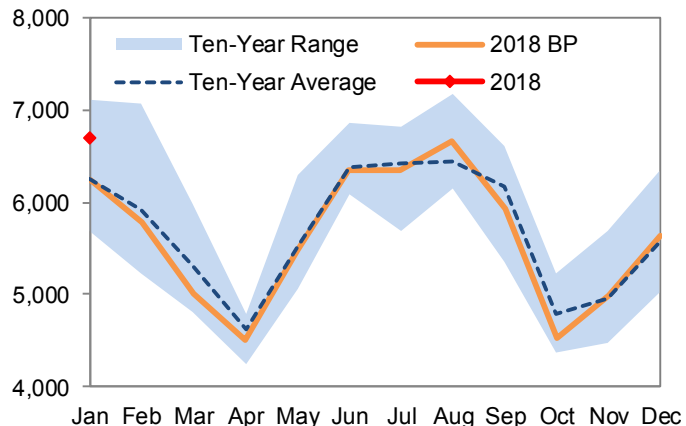
KU EMS Energy Requirements (GWh)



LGE Gas Sales and Transportation (MMcf)



Combined Company Peak Demand (MW)



- December Combined Company EMS energy requirements were 1.2 percent above the 10 -year average, with KU/ODP 1.7 percent above and LGE 0.2 percent above. Compared to budget, KU/ODP was 0.2 percent below while LGE was 3.5 percent below. Combined Company EMS requirements were 1.3 percent below budget.
- December Combined Company load peaked at 5,612 MW. This was above the ten -year average of 5,541 MW but below the 2017 Plan value of 5,723 MW.
- January Combined Company EMS energy requirements were 5.0 percent above the 10 -year average, with KU/ODP 5.8 percent above and LGE 3.4 percent above. Compared to budget, KU/ODP was 7.4 percent above while LGE was 2.6 percent above. Combined Company EMS requirements were 5.8 percent above budget.
- January Combined Company load peaked at 6,699 MW. This was above the ten -year average of 6,206 MW and the 2018 Plan value of 6,235 MW.
- Billed LGE Gas Sales and Transport volumes were 3.6 percent above the five -year average in December and 21.6 percent above the five-year average in January as temperatures were much colder than normal.

Class-Level Customer Growth in the Service Territory (continued) Sinclair

2017

Residential customers experienced more annual growth in 2017 than any prior year in the CCS (April 2009-present) era (Figure 1). Across the service territory, customer growth registered 0.72 percent, well above both the average from the previous six years (0.34 percent) and the 2018BP forecast (0.40 percent). Indeed, the 2018BP residential forecast came up shy of actual growth across both Kentucky service territories, with KU outpacing its forecast by the greatest amount (0.7 percent actual growth vs 0.3 percent forecast).

Rank	County	YOY Growth	YOY % Growth	2017 Contracts	Economic Region
1	JEFFERSON	2,645	0.8%	336,479	Louisville
2	FAYETTE	1,625	1.3%	130,591	Lexington
3	SCOTT	515	3.0%	17,940	Lexington
4	SHELBY	323	2.9%	11,579	Louisville
5	OLDHAM	287	1.2%	23,564	Louisville
6	MADISON	221	1.1%	20,247	Lexington
7	BULLITT	107	1.1%	9,634	Louisville
8	WOODFORD	87	0.8%	10,413	Lexington
9	CLARK	78	0.7%	11,936	Lexington
10	PULASKI	68	0.8%	8,166	Cumberland
74	CARROLL	-19	-0.6%	2,989	Louisville
75	CLAY	-19	-1.3%	1,478	Cumberland
76	HOPKINS	-21	-0.2%	9,857	Owensboro-Henderson
77	WEBSTER	-21	-1.0%	2,051	Owensboro-Henderson
78	ROCKCASTLE	-24	-1.0%	2,368	Lexington
79	LEE	-33	-0.6%	5,999	ODP
80	MUHLENBERG	-62	-0.6%	11,046	Owensboro-Henderson
81	WISE	-69	-0.4%	16,535	ODP
82	BELL	-108	-1.0%	10,861	Mountain
83	HARLAN	-108	-1.0%	10,764	Mountain

Figure 2: Annual Residential Customer Growth by Company

In the KU service territory, customer growth was unsurprisingly strongest in the counties near Louisville and Lexington. As discussed in a [previous article](#), these cities are sprawling outward, leading to large net customer gains in the surrounding counties. Counties in the rural regions of the service territory have seen the largest declines, particularly in the [Mountain economic region of Kentucky](#) and the ODP region in Virginia. Figure 2 shows the top and bottom 10 counties in the service territory by absolute customer growth during 2017.

Forward Outlook

Compared to the 2018BP, preliminary customer forecasts for this year’s Business Plan are more bullish for a number of reasons:

- There is a higher starting point for the forecasts to begin due to the growth in 2017.
- Population forecasts provided by IHS have been revised higher compared to last year’s for the Louisville Metro area and Kentucky as a whole.
- Housing permit growth, typically a leading indicator for new residential customers, is showing no signs of slowing in the Commonwealth’s major metros, particularly in comparison to the state overall. This is likely an indication that the state is not only adding residents, but that more of these people are taking up residence in areas served by LKE. This concept is supported in Figure 1 of this [article](#) by Patrick Kennedy, which implies the percentage of the state’s population served by LKE is anticipated to increase gradually over the coming years.

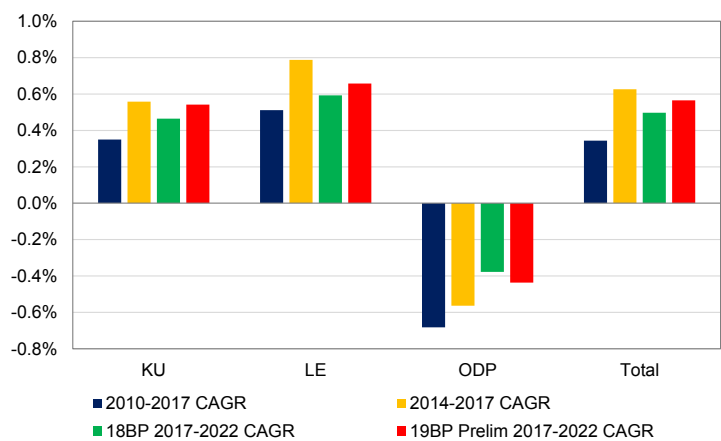


Figure 3: Historical and Forecasted Customer Growth Rates

Note: 2017 Data is actual for all comparisons except 2018 BP, which uses the Plan’s 2017 customer forecast as a base

The remaining question for this year’s Business Plan is just how high the customer growth forecast will go in the next few years. Much as with the majority of the group’s electricity consumption forecasts, SAF uses econometric regression techniques to forecast customer growth. This technique minimizes errors over the entire data set, which suggests growth fore-

Class-Level Customer Growth in the Service Territory (continued) Sinclair

casts may continue to lag the elevated rates we have seen in the last few years over the medium-to-long term. However, the strong growth of recent years in conjunction with the positive housing outlook for the Lexington and Louisville regions may warrant a more aggressive rate of growth over a shorter time horizon as compared to the preliminary numbers (Figure 3 – red bars), reverting back towards a more moderate level over the longer-term duration of the forecast.

Commercial

For purposes of this article, commercial rates are defined as general service rates (GS single- or three-phase) and power service or time-of-day (PS and TOD) rates having secondary voltage. School PS and School TOD specifically were introduced in the most recent rate case and are also included.

Trend

Commercial customers have grown at a faster rate than conveyed in the 2018BP, particularly in the LG&E service territory (Figure 4). As anticipated, GS continues to drive the majority of the growth, accounting for over 90% of commercial customer growth year over year; however, some of the customer growth in GS has been at the expense of PS due to existing customers changing rates. This was seen more in KU than LG&E in 2017. Recall from [a previous article on the small commercial class](#) that GS customers are below 50 kW and include buildings such as banks, restaurants, bars, small retail stores, and medical offices as well as non-buildings such as telecom equipment, small farms, nurseries, wineries, and golf courses.

Driven by the continued migration of residents from rural to urban areas, commercial customer growth is projected to remain steady in the LG&E and KU service territories; however, this is at the expense of the rural areas of the Companies' service territory as shown in Figure 5.

2017

Across the service territory, customer growth relative to 2016 registered 0.55%, which is over the 2018BP predicted growth rate of 0.37%.

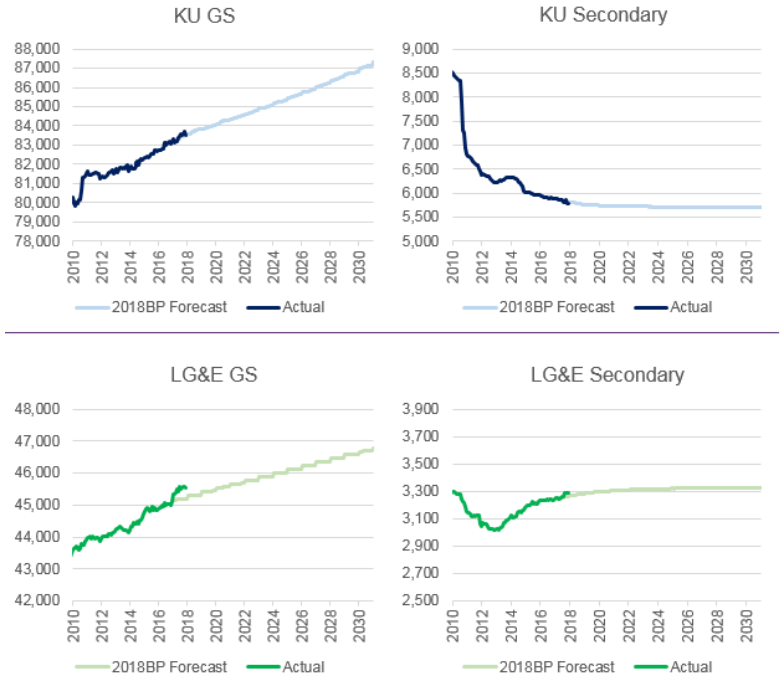


Figure 4: Actual Commercial Customers vs. 2018 BP Forecast

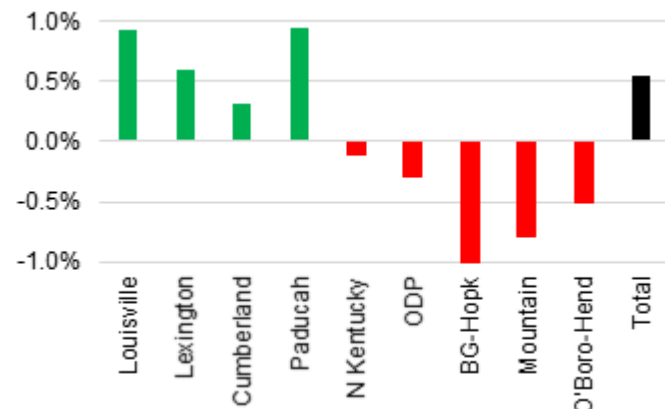


Figure 5: Commercial Customer Growth by Economic Region

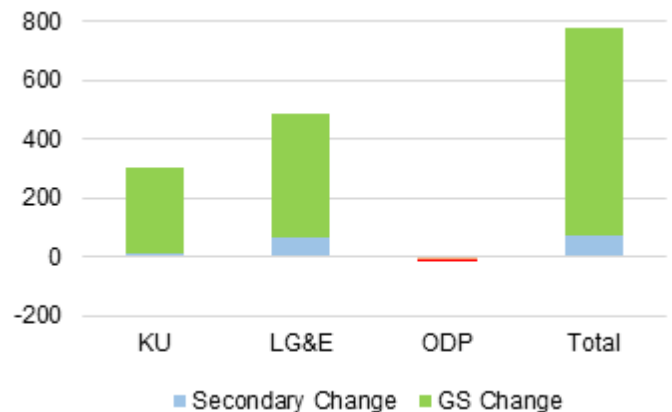


Figure 6: YOY Commercial Customer Growth by Company

Class-Level Customer Growth in the Service Territory (continued) Sinclair

Similar to the residential sector, urban sprawl also appears to have contributed to commercial customer counts with 9 of the top 10 growing counties in 2017 being in or around Louisville and Lexington. The Mountain economic region along with other rural regions of the state lost customers in 2017. Figure 7 shows the top and bottom 10 counties in the service territory by absolute customer growth during 2017.

Compared to the 2018BP, we anticipate the 2019BP customer forecast to be slightly more bullish in both

LG&E and KU, particularly in the short-term. For one, the starting point for LG&E and KU will both be slightly higher than anticipated in the 2018BP. In addition, independent variables that have explanatory value in the commercial customer model, such as population and employment, are slightly more bullish versus last year particularly in the near-term, according to IHS Markit.

Industrial

Trend

The trend from the 2018BP remains in place, as slow growth to no change in industrial customers was the norm in 2017. Very slight customer growth was expected for the primary service level customers across LG&E, KU, and ODP and did materialize in all three, with a few extra customer gains than forecasted. Transmission level customers (RTS) were expected to remain steady, and did, with the exception of the loss of a KU transmission customer.

2017

With fewer than 700 primary service customers and less than 50 transmission level customers between the three companies any gain or loss of customers can look like a substantial percent change, so we will focus on absolute numbers. KU saw the expected net gain of two primary level customers compared to the end of 2016. However, this may have a net negative impact on energy sales as one of the lost customers was a major manufacturer with demand around 4 MVA. LG&E gained four primary level customers. One addition came from the known change of a customer on a special contract, while two of the new customers combined to add over 1 MW of new demand to the Louisville area. ODP, as a whole, and LG&E transmission customers remained at a steady level as expected; with no real changes in the chemical, manufacturing, and mining companies that make up those customers. KU did lose a transmission customer, a coal mine from the eastern part of the state.

Forward Outlook

Compared to the 2018BP, customer forecasts for the 2019BP will see changes mainly from LG&E primary and KU transmission. The starting point for LG&E primary will be raised and an increase in the growth rate of customers will also be examined. KU transmission customers will start lower for the 2019BP, with a look into whether continued flat customer counts or a very small decrease is warranted. It will be important to look at which customers make up the churn of additions and subtractions to the industrial customer class, as they can have an outsized impact as individual customers. In the last several years a few examples of the large impacts individual industrial customers can have are losses of: a 50 MVA paper mill, a 4.5 MVA machinery manufacturer, a 6.5 MVA commercial vehicle equipment manufacturer, a 3.5 MVA glass plant, 6 MVA of reduction at a lighting plant, and 12 MVA of reduction at a coal mine.

Rank	County	YOY Growth	YOY % Growth	2017 Contracts	Economic Region
1	JEFFERSON	403	0.9%	44,698	Louisville
2	FAYETTE	113	0.6%	17,927	Lexington
3	OLDHAM	66	2.1%	3,149	Louisville
4	SCOTT	40	1.3%	3,182	Lexington
5	SHELBY	33	1.5%	2,201	Louisville
6	BOYLE	30	1.5%	2,028	Lexington
7	BOURBON	29	1.7%	1,780	Lexington
8	LAUREL	29	1.2%	2,470	Cumberland
9	MADISON	26	0.8%	3,303	Lexington
10	BULLITT	22	1.5%	1,474	Louisville
74	CALDWELL	-9	-3.0%	296	Bowling Green-Hopkinsville
75	MASON	-10	-0.6%	1,562	Northern Kentucky
76	WEBSTER	-10	-1.6%	629	Owensboro-Henderson
77	ADAIR	-11	-1.7%	651	Cumberland
78	CARROLL	-12	-1.2%	944	Louisville
79	ROCKCASTLE	-14	-2.3%	580	Lexington
80	MUHLENBERG	-15	-0.5%	2,873	Owensboro-Henderson
81	NICHOLAS	-15	-3.5%	426	Lexington
82	UNION	-23	-1.9%	1,163	Owensboro-Henderson
83	HARLAN	-27	-1.3%	2,133	Mountain

Figure 7: Top and Bottom 10 Counties by Absolute Commercial Customer Growth

Class-Level Customer Growth in the Service Territory (continued)

Conclusion

Strong customer growth has been a persistent theme in recent years among the residential and commercial classes, and SAF anticipates a continuation of robust growth rates in the years ahead. However, ongoing efficiency improvements will continue to exert downward pressure on use-per-customer figures among customers in these classes moving forward. Additionally, a continued trend of strong multi-family housing growth in the state's major metro areas is expected to provide further headwinds to residential sales growth.

Industrial sector growth is anticipated to remain slow from an absolute perspective. The more interesting aspect from a sales perspective will be which industries exhibit strength or weakness in the coming years. As demonstrated in 2017, though total customers may increase moving forward, sales can experience negative annual growth if the closures are in energy-intensive sectors.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 19

Responding Witness: David S. Sinclair

Q.1-19. With regard to Mr. Sinclair's Exhibit DSS-4, please explain how the KY GDP and Personal Income data are used in the Companies' sales forecast models.

A.1-19. Specifically, Kentucky GSP projections are used as an elasticity input in the small commercial end-use consumption forecast. The metric has a positive relationship with sales.

Personal Income data is used in the residential end-use econometric models as an elasticity input. This metric is directionally positive for sales volumes.

LOUISVILLE GAS AND ELECTRIC COMPANY

**Response to First Set of Data Requests of
Kentucky Industrial Utility Customers, Inc.
Dated November 13, 2018**

Case No. 2018-00295

Question No. 20

Responding Witness: David S. Sinclair

Q.1-20. With regard to 807 KAR 5:001 Sec. 16(7)(c)B (Electric Sales & Demand Forecast Process), please provide the following:

- a. an excel spreadsheet with the “Service Territory-Specific Macroeconomic Forecasts” used in this rate case to project test year sales and demand.
- b. a copy of each of the econometric models used to develop the KU and LG&E sales forecasts by rate class (i.e., the estimated models, with coefficients).
- c. for rate classes whose forecast relies on “specific intelligence on the prospective energy requirements of the utilities largest customers, please provide the following:
 1. the identification of each rate class (by Company) whose forecast relies on individual customer surveys/analyses, etc.
 2. an explanation of how the individual customer information is incorporated into the forecast, including whether such information is combined with econometric forecast results for the rate class.

A.1-20.

- a. See the attachment being provided in Excel format. The information requested is confidential and proprietary and is being provided under seal pursuant to a petition for confidential protection.
- b. See attached.
- c.
 1. See Filing Requirement 807 KAR 5:001 Sec. 16(7)(c) B. Section 4 “Electric Sales and Demand Forecast Process.
 2. See Filing Requirement 807 KAR 5:001 Sec. 16(7)(c) B. Section 4 “Electric Sales and Demand Forecast Process.”

The attachment is
Confidential and
provided under seal in
a separate file in Excel
format.

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Attachment 1 to Response to KIUC-1 Question No. 20b
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Sinclair

Year	Month	LEERS_UPC_exNM	XHeat	XCool	XOther4	9-Apr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
2011	1	1,194.73	416.3	0	831.40	0	1	0	0	0	0	0	0	0
2011	2	961.81	278.3	0	697.1	0	0	1	0	0	0	0	0	0
2011	3	845.54	199.6	4.2	738.8	0	0	0	1	0	0	0	0	0
2011	4	752.05	125.4	39	720.7	0	0	0	0	1	0	0	0	0
2011	5	758.61	52.2	98.6	717.3	0	0	0	0	0	1	0	0	0
2011	6	1,182.63	15	421.3	721.6	0	0	0	0	0	0	1	0	0
2011	7	1,410.83	0	563.1	673.6	0	0	0	0	0	0	0	1	0
2011	8	1,642.03	0	753.4	683.6	0	0	0	0	0	0	0	0	1
2011	9	1,249.11	4.9	482.7	721.4	0	0	0	0	0	0	0	0	0
2011	10	716.73	34.7	78.6	712.6	0	0	0	0	0	0	0	0	0
2011	11	676.74	99.8	7.8	679.5	0	0	0	0	0	0	0	0	0
2011	12	846.10	187.4	2.8	763.1	0	0	0	0	0	0	0	0	0
2012	1	1,028.64	290.5	0	838.40	0	1	0	0	0	0	0	0	0
2012	2	920.23	230.1	0	736.7	0	0	1	0	0	0	0	0	0
2012	3	788.80	155.3	26.3	725.6	0	0	0	1	0	0	0	0	0
2012	4	708.35	51.9	92.6	731.2	0	0	0	0	1	0	0	0	0
2012	5	849.6	36	176.5	720.7	0	0	0	0	0	1	0	0	0
2012	6	1,135.22	2.8	390.6	728.8	0	0	0	0	0	0	1	0	0
2012	7	1,582.15	0.2	710.1	690.7	0	0	0	0	0	0	0	1	0
2012	8	1,467.71	0	660.2	685	0	0	0	0	0	0	0	0	1
2012	9	1,236.45	3.2	454	715.9	0	0	0	0	0	0	0	0	0
2012	10	727.15	43.7	78.6	700.5	0	0	0	0	0	0	0	0	0
2012	11	737.3	139.7	17.4	719.4	0	0	0	0	0	0	0	0	0
2012	12	830.59	196.5	3.8	760.8	0	0	0	0	0	0	0	0	0
2013	1	1,039.43	301.7	0	786.2	0	1	0	0	0	0	0	0	0
2013	2	948.53	266.5	0	715.8	0	0	1	0	0	0	0	0	0
2013	3	886.01	240.6	0	695.7	0	0	0	1	0	0	0	0	0
2013	4	778.34	156.4	28	686.1	0	0	0	0	1	0	0	0	0
2013	5	704.47	50.2	81.5	680.4	0	0	0	0	0	1	0	0	0
2013	6	1,008.04	9.2	307.8	696.2	0	0	0	0	0	0	1	0	0
2013	7	1,239.11	0	483.5	676.1	0	0	0	0	0	0	0	1	0
2013	8	1,253.37	0	443.1	668.9	0	0	0	0	0	0	0	0	1
2013	9	1,282.04	0.9	501.3	703.3	0	0	0	0	0	0	0	0	0
2013	10	861.34	27.3	150.5	694.9	0	0	0	0	0	0	0	0	0
2013	11	731.11	133.7	7.3	695.8	0	0	0	0	0	0	0	0	0
2013	12	973.03	280.6	0	774.8	0	0	0	0	0	0	0	0	0
2014	1	1,180.47	392.9	0	800.2	0	1	0	0	0	0	0	0	0
2014	2	1,080.36	338.5	0	696.5	0	0	1	0	0	0	0	0	0
2014	3	914.80	262.3	0.3	700.7	0	0	0	1	0	0	0	0	0
2014	4	703.20	115.9	24.1	685.3	0	0	0	0	1	0	0	0	0
2014	5	740.8	30.4	166.6	684.9	0	0	0	0	0	1	0	0	0

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2014	6	1,055.53	6.5	450.6	673.5	0	0	0	0	0	0	1	0	0
2014	7	1,303.01	0	518.1	664	0	0	0	0	0	0	0	1	0
2014	8	1,116.52	0	398	633	0	0	0	0	0	0	0	0	1
2014	9	1,182.49	5.3	432.1	673.3	0	0	0	0	0	0	0	0	0
2014	10	773.47	38.6	97.7	679.2	0	0	0	0	0	0	0	0	0
2014	11	710.75	155.9	5.4	684.9	0	0	0	0	0	0	0	0	0
2014	12	934.34	267.2	0	748.8	0	0	0	0	0	0	0	0	0
2015	1	1,068.51	335	0	760.9	0	1	0	0	0	0	0	0	0
2015	2	998.28	308.7	0	688.8	0	0	1	0	0	0	0	0	0
2015	3	964.06	285.3	0	694.3	0	0	0	1	0	0	0	0	0
2015	4	668.88	104	21.9	697.3	0	0	0	0	1	0	0	0	0
2015	5	726.18	35.3	119.6	632.1	0	0	0	0	0	1	0	0	0
2015	6	1,050.47	8.4	377.2	684.2	0	0	0	0	0	0	1	0	0
2015	7	1,251.82	0	508	643.3	0	0	0	0	0	0	0	1	0
2015	8	1,308.10	0	524.2	642.4	0	0	0	0	0	0	0	0	1
2015	9	1,176.77	1.4	434.5	694.4	0	0	0	0	0	0	0	0	0
2015	10	774.57	28.7	127	661.2	0	0	0	0	0	0	0	0	0
2015	11	650.48	94.6	14.5	681.2	0	0	0	0	0	0	0	0	0
2015	12	820.07	176.6	3.8	738.7	0	0	0	0	0	0	0	0	0
2016	1	986.65	270.4	1.5	752	0	1	0	0	0	0	0	0	0
2016	2	918.34	263.1	0	681.9	0	0	1	0	0	0	0	0	0
2016	3	751.97	157.6	2.9	662.1	0	0	0	1	0	0	0	0	0
2016	4	669.44	105.8	16.5	687.4	0	0	0	0	1	0	0	0	0
2016	5	682.86	36.7	75.1	651.9	0	0	0	0	0	1	0	0	0
2016	6	1,059.15	12.4	364.9	679.4	0	0	0	0	0	0	1	0	0
2016	7	1,350.95	0	591	665.1	0	0	0	0	0	0	0	1	0
2016	8	1,405.19	0	638.7	636.8	0	0	0	0	0	0	0	0	1
2016	9	1,336.02	0.6	563.7	672.5	0	0	0	0	0	0	0	0	0
2016	10	826.8	16.3	208.9	641.9	0	0	0	0	0	0	0	0	0
2016	11	680	77	62	671.6	0	0	0	0	0	0	0	0	0
2016	12	879.55	237.1	0.7	727.3	0	0	0	0	0	0	0	0	0
2017	1	981.52	285.9	1	746.6	0	1	0	0	0	0	0	0	0
2017	2	769.12	183.2	0.9	666	0	0	1	0	0	0	0	0	0
2017	3	691.60	144.8	5	655.8	0	0	0	1	0	0	0	0	0
2017	4	691.86	77.3	55.5	668	0	0	0	0	1	0	0	0	0
2017	5	762.78	32.3	150.6	665	0	0	0	0	0	1	0	0	0
2017	6	1,082.52	4.6	345.8	676.1	0	0	0	0	0	0	1	0	0
2017	7	1,305.59	0	538.4	652.8	0	0	0	0	0	0	0	1	0
2017	8	1,223.08	0	462.9	615.2	0	0	0	0	0	0	0	0	1
2017	9	993.33	6	287	656.5	0	0	0	0	0	0	0	0	0
2017	10	850.82	18.7	191.6	660.7	0	0	0	0	0	0	0	0	0
2017	11	693.97	118.4	21.5	643.7	0	0	0	0	0	0	0	0	0

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2017	12	854.91	234.4	1.3	708.6	0	0	0	0	0	0	0	0	0
2018	1	1,160.36	315.8	0.6	739.1	0	1	0	0	0	0	0	0	0
2018	2		262.6	0.1	659.5	0	0	1	0	0	0	0	0	0
2018	3		207.5	2.8	653.1	0	0	0	1	0	0	0	0	0
2018	4		116.4	33.2	684.6	0	0	0	0	1	0	0	0	0
2018	5		43.6	98.6	665.4	0	0	0	0	0	1	0	0	0
2018	6		9	306.4	649.8	0	0	0	0	0	0	1	0	0
2018	7		0.1	521.3	649.3	0	0	0	0	0	0	0	1	0
2018	8		0	532.5	626.5	0	0	0	0	0	0	0	0	1
2018	9		1.8	430.7	646.7	0	0	0	0	0	0	0	0	0
2018	10		29.9	145.3	659.4	0	0	0	0	0	0	0	0	0
2018	11		111.4	18.2	662.6	0	0	0	0	0	0	0	0	0
2018	12		223.6	1.7	711.8	0	0	0	0	0	0	0	0	0
2019	1		309.1	0.6	719.8	0	1	0	0	0	0	0	0	0
2019	2		260.3	0.1	650.6	0	0	1	0	0	0	0	0	0
2019	3		213.6	2.9	669.3	0	0	0	1	0	0	0	0	0
2019	4		113.5	32.3	664.4	0	0	0	0	1	0	0	0	0
2019	5		42.1	95	640.6	0	0	0	0	0	1	0	0	0
2019	6		9.1	306.8	650.3	0	0	0	0	0	0	1	0	0
2019	7		0.1	508.7	633.4	0	0	0	0	0	0	0	1	0
2019	8		0	525.6	618.1	0	0	0	0	0	0	0	0	1
2019	9		1.8	427.8	642.1	0	0	0	0	0	0	0	0	0
2019	10		29.8	144.2	653.9	0	0	0	0	0	0	0	0	0
2019	11		112.2	18.2	664.3	0	0	0	0	0	0	0	0	0
2019	12		220.1	1.6	697.3	0	0	0	0	0	0	0	0	0
2020	1		306.9	0.6	712.1	0	1	0	0	0	0	0	0	0
2020	2		258.4	0.1	643.6	0	0	1	0	0	0	0	0	0
2020	3		219.1	2.9	684.2	0	0	0	1	0	0	0	0	0
2020	4		112.6	32.1	657.2	0	0	0	0	1	0	0	0	0
2020	5		41.8	94.5	633.9	0	0	0	0	0	1	0	0	0
2020	6		9	305.1	643.7	0	0	0	0	0	0	1	0	0
2020	7		0.1	505.9	627.2	0	0	0	0	0	0	0	1	0
2020	8		0	522.7	612	0	0	0	0	0	0	0	0	1
2020	9		1.8	425.5	635.7	0	0	0	0	0	0	0	0	0
2020	10		29.5	143.4	647.2	0	0	0	0	0	0	0	0	0
2020	11		111.3	18.1	657.4	0	0	0	0	0	0	0	0	0
2020	12		218.5	1.6	690	0	0	0	0	0	0	0	0	0
2021	1		305	0.6	705.1	0	1	0	0	0	0	0	0	0
2021	2		256.7	0.1	637.3	0	0	1	0	0	0	0	0	0
2021	3		210.6	2.8	655.5	0	0	0	1	0	0	0	0	0
2021	4		111.7	31.9	650.5	0	0	0	0	1	0	0	0	0
2021	5		41.5	93.8	627.5	0	0	0	0	0	1	0	0	0

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2021	6	8.9	302.8	637.3	0	0	0	0	0	0	1	0	0
2021	7	0.1	501.9	620.9	0	0	0	0	0	0	0	1	0
2021	8	0	518.6	605.7	0	0	0	0	0	0	0	0	1
2021	9	1.8	422.1	628.9	0	0	0	0	0	0	0	0	0
2021	10	29.3	142.2	640.1	0	0	0	0	0	0	0	0	0
2021	11	110.4	18	649.7	0	0	0	0	0	0	0	0	0
2021	12	216.5	1.6	681.7	0	0	0	0	0	0	0	0	0
2022	1	302.3	0.6	698.5	0	1	0	0	0	0	0	0	0
2022	2	254.4	0.1	631.4	0	0	1	0	0	0	0	0	0
2022	3	208.8	2.8	649.6	0	0	0	1	0	0	0	0	0
2022	4	110.8	31.6	644.7	0	0	0	0	1	0	0	0	0
2022	5	41.1	93.1	622	0	0	0	0	0	1	0	0	0
2022	6	8.9	300.5	631.9	0	0	0	0	0	0	1	0	0
2022	7	0.1	498.5	615.9	0	0	0	0	0	0	0	1	0
2022	8	0	515.1	600.8	0	0	0	0	0	0	0	0	1
2022	9	1.8	419.3	623.9	0	0	0	0	0	0	0	0	0
2022	10	29	141.2	634.8	0	0	0	0	0	0	0	0	0
2022	11	109.5	17.8	644.3	0	0	0	0	0	0	0	0	0
2022	12	214.8	1.6	676	0	0	0	0	0	0	0	0	0
2023	1	300.1	0.6	693.5	0	1	0	0	0	0	0	0	0
2023	2	252.6	0.1	626.9	0	0	1	0	0	0	0	0	0
2023	3	207.3	2.8	645	0	0	0	1	0	0	0	0	0
2023	4	110	31.4	640.3	0	0	0	0	1	0	0	0	0
2023	5	40.8	92.6	617.8	0	0	0	0	0	1	0	0	0
2023	6	8.8	299	627.7	0	0	0	0	0	0	1	0	0
2023	7	0.1	495.9	611.7	0	0	0	0	0	0	0	1	0
2023	8	0	512.4	596.7	0	0	0	0	0	0	0	0	1
2023	9	1.7	417.1	619.6	0	0	0	0	0	0	0	0	0
2023	10	28.8	140.5	630.4	0	0	0	0	0	0	0	0	0
2023	11	108.7	17.8	639.8	0	0	0	0	0	0	0	0	0
2023	12	213.2	1.6	671.2	0	0	0	0	0	0	0	0	0
2024	1	298	0.6	689.3	0	1	0	0	0	0	0	0	0
2024	2	250.9	0.1	623.2	0	0	1	0	0	0	0	0	0
2024	3	212.7	2.9	662.5	0	0	0	1	0	0	0	0	0
2024	4	109.2	31.3	636.5	0	0	0	0	1	0	0	0	0
2024	5	40.6	92.2	614.1	0	0	0	0	0	1	0	0	0
2024	6	8.7	297.8	624	0	0	0	0	0	0	1	0	0
2024	7	0.1	493.7	608.2	0	0	0	0	0	0	0	1	0
2024	8	0	510.2	593.2	0	0	0	0	0	0	0	0	1
2024	9	1.7	415.3	616	0	0	0	0	0	0	0	0	0
2024	10	28.6	140	626.8	0	0	0	0	0	0	0	0	0
2024	11	107.9	17.7	636.1	0	0	0	0	0	0	0	0	0

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2024	12	211.8	1.6	667.4	0	0	0	0	0	0	0	0	0
2025	1	296	0.6	684	0	1	0	0	0	0	0	0	0
2025	2	249.2	0.1	618.5	0	0	1	0	0	0	0	0	0
2025	3	204.5	2.8	636.4	0	0	0	1	0	0	0	0	0
2025	4	108.5	31.2	631.9	0	0	0	0	1	0	0	0	0
2025	5	40.3	92	609.9	0	0	0	0	0	1	0	0	0
2025	6	8.7	297	619.9	0	0	0	0	0	0	1	0	0
2025	7	0.1	492.5	604.1	0	0	0	0	0	0	0	1	0
2025	8	0	508.9	589.3	0	0	0	0	0	0	0	0	1
2025	9	1.7	414.3	611.8	0	0	0	0	0	0	0	0	0
2025	10	28.5	139.6	622.4	0	0	0	0	0	0	0	0	0
2025	11	107.3	17.6	631.5	0	0	0	0	0	0	0	0	0
2025	12	210.5	1.6	662.4	0	0	0	0	0	0	0	0	0
2026	1	294.2	0.6	679.7	0	1	0	0	0	0	0	0	0
2026	2	247.7	0.1	614.6	0	0	1	0	0	0	0	0	0
2026	3	203.2	2.8	632.5	0	0	0	1	0	0	0	0	0
2026	4	107.8	31.2	628	0	0	0	0	1	0	0	0	0
2026	5	40	91.8	606.2	0	0	0	0	0	1	0	0	0
2026	6	8.6	296.5	616.2	0	0	0	0	0	0	1	0	0
2026	7	0.1	491.7	600.6	0	0	0	0	0	0	0	1	0
2026	8	0	508	585.8	0	0	0	0	0	0	0	0	1
2026	9	1.7	413.6	608.2	0	0	0	0	0	0	0	0	0
2026	10	28.3	139.4	618.6	0	0	0	0	0	0	0	0	0
2026	11	106.6	17.6	627.5	0	0	0	0	0	0	0	0	0
2026	12	209.2	1.6	658.2	0	0	0	0	0	0	0	0	0
2027	1	292.3	0.6	675.8	0	1	0	0	0	0	0	0	0
2027	2	246.1	0.1	611.2	0	0	1	0	0	0	0	0	0
2027	3	201.9	2.8	629	0	0	0	1	0	0	0	0	0
2027	4	107.2	31.1	624.6	0	0	0	0	1	0	0	0	0
2027	5	39.8	91.8	603	0	0	0	0	0	1	0	0	0
2027	6	8.6	296.2	613	0	0	0	0	0	0	1	0	0
2027	7	0.1	491.2	597.5	0	0	0	0	0	0	0	1	0
2027	8	0	507.5	582.7	0	0	0	0	0	0	0	0	1
2027	9	1.7	413.2	604.9	0	0	0	0	0	0	0	0	0
2027	10	28.1	139.2	615.2	0	0	0	0	0	0	0	0	0
2027	11	105.9	17.6	623.9	0	0	0	0	0	0	0	0	0
2027	12	207.8	1.6	654.4	0	0	0	0	0	0	0	0	0
2028	1	290.6	0.6	672.5	0	1	0	0	0	0	0	0	0
2028	2	244.7	0.1	608.2	0	0	1	0	0	0	0	0	0
2028	3	207.4	2.9	646.7	0	0	0	1	0	0	0	0	0
2028	4	106.5	31.1	621.7	0	0	0	0	1	0	0	0	0
2028	5	39.6	91.8	600.2	0	0	0	0	0	1	0	0	0

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2028	6	8.5	296.2	610.3	0	0	0	0	0	0	1	0	0
2028	7	0.1	491.2	594.8	0	0	0	0	0	0	0	1	0
2028	8	0	507.5	580	0	0	0	0	0	0	0	0	1
2028	9	1.7	413.2	602.2	0	0	0	0	0	0	0	0	0
2028	10	27.9	139.2	612.2	0	0	0	0	0	0	0	0	0
2028	11	105.3	17.6	620.9	0	0	0	0	0	0	0	0	0
2028	12	206.6	1.6	651.1	0	0	0	0	0	0	0	0	0
2029	1	289	0.6	669.5	0	1	0	0	0	0	0	0	0
2029	2	243.3	0.1	605.5	0	0	1	0	0	0	0	0	0
2029	3	199.7	2.8	623.2	0	0	0	1	0	0	0	0	0
2029	4	106	31.2	619	0	0	0	0	1	0	0	0	0
2029	5	39.3	91.8	597.7	0	0	0	0	0	1	0	0	0
2029	6	8.5	296.4	607.8	0	0	0	0	0	0	1	0	0
2029	7	0.1	491.6	592.4	0	0	0	0	0	0	0	1	0
2029	8	0	508	577.7	0	0	0	0	0	0	0	0	1
2029	9	1.7	413.5	599.7	0	0	0	0	0	0	0	0	0
2029	10	27.8	139.3	609.7	0	0	0	0	0	0	0	0	0
2029	11	104.7	17.6	618.2	0	0	0	0	0	0	0	0	0
2029	12	205.4	1.6	648.3	0	0	0	0	0	0	0	0	0
2030	1	287.4	0.6	664.9	0	1	0	0	0	0	0	0	0
2030	2	241.9	0.1	601.4	0	0	1	0	0	0	0	0	0
2030	3	198.5	2.8	619.1	0	0	0	1	0	0	0	0	0
2030	4	105.4	31.1	615.1	0	0	0	0	1	0	0	0	0
2030	5	39.1	91.8	594.1	0	0	0	0	0	1	0	0	0
2030	6	8.4	296.2	604.3	0	0	0	0	0	0	1	0	0
2030	7	0.1	491.2	589	0	0	0	0	0	0	0	1	0
2030	8	0	507.5	574.3	0	0	0	0	0	0	0	0	1
2030	9	1.7	413.1	596.1	0	0	0	0	0	0	0	0	0
2030	10	27.6	139.2	605.9	0	0	0	0	0	0	0	0	0
2030	11	104.1	17.6	614.2	0	0	0	0	0	0	0	0	0
2030	12	204.3	1.6	644	0	0	0	0	0	0	0	0	0
2031	1	285.9	0.6	660.9	0	1	0	0	0	0	0	0	0
2031	2	240.7	0.1	597.8	0	0	1	0	0	0	0	0	0
2031	3	197.5	2.8	615.5	0	0	0	1	0	0	0	0	0
2031	4	104.8	31.2	611.5	0	0	0	0	1	0	0	0	0
2031	5	38.9	91.9	590.7	0	0	0	0	0	1	0	0	0
2031	6	8.4	296.7	601.1	0	0	0	0	0	0	1	0	0
2031	7	0.1	492	585.9	0	0	0	0	0	0	0	1	0
2031	8	0	508.4	571.2	0	0	0	0	0	0	0	0	1
2031	9	1.7	413.9	592.8	0	0	0	0	0	0	0	0	0
2031	10	27.5	139.4	602.3	0	0	0	0	0	0	0	0	0
2031	11	103.6	17.6	610.5	0	0	0	0	0	0	0	0	0

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2031	12	203.3	1.6	640.1	0	0	0	0	0	0	0	0	0
2032	1	284.3	0.6	657.1	0	1	0	0	0	0	0	0	0
2032	2	239.3	0.1	594.4	0	0	1	0	0	0	0	0	0
2032	3	202.9	2.9	632.4	0	0	0	1	0	0	0	0	0
2032	4	104.2	31.2	608.1	0	0	0	0	1	0	0	0	0
2032	5	38.7	92	587.6	0	0	0	0	0	1	0	0	0
2032	6	8.3	296.9	598.1	0	0	0	0	0	0	1	0	0
2032	7	0.1	492.4	583	0	0	0	0	0	0	0	1	0
2032	8	0	508.8	568.3	0	0	0	0	0	0	0	0	1
2032	9	1.6	414.2	589.7	0	0	0	0	0	0	0	0	0
2032	10	27.3	139.5	599	0	0	0	0	0	0	0	0	0
2032	11	103	17.6	607	0	0	0	0	0	0	0	0	0
2032	12	202.1	1.6	636.4	0	0	0	0	0	0	0	0	0
2033	1	282.8	0.6	653.5	0	1	0	0	0	0	0	0	0
2033	2	238	0.1	591.3	0	0	1	0	0	0	0	0	0
2033	3	195.3	2.8	608.8	0	0	0	1	0	0	0	0	0
2033	4	103.6	31.2	605	0	0	0	0	1	0	0	0	0
2033	5	38.5	92.1	584.7	0	0	0	0	0	1	0	0	0
2033	6	8.3	297.2	595.2	0	0	0	0	0	0	1	0	0
2033	7	0.1	492.7	580.2	0	0	0	0	0	0	0	1	0
2033	8	0	509.1	565.5	0	0	0	0	0	0	0	0	1
2033	9	1.6	414.4	586.7	0	0	0	0	0	0	0	0	0
2033	10	27.2	139.6	595.9	0	0	0	0	0	0	0	0	0
2033	11	102.4	17.6	603.7	0	0	0	0	0	0	0	0	0
2033	12	200.9	1.6	632.9	0	0	0	0	0	0	0	0	0
2034	1	281.2	0.6	650.2	0	1	0	0	0	0	0	0	0
2034	2	236.7	0.1	588.3	0	0	1	0	0	0	0	0	0
2034	3	194.3	2.8	605.8	0	0	0	1	0	0	0	0	0
2034	4	103.1	31.3	602	0	0	0	0	1	0	0	0	0
2034	5	38.3	92.1	581.9	0	0	0	0	0	1	0	0	0
2034	6	8.2	297.4	592.5	0	0	0	0	0	0	1	0	0
2034	7	0.1	493.1	577.6	0	0	0	0	0	0	0	1	0
2034	8	0	509.5	563	0	0	0	0	0	0	0	0	1
2034	9	1.6	414.7	584	0	0	0	0	0	0	0	0	0
2034	10	27	139.7	593	0	0	0	0	0	0	0	0	0
2034	11	101.9	17.7	600.7	0	0	0	0	0	0	0	0	0
2034	12	199.9	1.6	629.7	0	0	0	0	0	0	0	0	0
2035	1	279.8	0.6	647.3	0	1	0	0	0	0	0	0	0
2035	2	235.5	0.1	585.7	0	0	1	0	0	0	0	0	0
2035	3	193.3	2.8	603.2	0	0	0	1	0	0	0	0	0
2035	4	102.6	31.3	599.5	0	0	0	0	1	0	0	0	0
2035	5	38.1	92.2	579.6	0	0	0	0	0	1	0	0	0

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2035	6	8.2	297.6	590.2	0	0	0	0	0	0	1	0	0
2035	7	0.1	493.4	575.3	0	0	0	0	0	0	0	1	0
2035	8	0	509.9	560.7	0	0	0	0	0	0	0	0	1
2035	9	1.6	415.1	581.6	0	0	0	0	0	0	0	0	0
2035	10	26.9	139.8	590.6	0	0	0	0	0	0	0	0	0
2035	11	101.3	17.7	598.1	0	0	0	0	0	0	0	0	0
2035	12	198.8	1.6	626.9	0	0	0	0	0	0	0	0	0
2036	1	278.4	0.6	644.7	0	1	0	0	0	0	0	0	0
2036	2	234.3	0.1	583.4	0	0	1	0	0	0	0	0	0
2036	3	198.7	2.9	620.8	0	0	0	1	0	0	0	0	0
2036	4	102	31.3	597.2	0	0	0	0	1	0	0	0	0
2036	5	37.9	92.3	577.4	0	0	0	0	0	1	0	0	0
2036	6	8.2	297.8	588.1	0	0	0	0	0	0	1	0	0
2036	7	0.1	493.8	573.3	0	0	0	0	0	0	0	1	0
2036	8	0	510.3	558.7	0	0	0	0	0	0	0	0	1
2036	9	1.6	415.4	579.5	0	0	0	0	0	0	0	0	0
2036	10	26.8	140	588.3	0	0	0	0	0	0	0	0	0
2036	11	100.8	17.7	595.8	0	0	0	0	0	0	0	0	0
2036	12	197.8	1.6	624.4	0	0	0	0	0	0	0	0	0
2037	1	276.9	0.6	642.1	0	1	0	0	0	0	0	0	0
2037	2	233.1	0.1	581.1	0	0	1	0	0	0	0	0	0
2037	3	191.3	2.8	598.6	0	0	0	1	0	0	0	0	0
2037	4	101.5	31.3	595	0	0	0	0	1	0	0	0	0
2037	5	37.7	92.3	575.3	0	0	0	0	0	1	0	0	0
2037	6	8.1	298	586.1	0	0	0	0	0	0	1	0	0
2037	7	0.1	494.1	571.3	0	0	0	0	0	0	0	1	0
2037	8	0	510.6	556.8	0	0	0	0	0	0	0	0	1
2037	9	1.6	415.7	577.4	0	0	0	0	0	0	0	0	0
2037	10	26.6	140	586.1	0	0	0	0	0	0	0	0	0
2037	11	100.3	17.7	593.5	0	0	0	0	0	0	0	0	0
2037	12	196.8	1.6	622	0	0	0	0	0	0	0	0	0
2038	1	275.6	0.6	639.7	0	1	0	0	0	0	0	0	0
2038	2	232	0.1	578.9	0	0	1	0	0	0	0	0	0
2038	3	190.4	2.8	596.3	0	0	0	1	0	0	0	0	0
2038	4	101	31.4	592.8	0	0	0	0	1	0	0	0	0
2038	5	37.5	92.4	573.3	0	0	0	0	0	1	0	0	0
2038	6	8.1	298.3	584.1	0	0	0	0	0	0	1	0	0
2038	7	0.1	494.6	569.4	0	0	0	0	0	0	0	1	0
2038	8	0	511.1	554.8	0	0	0	0	0	0	0	0	1
2038	9	1.6	416	575.4	0	0	0	0	0	0	0	0	0
2038	10	26.5	140.2	584	0	0	0	0	0	0	0	0	0
2038	11	99.8	17.7	591.2	0	0	0	0	0	0	0	0	0

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2038	12	195.9	1.6	619.6	0	0	0	0	0	0	0	0	0
2039	1	274.3	0.6	637.2	0	1	0	0	0	0	0	0	0
2039	2	230.9	0.1	576.7	0	0	1	0	0	0	0	0	0
2039	3	189.5	2.8	594.1	0	0	0	1	0	0	0	0	0
2039	4	100.6	31.4	590.6	0	0	0	0	1	0	0	0	0
2039	5	37.3	92.5	571.2	0	0	0	0	0	1	0	0	0
2039	6	8	298.5	582	0	0	0	0	0	0	1	0	0
2039	7	0.1	495	567.4	0	0	0	0	0	0	0	1	0
2039	8	0	511.5	552.9	0	0	0	0	0	0	0	0	1
2039	9	1.6	416.3	573.4	0	0	0	0	0	0	0	0	0
2039	10	26.4	140.3	581.8	0	0	0	0	0	0	0	0	0
2039	11	99.4	17.7	589	0	0	0	0	0	0	0	0	0
2039	12	195	1.6	617.2	0	0	0	0	0	0	0	0	0
2040	1	273	0.6	634.9	0	1	0	0	0	0	0	0	0
2040	2	229.8	0.1	574.7	0	0	1	0	0	0	0	0	0
2040	3	194.8	2.9	611.6	0	0	0	1	0	0	0	0	0
2040	4	100.1	31.4	588.5	0	0	0	0	1	0	0	0	0
2040	5	37.2	92.4	569.2	0	0	0	0	0	1	0	0	0
2040	6	8	298.4	580.1	0	0	0	0	0	0	1	0	0
2040	7	0.1	494.7	565.5	0	0	0	0	0	0	0	1	0
2040	8	0	511.2	551	0	0	0	0	0	0	0	0	1
2040	9	1.6	416.1	571.4	0	0	0	0	0	0	0	0	0
2040	10	26.2	140.2	579.8	0	0	0	0	0	0	0	0	0
2040	11	98.9	17.7	586.9	0	0	0	0	0	0	0	0	0
2040	12	194	1.6	615	0	0	0	0	0	0	0	0	0
2041	1	271.8	0.6	630.7	0	1	0	0	0	0	0	0	0
2041	2	228.8	0.1	570.9	0	0	1	0	0	0	0	0	0
2041	3	187.7	2.8	588.2	0	0	0	1	0	0	0	0	0
2041	4	99.6	31.4	584.8	0	0	0	0	1	0	0	0	0
2041	5	37	92.4	565.8	0	0	0	0	0	1	0	0	0
2041	6	8	298.4	576.8	0	0	0	0	0	0	1	0	0
2041	7	0.1	494.9	562.4	0	0	0	0	0	0	0	1	0
2041	8	0	511.3	547.9	0	0	0	0	0	0	0	0	1
2041	9	1.6	416.3	568	0	0	0	0	0	0	0	0	0
2041	10	26.1	140.3	576.3	0	0	0	0	0	0	0	0	0
2041	11	98.5	17.7	583.2	0	0	0	0	0	0	0	0	0
2041	12	193.2	1.6	611	0	0	0	0	0	0	0	0	0
2042	1	270.7	0.6	626.8	0	1	0	0	0	0	0	0	0
2042	2	227.9	0.1	567.5	0	0	1	0	0	0	0	0	0
2042	3	187	2.8	584.7	0	0	0	1	0	0	0	0	0
2042	4	99.2	31.4	581.5	0	0	0	0	1	0	0	0	0
2042	5	36.8	92.5	562.8	0	0	0	0	0	1	0	0	0

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2042	6	7.9	298.6	573.9	0	0	0	0	0	0	1	0	0
2042	7	0.1	495.1	559.5	0	0	0	0	0	0	0	1	0
2042	8	0	511.6	545	0	0	0	0	0	0	0	0	1
2042	9	1.6	416.4	564.9	0	0	0	0	0	0	0	0	0
2042	10	26	140.3	573	0	0	0	0	0	0	0	0	0
2042	11	98.1	17.7	579.7	0	0	0	0	0	0	0	0	0
2042	12	192.4	1.6	607.4	0	0	0	0	0	0	0	0	0
2043	1	269.6	0.6	623.5	0	1	0	0	0	0	0	0	0
2043	2	227	0.1	564.6	0	0	1	0	0	0	0	0	0
2043	3	186.3	2.8	581.8	0	0	0	1	0	0	0	0	0
2043	4	98.9	31.4	578.6	0	0	0	0	1	0	0	0	0
2043	5	36.7	92.5	560.1	0	0	0	0	0	1	0	0	0
2043	6	7.9	298.8	571.2	0	0	0	0	0	0	1	0	0
2043	7	0.1	495.4	557	0	0	0	0	0	0	0	1	0
2043	8	0	511.9	542.5	0	0	0	0	0	0	0	0	1
2043	9	1.6	416.8	562.3	0	0	0	0	0	0	0	0	0
2043	10	25.9	140.4	570.2	0	0	0	0	0	0	0	0	0
2043	11	97.7	17.7	576.8	0	0	0	0	0	0	0	0	0
2043	12	191.7	1.6	604.3	0	0	0	0	0	0	0	0	0
2044	1	268.7	0.6	620.8	0	1	0	0	0	0	0	0	0
2044	2	226.2	0.1	562.1	0	0	1	0	0	0	0	0	0
2044	3	191.7	2.9	598.5	0	0	0	1	0	0	0	0	0
2044	4	98.5	31.4	576.2	0	0	0	0	1	0	0	0	0
2044	5	36.6	92.6	557.8	0	0	0	0	0	1	0	0	0
2044	6	7.9	299	569.1	0	0	0	0	0	0	1	0	0
2044	7	0.1	495.9	554.9	0	0	0	0	0	0	0	1	0
2044	8	0	512.4	540.4	0	0	0	0	0	0	0	0	1
2044	9	1.6	417.1	560.1	0	0	0	0	0	0	0	0	0
2044	10	25.8	140.6	568	0	0	0	0	0	0	0	0	0
2044	11	97.4	17.8	574.4	0	0	0	0	0	0	0	0	0
2044	12	191.1	1.6	601.8	0	0	0	0	0	0	0	0	0
2045	1	267.7	0.6	618.3	0	1	0	0	0	0	0	0	0
2045	2	225.3	0.1	559.9	0	0	1	0	0	0	0	0	0
2045	3	184.9	2.8	577	0	0	0	1	0	0	0	0	0
2045	4	98.1	31.5	574	0	0	0	0	1	0	0	0	0
2045	5	36.4	92.7	555.7	0	0	0	0	0	1	0	0	0
2045	6	7.9	299.3	567	0	0	0	0	0	0	1	0	0
2045	7	0.1	496.4	553	0	0	0	0	0	0	0	1	0
2045	8	0	512.9	538.5	0	0	0	0	0	0	0	0	1
2045	9	1.6	417.5	558.1	0	0	0	0	0	0	0	0	0
2045	10	25.8	140.7	565.9	0	0	0	0	0	0	0	0	0
2045	11	97	17.8	572.3	0	0	0	0	0	0	0	0	0

2045	12	190.4	1.6	599.5	0	0	0	0	0	0	0	0	0
2046	1	266.8	0.6	615.9	0	1	0	0	0	0	0	0	0
2046	2	224.6	0.1	557.8	0	0	1	0	0	0	0	0	0
2046	3	184.3	2.8	574.9	0	0	0	1	0	0	0	0	0
2046	4	97.8	31.5	571.9	0	0	0	0	1	0	0	0	0
2046	5	36.3	92.8	553.8	0	0	0	0	0	1	0	0	0
2046	6	7.8	299.6	565.1	0	0	0	0	0	0	1	0	0
2046	7	0.1	496.9	551.1	0	0	0	0	0	0	0	1	0
2046	8	0	513.4	536.7	0	0	0	0	0	0	0	0	1
2046	9	1.5	418	556.1	0	0	0	0	0	0	0	0	0
2046	10	25.7	140.9	563.9	0	0	0	0	0	0	0	0	0
2046	11	96.7	17.8	570.2	0	0	0	0	0	0	0	0	0
2046	12	189.8	1.6	597.3	0	0	0	0	0	0	0	0	0
2047	1	266.1	0.6	613.9	0	1	0	0	0	0	0	0	0
2047	2	224	0.1	556	0	0	1	0	0	0	0	0	0
2047	3	183.8	2.8	573	0	0	0	1	0	0	0	0	0
2047	4	97.6	31.6	570.1	0	0	0	0	1	0	0	0	0
2047	5	36.2	93	552.1	0	0	0	0	0	1	0	0	0
2047	6	7.8	300.1	563.5	0	0	0	0	0	0	1	0	0
2047	7	0.1	497.8	549.6	0	0	0	0	0	0	0	1	0
2047	8	0	514.4	535.1	0	0	0	0	0	0	0	0	1
2047	9	1.5	418.7	554.5	0	0	0	0	0	0	0	0	0
2047	10	25.6	141.2	562.3	0	0	0	0	0	0	0	0	0
2047	11	96.5	17.8	568.5	0	0	0	0	0	0	0	0	0
2047	12	189.3	1.6	595.5	0	0	0	0	0	0	0	0	0
2048	1	265.4	0.6	612	0	1	0	0	0	0	0	0	0
2048	2	223.4	0.1	554.3	0	0	1	0	0	0	0	0	0
2048	3	189.4	2.9	590.3	0	0	0	1	0	0	0	0	0
2048	4	97.3	31.6	568.4	0	0	0	0	1	0	0	0	0
2048	5	36.1	93.1	550.5	0	0	0	0	0	1	0	0	0
2048	6	7.8	300.6	561.9	0	0	0	0	0	0	1	0	0
2048	7	0.1	498.7	548.1	0	0	0	0	0	0	0	1	0
2048	8	0	515.3	533.6	0	0	0	0	0	0	0	0	1
2048	9	1.5	419.5	552.9	0	0	0	0	0	0	0	0	0
2048	10	25.5	141.4	560.7	0	0	0	0	0	0	0	0	0
2048	11	96.3	17.9	566.9	0	0	0	0	0	0	0	0	0
2048	12	188.9	1.6	593.7	0	0	0	0	0	0	0	0	0
2049	1	264.8	0.6	610.2	0	1	0	0	0	0	0	0	0
2049	2	222.9	0.1	552.7	0	0	1	0	0	0	0	0	0
2049	3	182.9	2.8	569.7	0	0	0	1	0	0	0	0	0
2049	4	97.1	31.7	566.8	0	0	0	0	1	0	0	0	0
2049	5	36.1	93.3	549	0	0	0	0	0	1	0	0	0

2049	6	7.8	301.2	560.4	0	0	0	0	0	0	1	0	0
2049	7	0.1	499.6	546.6	0	0	0	0	0	0	0	1	0
2049	8	0	516.3	532.2	0	0	0	0	0	0	0	0	1
2049	9	1.5	420.3	551.4	0	0	0	0	0	0	0	0	0
2049	10	25.5	141.7	559.2	0	0	0	0	0	0	0	0	0
2049	11	96.1	17.9	565.3	0	0	0	0	0	0	0	0	0
2049	12	188.5	1.6	592.1	0	0	0	0	0	0	0	0	0
2050	1	264.2	0.6	608.5	0	1	0	0	0	0	0	0	0
2050	2	222.4	0.1	551.1	0	0	1	0	0	0	0	0	0
2050	3	182.5	2.8	568.1	0	0	0	1	0	0	0	0	0
2050	4	96.9	31.7	565.3	0	0	0	0	1	0	0	0	0
2050	5	36	93.5	547.5	0	0	0	0	0	1	0	0	0
2050	6	7.8	301.7	558.9	0	0	0	0	0	0	1	0	0
2050	7	0.1	500.6	545.2	0	0	0	0	0	0	0	1	0
2050	8	0	517.3	530.9	0	0	0	0	0	0	0	0	1
2050	9	1.5	421.1	550	0	0	0	0	0	0	0	0	0
2050	10	25.4	142	557.8	0	0	0	0	0	0	0	0	0
2050	11	95.9	17.9	563.8	0	0	0	0	0	0	0	0	0
2050	12	188.1	1.6	590.6	0	0	0	0	0	0	0	0	0

Sep	Oct	Nov	TStormWeekdays_Lou	XMissing	YMissing
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	1.5	0	0
0	0	0	4.5	0	0
0	0	0	5.5	0	0
0	0	0	4	0	0
1	0	0	2	0	0
0	1	0	1	0	0
0	0	1	0.50	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	2.5	0	0
0	0	0	2.5	0	0
0	0	0	4	0	0
0	0	0	5	0	0
1	0	0	3	0	0
0	1	0	2	0	0
0	0	1	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	2.5	0	0
0	0	0	5	0	0
0	0	0	5	0	0
0	0	0	3.5	0	0
1	0	0	2	0	0
0	1	0	1	0	0
0	0	1	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	5	0	0

0	0	0	8.5	0	0
0	0	0	6	0	0
0	0	0	5	0	0
1	0	0	3.5	0	0
0	1	0	2.5	0	0
0	0	1	1.50	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	1.5	0	0
0	0	0	6	0	0
0	0	0	9	0	0
0	0	0	6.5	0	0
1	0	0	3	0	0
0	1	0	2	0	0
0	0	1	1.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	3	0	0
0	0	0	6.5	0	0
0	0	0	9.5	0	0
0	0	0	10.5	0	0
1	0	0	5.5	0	0
0	1	0	1.5	0	0
0	0	1	0.50	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	2.5	0	0
0	0	0	5.5	0	0
0	0	0	4	0	0
0	0	0	4	0	0
1	0	0	4.5	0	0
0	1	0	1.5	0	0
0	0	1	0.00	0	0

0	0	0	0.00	0	0
0	0	0	0.00	0	0
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1

0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1

0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
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0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
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0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1

0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1

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0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
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0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
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0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
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0	0	0	0.00	0	1
0	0	0	2.93	0	1

0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
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0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1

0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1

0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1

0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1

0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	0.00	0	1
0	0	0	2.93	0	1
0	0	0	6.55	0	1
0	0	0	7.08	0	1
0	0	0	5.88	0	1
1	0	0	3.75	0	1
0	1	0	2.03	0	1
0	0	1	0.70	0	1
0	0	0	0.00	0	1

Variable	Count	Mean	StdDev	Min	Max	Skewness	Kurtosis	Jarque-Bera
LERS_UPC_exNM	84	970.90	242.815	650.478	1,642.03	0.649	2.567	6.5
XHeat	84	110.77	117.25	0	416.33	0.768	2.33	9.8
XCool	84	189	226.13	0	753.42	0.855	2.268	12.1
XOther4	84	697.35	42.62	615.21	838.40	0.994	4.34	20.1
9-Apr	84	0	0	0	0	0	0	31.5
Jan	84	0.083	0.278	0	1	3.015	10.091	303.3
Feb	84	0.083	0.278	0	1	3.015	10.091	303.3
Mar	84	0.083	0.278	0	1	3.015	10.091	303.3
Apr	84	0.083	0.278	0	1	3.015	10.091	303.3
May	84	0.083	0.278	0	1	3.015	10.091	303.3
Jun	84	0.083	0.278	0	1	3.015	10.091	303.3
Jul	84	0.083	0.278	0	1	3.015	10.091	303.3
Aug	84	0.083	0.278	0	1	3.015	10.091	303.3
Sep	84	0.083	0.278	0	1	3.015	10.091	303.3
Oct	84	0.083	0.278	0	1	3.015	10.091	303.3
Nov	84	0.083	0.278	0	1	3.015	10.091	303.3
TStormWeekdays_Lou	84	2.11	2.62	0	10.50	1.211	3.793	22.7

Probability	CorrYX	Units
3.79E-02	1	
7.35E-03	-0.242	
2.34E-03	0.827	
4.28E-05	-0.029	
1.44E-07	0	
0.00E+00	0.122	
0.00E+00	-0.036	
0.00E+00	-0.17	
0.00E+00	-0.326	
0.00E+00	-0.28	
0.00E+00	0.139	
0.00E+00	0.472	
0.00E+00	0.467	
0.00E+00	0.296	
0.00E+00	-0.226	
0.00E+00	-0.342	
1.16E-05	0.612	

Definition

Residential Heating Component (Actual History with Normal Weather Forecast)
Residential Cooling Component (Actual History with Normal Weather Forecast)
Residential NonHVAC Component (Actual History with Normal Weather Forecast)

	LERES_UPC_exNM	XHeat	XCool	XOther4	9-Apr	Jan	Feb	Mar
LERES_UPC_exNM	1	-0.242	0.827	-0.029	0	0.122	-0.036	-0.17
XHeat	-0.242	1	-0.737	0.659	0	0.561	0.404	0.248
XCool	0.827	-0.737	1	-0.422	0	-0.253	-0.253	-0.246
XOther4	-0.029	0.659	-0.422	1	0	0.645	0.001	-0.008
	9-Apr	0	0	0	0	1	0	0
Jan	0.122	0.561	-0.253	0.645	0	1	-0.091	-0.091
Feb	-0.036	0.404	-0.253	0.001	0	-0.091	1	-0.091
Mar	-0.17	0.248	-0.246	-0.008	0	-0.091	-0.091	1
Apr	-0.326	-0.014	-0.2	-0.006	0	-0.091	-0.091	-0.091
May	-0.28	-0.186	-0.087	-0.131	0	-0.091	-0.091	-0.091
Jun	0.139	-0.265	0.256	-0.022	0	-0.091	-0.091	-0.091
Jul	0.472	-0.287	0.496	-0.219	0	-0.091	-0.091	-0.091
Aug	0.467	-0.287	0.49	-0.322	0	-0.091	-0.091	-0.091
Sep	0.296	-0.278	0.351	-0.045	0	-0.091	-0.091	-0.091
Oct	-0.226	-0.21	-0.075	-0.133	0	-0.091	-0.091	-0.091
Nov	-0.342	0.016	-0.227	-0.107	0	-0.091	-0.091	-0.091
TStormWeekdays_Lou	0.612	-0.695	0.842	-0.49	0	-0.244	-0.244	-0.244

Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	TStormWeekdays_Lou
-0.326	-0.28	0.139	0.472	0.467	0.296	-0.226	-0.342	0.612
-0.014	-0.186	-0.265	-0.287	-0.287	-0.278	-0.21	0.016	-0.695
-0.2	-0.087	0.256	0.496	0.49	0.351	-0.075	-0.227	0.842
-0.006	-0.131	-0.022	-0.219	-0.322	-0.045	-0.133	-0.107	-0.49
0	0	0	0	0	0	0	0	0
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.244
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.244
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.244
1	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.244
-0.091	1	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	0.062
-0.091	-0.091	1	-0.091	-0.091	-0.091	-0.091	-0.091	0.392
-0.091	-0.091	-0.091	1	-0.091	-0.091	-0.091	-0.091	0.467
-0.091	-0.091	-0.091	-0.091	1	-0.091	-0.091	-0.091	0.392
-0.091	-0.091	-0.091	-0.091	-0.091	1	-0.091	-0.091	0.145
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	1	-0.091	-0.054
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	1	-0.186
-0.244	0.062	0.392	0.467	0.392	0.145	-0.054	-0.186	1

Variable	Coefficient	StdErr	T-Stat	P-Value	Units
ResidentialVars.XHeat	1.549	0.086	18.075	0.00%	
ResidentialVars.XCool	1.237	0.049	25.486	0.00%	
ResidentialVars.XOther4	0.701	0.028	24.685	0.00%	
BinaryVars.Apr09	0	0	0	100.00%	
BinaryVars.Jan	8.371	14.666	0.571	57.00%	
BinaryVars.Feb	39.809	12.725	3.128	0.26%	
BinaryVars.Mar	19.962	11.789	1.693	9.50%	
BinaryVars.Apr	9.867	14.768	0.668	50.63%	
BinaryVars.May	81.74	19.707	4.148	0.01%	
BinaryVars.Jun	164.752	28.446	5.792	0.00%	
BinaryVars.Jul	248.837	34.075	7.303	0.00%	
BinaryVars.Aug	254.517	33.235	7.658	0.00%	
BinaryVars.Sep	192.857	28.985	6.654	0.00%	
BinaryVars.Oct	119.062	19.719	6.038	0.00%	
BinaryVars.Nov	18.351	14.014	1.309	19.48%	
UtilityData.TStormWeekdays_Lou	-9.531	2.216	-4.302	0.01%	

Definition

Residential Heating Component (Actual History with Normal Weather Forecast)

Residential Cooling Component (Actual History with Normal Weather Forecast)

Residential NonHVAC Component (Actual History with Normal Weather Forecast)

Model Statistics		Forecast Statistics	
Iterations	1	Forecast Observations	1
Adjusted Observations	84	Mean Abs. Dev. (MAD)	143.89
Deg. of Freedom for Error	68	Mean Abs. % Err. (MAPE)	12.40%
R-Squared	0.993	Avg. Forecast Error	143.89
Adjusted R-Squared	0.991	Mean % Error	12.40%
AIC	6.428	Root Mean-Square Error	143.89
BIC	6.891	Theil's Inequality Coefficient	0.0661
F-Statistic	#NA	#NAME?	100.00%
Prob (F-Statistic)	#NA	#NAME?	0.00%
Log-Likelihood	-373.18	#NAME?	0.00%
Model Sum of Squares	4,858,079.96		
Sum of Squared Errors	35,527.83		
Mean Squared Error	522.47		
Std. Error of Regression	22.86		
Mean Abs. Dev. (MAD)	15.88		
Mean Abs. % Err. (MAPE)	1.70%		
Durbin-Watson Statistic	2.03		
Durbin-H Statistic	#NA		
Ljung-Box Statistic	19.21		
Prob (Ljung-Box)	0.7409		
Skewness	-0.291		
Kurtosis	4.035		
Jarque-Bera	4.934		
Prob (Jarque-Bera)	0.0849		

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2011	1	1,194.73	1,236.11	-41.383	-3.46%	-1.81
2011	2	961.81	959.53	2.286	0.24%	0.1
2011	3	845.54	852.21	-6.668	-0.79%	-0.292
2011	4	752.05	757.50	-5.455	-0.73%	-0.239
2011	5	758.606	773.195	-14.589	-1.92%	-0.638
2011	6	1,182.63	1,172.27	10.365	0.88%	0.453
2011	7	1,410.83	1,365.36	45.471	3.22%	1.989
2011	8	1,642.03	1,627.81	14.218	0.87%	0.622
2011	9	1,249.11	1,284.40	-35.289	-2.83%	-1.544
2011	10	716.735	760.018	-43.284	-6.04%	-1.894
2011	11	676.745	654.151	22.594	3.34%	0.988
2011	12	846.10	828.78	17.327	2.05%	0.758
2012	1	1,028.64	1,046.12	-17.477	-1.70%	-0.765
2012	2	920.23	912.68	7.553	0.82%	0.33
2012	3	788.80	801.74	-12.944	-1.64%	-0.566
2012	4	708.347	717.424	-9.077	-1.28%	-0.397
2012	5	849.599	837.308	12.29	1.45%	0.538
2012	6	1,135.22	1,139.46	-4.246	-0.37%	-0.186
2012	7	1,582.15	1,573.73	8.414	0.53%	0.368
2012	8	1,467.71	1,503.86	-36.147	-2.46%	-1.581
2012	9	1,236.45	1,232.82	3.622	0.29%	0.158
2012	10	727.15	756.021	-28.871	-3.97%	-1.263
2012	11	737.296	760.63	-23.336	-3.17%	-1.021
2012	12	830.59	842.37	-11.774	-1.42%	-0.515
2013	1	1,039.43	1,026.93	12.501	1.20%	0.547
2013	2	948.53	954.34	-5.81	-0.61%	-0.254
2013	3	886.01	880.34	5.669	0.64%	0.248
2013	4	778.34	767.82	10.521	1.35%	0.46
2013	5	704.474	713.479	-9.005	-1.28%	-0.394
2013	6	1,008.04	1,000.35	7.694	0.76%	0.337
2013	7	1,239.11	1,273.33	-34.216	-2.76%	-1.497
2013	8	1,253.37	1,238.29	15.073	1.20%	0.659
2013	9	1,282.04	1,288.60	-6.565	-0.51%	-0.287
2013	10	861.336	825.201	36.134	4.20%	1.581
2013	11	731.108	722.312	8.796	1.20%	0.385
2013	12	973.03	977.80	-4.768	-0.49%	-0.209
2014	1	1,180.47	1,177.94	2.535	0.21%	0.111
2014	2	1,080.36	1,052.38	27.981	2.59%	1.224
2014	3	914.80	917.80	-2.997	-0.33%	-0.131
2014	4	703.20	699.716	3.483	0.50%	0.152
2014	5	740.803	767.431	-26.628	-3.59%	-1.165

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2014	6	1,055.53	1,123.47	-67.945	-6.44%	-2.973
2014	7	1,303.01	1,298.26	4.745	0.36%	0.208
2014	8	1,116.52	1,143.02	-26.508	-2.37%	-1.16
2014	9	1,182.49	1,174.47	8.023	0.68%	0.351
2014	10	773.468	752.027	21.442	2.77%	0.938
2014	11	710.754	732.39	-21.636	-3.04%	-0.947
2014	12	934.34	938.80	-4.459	-0.48%	-0.195
2015	1	1,068.51	1,060.67	7.849	0.73%	0.343
2015	2	998.28	1,000.83	-2.55	-0.26%	-0.112
2015	3	964.06	948.69	15.372	1.59%	0.672
2015	4	668.878	686.87	-17.992	-2.69%	-0.787
2015	5	726.181	713.296	12.884	1.77%	0.564
2015	6	1,050.47	1,066.94	-16.47	-1.57%	-0.721
2015	7	1,251.82	1,242.57	9.25	0.74%	0.405
2015	8	1,308.10	1,291.43	16.671	1.27%	0.729
2015	9	1,176.77	1,190.87	-14.097	-1.20%	-0.617
2015	10	774.569	765.242	9.327	1.20%	0.408
2015	11	650.478	650.903	-0.425	-0.07%	-0.019
2015	12	820.07	796.03	24.044	2.93%	1.052
2016	1	986.65	956.27	30.376	3.08%	1.329
2016	2	918.34	925.32	-6.981	-0.76%	-0.305
2016	3	751.97	731.91	20.067	2.67%	0.878
2016	4	669.436	676.138	-6.702	-1.00%	-0.293
2016	5	682.862	660.018	22.843	3.35%	0.999
2016	6	1,059.16	1,049.82	9.332	0.88%	0.408
2016	7	1,350.95	1,355.77	-4.819	-0.36%	-0.211
2016	8	1,405.19	1,391.12	14.071	1.00%	0.616
2016	9	1,336.02	1,310.34	25.685	1.92%	1.124
2016	10	826.796	838.446	-11.649	-1.41%	-0.51
2016	11	680	680.376	-0.377	-0.06%	-0.016
2016	12	879.55	878.01	1.542	0.18%	0.067
2017	1	981.52	975.92	5.6	0.57%	0.245
2017	2	769.12	791.60	-22.48	-2.92%	-0.983
2017	3	691.60	710.10	-18.498	-2.67%	-0.809
2017	4	691.856	666.634	25.222	3.65%	1.103
2017	5	762.78	760.577	2.204	0.29%	0.096
2017	6	1,082.52	1,021.25	61.27	5.66%	2.68
2017	7	1,305.59	1,334.44	-28.845	-2.21%	-1.262
2017	8	1,223.08	1,220.46	2.622	0.21%	0.115
2017	9	993.33	974.71	18.621	1.87%	0.815
2017	10	850.82	833.919	16.901	1.99%	0.739
2017	11	693.971	679.587	14.384	2.07%	0.629

2017	12	854.91	861.40	-6.491	-0.76%	-0.284
2018	1	1,160.36	1,016.47	143.887	12.40%	6.295
2018	2		909.06			
2018	3		802.62			
2018	4		711.20			
2018	5		709.856			
2018	6		951.01			
2018	7		1,281.76			
2018	8		1,296.68			
2018	9		1,146.16			
2018	10		788.027			
2018	11		671.206			
2018	12		847.45			
2019	1		992.49			
2019	2		899.16			
2019	3		823.60			
2019	4		691.314			
2019	5		685.797			
2019	6		951.813			
2019	7		1,254.96			
2019	8		1,282.15			
2019	9		1,139.33			
2019	10		782.596			
2019	11		673.627			
2019	12		831.77			
2020	1		983.73			
2020	2		891.43			
2020	3		842.65			
2020	4		684.715			
2020	5		679.901			
2020	6		944.966			
2020	7		1,247.08			
2020	8		1,274.35			
2020	9		1,132.03			
2020	10		776.612			
2020	11		667.378			
2020	12		824.13			
2021	1		975.76			
2021	2		884.31			
2021	3		809.24			
2021	4		678.403			
2021	5		674.07			

2021	6	937.649
2021	7	1,237.85
2021	8	1,264.85
2021	9	1,123.07
2021	10	769.843
2021	11	660.323
2021	12	815.24
2022	1	966.99
2022	2	876.73
2022	3	802.23
2022	4	672.501
2022	5	668.779
2022	6	930.887
2022	7	1,230.10
2022	8	1,257.07
2022	9	1,115.99
2022	10	764.536
2022	11	654.986
2022	12	808.54
2023	1	960.07
2023	2	870.70
2023	3	796.62
2023	4	668.041
2023	5	664.831
2023	6	925.993
2023	7	1,223.98
2023	8	1,250.88
2023	9	1,110.26
2023	10	760.231
2023	11	650.483
2023	12	802.79
2024	1	953.91
2024	2	865.38
2024	3	817.39
2024	4	663.952
2024	5	661.322
2024	6	921.752
2024	7	1,218.78
2024	8	1,245.69
2024	9	1,105.50
2024	10	756.729
2024	11	646.701

2024	12	797.87
2025	1	947.14
2025	2	859.51
2025	3	786.27
2025	4	659.624
2025	5	657.661
2025	6	917.782
2025	7	1,214.40
2025	8	1,241.29
2025	9	1,101.25
2025	10	752.873
2025	11	642.343
2025	12	792.35
2026	1	941.27
2026	2	854.41
2026	3	781.55
2026	4	655.696
2026	5	654.445
2026	6	914.471
2026	7	1,210.91
2026	8	1,237.80
2026	9	1,097.80
2026	10	749.659
2026	11	638.487
2026	12	787.35
2027	1	935.67
2027	2	849.55
2027	3	777.09
2027	4	652.24
2027	5	651.712
2027	6	911.828
2027	7	1,208.14
2027	8	1,235.04
2027	9	1,095.03
2027	10	746.783
2027	11	634.904
2027	12	782.61
2028	1	930.69
2028	2	845.24
2028	3	798.17
2028	4	649.241
2028	5	649.424

2028	6	909.844
2028	7	1,206.23
2028	8	1,233.16
2028	9	1,093.05
2028	10	744.408
2028	11	631.763
2028	12	778.40
2029	1	926.15
2029	2	841.30
2029	3	769.55
2029	4	646.517
2029	5	647.433
2029	6	908.336
2029	7	1,205.06
2029	8	1,232.03
2029	9	1,091.74
2029	10	742.543
2029	11	629.046
2029	12	774.69
2030	1	920.35
2030	2	836.27
2030	3	764.87
2030	4	642.807
2030	5	644.448
2030	6	905.513
2030	7	1,202.16
2030	8	1,229.13
2030	9	1,088.75
2030	10	739.521
2030	11	625.317
2030	12	769.92
2031	1	915.27
2031	2	831.87
2031	3	760.79
2031	4	639.501
2031	5	641.982
2031	6	903.783
2031	7	1,201.04
2031	8	1,228.05
2031	9	1,087.32
2031	10	737.134
2031	11	621.929

2031	12	765.53
2032	1	910.11
2032	2	827.40
2032	3	781.15
2032	4	636.254
2032	5	639.548
2032	6	901.9
2032	7	1,199.49
2032	8	1,226.53
2032	9	1,085.56
2032	10	734.705
2032	11	618.579
2032	12	761.11
2033	1	905.18
2033	2	823.13
2033	3	752.75
2033	4	633.205
2033	5	637.267
2033	6	900.124
2033	7	1,197.84
2033	8	1,224.91
2033	9	1,083.73
2033	10	732.341
2033	11	615.352
2033	12	756.84
2034	1	900.51
2034	2	819.08
2034	3	749.02
2034	4	630.284
2034	5	635.082
2034	6	898.415
2034	7	1,196.49
2034	8	1,223.59
2034	9	1,082.20
2034	10	730.231
2034	11	612.41
2034	12	752.93
2035	1	896.23
2035	2	815.37
2035	3	745.64
2035	4	627.695
2035	5	633.195

2035	6	897.017
2035	7	1,195.39
2035	8	1,222.51
2035	9	1,080.93
2035	10	728.444
2035	11	609.808
2035	12	749.42
2036	1	892.19
2036	2	811.88
2036	3	766.47
2036	4	625.306
2036	5	631.485
2036	6	895.783
2036	7	1,194.43
2036	8	1,221.58
2036	9	1,079.81
2036	10	726.814
2036	11	607.391
2036	12	746.11
2037	1	888.16
2037	2	808.41
2037	3	739.30
2037	4	622.946
2037	5	629.784
2037	6	894.507
2037	7	1,193.45
2037	8	1,220.63
2037	9	1,078.69
2037	10	725.128
2037	11	604.953
2037	12	742.77
2038	1	884.44
2038	2	805.18
2038	3	736.36
2038	4	620.705
2038	5	628.163
2038	6	893.343
2038	7	1,192.65
2038	8	1,219.86
2038	9	1,077.72
2038	10	723.59
2038	11	602.688

2038	12	739.70
2039	1	880.70
2039	2	801.95
2039	3	733.40
2039	4	618.471
2039	5	626.529
2039	6	892.124
2039	7	1,191.73
2039	8	1,218.97
2039	9	1,076.66
2039	10	722.028
2039	11	600.431
2039	12	736.65
2040	1	877.02
2040	2	798.75
2040	3	754.10
2040	4	616.273
2040	5	624.837
2040	6	890.542
2040	7	1,190.04
2040	8	1,217.29
2040	9	1,074.97
2040	10	720.325
2040	11	598.217
2040	12	733.66
2041	1	872.23
2041	2	794.58
2041	3	726.57
2041	4	613.003
2041	5	622.215
2041	6	888.276
2041	7	1,188.06
2041	8	1,215.32
2041	9	1,072.78
2041	10	717.748
2041	11	594.95
2041	12	729.59
2042	1	867.80
2042	2	790.73
2042	3	722.95
2042	4	610.072
2042	5	619.881

2042	6	886.32
2042	7	1,186.31
2042	8	1,213.58
2042	9	1,070.84
2042	10	715.396
2042	11	591.952
2042	12	725.85
2043	1	863.87
2043	2	787.31
2043	3	719.75
2043	4	607.48
2043	5	617.851
2043	6	884.689
2043	7	1,185.01
2043	8	1,212.31
2043	9	1,069.35
2043	10	713.413
2043	11	589.34
2043	12	722.54
2044	1	860.41
2044	2	784.30
2044	3	740.11
2044	4	605.264
2044	5	616.158
2044	6	883.408
2044	7	1,184.08
2044	8	1,211.41
2044	9	1,068.25
2044	10	711.867
2044	11	587.181
2044	12	719.76
2045	1	857.16
2045	2	781.47
2045	3	714.33
2045	4	603.213
2045	5	614.615
2045	6	882.288
2045	7	1,183.35
2045	8	1,210.70
2045	9	1,067.34
2045	10	710.471
2045	11	585.18

2045	12	717.16
2046	1	854.07
2046	2	778.79
2046	3	711.84
2046	4	601.259
2046	5	613.152
2046	6	881.257
2046	7	1,182.66
2046	8	1,210.05
2046	9	1,066.49
2046	10	709.145
2046	11	583.261
2046	12	714.66
2047	1	851.61
2047	2	776.64
2047	3	709.83
2047	4	599.69
2047	5	612.034
2047	6	880.716
2047	7	1,182.67
2047	8	1,210.11
2047	9	1,066.26
2047	10	708.23
2047	11	581.742
2047	12	712.69
2048	1	849.25
2048	2	774.59
2048	3	730.78
2048	4	598.201
2048	5	610.984
2048	6	880.243
2048	7	1,182.75
2048	8	1,210.24
2048	9	1,066.11
2048	10	707.39
2048	11	580.306
2048	12	710.82
2049	1	847.03
2049	2	772.64
2049	3	706.11
2049	4	596.791
2049	5	610

2049	6	879.846
2049	7	1,182.93
2049	8	1,210.47
2049	9	1,066.06
2049	10	706.62
2049	11	578.951
2049	12	709.05
2050	1	844.90
2050	2	770.78
2050	3	704.37
2050	4	595.441
2050	5	609.062
2050	6	879.494
2050	7	1,183.15
2050	8	1,210.74
2050	9	1,066.05
2050	10	705.9
2050	11	577.656
2050	12	707.37

Variable	Coefficient	Mean	Elast	Units
XHeat	1.549	110.77	0.177	
XCool	1.237	189	0.241	
XOther4	0.701	697.35	0.504	
	9-Apr	0	0	0
Jan	8.371	0.083	0.001	
Feb	39.809	0.083	0.003	
Mar	19.962	0.083	0.002	
Apr	9.867	0.083	0.001	
May	81.74	0.083	0.007	
Jun	164.752	0.083	0.014	
Jul	248.837	0.083	0.021	
Aug	254.517	0.083	0.022	
Sep	192.857	0.083	0.017	
Oct	119.062	0.083	0.01	
Nov	18.351	0.083	0.002	
TStormWeekdays_Lou	-9.531	2.11	-0.021	

Definition

Residential Heating Component (Actual History with Normal Weather Forecast)

Residential Cooling Component (Actual History with Normal Weather Forecast)

Residential NonHVAC Component (Actual History with Normal Weather Forecast)

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Year	Month	Pred	XHeat	XCool	XOther4	9-Apr	Jan	Feb	Mar	Apr	May
2011	1	1,236.11	644.89	0	582.849	0	8.371	0	0	0	0
2011	2	959.53	431.06	0	488.656	0	0	39.809	0	0	0
2011	3	852.21	309.137	5.174	517.939	0	0	0	19.962	0	0
2011	4	757.50	194.232	48.202	505.199	0	0	0	0	9.867	0
2011	5	773.195	80.899	122.032	502.821	0	0	0	0	0	81.74
2011	6	1,172.27	23.282	521.262	505.864	0	0	0	0	0	0
2011	7	1,365.36	0	696.713	472.229	0	0	0	0	0	0
2011	8	1,627.81	0	932.199	479.217	0	0	0	0	0	0
2011	9	1,284.40	7.661	597.214	505.725	0	0	0	0	0	0
2011	10	760.018	53.701	97.206	499.581	0	0	0	0	0	0
2011	11	654.151	154.537	9.674	476.355	0	0	0	0	0	0
2011	12	828.78	290.278	3.519	534.978	0	0	0	0	0	0
2012	1	1,046.12	450.009	0	587.74	0	8.371	0	0	0	0
2012	2	912.68	356.405	0	516.466	0	0	39.809	0	0	0
2012	3	801.74	240.507	32.596	508.677	0	0	0	19.962	0	0
2012	4	717.424	80.465	114.532	512.56	0	0	0	0	9.867	0
2012	5	837.308	55.825	218.33	505.242	0	0	0	0	0	81.74
2012	6	1,139.46	4.402	483.243	510.896	0	0	0	0	0	0
2012	7	1,573.73	0.236	878.569	484.217	0	0	0	0	0	0
2012	8	1,503.86	0	816.815	480.185	0	0	0	0	0	0
2012	9	1,232.82	4.952	561.722	501.887	0	0	0	0	0	0
2012	10	756.021	67.674	97.302	491.046	0	0	0	0	0	0
2012	11	760.63	216.464	21.484	504.333	0	0	0	0	0	0
2012	12	842.37	304.328	4.676	533.361	0	0	0	0	0	0
2013	1	1,026.93	467.376	0	551.18	0	8.371	0	0	0	0
2013	2	954.34	412.747	0	501.781	0	0	39.809	0	0	0
2013	3	880.34	372.671	0	487.706	0	0	0	19.962	0	0
2013	4	767.82	242.267	34.695	480.992	0	0	0	0	9.867	0
2013	5	713.479	77.782	100.787	476.998	0	0	0	0	0	81.74
2013	6	1,000.35	14.319	380.878	488.055	0	0	0	0	0	0
2013	7	1,273.33	0	598.193	473.952	0	0	0	0	0	0
2013	8	1,238.29	0	548.206	468.929	0	0	0	0	0	0
2013	9	1,288.60	1.459	620.3	493.049	0	0	0	0	0	0
2013	10	825.201	42.295	186.207	487.169	0	0	0	0	0	0
2013	11	722.312	207.151	9.05	487.759	0	0	0	0	0	0
2013	12	977.80	434.655	0	543.146	0	0	0	0	0	0
2014	1	1,177.94	608.574	0	560.99	0	8.371	0	0	0	0
2014	2	1,052.38	524.27	0	488.299	0	0	39.809	0	0	0
2014	3	917.80	406.262	0.333	491.237	0	0	0	19.962	0	0
2014	4	699.716	179.578	29.829	480.442	0	0	0	0	9.867	0
2014	5	767.431	47.038	206.152	480.156	0	0	0	0	0	81.74

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2014	6	1,123.47	10.12	557.503	472.113	0	0	0	0	0	0
2014	7	1,298.26	0	641.098	465.517	0	0	0	0	0	0
2014	8	1,143.02	0	492.423	443.74	0	0	0	0	0	0
2014	9	1,174.47	8.279	534.677	472.016	0	0	0	0	0	0
2014	10	752.027	59.726	120.916	476.151	0	0	0	0	0	0
2014	11	732.39	241.49	6.716	480.13	0	0	0	0	0	0
2014	12	938.80	413.847	0	524.956	0	0	0	0	0	0
2015	1	1,060.67	518.884	0	533.41	0	8.371	0	0	0	0
2015	2	1,000.83	478.128	0	482.893	0	0	39.809	0	0	0
2015	3	948.69	442.001	0	486.726	0	0	0	19.962	0	0
2015	4	686.87	161.085	27.114	488.803	0	0	0	0	9.867	0
2015	5	713.296	54.694	148.033	443.126	0	0	0	0	0	81.74
2015	6	1,066.94	12.989	466.725	479.665	0	0	0	0	0	0
2015	7	1,242.57	0	628.541	450.974	0	0	0	0	0	0
2015	8	1,291.43	0	648.541	450.327	0	0	0	0	0	0
2015	9	1,190.87	2.211	537.575	486.819	0	0	0	0	0	0
2015	10	765.242	44.515	157.175	463.553	0	0	0	0	0	0
2015	11	650.903	146.611	17.903	477.57	0	0	0	0	0	0
2015	12	796.03	273.474	4.677	517.876	0	0	0	0	0	0
2016	1	956.27	418.892	1.82	527.191	0	8.371	0	0	0	0
2016	2	925.32	407.47	0	478.043	0	0	39.809	0	0	0
2016	3	731.91	244.19	3.592	464.163	0	0	0	19.962	0	0
2016	4	676.138	163.932	20.466	481.874	0	0	0	0	9.867	0
2016	5	660.018	56.888	92.976	457.008	0	0	0	0	0	81.74
2016	6	1,049.82	19.206	451.505	476.313	0	0	0	0	0	0
2016	7	1,355.77	0	731.227	466.256	0	0	0	0	0	0
2016	8	1,391.12	0	790.284	446.4	0	0	0	0	0	0
2016	9	1,310.34	0.97	697.504	471.427	0	0	0	0	0	0
2016	10	838.446	25.179	258.526	449.975	0	0	0	0	0	0
2016	11	680.376	119.207	76.768	470.815	0	0	0	0	0	0
2016	12	878.01	367.295	0.847	509.867	0	0	0	0	0	0
2017	1	975.92	442.882	1.285	523.384	0	8.371	0	0	0	0
2017	2	791.60	283.721	1.16	466.91	0	0	39.809	0	0	0
2017	3	710.10	224.219	6.162	459.758	0	0	0	19.962	0	0
2017	4	666.634	119.753	68.709	468.306	0	0	0	0	9.867	0
2017	5	760.577	50.098	186.385	466.182	0	0	0	0	0	81.74
2017	6	1,021.25	7.086	427.879	473.953	0	0	0	0	0	0
2017	7	1,334.44	0	666.097	457.626	0	0	0	0	0	0
2017	8	1,220.46	0	572.78	431.283	0	0	0	0	0	0
2017	9	974.71	9.327	355.158	460.26	0	0	0	0	0	0
2017	10	833.919	28.906	237.085	463.163	0	0	0	0	0	0
2017	11	679.587	183.373	26.58	451.283	0	0	0	0	0	0

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2017	12	861.40	363.118	1.563	496.716	0	0	0	0	0	0
2018	1	1,016.47	489.243	0.746	518.108	0	8.371	0	0	0	0
2018	2	909.06	406.763	0.134	462.359	0	0	39.809	0	0	0
2018	3	802.62	321.4	3.444	457.815	0	0	0	19.962	0	0
2018	4	711.20	180.31	41.086	479.933	0	0	0	0	9.867	0
2018	5	709.856	67.513	122.046	466.436	0	0	0	0	0	81.74
2018	6	951.01	14.001	379.144	455.543	0	0	0	0	0	0
2018	7	1,281.76	0.14	645.021	455.198	0	0	0	0	0	0
2018	8	1,296.68	0.05	658.911	439.201	0	0	0	0	0	0
2018	9	1,146.16	2.789	532.892	453.367	0	0	0	0	0	0
2018	10	788.027	46.292	179.745	462.229	0	0	0	0	0	0
2018	11	671.206	172.54	22.465	464.521	0	0	0	0	0	0
2018	12	847.45	346.414	2.052	498.986	0	0	0	0	0	0
2019	1	992.49	478.799	0.727	504.595	0	8.371	0	0	0	0
2019	2	899.16	403.14	0.132	456.081	0	0	39.809	0	0	0
2019	3	823.60	330.906	3.533	469.197	0	0	0	19.962	0	0
2019	4	691.314	175.782	39.911	465.755	0	0	0	0	9.867	0
2019	5	685.797	65.279	117.586	449.071	0	0	0	0	0	81.74
2019	6	951.813	14.067	379.562	455.862	0	0	0	0	0	0
2019	7	1,254.96	0.137	629.371	444.051	0	0	0	0	0	0
2019	8	1,282.15	0.049	650.291	433.293	0	0	0	0	0	0
2019	9	1,139.33	2.78	529.33	450.107	0	0	0	0	0	0
2019	10	782.596	46.1	178.361	458.374	0	0	0	0	0	0
2019	11	673.627	173.744	22.541	465.663	0	0	0	0	0	0
2019	12	831.77	340.929	2.013	488.827	0	0	0	0	0	0
2020	1	983.73	475.442	0.724	499.189	0	8.371	0	0	0	0
2020	2	891.43	400.272	0.132	451.214	0	0	39.809	0	0	0
2020	3	842.65	339.425	3.632	479.627	0	0	0	19.962	0	0
2020	4	684.715	174.408	39.689	460.75	0	0	0	0	9.867	0
2020	5	679.901	64.765	116.927	444.348	0	0	0	0	0	81.74
2020	6	944.966	13.957	377.448	451.239	0	0	0	0	0	0
2020	7	1,247.08	0.136	625.881	439.663	0	0	0	0	0	0
2020	8	1,274.35	0.049	646.763	429.012	0	0	0	0	0	0
2020	9	1,132.03	2.759	526.525	445.63	0	0	0	0	0	0
2020	10	776.612	45.747	177.401	453.703	0	0	0	0	0	0
2020	11	667.378	172.439	22.423	460.837	0	0	0	0	0	0
2020	12	824.13	338.406	2.002	483.724	0	0	0	0	0	0
2021	1	975.76	472.37	0.72	494.295	0	8.371	0	0	0	0
2021	2	884.31	397.606	0.131	446.762	0	0	39.809	0	0	0
2021	3	809.24	326.231	3.492	459.559	0	0	0	19.962	0	0
2021	4	678.403	173.093	39.408	456.035	0	0	0	0	9.867	0
2021	5	674.07	64.267	116.08	439.862	0	0	0	0	0	81.74

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2021	6	937.649	13.848	374.685	446.794	0	0	0	0	0	0
2021	7	1,237.85	0.135	621.049	435.263	0	0	0	0	0	0
2021	8	1,264.85	0.049	641.678	424.598	0	0	0	0	0	0
2021	9	1,123.07	2.736	522.308	440.91	0	0	0	0	0	0
2021	10	769.843	45.364	175.995	448.723	0	0	0	0	0	0
2021	11	660.323	170.932	22.237	455.474	0	0	0	0	0	0
2021	12	815.24	335.356	1.985	477.9	0	0	0	0	0	0
2022	1	966.99	468.211	0.714	489.694	0	8.371	0	0	0	0
2022	2	876.73	394.129	0.13	442.661	0	0	39.809	0	0	0
2022	3	802.23	323.398	3.466	455.401	0	0	0	19.962	0	0
2022	4	672.501	171.571	39.106	451.958	0	0	0	0	9.867	0
2022	5	668.779	63.705	115.197	436.015	0	0	0	0	0	81.74
2022	6	930.887	13.728	371.857	442.98	0	0	0	0	0	0
2022	7	1,230.10	0.134	616.816	431.748	0	0	0	0	0	0
2022	8	1,257.07	0.048	637.342	421.163	0	0	0	0	0	0
2022	9	1,115.99	2.714	518.809	437.347	0	0	0	0	0	0
2022	10	764.536	44.995	174.762	445.018	0	0	0	0	0	0
2022	11	654.986	169.551	22.083	451.673	0	0	0	0	0	0
2022	12	808.54	332.666	1.971	473.904	0	0	0	0	0	0
2023	1	960.07	464.824	0.71	486.169	0	8.371	0	0	0	0
2023	2	870.70	391.273	0.129	439.493	0	0	39.809	0	0	0
2023	3	796.62	321.051	3.448	452.163	0	0	0	19.962	0	0
2023	4	668.041	170.386	38.911	448.878	0	0	0	0	9.867	0
2023	5	664.831	63.265	114.622	433.082	0	0	0	0	0	81.74
2023	6	925.993	13.633	369.998	440.04	0	0	0	0	0	0
2023	7	1,223.98	0.133	613.596	428.846	0	0	0	0	0	0
2023	8	1,250.88	0.048	634.007	418.306	0	0	0	0	0	0
2023	9	1,110.26	2.695	516.089	434.364	0	0	0	0	0	0
2023	10	760.231	44.675	173.858	441.937	0	0	0	0	0	0
2023	11	650.483	168.345	21.968	448.491	0	0	0	0	0	0
2023	12	802.79	330.295	1.961	470.529	0	0	0	0	0	0
2024	1	953.91	461.623	0.707	483.207	0	8.371	0	0	0	0
2024	2	865.38	388.594	0.129	436.848	0	0	39.809	0	0	0
2024	3	817.39	329.462	3.548	464.415	0	0	0	19.962	0	0
2024	4	663.952	169.171	38.742	446.173	0	0	0	0	9.867	0
2024	5	661.322	62.816	114.129	430.515	0	0	0	0	0	81.74
2024	6	921.752	13.537	368.421	437.472	0	0	0	0	0	0
2024	7	1,218.78	0.132	610.908	426.336	0	0	0	0	0	0
2024	8	1,245.69	0.048	631.254	415.862	0	0	0	0	0	0
2024	9	1,105.50	2.676	513.867	431.841	0	0	0	0	0	0
2024	10	756.729	44.372	173.165	439.431	0	0	0	0	0	0
2024	11	646.701	167.209	21.881	445.931	0	0	0	0	0	0

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2024	12	797.87	328.08	1.954	467.836	0	0	0	0	0	0
2025	1	947.14	458.543	0.705	479.524	0	8.371	0	0	0	0
2025	2	859.51	386.005	0.128	433.563	0	0	39.809	0	0	0
2025	3	786.27	316.743	3.423	446.146	0	0	0	19.962	0	0
2025	4	659.624	168.107	38.639	443.011	0	0	0	0	9.867	0
2025	5	657.661	62.422	113.827	427.552	0	0	0	0	0	81.74
2025	6	917.782	13.452	367.446	434.562	0	0	0	0	0	0
2025	7	1,214.40	0.131	609.339	423.526	0	0	0	0	0	0
2025	8	1,241.29	0.047	629.637	413.086	0	0	0	0	0	0
2025	9	1,101.25	2.659	512.555	428.916	0	0	0	0	0	0
2025	10	752.873	44.092	172.699	436.321	0	0	0	0	0	0
2025	11	642.343	166.155	21.823	442.686	0	0	0	0	0	0
2025	12	792.35	326.014	1.948	464.387	0	0	0	0	0	0
2026	1	941.27	455.732	0.704	476.466	0	8.371	0	0	0	0
2026	2	854.41	383.638	0.128	430.833	0	0	39.809	0	0	0
2026	3	781.55	314.8	3.418	443.372	0	0	0	19.962	0	0
2026	4	655.696	167.027	38.572	440.23	0	0	0	0	9.867	0
2026	5	654.445	62.021	113.628	424.935	0	0	0	0	0	81.74
2026	6	914.471	13.365	366.806	431.978	0	0	0	0	0	0
2026	7	1,210.91	0.131	608.332	421.042	0	0	0	0	0	0
2026	8	1,237.80	0.047	628.597	410.634	0	0	0	0	0	0
2026	9	1,097.80	2.642	511.709	426.335	0	0	0	0	0	0
2026	10	749.659	43.819	172.438	433.641	0	0	0	0	0	0
2026	11	638.487	165.125	21.79	439.892	0	0	0	0	0	0
2026	12	787.35	323.994	1.945	461.414	0	0	0	0	0	0
2027	1	935.67	452.811	0.703	473.784	0	8.371	0	0	0	0
2027	2	849.55	381.18	0.128	428.435	0	0	39.809	0	0	0
2027	3	777.09	312.783	3.415	440.934	0	0	0	19.962	0	0
2027	4	652.24	165.982	38.536	437.856	0	0	0	0	9.867	0
2027	5	651.712	61.632	113.523	422.696	0	0	0	0	0	81.74
2027	6	911.828	13.282	366.465	429.759	0	0	0	0	0	0
2027	7	1,208.14	0.13	607.738	418.867	0	0	0	0	0	0
2027	8	1,235.04	0.047	627.984	408.49	0	0	0	0	0	0
2027	9	1,095.03	2.626	511.209	424.085	0	0	0	0	0	0
2027	10	746.783	43.536	172.243	431.244	0	0	0	0	0	0
2027	11	634.904	164.058	21.765	437.401	0	0	0	0	0	0
2027	12	782.61	321.9	1.943	458.766	0	0	0	0	0	0
2028	1	930.69	450.181	0.703	471.434	0	8.371	0	0	0	0
2028	2	845.24	378.966	0.128	426.333	0	0	39.809	0	0	0
2028	3	798.17	321.301	3.528	453.378	0	0	0	19.962	0	0
2028	4	649.241	165.038	38.538	435.797	0	0	0	0	9.867	0
2028	5	649.424	61.282	113.53	420.751	0	0	0	0	0	81.74

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2028	6	909.844	13.206	366.488	427.827	0	0	0	0	0	0
2028	7	1,206.23	0.129	607.716	416.976	0	0	0	0	0	0
2028	8	1,233.16	0.046	627.96	406.629	0	0	0	0	0	0
2028	9	1,093.05	2.611	511.19	422.135	0	0	0	0	0	0
2028	10	744.408	43.277	172.207	429.163	0	0	0	0	0	0
2028	11	631.763	163.082	21.761	435.241	0	0	0	0	0	0
2028	12	778.40	319.984	1.943	456.469	0	0	0	0	0	0
2029	1	926.15	447.706	0.704	469.365	0	8.371	0	0	0	0
2029	2	841.30	376.881	0.128	424.481	0	0	39.809	0	0	0
2029	3	769.55	309.256	3.417	436.91	0	0	0	19.962	0	0
2029	4	646.517	164.13	38.57	433.95	0	0	0	0	9.867	0
2029	5	647.433	60.945	113.624	419.003	0	0	0	0	0	81.74
2029	6	908.336	13.134	366.792	426.089	0	0	0	0	0	0
2029	7	1,205.06	0.128	608.219	415.306	0	0	0	0	0	0
2029	8	1,232.03	0.046	628.481	404.985	0	0	0	0	0	0
2029	9	1,091.74	2.596	511.614	420.414	0	0	0	0	0	0
2029	10	742.543	43.04	172.354	427.388	0	0	0	0	0	0
2029	11	629.046	162.189	21.779	433.399	0	0	0	0	0	0
2029	12	774.69	318.232	1.944	454.511	0	0	0	0	0	0
2030	1	920.35	445.144	0.703	466.127	0	8.371	0	0	0	0
2030	2	836.27	374.725	0.128	421.608	0	0	39.809	0	0	0
2030	3	764.87	307.487	3.414	434.01	0	0	0	19.962	0	0
2030	4	642.807	163.214	38.54	431.185	0	0	0	0	9.867	0
2030	5	644.448	60.605	113.535	416.446	0	0	0	0	0	81.74
2030	6	905.513	13.06	366.506	423.625	0	0	0	0	0	0
2030	7	1,202.16	0.128	607.707	412.918	0	0	0	0	0	0
2030	8	1,229.13	0.046	627.952	402.606	0	0	0	0	0	0
2030	9	1,088.75	2.582	511.183	417.872	0	0	0	0	0	0
2030	10	739.521	42.803	172.232	424.726	0	0	0	0	0	0
2030	11	625.317	161.295	21.764	430.579	0	0	0	0	0	0
2030	12	769.92	316.478	1.943	451.494	0	0	0	0	0	0
2031	1	915.27	442.921	0.705	463.277	0	8.371	0	0	0	0
2031	2	831.87	372.854	0.128	419.078	0	0	39.809	0	0	0
2031	3	760.79	305.951	3.42	431.455	0	0	0	19.962	0	0
2031	4	639.501	162.367	38.602	428.665	0	0	0	0	9.867	0
2031	5	641.982	60.29	113.718	414.112	0	0	0	0	0	81.74
2031	6	903.783	12.993	367.097	421.372	0	0	0	0	0	0
2031	7	1,201.04	0.127	608.754	410.756	0	0	0	0	0	0
2031	8	1,228.05	0.046	629.033	400.452	0	0	0	0	0	0
2031	9	1,087.32	2.568	512.063	415.574	0	0	0	0	0	0
2031	10	737.134	42.584	172.525	422.263	0	0	0	0	0	0
2031	11	621.929	160.473	21.801	427.976	0	0	0	0	0	0

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2031	12	765.53	314.865	1.946	448.716	0	0	0	0	0	0
2032	1	910.11	440.417	0.705	460.618	0	8.371	0	0	0	0
2032	2	827.40	370.746	0.128	416.713	0	0	39.809	0	0	0
2032	3	781.15	314.332	3.537	443.322	0	0	0	19.962	0	0
2032	4	636.254	161.439	38.635	426.313	0	0	0	0	9.867	0
2032	5	639.548	59.946	113.815	411.926	0	0	0	0	0	81.74
2032	6	901.9	12.918	367.408	419.252	0	0	0	0	0	0
2032	7	1,199.49	0.126	609.268	408.696	0	0	0	0	0	0
2032	8	1,226.53	0.045	629.564	398.402	0	0	0	0	0	0
2032	9	1,085.56	2.554	512.495	413.394	0	0	0	0	0	0
2032	10	734.705	42.338	172.659	419.946	0	0	0	0	0	0
2032	11	618.579	159.545	21.818	425.538	0	0	0	0	0	0
2032	12	761.11	313.043	1.948	446.119	0	0	0	0	0	0
2033	1	905.18	437.978	0.706	458.128	0	8.371	0	0	0	0
2033	2	823.13	368.693	0.128	414.497	0	0	39.809	0	0	0
2033	3	752.75	302.537	3.426	426.82	0	0	0	19.962	0	0
2033	4	633.205	160.547	38.664	424.128	0	0	0	0	9.867	0
2033	5	637.267	59.614	113.899	409.892	0	0	0	0	0	81.74
2033	6	900.124	12.847	367.681	417.275	0	0	0	0	0	0
2033	7	1,197.84	0.125	609.592	406.72	0	0	0	0	0	0
2033	8	1,224.91	0.045	629.899	396.44	0	0	0	0	0	0
2033	9	1,083.73	2.539	512.769	411.312	0	0	0	0	0	0
2033	10	732.341	42.095	172.751	417.734	0	0	0	0	0	0
2033	11	615.352	158.629	21.829	423.215	0	0	0	0	0	0
2033	12	756.84	311.246	1.949	443.647	0	0	0	0	0	0
2034	1	900.51	435.633	0.706	455.797	0	8.371	0	0	0	0
2034	2	819.08	366.719	0.128	412.421	0	0	39.809	0	0	0
2034	3	749.02	300.917	3.428	424.716	0	0	0	19.962	0	0
2034	4	630.284	159.679	38.69	422.048	0	0	0	0	9.867	0
2034	5	635.082	59.292	113.977	407.951	0	0	0	0	0	81.74
2034	6	898.415	12.778	367.932	415.383	0	0	0	0	0	0
2034	7	1,196.49	0.125	610.049	404.915	0	0	0	0	0	0
2034	8	1,223.59	0.045	630.371	394.648	0	0	0	0	0	0
2034	9	1,082.20	2.525	513.153	409.41	0	0	0	0	0	0
2034	10	730.231	41.869	172.873	415.729	0	0	0	0	0	0
2034	11	612.41	157.776	21.845	421.11	0	0	0	0	0	0
2034	12	752.93	309.573	1.95	441.407	0	0	0	0	0	0
2035	1	896.23	433.386	0.707	453.762	0	8.371	0	0	0	0
2035	2	815.37	364.827	0.128	410.609	0	0	39.809	0	0	0
2035	3	745.64	299.365	3.431	422.88	0	0	0	19.962	0	0
2035	4	627.695	158.849	38.721	420.258	0	0	0	0	9.867	0
2035	5	633.195	58.984	114.069	406.282	0	0	0	0	0	81.74

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2035	6	897.017	12.711	368.227	413.757	0	0	0	0	0	0
2035	7	1,195.39	0.124	610.53	403.33	0	0	0	0	0	0
2035	8	1,222.51	0.045	630.868	393.076	0	0	0	0	0	0
2035	9	1,080.93	2.512	513.557	407.742	0	0	0	0	0	0
2035	10	728.444	41.655	173.027	414.001	0	0	0	0	0	0
2035	11	609.808	156.969	21.864	419.296	0	0	0	0	0	0
2035	12	749.42	307.99	1.952	439.477	0	0	0	0	0	0
2036	1	892.19	431.17	0.707	451.937	0	8.371	0	0	0	0
2036	2	811.88	362.962	0.129	408.984	0	0	39.809	0	0	0
2036	3	766.47	307.732	3.548	435.231	0	0	0	19.962	0	0
2036	4	625.306	158.035	38.752	418.652	0	0	0	0	9.867	0
2036	5	631.485	58.682	114.159	404.783	0	0	0	0	0	81.74
2036	6	895.783	12.646	368.52	412.296	0	0	0	0	0	0
2036	7	1,194.43	0.124	610.991	401.915	0	0	0	0	0	0
2036	8	1,221.58	0.044	631.345	391.673	0	0	0	0	0	0
2036	9	1,079.81	2.499	513.946	406.253	0	0	0	0	0	0
2036	10	726.814	41.442	173.166	412.445	0	0	0	0	0	0
2036	11	607.391	156.166	21.882	417.663	0	0	0	0	0	0
2036	12	746.11	306.415	1.954	437.739	0	0	0	0	0	0
2037	1	888.16	428.921	0.708	450.163	0	8.371	0	0	0	0
2037	2	808.41	361.068	0.129	407.4	0	0	39.809	0	0	0
2037	3	739.30	296.281	3.436	419.624	0	0	0	19.962	0	0
2037	4	622.946	157.218	38.776	417.085	0	0	0	0	9.867	0
2037	5	629.784	58.378	114.229	403.316	0	0	0	0	0	81.74
2037	6	894.507	12.581	368.745	410.859	0	0	0	0	0	0
2037	7	1,193.45	0.123	611.397	400.53	0	0	0	0	0	0
2037	8	1,220.63	0.044	631.764	390.302	0	0	0	0	0	0
2037	9	1,078.69	2.487	514.287	404.8	0	0	0	0	0	0
2037	10	725.128	41.224	173.257	410.886	0	0	0	0	0	0
2037	11	604.953	155.345	21.893	416.035	0	0	0	0	0	0
2037	12	742.77	304.804	1.955	436.009	0	0	0	0	0	0
2038	1	884.44	426.922	0.708	448.436	0	8.371	0	0	0	0
2038	2	805.18	359.385	0.129	405.858	0	0	39.809	0	0	0
2038	3	736.36	294.9	3.439	418.057	0	0	0	19.962	0	0
2038	4	620.705	156.485	38.809	415.544	0	0	0	0	9.867	0
2038	5	628.163	58.106	114.327	401.869	0	0	0	0	0	81.74
2038	6	893.343	12.522	369.061	409.439	0	0	0	0	0	0
2038	7	1,192.65	0.122	611.96	399.159	0	0	0	0	0	0
2038	8	1,219.86	0.044	632.346	388.945	0	0	0	0	0	0
2038	9	1,077.72	2.475	514.76	403.366	0	0	0	0	0	0
2038	10	723.59	41.033	173.413	409.383	0	0	0	0	0	0
2038	11	602.688	154.628	21.913	414.468	0	0	0	0	0	0

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2038	12	739.70	303.396	1.956	434.349	0	0	0	0	0	0
2039	1	880.70	424.914	0.709	446.708	0	8.371	0	0	0	0
2039	2	801.95	357.695	0.129	404.312	0	0	39.809	0	0	0
2039	3	733.40	293.513	3.441	416.482	0	0	0	19.962	0	0
2039	4	618.471	155.757	38.837	414.01	0	0	0	0	9.867	0
2039	5	626.529	57.836	114.409	400.424	0	0	0	0	0	81.74
2039	6	892.124	12.464	369.325	408.013	0	0	0	0	0	0
2039	7	1,191.73	0.122	612.41	397.79	0	0	0	0	0	0
2039	8	1,218.97	0.044	632.812	387.592	0	0	0	0	0	0
2039	9	1,076.66	2.464	515.139	401.94	0	0	0	0	0	0
2039	10	722.028	40.843	173.54	407.884	0	0	0	0	0	0
2039	11	600.431	153.911	21.929	412.911	0	0	0	0	0	0
2039	12	736.65	301.99	1.958	432.703	0	0	0	0	0	0
2040	1	877.02	422.857	0.708	445.08	0	8.371	0	0	0	0
2040	2	798.75	355.964	0.129	402.851	0	0	39.809	0	0	0
2040	3	754.10	301.799	3.554	428.782	0	0	0	19.962	0	0
2040	4	616.273	155.022	38.82	412.565	0	0	0	0	9.867	0
2040	5	624.837	57.563	114.358	399.055	0	0	0	0	0	81.74
2040	6	890.542	12.405	369.162	406.654	0	0	0	0	0	0
2040	7	1,190.04	0.121	612.082	396.436	0	0	0	0	0	0
2040	8	1,217.29	0.044	632.472	386.258	0	0	0	0	0	0
2040	9	1,074.97	2.452	514.863	400.539	0	0	0	0	0	0
2040	10	720.325	40.649	173.457	406.458	0	0	0	0	0	0
2040	11	598.217	153.179	21.919	411.439	0	0	0	0	0	0
2040	12	733.66	300.554	1.957	431.151	0	0	0	0	0	0
2041	1	872.23	421.015	0.709	442.131	0	8.371	0	0	0	0
2041	2	794.58	354.413	0.129	400.234	0	0	39.809	0	0	0
2041	3	726.57	290.819	3.44	412.349	0	0	0	19.962	0	0
2041	4	613.003	154.333	38.828	409.975	0	0	0	0	9.867	0
2041	5	622.215	57.307	114.383	396.663	0	0	0	0	0	81.74
2041	6	888.276	12.35	369.243	404.361	0	0	0	0	0	0
2041	7	1,188.06	0.121	612.287	394.246	0	0	0	0	0	0
2041	8	1,215.32	0.043	632.684	384.069	0	0	0	0	0	0
2041	9	1,072.78	2.441	515.035	398.189	0	0	0	0	0	0
2041	10	717.748	40.477	173.533	403.976	0	0	0	0	0	0
2041	11	594.95	152.532	21.928	408.811	0	0	0	0	0	0
2041	12	729.59	299.284	1.958	428.35	0	0	0	0	0	0
2042	1	867.80	419.286	0.709	439.433	0	8.371	0	0	0	0
2042	2	790.73	352.957	0.129	397.836	0	0	39.809	0	0	0
2042	3	722.95	289.625	3.442	409.924	0	0	0	19.962	0	0
2042	4	610.072	153.713	38.846	407.646	0	0	0	0	9.867	0
2042	5	619.881	57.077	114.435	394.508	0	0	0	0	0	81.74

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2042	6	886.32	12.3	369.411	402.287	0	0	0	0	0	0
2042	7	1,186.31	0.12	612.56	392.226	0	0	0	0	0	0
2042	8	1,213.58	0.043	632.966	382.053	0	0	0	0	0	0
2042	9	1,070.84	2.431	515.265	396.032	0	0	0	0	0	0
2042	10	715.396	40.316	173.619	401.7	0	0	0	0	0	0
2042	11	591.952	151.925	21.939	406.409	0	0	0	0	0	0
2042	12	725.85	298.093	1.959	425.795	0	0	0	0	0	0
2043	1	863.87	417.677	0.709	437.113	0	8.371	0	0	0	0
2043	2	787.31	351.604	0.129	395.77	0	0	39.809	0	0	0
2043	3	719.75	288.514	3.444	407.833	0	0	0	19.962	0	0
2043	4	607.48	153.127	38.871	405.615	0	0	0	0	9.867	0
2043	5	617.851	56.859	114.51	392.62	0	0	0	0	0	81.74
2043	6	884.689	12.253	369.654	400.461	0	0	0	0	0	0
2043	7	1,185.01	0.12	613.006	390.482	0	0	0	0	0	0
2043	8	1,212.31	0.043	633.427	380.315	0	0	0	0	0	0
2043	9	1,069.35	2.422	515.64	394.178	0	0	0	0	0	0
2043	10	713.413	40.165	173.745	399.742	0	0	0	0	0	0
2043	11	589.34	151.356	21.955	404.349	0	0	0	0	0	0
2043	12	722.54	296.977	1.96	423.607	0	0	0	0	0	0
2044	1	860.41	416.141	0.71	435.186	0	8.371	0	0	0	0
2044	2	784.30	350.311	0.129	394.052	0	0	39.809	0	0	0
2044	3	740.11	297.006	3.561	419.585	0	0	0	19.962	0	0
2044	4	605.264	152.571	38.903	403.923	0	0	0	0	9.867	0
2044	5	616.158	56.653	114.604	391.041	0	0	0	0	0	81.74
2044	6	883.408	12.209	369.956	398.922	0	0	0	0	0	0
2044	7	1,184.08	0.119	613.546	389.013	0	0	0	0	0	0
2044	8	1,211.41	0.043	633.985	378.857	0	0	0	0	0	0
2044	9	1,068.25	2.414	516.095	392.627	0	0	0	0	0	0
2044	10	711.867	40.027	173.92	398.159	0	0	0	0	0	0
2044	11	587.181	150.836	21.977	402.689	0	0	0	0	0	0
2044	12	719.76	295.955	1.962	421.846	0	0	0	0	0	0
2045	1	857.16	414.645	0.711	433.431	0	8.371	0	0	0	0
2045	2	781.47	349.05	0.129	392.485	0	0	39.809	0	0	0
2045	3	714.33	286.419	3.449	404.497	0	0	0	19.962	0	0
2045	4	603.213	152.029	38.939	402.378	0	0	0	0	9.867	0
2045	5	614.615	56.451	114.709	389.593	0	0	0	0	0	81.74
2045	6	882.288	12.165	370.294	397.506	0	0	0	0	0	0
2045	7	1,183.35	0.119	614.16	387.666	0	0	0	0	0	0
2045	8	1,210.70	0.043	634.62	377.52	0	0	0	0	0	0
2045	9	1,067.34	2.405	516.611	391.209	0	0	0	0	0	0
2045	10	710.471	39.892	174.109	396.709	0	0	0	0	0	0
2045	11	585.18	150.325	22.001	401.174	0	0	0	0	0	0

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2045	12	717.16	294.955	1.964	420.241	0	0	0	0	0	0
2046	1	854.07	413.217	0.711	431.773	0	8.371	0	0	0	0
2046	2	778.79	347.849	0.129	391.002	0	0	39.809	0	0	0
2046	3	711.84	285.433	3.453	402.989	0	0	0	19.962	0	0
2046	4	601.259	151.509	38.978	400.906	0	0	0	0	9.867	0
2046	5	613.152	56.258	114.823	388.209	0	0	0	0	0	81.74
2046	6	881.257	12.124	370.664	396.147	0	0	0	0	0	0
2046	7	1,182.66	0.118	614.785	386.357	0	0	0	0	0	0
2046	8	1,210.05	0.043	635.265	376.225	0	0	0	0	0	0
2046	9	1,066.49	2.397	517.137	389.839	0	0	0	0	0	0
2046	10	709.145	39.76	174.307	395.317	0	0	0	0	0	0
2046	11	583.261	149.831	22.026	399.724	0	0	0	0	0	0
2046	12	714.66	293.985	1.966	418.706	0	0	0	0	0	0
2047	1	851.61	412.153	0.712	430.371	0	8.371	0	0	0	0
2047	2	776.64	346.953	0.129	389.749	0	0	39.809	0	0	0
2047	3	709.83	284.698	3.459	401.713	0	0	0	19.962	0	0
2047	4	599.69	151.12	39.045	399.658	0	0	0	0	9.867	0
2047	5	612.034	56.114	115.022	387.037	0	0	0	0	0	81.74
2047	6	880.716	12.093	371.306	394.996	0	0	0	0	0	0
2047	7	1,182.67	0.118	615.893	385.258	0	0	0	0	0	0
2047	8	1,210.11	0.043	636.41	375.137	0	0	0	0	0	0
2047	9	1,066.26	2.391	518.068	388.688	0	0	0	0	0	0
2047	10	708.23	39.667	174.645	394.158	0	0	0	0	0	0
2047	11	581.742	149.477	22.069	398.517	0	0	0	0	0	0
2047	12	712.69	293.29	1.97	417.429	0	0	0	0	0	0
2048	1	849.25	411.115	0.714	429.052	0	8.371	0	0	0	0
2048	2	774.59	346.08	0.13	388.568	0	0	39.809	0	0	0
2048	3	730.78	293.419	3.58	413.821	0	0	0	19.962	0	0
2048	4	598.201	150.74	39.114	398.48	0	0	0	0	9.867	0
2048	5	610.984	55.973	115.225	385.926	0	0	0	0	0	81.74
2048	6	880.243	12.062	371.959	393.9	0	0	0	0	0	0
2048	7	1,182.75	0.118	617.019	384.213	0	0	0	0	0	0
2048	8	1,210.24	0.042	637.574	374.103	0	0	0	0	0	0
2048	9	1,066.11	2.385	519.016	387.597	0	0	0	0	0	0
2048	10	707.39	39.575	174.988	393.066	0	0	0	0	0	0
2048	11	580.306	149.133	22.112	397.382	0	0	0	0	0	0
2048	12	710.82	292.615	1.974	416.23	0	0	0	0	0	0
2049	1	847.03	410.143	0.715	427.798	0	8.371	0	0	0	0
2049	2	772.64	345.261	0.13	387.443	0	0	39.809	0	0	0
2049	3	706.11	283.31	3.471	399.363	0	0	0	19.962	0	0
2049	4	596.791	150.385	39.186	397.354	0	0	0	0	9.867	0
2049	5	610	55.841	115.437	384.862	0	0	0	0	0	81.74

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2049	6	879.846	12.034	372.644	392.847	0	0	0	0	0	0
2049	7	1,182.93	0.118	618.199	383.207	0	0	0	0	0	0
2049	8	1,210.47	0.042	638.793	373.11	0	0	0	0	0	0
2049	9	1,066.06	2.38	520.008	386.552	0	0	0	0	0	0
2049	10	706.62	39.49	175.346	392.023	0	0	0	0	0	0
2049	11	578.951	148.812	22.157	396.302	0	0	0	0	0	0
2049	12	709.05	291.985	1.978	415.091	0	0	0	0	0	0
2050	1	844.90	409.215	0.716	426.592	0	8.371	0	0	0	0
2050	2	770.78	344.48	0.13	386.362	0	0	39.809	0	0	0
2050	3	704.37	282.669	3.478	398.259	0	0	0	19.962	0	0
2050	4	595.441	150.046	39.259	396.269	0	0	0	0	9.867	0
2050	5	609.062	55.715	115.652	383.834	0	0	0	0	0	81.74
2050	6	879.494	12.007	373.338	391.827	0	0	0	0	0	0
2050	7	1,183.15	0.117	619.394	382.235	0	0	0	0	0	0
2050	8	1,210.74	0.042	640.028	372.151	0	0	0	0	0	0
2050	9	1,066.05	2.375	521.014	385.544	0	0	0	0	0	0
2050	10	705.9	39.409	175.71	391.021	0	0	0	0	0	0
2050	11	577.656	148.507	22.203	395.266	0	0	0	0	0	0
2050	12	707.37	291.387	1.982	413.998	0	0	0	0	0	0

Case No. 2018-00295
 Attachment 1 to Response to KIUC-1 Question No. 20b
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 Sinclair

Jun	Jul	Aug	Sep	Oct	Nov	TStormWeekdays_Lou	X-Missing
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
0	0	0	0	0	0	-14.297	0
164.752	0	0	0	0	0	-42.891	0
0	248.837	0	0	0	0	-52.422	0
0	0	254.517	0	0	0	-38.125	0
0	0	0	192.857	0	0	-19.063	0
0	0	0	0	119.062	0	-9.531	0
0	0	0	0	0	18.351	-4.766	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	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	-23.828	0
164.752	0	0	0	0	0	-23.828	0
0	248.837	0	0	0	0	-38.125	0
0	0	254.517	0	0	0	-47.656	0
0	0	0	192.857	0	0	-28.594	0
0	0	0	0	119.062	0	-19.063	0
0	0	0	0	0	18.351	0	0
0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0
0	0	0	0	0	0	-23.828	0
164.752	0	0	0	0	0	-47.656	0
0	248.837	0	0	0	0	-47.656	0
0	0	254.517	0	0	0	-33.359	0
0	0	0	192.857	0	0	-19.063	0
0	0	0	0	119.062	0	-9.531	0
0	0	0	0	0	18.351	0	0
0	0	0	0	0	0	0	0
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0	0	0	0	0	0	-47.656	0

164.752	0	0	0	0	0	-81.016	0
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0	0	254.517	0	0	0	-47.656	0
0	0	0	192.857	0	0	-33.359	0
0	0	0	0	119.062	0	-23.828	0
0	0	0	0	0	18.351	-14.297	0
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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
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164.752	0	0	0	0	0	-57.188	0
0	248.837	0	0	0	0	-85.781	0
0	0	254.517	0	0	0	-61.953	0
0	0	0	192.857	0	0	-28.594	0
0	0	0	0	119.062	0	-19.063	0
0	0	0	0	0	18.351	-9.531	0
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164.752	0	0	0	0	0	-61.953	0
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0	0	0	192.857	0	0	-52.422	0
0	0	0	0	119.062	0	-14.297	0
0	0	0	0	0	18.351	-4.766	0
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0	0	0	0	0	0	0	0
0	0	0	0	0	0	-23.828	0
164.752	0	0	0	0	0	-52.422	0
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0	0	254.517	0	0	0	-38.125	0
0	0	0	192.857	0	0	-42.891	0
0	0	0	0	119.062	0	-14.297	0
0	0	0	0	0	18.351	0	0

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164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
0	0	0	0	0	18.351	-6.672	0
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0	0	0	0	0	0	0	0
0	0	0	0	0	0	-27.879	0
164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
0	0	0	0	0	18.351	-6.672	0
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0	0	0	0	0	0	-27.879	0
164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
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0	0	0	0	0	0	-27.879	0

164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
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164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
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164.752	0	0	0	0	0	-62.43	0
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0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
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0	0	0	192.857	0	0	-35.742	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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0	0	254.517	0	0	0	-55.996	0
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164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
0	0	0	0	0	18.351	-6.672	0
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0	0	0	0	0	0	-27.879	0
164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
0	0	0	0	0	18.351	-6.672	0
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164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
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0	0	0	0	0	0	-27.879	0
164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
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164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
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164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
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164.752	0	0	0	0	0	-62.43	0
0	248.837	0	0	0	0	-67.434	0
0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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164.752	0	0	0	0	0	-62.43	0
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0	0	254.517	0	0	0	-55.996	0
0	0	0	192.857	0	0	-35.742	0
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164.752	0	0	0	0	0	-62.43	0
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0	0	0	192.857	0	0	-35.742	0
0	0	0	0	119.062	0	-19.301	0
0	0	0	0	0	18.351	-6.672	0
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Year	Month	Actual	Pred	Upper	Lower	Sigma
2011	1	1,194.73	1,236.11	1,286.57	1,185.66	25.285
2011	2	961.81	959.53	1,008.33	910.73	24.456
2011	3	845.54	852.21	901.10	803.32	24.501
2011	4	752.05	757.50	806.31	708.688	24.462
2011	5	758.606	773.195	822.261	724.128	24.589
2011	6	1,182.63	1,172.27	1,221.42	1,123.11	24.634
2011	7	1,410.83	1,365.36	1,414.20	1,316.51	24.479
2011	8	1,642.03	1,627.81	1,680.79	1,574.82	26.554
2011	9	1,249.11	1,284.40	1,333.65	1,235.14	24.683
2011	10	716.735	760.018	809.147	710.89	24.62
2011	11	676.745	654.151	703.015	605.287	24.488
2011	12	846.10	828.78	878.20	779.35	24.771
2012	1	1,028.64	1,046.12	1,095.71	996.53	24.851
2012	2	920.23	912.68	962.15	863.21	24.793
2012	3	788.80	801.74	851.55	751.93	24.962
2012	4	708.347	717.424	767.474	667.375	25.082
2012	5	849.599	837.308	886.373	788.244	24.588
2012	6	1,135.22	1,139.46	1,190.04	1,088.89	25.346
2012	7	1,582.15	1,573.73	1,625.71	1,521.76	26.046
2012	8	1,467.71	1,503.86	1,553.74	1,453.98	24.999
2012	9	1,236.45	1,232.82	1,281.63	1,184.02	24.457
2012	10	727.15	756.021	805.105	706.937	24.598
2012	11	737.296	760.63	809.49	711.771	24.486
2012	12	830.59	842.37	891.55	793.18	24.648
2013	1	1,039.43	1,026.93	1,075.88	977.98	24.532
2013	2	948.53	954.34	1,003.11	905.56	24.442
2013	3	886.01	880.34	929.44	831.24	24.608
2013	4	778.34	767.82	817.44	718.205	24.864
2013	5	704.474	713.479	762.424	664.534	24.528
2013	6	1,008.04	1,000.35	1,049.62	951.073	24.694
2013	7	1,239.11	1,273.33	1,322.83	1,223.82	24.808
2013	8	1,253.37	1,238.29	1,288.86	1,187.73	25.34
2013	9	1,282.04	1,288.60	1,338.01	1,239.19	24.762
2013	10	861.336	825.201	874.085	776.317	24.498
2013	11	731.108	722.312	771.18	673.445	24.489
2013	12	973.03	977.80	1,027.39	928.21	24.852
2014	1	1,180.47	1,177.94	1,227.82	1,128.05	25
2014	2	1,080.36	1,052.38	1,102.66	1,002.09	25.2
2014	3	914.80	917.80	967.42	868.17	24.87
2014	4	703.20	699.716	748.55	650.885	24.471
2014	5	740.803	767.431	817.419	717.442	25.051

2014	6	1,055.53	1,123.47	1,174.31	1,072.64	25.475
2014	7	1,303.01	1,298.26	1,347.18	1,249.35	24.515
2014	8	1,116.52	1,143.02	1,194.03	1,092.02	25.562
2014	9	1,182.49	1,174.47	1,223.28	1,125.66	24.46
2014	10	773.468	752.027	801.077	702.977	24.581
2014	11	710.754	732.39	781.74	683.043	24.73
2014	12	934.34	938.80	988.04	889.57	24.675
2015	1	1,068.51	1,060.67	1,109.50	1,011.83	24.474
2015	2	998.28	1,000.83	1,050.18	951.48	24.731
2015	3	964.06	948.69	999.28	898.09	25.356
2015	4	668.878	686.87	735.66	638.077	24.452
2015	5	726.181	713.296	762.375	664.218	24.595
2015	6	1,050.47	1,066.94	1,115.76	1,018.13	24.462
2015	7	1,251.82	1,242.57	1,293.27	1,191.88	25.405
2015	8	1,308.10	1,291.43	1,340.50	1,242.37	24.589
2015	9	1,176.77	1,190.87	1,239.68	1,142.06	24.461
2015	10	774.569	765.242	814.037	716.447	24.453
2015	11	650.478	650.903	699.882	601.923	24.546
2015	12	820.07	796.03	845.35	746.705	24.717
2016	1	986.65	956.27	1,005.68	906.87	24.757
2016	2	918.34	925.32	974.08	876.56	24.437
2016	3	751.97	731.91	781.12	682.69	24.664
2016	4	669.436	676.138	724.95	627.327	24.461
2016	5	682.862	660.018	709.041	610.995	24.568
2016	6	1,059.16	1,049.82	1,098.82	1,000.83	24.555
2016	7	1,350.95	1,355.77	1,406.75	1,304.80	25.547
2016	8	1,405.19	1,391.12	1,444.96	1,337.28	26.982
2016	9	1,336.02	1,310.34	1,361.02	1,259.65	25.401
2016	10	826.796	838.446	887.77	789.121	24.719
2016	11	680	680.376	729.63	631.123	24.683
2016	12	879.55	878.01	926.67	829.35	24.388
2017	1	981.52	975.92	1,024.94	926.90	24.567
2017	2	769.12	791.60	841.98	741.21	25.25
2017	3	691.60	710.10	759.60	660.6	24.807
2017	4	691.856	666.634	715.519	617.75	24.498
2017	5	762.78	760.577	809.412	711.742	24.473
2017	6	1,082.52	1,021.25	1,070.12	972.378	24.49
2017	7	1,305.59	1,334.44	1,384.13	1,284.75	24.901
2017	8	1,223.08	1,220.46	1,270.35	1,170.56	25.005
2017	9	993.33	974.71	1,026.29	923.126	25.851
2017	10	850.82	833.919	883.01	784.828	24.602
2017	11	693.971	679.587	728.468	630.705	24.496

2017	12	854.91	861.40	909.95	812.85	24.331
2018	1	1,160.36	1,016.47	1,065.24	967.69	24.444
2018	2		909.06	957.85	860.28	24.448
2018	3		802.62	851.45	753.79	24.47
2018	4		711.20	760.02	662.371	24.468
2018	5		709.856	758.708	661.004	24.482
2018	6		951.01	1,000.55	901.467	24.828
2018	7		1,281.76	1,330.85	1,232.67	24.6
2018	8		1,296.68	1,345.53	1,247.83	24.48
2018	9		1,146.16	1,195.03	1,097.29	24.49
2018	10		788.027	836.84	739.213	24.463
2018	11		671.206	719.976	622.436	24.441
2018	12		847.45	895.93	798.98	24.293
2019	1		992.49	1,041.28	943.71	24.449
2019	2		899.16	947.95	850.37	24.45
2019	3		823.60	872.43	774.77	24.472
2019	4		691.314	740.17	642.454	24.486
2019	5		685.797	734.702	636.891	24.509
2019	6		951.813	1,001.35	902.275	24.825
2019	7		1,254.96	1,304.17	1,205.76	24.659
2019	8		1,282.15	1,331.05	1,233.26	24.502
2019	9		1,139.33	1,188.22	1,090.44	24.501
2019	10		782.596	831.415	733.778	24.465
2019	11		673.627	722.397	624.857	24.441
2019	12		831.77	880.14	783.40	24.24
2020	1		983.73	1,032.52	934.93	24.452
2020	2		891.43	940.22	842.63	24.453
2020	3		842.65	891.49	793.81	24.475
2020	4		684.715	733.59	635.838	24.494
2020	5		679.901	728.824	630.977	24.518
2020	6		944.966	994.54	895.395	24.842
2020	7		1,247.08	1,296.33	1,197.84	24.676
2020	8		1,274.35	1,323.26	1,225.43	24.515
2020	9		1,132.03	1,180.94	1,083.11	24.513
2020	10		776.612	825.44	727.783	24.47
2020	11		667.378	716.15	618.606	24.442
2020	12		824.13	872.45	775.82	24.214
2021	1		975.76	1,024.56	926.96	24.455
2021	2		884.31	933.11	835.51	24.455
2021	3		809.24	858.09	760.40	24.48
2021	4		678.403	727.30	629.51	24.502
2021	5		674.07	723.013	625.127	24.527

2021	6	937.649	987.26	888.036	24.863
2021	7	1,237.85	1,287.14	1,188.56	24.701
2021	8	1,264.85	1,313.80	1,215.89	24.534
2021	9	1,123.07	1,172.02	1,074.12	24.531
2021	10	769.843	818.683	721.002	24.476
2021	11	660.323	709.099	611.547	24.444
2021	12	815.24	863.50	766.98	24.184
2022	1	966.99	1,015.80	918.19	24.458
2022	2	876.73	925.53	827.93	24.456
2022	3	802.23	851.08	753.38	24.481
2022	4	672.501	721.41	623.595	24.509
2022	5	668.779	717.74	619.818	24.537
2022	6	930.887	980.54	881.23	24.885
2022	7	1,230.10	1,279.44	1,180.77	24.724
2022	8	1,257.07	1,306.06	1,208.08	24.551
2022	9	1,115.99	1,164.97	1,067.00	24.546
2022	10	764.536	813.386	715.685	24.481
2022	11	654.986	703.765	606.207	24.445
2022	12	808.54	856.76	760.33	24.163
2023	1	960.07	1,008.88	911.27	24.46
2023	2	870.70	919.51	821.90	24.457
2023	3	796.62	845.48	747.77	24.482
2023	4	668.041	716.96	619.126	24.513
2023	5	664.831	713.807	615.855	24.544
2023	6	925.993	975.68	876.304	24.901
2023	7	1,223.98	1,273.35	1,174.60	24.744
2023	8	1,250.88	1,299.90	1,201.86	24.566
2023	9	1,110.26	1,159.27	1,061.26	24.56
2023	10	760.231	809.091	711.371	24.486
2023	11	650.483	699.265	601.7	24.447
2023	12	802.79	850.97	754.61	24.145
2024	1	953.91	1,002.72	905.10	24.462
2024	2	865.38	914.18	816.58	24.457
2024	3	817.39	866.23	768.54	24.478
2024	4	663.952	712.88	615.03	24.517
2024	5	661.322	710.311	612.334	24.55
2024	6	921.752	971.47	872.035	24.915
2024	7	1,218.78	1,268.19	1,169.37	24.76
2024	8	1,245.69	1,294.73	1,196.64	24.579
2024	9	1,105.50	1,154.53	1,056.47	24.571
2024	10	756.729	805.597	707.861	24.49
2024	11	646.701	695.486	597.916	24.448

2024	12	797.87	846.02	749.72	24.13
2025	1	947.14	995.96	898.33	24.465
2025	2	859.51	908.31	810.70	24.459
2025	3	786.27	835.13	737.42	24.483
2025	4	659.624	708.56	610.69	24.523
2025	5	657.661	706.665	608.658	24.558
2025	6	917.782	967.52	868.042	24.927
2025	7	1,214.40	1,263.83	1,164.97	24.773
2025	8	1,241.29	1,290.36	1,192.22	24.59
2025	9	1,101.25	1,150.30	1,052.19	24.583
2025	10	752.873	801.754	703.993	24.496
2025	11	642.343	691.133	593.554	24.451
2025	12	792.35	840.46	744.23	24.112
2026	1	941.27	990.10	892.45	24.468
2026	2	854.41	903.22	805.60	24.46
2026	3	781.55	830.41	732.70	24.484
2026	4	655.696	704.64	606.752	24.528
2026	5	654.445	703.462	605.428	24.564
2026	6	914.471	964.23	864.712	24.936
2026	7	1,210.91	1,260.36	1,161.46	24.782
2026	8	1,237.80	1,286.89	1,188.71	24.599
2026	9	1,097.80	1,146.87	1,048.73	24.592
2026	10	749.659	798.551	700.766	24.502
2026	11	638.487	687.28	589.693	24.452
2026	12	787.35	835.44	739.27	24.097
2027	1	935.67	984.50	886.84	24.47
2027	2	849.55	898.36	800.74	24.46
2027	3	777.09	825.95	728.24	24.484
2027	4	652.24	701.19	603.289	24.531
2027	5	651.712	700.74	602.684	24.57
2027	6	911.828	961.60	862.056	24.943
2027	7	1,208.14	1,257.60	1,158.67	24.79
2027	8	1,235.04	1,284.14	1,185.94	24.606
2027	9	1,095.03	1,144.12	1,045.95	24.601
2027	10	746.783	795.686	697.881	24.507
2027	11	634.904	683.701	586.107	24.454
2027	12	782.61	830.67	734.55	24.083
2028	1	930.69	979.52	881.86	24.473
2028	2	845.24	894.05	796.43	24.461
2028	3	798.17	847.02	749.32	24.479
2028	4	649.241	698.20	600.283	24.535
2028	5	649.424	698.462	600.386	24.575

2028	6	909.844	959.63	860.063	24.947
2028	7	1,206.23	1,255.70	1,156.75	24.794
2028	8	1,233.16	1,282.27	1,184.05	24.611
2028	9	1,093.05	1,142.15	1,043.95	24.607
2028	10	744.408	793.32	695.495	24.512
2028	11	631.763	680.563	582.963	24.456
2028	12	778.40	826.43	730.37	24.07
2029	1	926.15	974.98	877.31	24.475
2029	2	841.30	890.11	792.49	24.462
2029	3	769.55	818.40	720.69	24.484
2029	4	646.517	695.48	597.555	24.537
2029	5	647.433	696.479	598.387	24.579
2029	6	908.336	958.12	858.551	24.95
2029	7	1,205.06	1,254.53	1,155.58	24.795
2029	8	1,232.03	1,281.15	1,182.92	24.614
2029	9	1,091.74	1,140.85	1,042.63	24.612
2029	10	742.543	791.464	693.622	24.517
2029	11	629.046	677.849	580.244	24.457
2029	12	774.69	822.70	726.68	24.059
2030	1	920.35	969.19	871.50	24.478
2030	2	836.27	885.08	787.45	24.463
2030	3	764.87	813.73	716.01	24.486
2030	4	642.807	691.78	593.833	24.543
2030	5	644.448	693.509	595.387	24.587
2030	6	905.513	955.32	855.711	24.958
2030	7	1,202.16	1,251.65	1,152.66	24.803
2030	8	1,229.13	1,278.26	1,179.99	24.623
2030	9	1,088.75	1,137.88	1,039.62	24.622
2030	10	739.521	788.456	690.585	24.524
2030	11	625.317	674.125	576.509	24.46
2030	12	769.92	817.89	721.94	24.044
2031	1	915.27	964.13	866.42	24.481
2031	2	831.87	880.69	783.05	24.465
2031	3	760.79	809.65	711.92	24.488
2031	4	639.501	688.49	590.516	24.549
2031	5	641.982	691.056	592.908	24.593
2031	6	903.783	953.59	853.976	24.96
2031	7	1,201.04	1,250.53	1,151.55	24.803
2031	8	1,228.05	1,277.19	1,178.91	24.626
2031	9	1,087.32	1,136.46	1,038.18	24.628
2031	10	737.134	786.084	688.184	24.531
2031	11	621.929	670.743	573.116	24.462

2031	12	765.53	813.48	717.58	24.031
2032	1	910.11	958.97	861.26	24.484
2032	2	827.40	876.22	778.57	24.467
2032	3	781.15	830.01	732.30	24.483
2032	4	636.254	685.248	587.26	24.553
2032	5	639.548	688.635	590.461	24.599
2032	6	901.9	951.715	852.085	24.965
2032	7	1,199.49	1,248.99	1,149.99	24.806
2032	8	1,226.53	1,275.68	1,177.38	24.63
2032	9	1,085.56	1,134.72	1,036.40	24.636
2032	10	734.705	783.668	685.741	24.538
2032	11	618.579	667.398	569.761	24.465
2032	12	761.11	809.04	713.19	24.018
2033	1	905.18	954.05	856.32	24.487
2033	2	823.13	871.95	774.30	24.468
2033	3	752.75	801.62	703.88	24.49
2033	4	633.205	682.208	584.202	24.557
2033	5	637.267	686.365	588.168	24.605
2033	6	900.124	949.948	850.3	24.969
2033	7	1,197.84	1,247.35	1,148.33	24.81
2033	8	1,224.91	1,274.06	1,175.75	24.636
2033	9	1,083.73	1,132.91	1,034.56	24.643
2033	10	732.341	781.317	683.364	24.544
2033	11	615.352	664.175	566.529	24.467
2033	12	756.84	804.74	708.94	24.005
2034	1	900.51	949.38	851.64	24.49
2034	2	819.08	867.90	770.25	24.469
2034	3	749.02	797.90	700.15	24.491
2034	4	630.284	679.295	581.273	24.562
2034	5	635.082	684.192	585.972	24.611
2034	6	898.415	948.247	848.582	24.973
2034	7	1,196.49	1,246.01	1,146.98	24.814
2034	8	1,223.59	1,272.75	1,174.42	24.641
2034	9	1,082.20	1,131.39	1,033.02	24.65
2034	10	730.231	779.221	681.242	24.551
2034	11	612.41	661.237	563.582	24.47
2034	12	752.93	800.81	705.05	23.993
2035	1	896.23	945.10	847.35	24.493
2035	2	815.37	864.20	766.54	24.471
2035	3	745.64	794.51	696.77	24.492
2035	4	627.695	676.712	578.677	24.565
2035	5	633.195	682.315	584.075	24.616

2035	6	897.017	946.857	847.178	24.977
2035	7	1,195.39	1,244.91	1,145.87	24.816
2035	8	1,222.51	1,271.69	1,173.33	24.645
2035	9	1,080.93	1,130.13	1,031.73	24.656
2035	10	728.444	777.444	679.443	24.556
2035	11	609.808	658.64	560.977	24.471
2035	12	749.42	797.28	701.56	23.983
2036	1	892.19	941.07	843.31	24.496
2036	2	811.88	860.72	763.05	24.472
2036	3	766.47	815.33	717.62	24.484
2036	4	625.306	674.328	576.284	24.567
2036	5	631.485	680.614	582.356	24.621
2036	6	895.783	945.629	845.938	24.98
2036	7	1,194.43	1,243.96	1,144.91	24.819
2036	8	1,221.58	1,270.77	1,172.40	24.648
2036	9	1,079.81	1,129.02	1,030.60	24.662
2036	10	726.814	775.824	677.803	24.561
2036	11	607.391	656.225	558.556	24.473
2036	12	746.11	793.95	698.27	23.974
2037	1	888.16	937.05	839.28	24.5
2037	2	808.41	857.24	759.57	24.473
2037	3	739.30	788.17	690.43	24.492
2037	4	622.946	671.973	573.919	24.57
2037	5	629.784	678.922	580.647	24.625
2037	6	894.507	944.359	844.654	24.983
2037	7	1,193.45	1,242.98	1,143.92	24.821
2037	8	1,220.63	1,269.82	1,171.44	24.652
2037	9	1,078.69	1,127.91	1,029.47	24.668
2037	10	725.128	774.148	676.107	24.566
2037	11	604.953	653.79	556.115	24.475
2037	12	742.77	790.59	694.95	23.965
2038	1	884.44	933.33	835.54	24.503
2038	2	805.18	854.02	756.34	24.474
2038	3	736.36	785.23	687.49	24.492
2038	4	620.705	669.738	571.673	24.572
2038	5	628.163	677.31	579.017	24.629
2038	6	893.343	943.202	843.484	24.986
2038	7	1,192.65	1,242.18	1,143.11	24.823
2038	8	1,219.86	1,269.06	1,170.66	24.656
2038	9	1,077.72	1,126.95	1,028.48	24.673
2038	10	723.59	772.621	674.559	24.572
2038	11	602.688	651.529	553.847	24.476

2038	12	739.70	787.50	691.90	23.956
2039	1	880.70	929.60	831.80	24.506
2039	2	801.95	850.78	753.11	24.475
2039	3	733.40	782.27	684.53	24.492
2039	4	618.471	667.509	569.433	24.575
2039	5	626.529	675.685	577.374	24.634
2039	6	892.124	941.99	842.258	24.99
2039	7	1,191.73	1,241.26	1,142.19	24.826
2039	8	1,218.97	1,268.18	1,169.76	24.66
2039	9	1,076.66	1,125.90	1,027.41	24.679
2039	10	722.028	771.069	672.986	24.577
2039	11	600.431	649.275	551.586	24.478
2039	12	736.65	784.44	688.86	23.948
2040	1	877.02	925.92	828.11	24.509
2040	2	798.75	847.59	749.91	24.477
2040	3	754.10	802.95	705.24	24.483
2040	4	616.273	665.316	567.231	24.577
2040	5	624.837	674.002	575.672	24.639
2040	6	890.542	940.419	840.665	24.996
2040	7	1,190.04	1,239.59	1,140.49	24.832
2040	8	1,217.29	1,266.51	1,168.07	24.666
2040	9	1,074.97	1,124.23	1,025.71	24.686
2040	10	720.325	769.376	671.274	24.582
2040	11	598.217	647.064	549.369	24.48
2040	12	733.66	781.43	685.89	23.939
2041	1	872.23	921.14	823.31	24.513
2041	2	794.58	843.43	745.74	24.479
2041	3	726.57	775.45	677.69	24.496
2041	4	613.003	662.061	563.945	24.585
2041	5	622.215	671.398	573.032	24.648
2041	6	888.276	938.169	838.382	25.004
2041	7	1,188.06	1,237.62	1,138.49	24.839
2041	8	1,215.32	1,264.55	1,166.08	24.675
2041	9	1,072.78	1,122.06	1,023.50	24.697
2041	10	717.748	766.818	668.677	24.591
2041	11	594.95	643.806	546.094	24.484
2041	12	729.59	777.34	681.85	23.927
2042	1	867.80	916.72	818.88	24.516
2042	2	790.73	839.58	741.88	24.482
2042	3	722.95	771.84	674.07	24.499
2042	4	610.072	659.144	561	24.592
2042	5	619.881	669.082	570.681	24.656

2042	6	886.32	936.228	836.412	25.011
2042	7	1,186.31	1,235.89	1,136.73	24.846
2042	8	1,213.58	1,262.84	1,164.33	24.682
2042	9	1,070.84	1,120.15	1,021.54	24.708
2042	10	715.396	764.485	666.307	24.6
2042	11	591.952	640.816	543.088	24.488
2042	12	725.85	773.57	678.13	23.915
2043	1	863.87	912.80	814.95	24.519
2043	2	787.31	836.17	738.46	24.484
2043	3	719.75	768.64	670.86	24.501
2043	4	607.48	656.564	558.396	24.598
2043	5	617.851	667.066	568.636	24.664
2043	6	884.689	934.61	834.769	25.017
2043	7	1,185.01	1,234.60	1,135.42	24.85
2043	8	1,212.31	1,261.57	1,163.04	24.689
2043	9	1,069.35	1,118.68	1,020.03	24.716
2043	10	713.413	762.518	664.308	24.609
2043	11	589.34	638.21	540.469	24.491
2043	12	722.54	770.25	674.84	23.905
2044	1	860.41	909.34	811.48	24.522
2044	2	784.30	833.16	735.44	24.486
2044	3	740.11	788.99	691.24	24.494
2044	4	605.264	654.358	556.171	24.603
2044	5	616.158	665.386	566.931	24.67
2044	6	883.408	933.338	833.479	25.022
2044	7	1,184.08	1,233.68	1,134.49	24.854
2044	8	1,211.41	1,260.68	1,162.13	24.694
2044	9	1,068.25	1,117.58	1,018.92	24.724
2044	10	711.867	760.985	662.749	24.615
2044	11	587.181	636.057	538.304	24.494
2044	12	719.76	767.45	672.08	23.897
2045	1	857.16	906.09	808.22	24.525
2045	2	781.47	830.34	732.61	24.487
2045	3	714.33	763.23	665.43	24.505
2045	4	603.213	652.315	554.111	24.607
2045	5	614.615	663.854	565.376	24.676
2045	6	882.288	932.225	832.35	25.026
2045	7	1,183.35	1,232.95	1,133.75	24.857
2045	8	1,210.70	1,259.99	1,161.42	24.698
2045	9	1,067.34	1,116.69	1,017.99	24.73
2045	10	710.471	759.602	661.34	24.622
2045	11	585.18	634.062	536.299	24.497

2045	12	717.16	764.83	669.49	23.89
2046	1	854.07	903.02	805.13	24.527
2046	2	778.79	827.66	729.92	24.489
2046	3	711.84	760.74	662.94	24.506
2046	4	601.259	650.369	552.149	24.611
2046	5	613.152	662.402	563.903	24.681
2046	6	881.257	931.202	831.312	25.03
2046	7	1,182.66	1,232.27	1,133.06	24.86
2046	8	1,210.05	1,259.35	1,160.76	24.703
2046	9	1,066.49	1,115.85	1,017.13	24.737
2046	10	709.145	758.288	660.002	24.628
2046	11	583.261	632.147	534.374	24.499
2046	12	714.66	762.31	667.00	23.883
2047	1	851.61	900.55	802.66	24.529
2047	2	776.64	825.51	727.77	24.49
2047	3	709.83	758.74	660.93	24.508
2047	4	599.69	648.807	550.572	24.615
2047	5	612.034	661.293	562.775	24.686
2047	6	880.716	930.664	830.768	25.031
2047	7	1,182.67	1,232.28	1,133.07	24.86
2047	8	1,210.11	1,259.41	1,160.81	24.705
2047	9	1,066.26	1,115.63	1,016.89	24.742
2047	10	708.23	757.384	659.076	24.633
2047	11	581.742	630.633	532.851	24.501
2047	12	712.69	760.33	665.04	23.877
2048	1	849.25	898.20	800.30	24.531
2048	2	774.59	823.46	725.72	24.491
2048	3	730.78	779.67	681.90	24.499
2048	4	598.201	647.325	549.076	24.618
2048	5	610.984	660.253	561.716	24.69
2048	6	880.243	930.194	830.292	25.033
2048	7	1,182.75	1,232.36	1,133.15	24.86
2048	8	1,210.24	1,259.54	1,160.94	24.708
2048	9	1,066.11	1,115.49	1,016.73	24.746
2048	10	707.39	756.554	658.225	24.638
2048	11	580.306	629.201	531.411	24.503
2048	12	710.82	758.45	663.18	23.872
2049	1	847.03	895.98	798.07	24.533
2049	2	772.64	821.52	723.77	24.493
2049	3	706.11	755.02	657.20	24.511
2049	4	596.791	645.922	547.66	24.622
2049	5	610	659.277	560.724	24.695

2049	6	879.846	929.799	829.893	25.034
2049	7	1,182.93	1,232.53	1,133.32	24.86
2049	8	1,210.47	1,259.77	1,161.16	24.71
2049	9	1,066.06	1,115.44	1,016.67	24.751
2049	10	706.62	755.795	657.446	24.644
2049	11	578.951	627.85	530.052	24.505
2049	12	709.05	756.68	661.43	23.866
2050	1	844.90	893.85	795.94	24.535
2050	2	770.78	819.66	721.90	24.494
2050	3	704.37	753.28	655.46	24.512
2050	4	595.441	644.579	546.303	24.625
2050	5	609.062	658.347	559.777	24.699
2050	6	879.494	929.449	829.538	25.035
2050	7	1,183.15	1,232.76	1,133.54	24.859
2050	8	1,210.74	1,260.05	1,161.43	24.712
2050	9	1,066.05	1,115.44	1,016.65	24.755
2050	10	705.9	755.085	656.715	24.649
2050	11	577.656	626.559	528.753	24.507
2050	12	707.37	754.98	659.753	23.862

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Year	Month	LE_GS_NonPVSales	XHeat	XCool	XOther	Jan	Feb	Apr	May	Jun	Jul	Aug	Sep
2011	1	127,476,120.00	997.06	0	87,381.27	1	0	0	0	0	0	0	0
2011	2	111,386,310.00	783.17	0	74,043.41	0	1	0	0	0	0	0	0
2011	3	110,240,669.00	521.76	23.66	79,369.45	0	0	0	0	0	0	0	0
2011	4	105,559,587.00	329.52	221.56	79,371.67	0	0	1	0	0	0	0	0
2011	5	109,440,834.00	135.22	552.64	80,238.87	0	0	0	1	0	0	0	0
2011	6	134,338,941.00	37.92	2,300.10	82,020.18	0	0	0	0	1	0	0	0
2011	7	146,321,265.00	0	3,208.13	78,672.01	0	0	0	0	0	1	0	0
2011	8	160,099,938.00	0	4,210.67	79,990.35	0	0	0	0	0	0	1	0
2011	9	142,288,577.00	12.32	2,601.19	82,741.32	0	0	0	0	0	0	0	1
2011	10	107,906,716.00	90.33	443.03	80,143.29	0	0	0	0	0	0	0	0
2011	11	97,579,757.00	279.44	47.4	74,384.12	0	0	0	0	0	0	0	0
2011	12	104,555,025.00	480.36	15.78	81,087.49	0	0	0	0	0	0	0	0
2012	1	117,050,157.00	678.13	0	85,451.52	1	0	0	0	0	0	0	0
2012	2	111,386,887.00	603.17	0	75,987.89	0	1	0	0	0	0	0	0
2012	3	103,482,827.00	407.59	151.53	75,790.79	0	0	0	0	0	0	0	0
2012	4	104,521,938.00	132.62	517.82	78,426.59	0	0	1	0	0	0	0	0
2012	5	113,855,455.00	91.68	983.61	78,613.93	0	0	0	1	0	0	0	0
2012	6	132,328,421.00	7.02	2,113.99	80,858.08	0	0	0	0	1	0	0	0
2012	7	152,327,017.00	0.39	3,953.36	78,607.06	0	0	0	0	0	1	0	0
2012	8	146,541,211.00	0	3,691.89	78,153.15	0	0	0	0	0	0	1	0
2012	9	140,095,091.00	7.95	2,472.85	80,136.52	0	0	0	0	0	0	0	1
2012	10	105,692,442.00	113.21	446.52	75,790.00	0	0	0	0	0	0	0	0
2012	11	101,271,270.00	361.47	98.41	75,851.96	0	0	0	0	0	0	0	0
2012	12	101,629,301.00	493.99	20.82	77,948.68	0	0	0	0	0	0	0	0
2013	1	114,287,989.00	718.75	0	80,040.55	1	0	0	0	0	0	0	0
2013	2	111,312,025.00	688.64	0	73,746.56	0	1	0	0	0	0	0	0
2013	3	108,412,058.00	631.47	0	72,589.24	0	0	0	0	0	0	0	0
2013	4	102,641,840.00	407.1	161.41	73,184.34	0	0	1	0	0	0	0	0
2013	5	100,710,470.00	129.62	465.01	73,779.05	0	0	0	1	0	0	0	0
2013	6	122,700,857.00	22.93	1,688.86	76,748.30	0	0	0	0	1	0	0	0
2013	7	132,064,779.00	0	2,675.85	76,856.56	0	0	0	0	0	1	0	0
2013	8	133,750,360.00	0	2,468.84	76,322.64	0	0	0	0	0	0	1	0
2013	9	137,782,896.00	2.3	2,704.57	78,800.73	0	0	0	0	0	0	0	1
2013	10	112,713,305.00	69.57	847.96	76,283.15	0	0	0	0	0	0	0	0
2013	11	98,402,254.00	348.78	42.19	74,487.35	0	0	0	0	0	0	0	0
2013	12	111,073,308.00	675.76	0	80,630.11	0	0	0	0	0	0	0	0
2014	1	122,551,172.00	896.91	0	84,648.55	1	0	0	0	0	0	0	0
2014	2	114,156,696.00	877.23	0	74,523.63	0	1	0	0	0	0	0	0
2014	3	107,649,316.00	667.37	1.53	75,877.50	0	0	0	0	0	0	0	0
2014	4	95,039,863.00	296.19	137.23	76,101.14	0	0	1	0	0	0	0	0
2014	5	103,218,689.00	76.45	934.53	77,207.17	0	0	0	1	0	0	0	0

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2014	6	121,364,895.00	16.48	2,531.59	77,047.19	0	0	0	0	1	0	0	0
2014	7	134,739,912.00	0	2,886.95	78,105.41	0	0	0	0	0	1	0	0
2014	8	121,683,758.00	0	2,315.41	74,771.15	0	0	0	0	0	0	1	0
2014	9	127,954,397.00	13.35	2,403.92	78,165.08	0	0	0	0	0	0	0	1
2014	10	104,735,940.00	97.7	551.72	76,783.66	0	0	0	0	0	0	0	0
2014	11	94,003,270.00	401.01	31.11	75,609.09	0	0	0	0	0	0	0	0
2014	12	106,045,991.00	646.04	0	80,395.53	0	0	0	0	0	0	0	0
2015	1	113,786,998.00	784.01	0	80,755.29	1	0	0	0	0	0	0	0
2015	2	109,968,129.00	787.55	0	73,833.06	0	1	0	0	0	0	0	0
2015	3	107,725,673.00	712.46	0	75,196.21	0	0	0	0	0	0	0	0
2015	4	92,908,335.00	253.59	121.08	77,272.82	0	0	1	0	0	0	0	0
2015	5	97,375,562.00	93.42	717.22	70,996.16	0	0	0	1	0	0	0	0
2015	6	119,560,032.00	20.17	2,055.33	77,867.31	0	0	0	0	1	0	0	0
2015	7	128,888,158.00	0	2,870.61	75,121.34	0	0	0	0	0	1	0	0
2015	8	132,393,594.00	0	2,948.09	75,238.47	0	0	0	0	0	0	1	0
2015	9	130,192,353.00	3.33	2,295.79	79,840.52	0	0	0	0	0	0	0	1
2015	10	103,099,071.00	72.18	722.94	74,277.58	0	0	0	0	0	0	0	0
2015	11	91,546,430.00	235.84	81.69	74,649.60	0	0	0	0	0	0	0	0
2015	12	99,907,040.00	416.39	20.2	78,629.58	0	0	0	0	0	0	0	0
2016	1	107,890,814.00	617.95	7.71	78,994.25	1	0	0	0	0	0	0	0
2016	2	103,231,690.00	655.52	0	72,477.86	0	1	0	0	0	0	0	0
2016	3	94,740,789.00	399.86	16.9	71,252.20	0	0	0	0	0	0	0	0
2016	4	92,793,274.00	254.79	91.4	76,101.99	0	0	1	0	0	0	0	0
2016	5	95,029,019.00	91.88	431.48	73,256.27	0	0	0	1	0	0	0	0
2016	6	120,658,218.00	29.34	1,981.74	77,475.97	0	0	0	0	1	0	0	0
2016	7	135,635,548.00	0	3,219.18	78,334.07	0	0	0	0	0	1	0	0
2016	8	139,281,618.00	0	3,618.14	75,340.79	0	0	0	0	0	0	1	0
2016	9	138,517,211.00	1.49	3,076.75	78,219.84	0	0	0	0	0	0	0	1
2016	10	103,120,425.00	41.6	1,227.32	73,041.50	0	0	0	0	0	0	0	0
2016	11	94,184,583.00	192.72	356.61	74,672.54	0	0	0	0	0	0	0	0
2016	12	100,646,719.00	563.77	3.73	78,680.48	0	0	0	0	0	0	0	0
2017	1	105,476,211.00	654.38	5.52	80,398.90	1	0	0	0	0	0	0	0
2017	2	92,904,464.00	464.38	5.52	72,497.09	0	1	0	0	0	0	0	0
2017	3	89,136,375.00	368.12	29.42	72,199.49	0	0	0	0	0	0	0	0
2017	4	94,946,419.00	189.37	316.01	75,260.51	0	0	1	0	0	0	0	0
2017	5	99,668,095.00	78.39	848.29	75,958.83	0	0	0	1	0	0	0	0
2017	6	121,797,807.00	10.75	1,887.31	78,276.78	0	0	0	0	1	0	0	0
2017	7	130,909,759.00	0	2,970.16	77,620.26	0	0	0	0	0	1	0	0
2017	8	124,954,028.00	0	2,695.93	73,453.90	0	0	0	0	0	0	1	0
2017	9	114,763,016.00	14.38	1,592.49	77,020.12	0	0	0	0	0	0	0	1
2017	10	105,513,852.00	45.42	1,083.56	75,773.01	0	0	0	0	0	0	0	0
2017	11	91,498,194.00	302.49	127.53	72,106.14	0	0	0	0	0	0	0	0

2017	12	95,677,791.00	559.1	7	77,171.13	0	0	0	0	0	0	0	0
2018	1		709.46	3.17	79,561.57	1	0	0	0	0	0	0	0
2018	2		654.45	0.63	71,871.26	0	1	0	0	0	0	0	0
2018	3		516.81	16.22	72,076.42	0	0	0	0	0	0	0	0
2018	4		271.46	181.18	77,373.57	0	0	1	0	0	0	0	0
2018	5		103.23	546.62	76,345.43	0	0	0	1	0	0	0	0
2018	6		21.64	1,716.78	75,688.34	0	0	0	0	1	0	0	0
2018	7		0.21	2,857.28	77,790.93	0	0	0	0	0	1	0	0
2018	8		0.08	3,014.44	75,511.20	0	0	0	0	0	0	1	0
2018	9		4.3	2,405.23	76,725.57	0	0	0	0	0	0	0	1
2018	10		71.84	816.99	76,574.67	0	0	0	0	0	0	0	0
2018	11		272.95	104.09	75,286.86	0	0	0	0	0	0	0	0
2018	12		525.05	9.11	78,770.53	0	0	0	0	0	0	0	0
2019	1		707.18	3.17	78,720.51	1	0	0	0	0	0	0	0
2019	2		651.04	0.63	71,867.81	0	1	0	0	0	0	0	0
2019	3		513.09	16.14	74,710.63	0	0	0	0	0	0	0	0
2019	4		269.03	179.99	75,793.59	0	0	1	0	0	0	0	0
2019	5		102.11	541.95	74,039.83	0	0	0	1	0	0	0	0
2019	6		21.37	1,698.72	76,135.87	0	0	0	0	1	0	0	0
2019	7		0.21	2,821.29	76,159.86	0	0	0	0	0	1	0	0
2019	8		0.08	2,970.47	74,631.48	0	0	0	0	0	0	1	0
2019	9		4.22	2,365.35	76,180.98	0	0	0	0	0	0	0	1
2019	10		70.3	801.47	75,820.43	0	0	0	0	0	0	0	0
2019	11		266.57	101.91	75,237.14	0	0	0	0	0	0	0	0
2019	12		511.74	8.9	76,785.27	0	0	0	0	0	0	0	0
2020	1		693.7	3.12	78,103.75	1	0	0	0	0	0	0	0
2020	2		639.1	0.62	71,356.75	0	1	0	0	0	0	0	0
2020	3		504.05	15.95	76,700.14	0	0	0	0	0	0	0	0
2020	4		264.33	177.89	75,320.38	0	0	1	0	0	0	0	0
2020	5		100.39	536.02	73,630.18	0	0	0	1	0	0	0	0
2020	6		21.02	1,681.31	75,768.39	0	0	0	0	1	0	0	0
2020	7		0.21	2,792.02	75,782.61	0	0	0	0	0	1	0	0
2020	8		0.08	2,941.71	74,313.86	0	0	0	0	0	0	1	0
2020	9		4.15	2,344.08	75,909.58	0	0	0	0	0	0	0	1
2020	10		69.25	794.17	75,540.57	0	0	0	0	0	0	0	0
2020	11		262.77	101.05	75,010.96	0	0	0	0	0	0	0	0
2020	12		504.77	8.83	76,606.73	0	0	0	0	0	0	0	0
2021	1		684.84	3.1	78,005.49	1	0	0	0	0	0	0	0
2021	2		631.05	0.62	71,279.76	0	1	0	0	0	0	0	0
2021	3		497.79	15.85	74,166.30	0	0	0	0	0	0	0	0
2021	4		260.84	176.61	75,191.70	0	0	1	0	0	0	0	0
2021	5		99.08	532.25	73,517.53	0	0	0	1	0	0	0	0

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2021	6	20.75	1,669.77	75,666.00	0	0	0	0	1	0	0	0
2021	7	0.2	2,774.68	75,729.83	0	0	0	0	0	1	0	0
2021	8	0.07	2,923.96	74,275.36	0	0	0	0	0	0	1	0
2021	9	4.1	2,330.36	75,883.79	0	0	0	0	0	0	0	1
2021	10	68.51	790.42	75,601.07	0	0	0	0	0	0	0	0
2021	11	259.99	100.59	75,084.42	0	0	0	0	0	0	0	0
2021	12	499.53	8.79	76,695.40	0	0	0	0	0	0	0	0
2022	1	670.94	3.07	78,115.54	1	0	0	0	0	0	0	0
2022	2	618.21	0.61	71,376.43	0	1	0	0	0	0	0	0
2022	3	487.63	15.69	74,262.83	0	0	0	0	0	0	0	0
2022	4	255.87	175.11	75,393.05	0	0	1	0	0	0	0	0
2022	5	97.19	527.71	73,710.39	0	0	0	1	0	0	0	0
2022	6	20.35	1,655.46	75,860.36	0	0	0	0	1	0	0	0
2022	7	0.2	2,750.20	75,905.07	0	0	0	0	0	1	0	0
2022	8	0.07	2,898.00	74,443.17	0	0	0	0	0	0	1	0
2022	9	4.02	2,309.54	76,051.10	0	0	0	0	0	0	0	1
2022	10	67.14	783.03	75,736.25	0	0	0	0	0	0	0	0
2022	11	254.8	99.65	75,214.57	0	0	0	0	0	0	0	0
2022	12	489.53	8.71	76,824.15	0	0	0	0	0	0	0	0
2023	1	668.19	3.05	78,110.60	1	0	0	0	0	0	0	0
2023	2	615.54	0.61	71,355.30	0	1	0	0	0	0	0	0
2023	3	485.41	15.59	74,223.60	0	0	0	0	0	0	0	0
2023	4	254.35	173.79	75,251.21	0	0	1	0	0	0	0	0
2023	5	96.59	523.59	73,554.68	0	0	0	1	0	0	0	0
2023	6	20.22	1,642.14	75,682.61	0	0	0	0	1	0	0	0
2023	7	0.2	2,727.50	75,711.33	0	0	0	0	0	1	0	0
2023	8	0.07	2,873.43	74,236.06	0	0	0	0	0	0	1	0
2023	9	4	2,289.43	75,822.07	0	0	0	0	0	0	0	1
2023	10	66.65	775.97	75,484.23	0	0	0	0	0	0	0	0
2023	11	252.87	98.72	74,947.11	0	0	0	0	0	0	0	0
2023	12	485.71	8.63	76,533.46	0	0	0	0	0	0	0	0
2024	1	662.19	3.03	77,968.47	1	0	0	0	0	0	0	0
2024	2	610	0.6	71,225.46	0	1	0	0	0	0	0	0
2024	3	481.04	15.49	76,550.77	0	0	0	0	0	0	0	0
2024	4	252.08	172.61	75,117.65	0	0	1	0	0	0	0	0
2024	5	95.73	520.03	73,424.12	0	0	0	1	0	0	0	0
2024	6	20.04	1,630.99	75,548.28	0	0	0	0	1	0	0	0
2024	7	0.2	2,708.62	75,566.78	0	0	0	0	0	1	0	0
2024	8	0.07	2,853.53	74,094.32	0	0	0	0	0	0	1	0
2024	9	3.96	2,273.57	75,677.31	0	0	0	0	0	0	0	1
2024	10	66.02	770.36	75,317.01	0	0	0	0	0	0	0	0
2024	11	250.49	98.01	74,781.08	0	0	0	0	0	0	0	0

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2024	12	481.15	8.57	76,363.92	0	0	0	0	0	0	0	0
2025	1	655.87	3.01	77,791.12	1	0	0	0	0	0	0	0
2025	2	604.18	0.6	71,063.45	0	1	0	0	0	0	0	0
2025	3	476.46	15.37	73,920.02	0	0	0	0	0	0	0	0
2025	4	249.65	171.32	74,940.53	0	0	1	0	0	0	0	0
2025	5	94.81	516.17	73,251.00	0	0	0	1	0	0	0	0
2025	6	19.85	1,618.88	75,370.14	0	0	0	0	1	0	0	0
2025	7	0.19	2,688.10	75,377.42	0	0	0	0	0	1	0	0
2025	8	0.07	2,831.92	73,908.66	0	0	0	0	0	0	1	0
2025	9	3.92	2,256.35	75,487.68	0	0	0	0	0	0	0	1
2025	10	65.39	764.72	75,147.41	0	0	0	0	0	0	0	0
2025	11	248.11	97.29	74,612.68	0	0	0	0	0	0	0	0
2025	12	476.57	8.5	76,191.95	0	0	0	0	0	0	0	0
2026	1	647.11	2.99	77,626.47	1	0	0	0	0	0	0	0
2026	2	596.12	0.59	70,913.04	0	1	0	0	0	0	0	0
2026	3	470.1	15.25	73,763.56	0	0	0	0	0	0	0	0
2026	4	246.36	169.91	74,792.50	0	0	1	0	0	0	0	0
2026	5	93.56	511.9	73,106.30	0	0	0	1	0	0	0	0
2026	6	19.59	1,605.50	75,221.26	0	0	0	0	1	0	0	0
2026	7	0.19	2,666.91	75,257.47	0	0	0	0	0	1	0	0
2026	8	0.07	2,809.59	73,791.04	0	0	0	0	0	0	1	0
2026	9	3.87	2,238.57	75,367.55	0	0	0	0	0	0	0	1
2026	10	64.56	758.76	75,034.70	0	0	0	0	0	0	0	0
2026	11	244.95	96.53	74,500.78	0	0	0	0	0	0	0	0
2026	12	470.5	8.44	76,077.68	0	0	0	0	0	0	0	0
2027	1	639.3	2.96	77,576.06	1	0	0	0	0	0	0	0
2027	2	588.92	0.59	70,866.99	0	1	0	0	0	0	0	0
2027	3	464.42	15.14	73,715.66	0	0	0	0	0	0	0	0
2027	4	243.43	168.73	74,758.55	0	0	1	0	0	0	0	0
2027	5	92.44	508.36	73,073.12	0	0	0	1	0	0	0	0
2027	6	19.36	1,594.39	75,187.12	0	0	0	0	1	0	0	0
2027	7	0.19	2,648.00	75,210.47	0	0	0	0	0	1	0	0
2027	8	0.07	2,789.67	73,744.96	0	0	0	0	0	0	1	0
2027	9	3.82	2,222.69	75,320.48	0	0	0	0	0	0	0	1
2027	10	63.78	753.31	74,981.01	0	0	0	0	0	0	0	0
2027	11	241.98	95.84	74,447.47	0	0	0	0	0	0	0	0
2027	12	464.79	8.38	76,023.25	0	0	0	0	0	0	0	0
2028	1	631.61	2.94	77,560.79	1	0	0	0	0	0	0	0
2028	2	581.84	0.59	70,853.04	0	1	0	0	0	0	0	0
2028	3	458.84	15.03	76,150.51	0	0	0	0	0	0	0	0
2028	4	240.5	167.58	74,744.03	0	0	1	0	0	0	0	0
2028	5	91.33	504.9	73,058.93	0	0	0	1	0	0	0	0

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2028	6	19.12	1,583.54	75,172.52	0	0	0	0	1	0	0	0
2028	7	0.19	2,630.41	75,208.21	0	0	0	0	0	1	0	0
2028	8	0.07	2,771.14	73,742.74	0	0	0	0	0	0	1	0
2028	9	3.78	2,207.93	75,318.21	0	0	0	0	0	0	0	1
2028	10	63.02	748.35	74,982.84	0	0	0	0	0	0	0	0
2028	11	239.12	95.21	74,449.29	0	0	0	0	0	0	0	0
2028	12	459.3	8.32	76,025.10	0	0	0	0	0	0	0	0
2029	1	623.69	2.93	77,593.39	1	0	0	0	0	0	0	0
2029	2	574.54	0.58	70,882.82	0	1	0	0	0	0	0	0
2029	3	453.08	14.94	73,732.13	0	0	0	0	0	0	0	0
2029	4	237.53	166.57	74,788.92	0	0	1	0	0	0	0	0
2029	5	90.2	501.85	73,102.81	0	0	0	1	0	0	0	0
2029	6	18.89	1,573.97	75,217.66	0	0	0	0	1	0	0	0
2029	7	0.18	2,614.86	75,262.92	0	0	0	0	0	1	0	0
2029	8	0.07	2,754.76	73,796.39	0	0	0	0	0	0	1	0
2029	9	3.73	2,194.88	75,373.01	0	0	0	0	0	0	0	1
2029	10	62.27	744.11	75,055.99	0	0	0	0	0	0	0	0
2029	11	236.25	94.67	74,521.91	0	0	0	0	0	0	0	0
2029	12	453.79	8.27	76,099.26	0	0	0	0	0	0	0	0
2030	1	616.36	2.91	77,470.34	1	0	0	0	0	0	0	0
2030	2	567.78	0.58	70,770.41	0	1	0	0	0	0	0	0
2030	3	447.75	14.86	73,615.20	0	0	0	0	0	0	0	0
2030	4	234.74	165.65	74,671.88	0	0	1	0	0	0	0	0
2030	5	89.14	499.07	72,988.41	0	0	0	1	0	0	0	0
2030	6	18.66	1,565.26	75,099.96	0	0	0	0	1	0	0	0
2030	7	0.18	2,599.96	75,133.06	0	0	0	0	0	1	0	0
2030	8	0.07	2,739.06	73,669.06	0	0	0	0	0	0	1	0
2030	9	3.69	2,182.37	75,242.95	0	0	0	0	0	0	0	1
2030	10	61.52	739.83	74,922.93	0	0	0	0	0	0	0	0
2030	11	233.43	94.13	74,389.80	0	0	0	0	0	0	0	0
2030	12	448.37	8.23	75,964.36	0	0	0	0	0	0	0	0
2031	1	609.18	2.89	77,395.00	1	0	0	0	0	0	0	0
2031	2	561.17	0.58	70,701.59	0	1	0	0	0	0	0	0
2031	3	442.54	14.78	73,543.61	0	0	0	0	0	0	0	0
2031	4	231.95	164.74	74,580.92	0	0	1	0	0	0	0	0
2031	5	88.08	496.34	72,899.50	0	0	0	1	0	0	0	0
2031	6	18.44	1,556.67	75,008.47	0	0	0	0	1	0	0	0
2031	7	0.18	2,585.31	75,030.25	0	0	0	0	0	1	0	0
2031	8	0.07	2,723.63	73,568.26	0	0	0	0	0	0	1	0
2031	9	3.64	2,170.07	75,140.00	0	0	0	0	0	0	0	1
2031	10	60.78	735.6	74,814.49	0	0	0	0	0	0	0	0
2031	11	230.6	93.59	74,282.13	0	0	0	0	0	0	0	0

2031	12	442.94	8.18	75,854.40	0	0	0	0	0	0	0	0
2032	1	601.96	2.88	77,329.32	1	0	0	0	0	0	0	0
2032	2	554.53	0.57	70,641.59	0	1	0	0	0	0	0	0
2032	3	437.3	14.7	75,923.24	0	0	0	0	0	0	0	0
2032	4	229.22	163.86	74,522.00	0	0	1	0	0	0	0	0
2032	5	87.05	493.7	72,841.90	0	0	0	1	0	0	0	0
2032	6	18.23	1,548.39	74,949.21	0	0	0	0	1	0	0	0
2032	7	0.18	2,571.76	74,976.79	0	0	0	0	0	1	0	0
2032	8	0.07	2,709.35	73,515.83	0	0	0	0	0	0	1	0
2032	9	3.6	2,158.70	75,086.46	0	0	0	0	0	0	0	1
2032	10	60.06	731.72	74,758.57	0	0	0	0	0	0	0	0
2032	11	227.89	93.09	74,226.61	0	0	0	0	0	0	0	0
2032	12	437.74	8.14	75,797.71	0	0	0	0	0	0	0	0
2033	1	595.15	2.86	77,290.87	1	0	0	0	0	0	0	0
2033	2	548.25	0.57	70,606.46	0	1	0	0	0	0	0	0
2033	3	432.35	14.62	73,444.66	0	0	0	0	0	0	0	0
2033	4	226.64	163.02	74,490.27	0	0	1	0	0	0	0	0
2033	5	86.07	491.16	72,810.89	0	0	0	1	0	0	0	0
2033	6	18.02	1,540.43	74,917.30	0	0	0	0	1	0	0	0
2033	7	0.18	2,558.82	74,953.03	0	0	0	0	0	1	0	0
2033	8	0.06	2,695.72	73,492.54	0	0	0	0	0	0	1	0
2033	9	3.56	2,147.83	75,062.67	0	0	0	0	0	0	0	1
2033	10	59.4	728.14	74,744.68	0	0	0	0	0	0	0	0
2033	11	225.38	92.64	74,212.82	0	0	0	0	0	0	0	0
2033	12	432.92	8.1	75,783.63	0	0	0	0	0	0	0	0
2034	1	588.81	2.85	77,330.70	1	0	0	0	0	0	0	0
2034	2	542.41	0.57	70,642.85	0	1	0	0	0	0	0	0
2034	3	427.74	14.56	73,482.51	0	0	0	0	0	0	0	0
2034	4	224.18	162.27	74,515.37	0	0	1	0	0	0	0	0
2034	5	85.14	488.89	72,835.42	0	0	0	1	0	0	0	0
2034	6	17.83	1,533.33	74,942.54	0	0	0	0	1	0	0	0
2034	7	0.17	2,546.86	74,973.74	0	0	0	0	0	1	0	0
2034	8	0.06	2,683.12	73,512.84	0	0	0	0	0	0	1	0
2034	9	3.52	2,137.80	75,083.40	0	0	0	0	0	0	0	1
2034	10	58.75	724.7	74,762.17	0	0	0	0	0	0	0	0
2034	11	222.92	92.2	74,230.18	0	0	0	0	0	0	0	0
2034	12	428.19	8.06	75,801.36	0	0	0	0	0	0	0	0
2035	1	582.48	2.84	77,369.04	1	0	0	0	0	0	0	0
2035	2	536.58	0.56	70,677.87	0	1	0	0	0	0	0	0
2035	3	423.14	14.49	73,518.94	0	0	0	0	0	0	0	0
2035	4	221.8	161.54	74,561.11	0	0	1	0	0	0	0	0
2035	5	84.23	486.68	72,880.13	0	0	0	1	0	0	0	0

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2035	6	17.64	1,526.39	74,988.55	0	0	0	0	1	0	0	0
2035	7	0.17	2,535.45	75,022.98	0	0	0	0	0	1	0	0
2035	8	0.06	2,671.09	73,561.13	0	0	0	0	0	0	1	0
2035	9	3.48	2,128.22	75,132.72	0	0	0	0	0	0	0	1
2035	10	58.14	721.5	74,815.99	0	0	0	0	0	0	0	0
2035	11	220.57	91.79	74,283.62	0	0	0	0	0	0	0	0
2035	12	423.68	8.02	75,855.93	0	0	0	0	0	0	0	0
2036	1	576.76	2.83	77,452.65	1	0	0	0	0	0	0	0
2036	2	531.31	0.56	70,754.25	0	1	0	0	0	0	0	0
2036	3	418.99	14.43	76,044.33	0	0	0	0	0	0	0	0
2036	4	219.64	160.88	74,647.20	0	0	1	0	0	0	0	0
2036	5	83.41	484.72	72,964.28	0	0	0	1	0	0	0	0
2036	6	17.46	1,520.23	75,075.13	0	0	0	0	1	0	0	0
2036	7	0.17	2,525.42	75,115.40	0	0	0	0	0	1	0	0
2036	8	0.06	2,660.53	73,651.75	0	0	0	0	0	0	1	0
2036	9	3.45	2,119.80	75,225.27	0	0	0	0	0	0	0	1
2036	10	57.58	718.68	74,911.31	0	0	0	0	0	0	0	0
2036	11	218.45	91.43	74,378.26	0	0	0	0	0	0	0	0
2036	12	419.6	7.99	75,952.57	0	0	0	0	0	0	0	0
2037	1	570.94	2.82	77,571.86	1	0	0	0	0	0	0	0
2037	2	525.94	0.56	70,863.16	0	1	0	0	0	0	0	0
2037	3	414.76	14.38	73,711.67	0	0	0	0	0	0	0	0
2037	4	217.44	160.31	74,769.91	0	0	1	0	0	0	0	0
2037	5	82.58	482.98	73,084.23	0	0	0	1	0	0	0	0
2037	6	17.29	1,514.78	75,198.55	0	0	0	0	1	0	0	0
2037	7	0.17	2,516.86	75,253.80	0	0	0	0	0	1	0	0
2037	8	0.06	2,651.51	73,787.45	0	0	0	0	0	0	1	0
2037	9	3.42	2,112.61	75,363.87	0	0	0	0	0	0	0	1
2037	10	57.01	716.27	75,052.87	0	0	0	0	0	0	0	0
2037	11	216.32	91.13	74,518.82	0	0	0	0	0	0	0	0
2037	12	415.51	7.96	76,096.10	0	0	0	0	0	0	0	0
2038	1	565.49	2.81	77,726.85	1	0	0	0	0	0	0	0
2038	2	520.93	0.56	71,004.74	0	1	0	0	0	0	0	0
2038	3	410.8	14.33	73,858.94	0	0	0	0	0	0	0	0
2038	4	215.35	159.8	74,914.41	0	0	1	0	0	0	0	0
2038	5	81.78	481.46	73,225.47	0	0	0	1	0	0	0	0
2038	6	17.12	1,510.03	75,343.88	0	0	0	0	1	0	0	0
2038	7	0.17	2,508.90	75,397.36	0	0	0	0	0	1	0	0
2038	8	0.06	2,643.12	73,928.21	0	0	0	0	0	0	1	0
2038	9	3.38	2,105.93	75,507.64	0	0	0	0	0	0	0	1
2038	10	56.46	713.95	75,189.68	0	0	0	0	0	0	0	0
2038	11	214.22	90.83	74,654.65	0	0	0	0	0	0	0	0

2038	12	411.47	7.94	76,234.81	0	0	0	0	0	0	0	0
2039	1	560.04	2.8	77,876.21	1	0	0	0	0	0	0	0
2039	2	515.91	0.56	71,141.18	0	1	0	0	0	0	0	0
2039	3	406.84	14.29	74,000.87	0	0	0	0	0	0	0	0
2039	4	213.27	159.29	75,053.88	0	0	1	0	0	0	0	0
2039	5	80.99	479.92	73,361.79	0	0	0	1	0	0	0	0
2039	6	16.96	1,505.18	75,484.14	0	0	0	0	1	0	0	0
2039	7	0.17	2,500.69	75,533.32	0	0	0	0	0	1	0	0
2039	8	0.06	2,634.48	74,061.52	0	0	0	0	0	0	1	0
2039	9	3.35	2,099.05	75,643.80	0	0	0	0	0	0	0	1
2039	10	55.92	711.78	75,342.53	0	0	0	0	0	0	0	0
2039	11	212.18	90.56	74,806.42	0	0	0	0	0	0	0	0
2039	12	407.55	7.91	76,389.79	0	0	0	0	0	0	0	0
2040	1	554.65	2.79	78,042.65	1	0	0	0	0	0	0	0
2040	2	510.94	0.55	71,293.23	0	1	0	0	0	0	0	0
2040	3	402.92	14.25	76,623.61	0	0	0	0	0	0	0	0
2040	4	211.26	158.88	75,230.65	0	0	1	0	0	0	0	0
2040	5	80.23	478.67	73,534.58	0	0	0	1	0	0	0	0
2040	6	16.8	1,501.26	75,661.93	0	0	0	0	1	0	0	0
2040	7	0.16	2,493.96	75,704.41	0	0	0	0	0	1	0	0
2040	8	0.06	2,627.39	74,229.27	0	0	0	0	0	0	1	0
2040	9	3.32	2,093.40	75,815.14	0	0	0	0	0	0	0	1
2040	10	55.4	709.94	75,521.15	0	0	0	0	0	0	0	0
2040	11	210.18	90.32	74,983.76	0	0	0	0	0	0	0	0
2040	12	403.72	7.89	76,570.89	0	0	0	0	0	0	0	0
2041	1	549.44	2.78	78,183.08	1	0	0	0	0	0	0	0
2041	2	506.14	0.55	71,421.51	0	1	0	0	0	0	0	0
2041	3	399.14	14.21	74,292.47	0	0	0	0	0	0	0	0
2041	4	209.31	158.46	75,378.08	0	0	1	0	0	0	0	0
2041	5	79.49	477.42	73,678.68	0	0	0	1	0	0	0	0
2041	6	16.64	1,497.33	75,810.20	0	0	0	0	1	0	0	0
2041	7	0.16	2,486.94	75,837.62	0	0	0	0	0	1	0	0
2041	8	0.06	2,619.99	74,359.89	0	0	0	0	0	0	1	0
2041	9	3.29	2,087.50	75,948.54	0	0	0	0	0	0	0	1
2041	10	54.86	707.78	75,637.22	0	0	0	0	0	0	0	0
2041	11	208.15	90.05	75,099.00	0	0	0	0	0	0	0	0
2041	12	399.82	7.87	76,688.57	0	0	0	0	0	0	0	0
2042	1	544.26	2.78	78,301.38	1	0	0	0	0	0	0	0
2042	2	501.37	0.55	71,529.58	0	1	0	0	0	0	0	0
2042	3	395.38	14.17	74,404.89	0	0	0	0	0	0	0	0
2042	4	207.29	157.99	75,475.53	0	0	1	0	0	0	0	0
2042	5	78.72	476	73,773.93	0	0	0	1	0	0	0	0

2042	6	16.48	1,492.90	75,908.21	0	0	0	0	1	0	0	0
2042	7	0.16	2,480.85	75,974.79	0	0	0	0	0	1	0	0
2042	8	0.06	2,613.57	74,494.38	0	0	0	0	0	0	1	0
2042	9	3.26	2,082.39	76,085.91	0	0	0	0	0	0	0	1
2042	10	54.38	706.33	75,804.12	0	0	0	0	0	0	0	0
2042	11	206.33	89.86	75,264.72	0	0	0	0	0	0	0	0
2042	12	396.33	7.85	76,857.79	0	0	0	0	0	0	0	0
2043	1	539.65	2.77	78,458.13	1	0	0	0	0	0	0	0
2043	2	497.13	0.55	71,672.77	0	1	0	0	0	0	0	0
2043	3	392.03	14.14	74,553.84	0	0	0	0	0	0	0	0
2043	4	205.59	157.69	75,646.56	0	0	1	0	0	0	0	0
2043	5	78.07	475.09	73,941.11	0	0	0	1	0	0	0	0
2043	6	16.35	1,490.03	76,080.22	0	0	0	0	1	0	0	0
2043	7	0.16	2,475.79	76,138.05	0	0	0	0	0	1	0	0
2043	8	0.06	2,608.25	74,654.47	0	0	0	0	0	0	1	0
2043	9	3.23	2,078.14	76,249.42	0	0	0	0	0	0	0	1
2043	10	53.93	704.88	75,965.77	0	0	0	0	0	0	0	0
2043	11	204.62	89.68	75,425.22	0	0	0	0	0	0	0	0
2043	12	393.03	7.84	77,021.69	0	0	0	0	0	0	0	0
2044	1	535.82	2.76	78,639.96	1	0	0	0	0	0	0	0
2044	2	493.59	0.55	71,838.88	0	1	0	0	0	0	0	0
2044	3	389.24	14.12	77,210.05	0	0	0	0	0	0	0	0
2044	4	204.14	157.44	75,825.31	0	0	1	0	0	0	0	0
2044	5	77.52	474.34	74,115.83	0	0	0	1	0	0	0	0
2044	6	16.23	1,487.68	76,259.99	0	0	0	0	1	0	0	0
2044	7	0.16	2,472.12	76,324.97	0	0	0	0	0	1	0	0
2044	8	0.06	2,604.38	74,837.75	0	0	0	0	0	0	1	0
2044	9	3.21	2,075.06	76,436.61	0	0	0	0	0	0	0	1
2044	10	53.57	704.01	76,171.58	0	0	0	0	0	0	0	0
2044	11	203.24	89.57	75,629.57	0	0	0	0	0	0	0	0
2044	12	390.39	7.83	77,230.36	0	0	0	0	0	0	0	0
2045	1	531.68	2.76	78,795.36	1	0	0	0	0	0	0	0
2045	2	489.78	0.55	71,980.84	0	1	0	0	0	0	0	0
2045	3	386.24	14.09	74,874.29	0	0	0	0	0	0	0	0
2045	4	202.56	157.16	75,976.30	0	0	1	0	0	0	0	0
2045	5	76.93	473.5	74,263.42	0	0	0	1	0	0	0	0
2045	6	16.11	1,485.04	76,411.85	0	0	0	0	1	0	0	0
2045	7	0.16	2,467.55	76,471.34	0	0	0	0	0	1	0	0
2045	8	0.06	2,599.57	74,981.26	0	0	0	0	0	0	1	0
2045	9	3.18	2,071.23	76,583.19	0	0	0	0	0	0	0	1
2045	10	53.14	702.59	76,304.90	0	0	0	0	0	0	0	0
2045	11	201.63	89.39	75,761.94	0	0	0	0	0	0	0	0

2045	12	387.29	7.81	77,365.54	0	0	0	0	0	0	0	0
2046	1	527.75	2.76	78,980.39	1	0	0	0	0	0	0	0
2046	2	486.16	0.55	72,149.87	0	1	0	0	0	0	0	0
2046	3	383.39	14.08	75,050.11	0	0	0	0	0	0	0	0
2046	4	201.09	157.02	76,162.42	0	0	1	0	0	0	0	0
2046	5	76.36	473.07	74,445.34	0	0	0	1	0	0	0	0
2046	6	15.99	1,483.69	76,599.04	0	0	0	0	1	0	0	0
2046	7	0.16	2,465.60	76,667.97	0	0	0	0	0	1	0	0
2046	8	0.06	2,597.51	75,174.06	0	0	0	0	0	0	1	0
2046	9	3.16	2,069.59	76,780.11	0	0	0	0	0	0	0	1
2046	10	52.77	702.13	76,511.96	0	0	0	0	0	0	0	0
2046	11	200.21	89.33	75,967.52	0	0	0	0	0	0	0	0
2046	12	384.56	7.81	77,575.47	0	0	0	0	0	0	0	0
2047	1	524.37	2.76	79,216.54	1	0	0	0	0	0	0	0
2047	2	483.04	0.55	72,365.60	0	1	0	0	0	0	0	0
2047	3	380.93	14.08	75,274.51	0	0	0	0	0	0	0	0
2047	4	199.8	157.01	76,390.83	0	0	1	0	0	0	0	0
2047	5	75.88	473.05	74,668.60	0	0	0	1	0	0	0	0
2047	6	15.89	1,483.63	76,828.76	0	0	0	0	1	0	0	0
2047	7	0.16	2,465.55	76,898.97	0	0	0	0	0	1	0	0
2047	8	0.06	2,597.46	75,400.56	0	0	0	0	0	0	1	0
2047	9	3.14	2,069.55	77,011.45	0	0	0	0	0	0	0	1
2047	10	52.44	702.17	76,748.59	0	0	0	0	0	0	0	0
2047	11	198.94	89.34	76,202.47	0	0	0	0	0	0	0	0
2047	12	382.13	7.81	77,815.39	0	0	0	0	0	0	0	0
2048	1	521	2.76	79,435.04	1	0	0	0	0	0	0	0
2048	2	479.94	0.55	72,565.20	0	1	0	0	0	0	0	0
2048	3	378.48	14.08	77,990.68	0	0	0	0	0	0	0	0
2048	4	198.52	157.02	76,602.22	0	0	1	0	0	0	0	0
2048	5	75.39	473.08	74,875.23	0	0	0	1	0	0	0	0
2048	6	15.78	1,483.74	77,041.36	0	0	0	0	1	0	0	0
2048	7	0.15	2,465.75	77,112.85	0	0	0	0	0	1	0	0
2048	8	0.06	2,597.67	75,610.27	0	0	0	0	0	0	1	0
2048	9	3.12	2,069.71	77,225.64	0	0	0	0	0	0	0	1
2048	10	52.1	702.29	76,968.16	0	0	0	0	0	0	0	0
2048	11	197.69	89.35	76,420.48	0	0	0	0	0	0	0	0
2048	12	379.72	7.81	78,038.02	0	0	0	0	0	0	0	0
2049	1	517.5	2.76	79,638.58	1	0	0	0	0	0	0	0
2049	2	476.71	0.55	72,751.13	0	1	0	0	0	0	0	0
2049	3	375.93	14.07	75,675.54	0	0	0	0	0	0	0	0
2049	4	197.18	156.95	76,799.18	0	0	1	0	0	0	0	0
2049	5	74.88	472.88	75,067.75	0	0	0	1	0	0	0	0

2049	6	15.68	1,483.09	77,239.45	0	0	0	0	1	0	0	0
2049	7	0.15	2,464.71	77,312.21	0	0	0	0	0	1	0	0
2049	8	0.06	2,596.57	75,805.75	0	0	0	0	0	0	1	0
2049	9	3.1	2,068.84	77,425.29	0	0	0	0	0	0	0	1
2049	10	51.76	702.05	77,173.27	0	0	0	0	0	0	0	0
2049	11	196.38	89.32	76,624.13	0	0	0	0	0	0	0	0
2049	12	377.2	7.81	78,245.98	0	0	0	0	0	0	0	0
2050	1	514	2.76	79,826.09	1	0	0	0	0	0	0	0
2050	2	473.5	0.55	72,922.43	0	1	0	0	0	0	0	0
2050	3	373.4	14.08	75,853.73	0	0	0	0	0	0	0	0
2050	4	195.86	157.09	76,980.70	0	0	1	0	0	0	0	0
2050	5	74.38	473.28	75,245.17	0	0	0	1	0	0	0	0
2050	6	15.57	1,484.37	77,422.00	0	0	0	0	1	0	0	0
2050	7	0.15	2,466.88	77,496.03	0	0	0	0	0	1	0	0
2050	8	0.06	2,598.86	75,985.98	0	0	0	0	0	0	1	0
2050	9	3.08	2,070.66	77,609.38	0	0	0	0	0	0	0	1
2050	10	51.41	702.72	77,362.90	0	0	0	0	0	0	0	0
2050	11	195.07	89.4	76,812.41	0	0	0	0	0	0	0	0
2050	12	374.7	7.81	78,438.24	0	0	0	0	0	0	0	0

Oct	Nov	Dec	Aft13	Aft16	XMissing	YMissing
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Sinclair

Variable	Count	Mean	StdDev	Min	Max	Skewness
LE_GS_NonPVSales	84	113,651,179.64	16,411,275.73	89,136,375.00	160,099,938.00	0.681
XHeat	84	275.745	287.887	0	997.06	0.707
XCool	84	1,051.86	1,255.50	0	4,210.67	0.863
XOther	84	77,059.82	3,150.85	70,996.16	87,381.27	0.582
Jan	84	0.083	0.278	0	1	3.015
Feb	84	0.083	0.278	0	1	3.015
Apr	84	0.083	0.278	0	1	3.015
May	84	0.083	0.278	0	1	3.015
Jun	84	0.083	0.278	0	1	3.015
Jul	84	0.083	0.278	0	1	3.015
Aug	84	0.083	0.278	0	1	3.015
Sep	84	0.083	0.278	0	1	3.015
Oct	84	0.083	0.278	0	1	3.015
Nov	84	0.083	0.278	0	1	3.015
Dec	84	0.083	0.278	0	1	3.015
Aft13	84	0.571	0.498	0	1	-0.289
Aft16	84	0.143	0.352	0	1	2.041

Kurtosis	Jarque-Bera	Probability	CorrYX	Units	Definition
2.651	6.9	3.15E-02	1		
2.172	9.4	9.14E-03	-0.399		
2.305	12.1	2.33E-03	0.869		
3.655	6.2	4.41E-02	0.454		
10.091	303.3	0.00E+00	0.034		
10.091	303.3	0.00E+00	-0.109		
10.091	303.3	0.00E+00	-0.283		
10.091	303.3	0.00E+00	-0.201		
10.091	303.3	0.00E+00	0.204		
10.091	303.3	0.00E+00	0.437		
10.091	303.3	0.00E+00	0.431		
10.091	303.3	0.00E+00	0.359		
10.091	303.3	0.00E+00	-0.139		
10.091	303.3	0.00E+00	-0.336		
10.091	303.3	0.00E+00	-0.201		
1.083	14	9.01E-04	-0.268		
5.167	74.8	1.11E-16	-0.201		

	LE_GS_NonPVSales	XHeat	XCool	XOther	Jan	Feb	Apr	May
LE_GS_NonPVSales	1	-0.399	0.869	0.454	0.034	-0.109	-0.283	-0.201
XHeat	-0.399	1	-0.747	0.116	0.514	0.441	-0.01	-0.186
XCool	0.869	-0.747	1	0.15	-0.254	-0.254	-0.2	-0.084
XOther	0.454	0.116	0.15	1	0.526	-0.307	-0.051	-0.129
Jan	0.034	0.514	-0.254	0.526	1	-0.091	-0.091	-0.091
Feb	-0.109	0.441	-0.254	-0.307	-0.091	1	-0.091	-0.091
Apr	-0.283	-0.01	-0.2	-0.051	-0.091	-0.091	1	-0.091
May	-0.201	-0.186	-0.084	-0.129	-0.091	-0.091	-0.091	1
Jun	0.204	-0.269	0.248	0.15	-0.091	-0.091	-0.091	-0.091
Jul	0.437	-0.29	0.498	0.054	-0.091	-0.091	-0.091	-0.091
Aug	0.431	-0.291	0.503	-0.085	-0.091	-0.091	-0.091	-0.091
Sep	0.359	-0.282	0.338	0.213	-0.091	-0.091	-0.091	-0.091
Oct	-0.139	-0.211	-0.07	-0.101	-0.091	-0.091	-0.091	-0.091
Nov	-0.336	0.029	-0.227	-0.243	-0.091	-0.091	-0.091	-0.091
Dec	-0.201	0.287	-0.252	0.208	-0.091	-0.091	-0.091	-0.091
Aft13	-0.268	-0.028	-0.024	-0.31	0	0	0	0
Aft16	-0.201	-0.074	-0.029	-0.184	0	0	0	0

Jun	Jul	Aug	Sep	Oct	Nov	Dec	Aft13	Aft16
0.204	0.437	0.431	0.359	-0.139	-0.336	-0.201	-0.268	-0.201
-0.269	-0.29	-0.291	-0.282	-0.211	0.029	0.287	-0.028	-0.074
0.248	0.498	0.503	0.338	-0.07	-0.227	-0.252	-0.024	-0.029
0.15	0.054	-0.085	0.213	-0.101	-0.243	0.208	-0.31	-0.184
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	0	0
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	0	0
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	0	0
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	0	0
1	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	0	0
-0.091	1	-0.091	-0.091	-0.091	-0.091	-0.091	0	0
-0.091	-0.091	1	-0.091	-0.091	-0.091	-0.091	0	0
-0.091	-0.091	-0.091	1	-0.091	-0.091	-0.091	0	0
-0.091	-0.091	-0.091	-0.091	1	-0.091	-0.091	0	0
-0.091	-0.091	-0.091	-0.091	-0.091	1	-0.091	0	0
-0.091	-0.091	-0.091	-0.091	-0.091	-0.091	1	0	0
0	0	0	0	0	0	0	1	0.354
0	0	0	0	0	0	0	0.354	1

Variable	Coefficient	StdErr	T-Stat	P-Value	Units	Definition
CommercialVars.XHeat	31132.574	3136.494	9.926	0.00%		
CommercialVars.XCool	12510.181	794.707	15.742	0.00%		
CommercialVars.XOther	1193.398	24.918	47.893	0.00%		
BinaryVars.Jan	-3812802.597	1264686.862	-3.015	0.36%		
BinaryVars.Feb	955021.879	1197245.583	0.798	42.78%		
BinaryVars.Apr	-1099726.834	1390587.163	-0.791	43.18%		
BinaryVars.May	3451133.864	1755833.293	1.966	5.34%		
BinaryVars.Jun	7173244.794	2377996.539	3.017	0.36%		
BinaryVars.Jul	8682262.34	2922747.776	2.971	0.41%		
BinaryVars.Aug	9790625.638	2919628.853	3.353	0.13%		
BinaryVars.Sep	10561865.54	2580521.332	4.093	0.01%		
BinaryVars.Oct	6501426.592	1823534.309	3.565	0.07%		
BinaryVars.Nov	-1319811.091	1289860.564	-1.023	30.98%		
BinaryVars.Dec	-5955339.581	1116745.328	-5.333	0.00%		
BinaryVars.Aft13	-4735744.272	474345.88	-9.984	0.00%		
BinaryVars.Aft16	-1876394.351	702776.4	-2.67	0.95%		

Model Statistics		Forecast Statistics	
Iterations		1	Forecast Observations
Adjusted Observations		84	Mean Abs. Dev. (MAD)
Deg. of Freedom for Error		68	Mean Abs. % Err. (MAPE)
R-Squared		0.988	Avg. Forecast Error
Adjusted R-Squared		0.985	Mean % Error
AIC		29.213	Root Mean-Square Error
BIC		29.676	Theil's Inequality Coefficient
F-Statistic	#NA		#NAME?
Prob (F-Statistic)	#NA		#NAME?
Log-Likelihood		-1,330.15	#NAME?
Model Sum of Squares	22,075,101,256,893,900.00		
Sum of Squared Errors	279,286,337,047,066.00		
Mean Squared Error	4,107,152,015,398.03		
Std. Error of Regression	2,026,610.97		
Mean Abs. Dev. (MAD)	1,503,078.85		
Mean Abs. % Err. (MAPE)	1.34%		
Durbin-Watson Statistic	2.04		
Durbin-H Statistic	#NA		
Ljung-Box Statistic	34.4		
Prob (Ljung-Box)	0.0777		
Skewness	-0.153		
Kurtosis	2.713		
Jarque-Bera	0.617		
Prob (Jarque-Bera)	0.7346		

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Year	Month	Actual	Pred	Resid	%Resid	StdResid
2011	1	127,476,120.00	131,508,942.98	-4,032,822.98	-3.16%	-1.99
2011	2	111,386,310.00	113,700,387.69	-2,314,077.69	-2.08%	-1.142
2011	3	110,240,669.00	111,259,187.75	-1,018,518.75	-0.92%	-0.503
2011	4	105,559,587.00	106,652,754.41	-1,093,167.41	-1.04%	-0.539
2011	5	109,440,834.00	110,331,320.80	-890,486.80	-0.81%	-0.439
2011	6	134,338,941.00	135,011,112.57	-672,171.57	-0.50%	-0.332
2011	7	146,321,265.00	142,703,531.42	3,617,733.58	2.47%	1.785
2011	8	160,099,938.00	157,927,205.94	2,172,732.06	1.36%	1.072
2011	9	142,288,577.00	142,230,010.37	58,566.63	0.04%	0.029
2011	10	107,906,716.00	110,498,972.25	-2,592,256.25	-2.40%	-1.279
2011	11	97,579,757.00	96,742,715.62	837,041.38	0.86%	0.413
2011	12	104,555,025.00	105,966,552.43	-1,411,527.43	-1.35%	-0.696
2012	1	117,050,157.00	119,276,942.30	-2,226,785.30	-1.90%	-1.099
2012	2	111,386,887.00	110,417,104.62	969,782.38	0.87%	0.479
2012	3	103,482,827.00	105,033,597.78	-1,550,770.78	-1.50%	-0.765
2012	4	104,521,938.00	103,101,292.93	1,420,645.07	1.36%	0.701
2012	5	113,855,455.00	112,428,271.97	1,427,183.03	1.25%	0.704
2012	6	132,328,421.00	130,334,074.12	1,994,346.88	1.51%	0.984
2012	7	152,327,017.00	151,961,144.21	365,872.79	0.24%	0.181
2012	8	146,541,211.00	149,244,655.75	-2,703,444.75	-1.84%	-1.334
2012	9	140,095,091.00	137,379,861.27	2,715,229.73	1.94%	1.34
2012	10	105,692,442.00	106,059,744.06	-367,302.06	-0.35%	-0.181
2012	11	101,271,270.00	101,686,541.64	-415,271.64	-0.41%	-0.205
2012	12	101,629,301.00	102,708,180.80	-1,078,879.80	-1.06%	-0.532
2013	1	114,287,989.00	114,084,011.63	203,977.37	0.18%	0.101
2013	2	111,312,025.00	110,403,170.89	908,854.12	0.82%	0.448
2013	3	108,412,058.00	106,287,084.29	2,124,973.71	1.96%	1.049
2013	4	102,641,840.00	100,931,626.89	1,710,213.11	1.67%	0.844
2013	5	100,710,470.00	101,351,642.87	-641,172.87	-0.64%	-0.316
2013	6	122,700,857.00	120,606,388.82	2,094,468.18	1.71%	1.033
2013	7	132,064,779.00	133,878,060.28	-1,813,281.28	-1.37%	-0.895
2013	8	133,750,360.00	131,759,598.58	1,990,761.42	1.49%	0.982
2013	9	137,782,896.00	138,508,646.51	-725,750.51	-0.53%	-0.358
2013	10	112,713,305.00	110,311,527.00	2,401,778.00	2.13%	1.185
2013	11	98,402,254.00	98,959,587.38	-557,333.38	-0.57%	-0.275
2013	12	111,073,308.00	111,306,724.89	-233,416.89	-0.21%	-0.115
2014	1	122,551,172.00	120,394,118.89	2,157,053.11	1.76%	1.064
2014	2	114,156,696.00	112,466,084.81	1,690,611.19	1.48%	0.834
2014	3	107,649,316.00	106,612,347.23	1,036,968.77	0.96%	0.512
2014	4	95,039,863.00	95,921,481.28	-881,618.28	-0.93%	-0.435
2014	5	103,218,689.00	104,925,340.09	-1,706,651.09	-1.65%	-0.842

2014	6	121,364,895.00	126,568,982.32	-5,204,087.32	-4.29%	-2.568
2014	7	134,739,912.00	133,273,675.41	1,466,236.59	1.09%	0.723
2014	8	121,683,758.00	123,252,798.69	-1,569,040.69	-1.29%	-0.774
2014	9	127,954,397.00	129,597,074.59	-1,642,677.59	-1.28%	-0.811
2014	10	104,735,940.00	103,342,998.74	1,392,941.26	1.33%	0.687
2014	11	94,003,270.00	97,049,965.49	-3,046,695.49	-3.24%	-1.503
2014	12	106,045,991.00	105,365,697.25	680,293.76	0.64%	0.336
2015	1	113,786,998.00	112,232,935.49	1,554,062.51	1.37%	0.767
2015	2	109,968,129.00	108,849,964.05	1,118,164.95	1.02%	0.552
2015	3	107,725,673.00	107,184,084.05	541,588.96	0.50%	0.267
2015	4	92,908,335.00	95,791,237.94	-2,882,902.94	-3.10%	-1.423
2015	5	97,375,562.00	95,323,072.65	2,052,489.35	2.11%	1.013
2015	6	119,560,032.00	121,704,532.89	-2,144,500.89	-1.79%	-1.058
2015	7	128,888,158.00	129,508,036.12	-619,878.12	-0.48%	-0.306
2015	8	132,393,594.00	131,725,437.02	668,156.98	0.50%	0.33
2015	9	130,192,353.00	129,931,993.62	260,359.38	0.20%	0.128
2015	10	103,099,071.00	101,699,799.82	1,399,271.18	1.36%	0.69
2015	11	91,546,430.00	91,395,517.56	150,912.44	0.16%	0.074
2015	12	99,907,040.00	96,361,382.69	3,545,657.31	3.55%	1.75
2016	1	107,890,814.00	105,058,030.72	2,832,783.29	2.63%	1.398
2016	2	103,231,690.00	103,122,196.25	109,493.75	0.11%	0.054
2016	3	94,740,789.00	92,956,589.91	1,784,199.09	1.88%	0.88
2016	4	92,793,274.00	94,060,005.91	-1,266,731.91	-1.37%	-0.625
2016	5	95,029,019.00	94,397,553.84	631,465.16	0.66%	0.312
2016	6	120,658,218.00	120,602,481.68	55,736.32	0.05%	0.028
2016	7	135,635,548.00	137,702,738.87	-2,067,190.87	-1.52%	-1.02
2016	8	139,281,618.00	140,230,005.76	-948,387.76	-0.68%	-0.468
2016	9	138,517,211.00	137,710,536.96	806,674.04	0.58%	0.398
2016	10	103,120,425.00	105,582,410.56	-2,461,985.56	-2.39%	-1.215
2016	11	94,184,583.00	93,519,548.79	665,034.21	0.71%	0.328
2016	12	100,646,719.00	100,804,524.07	-157,805.07	-0.16%	-0.078
2017	1	105,476,211.00	105,964,478.98	-488,267.98	-0.46%	-0.241
2017	2	92,904,464.00	95,387,292.70	-2,482,828.70	-2.67%	-1.225
2017	3	89,136,375.00	91,379,094.70	-2,242,719.70	-2.52%	-1.107
2017	4	94,946,419.00	91,952,856.65	2,993,562.36	3.15%	1.477
2017	5	99,668,095.00	100,540,921.79	-872,826.79	-0.88%	-0.431
2017	6	121,797,807.00	117,921,598.60	3,876,208.40	3.18%	1.913
2017	7	130,909,759.00	131,859,251.70	-949,492.70	-0.73%	-0.469
2017	8	124,954,028.00	124,564,805.26	389,222.74	0.31%	0.192
2017	9	114,763,016.00	116,235,417.68	-1,472,401.68	-1.28%	-0.727
2017	10	105,513,852.00	105,286,298.57	227,553.43	0.22%	0.112
2017	11	91,498,194.00	89,131,881.51	2,366,312.50	2.59%	1.168

2017	12	95,677,791.00	97,022,112.87	-1,344,321.87	-1.41%	-0.663
2018	1		106,650,629.29			
2018	2		100,496,508.81			
2018	3		95,696,234.00			
2018	4		95,343,454.28			
2018	5		98,001,704.34			
2018	6		113,038,491.67			
2018	7		130,657,402.68			
2018	8		131,007,063.99			
2018	9		125,737,519.04			
2018	10		103,730,456.38			
2018	11		91,715,080.42			
2018	12		97,897,241.91			
2019	1		105,575,815.16			
2019	2		100,386,323.66			
2019	3		98,723,227.47			
2019	4		93,367,481.87			
2019	5		95,156,750.47			
2019	6		113,337,934.44			
2019	7		128,260,530.18			
2019	8		129,407,014.66			
2019	9		124,586,146.61			
2019	10		102,588,472.95			
2019	11		91,429,930.59			
2019	12		95,111,093.06			
2020	1		104,419,617.55			
2020	2		99,404,511.53			
2020	3		100,813,450.80			
2020	4		92,630,048.29			
2020	5		94,540,275.33			
2020	6		112,670,907.05			
2020	7		127,444,055.86			
2020	8		128,668,181.37			
2020	9		123,994,265.60			
2020	10		102,130,309.90			
2020	11		91,030,691.24			
2020	12		94,680,276.48			
2021	1		104,026,283.84			
2021	2		99,061,998.50			
2021	3		97,593,434.02			
2021	4		92,351,651.21			
2021	5		94,317,881.16			

2021	6	112,395,962.26
2021	7	127,164,059.32
2021	8	128,400,179.50
2021	9	123,790,234.84
2021	10	102,132,462.04
2021	11	91,026,227.48
2021	12	94,622,444.04
2022	1	103,724,603.42
2022	2	98,777,586.25
2022	3	97,390,572.16
2022	4	92,418,537.88
2022	5	94,432,378.55
2022	6	112,436,453.68
2022	7	127,066,758.74
2022	8	128,275,639.16
2022	9	123,726,989.86
2022	10	102,158,890.71
2022	11	91,008,033.22
2022	12	94,463,565.76
2023	1	103,632,902.00
2023	2	98,669,004.97
2023	3	97,273,291.23
2023	4	92,185,588.57
2023	5	94,176,391.65
2023	6	112,053,699.83
2023	7	126,551,585.05
2023	8	127,720,991.07
2023	9	123,201,171.76
2023	10	101,754,383.22
2023	11	90,617,217.22
2023	12	93,996,695.45
2024	1	103,275,971.32
2024	2	98,341,693.37
2024	3	99,913,317.86
2024	4	91,940,578.92
2024	5	93,949,202.60
2024	6	111,748,251.49
2024	7	126,142,751.12
2024	8	127,302,913.37
2024	9	122,828,960.18
2024	10	101,465,180.32
2024	11	90,336,274.72

2024	12	93,651,680.44
2025	1	102,867,404.83
2025	2	97,967,150.42
2025	3	96,629,509.52
2025	4	91,637,657.96
2025	5	93,665,601.56
2025	6	111,378,127.83
2025	7	125,660,083.76
2025	8	126,810,956.78
2025	9	122,386,037.11
2025	10	101,172,657.08
2025	11	90,052,118.19
2025	12	93,303,126.85
2026	1	102,398,017.92
2026	2	97,536,491.12
2026	3	96,243,162.85
2026	4	91,340,619.34
2026	5	93,400,568.27
2026	6	111,024,910.20
2026	7	125,251,744.38
2026	8	126,391,272.50
2026	9	122,018,579.94
2026	10	100,937,677.83
2026	11	89,810,693.58
2026	12	92,976,923.65
2027	1	102,094,399.47
2027	2	97,257,453.20
2027	3	96,007,973.69
2027	4	91,194,291.84
2027	5	93,282,050.46
2027	6	110,837,917.95
2027	7	124,959,034.01
2027	8	126,087,044.72
2027	9	121,762,401.66
2027	10	100,781,047.02
2027	11	89,645,845.84
2027	12	92,733,416.78
2028	1	101,836,582.16
2028	2	97,020,275.55
2028	3	98,738,555.23
2028	4	91,071,487.56
2028	5	93,187,230.73

2028	6	110,677,494.23
2028	7	124,736,196.94
2028	8	125,852,530.82
2028	9	121,573,564.51
2028	10	100,697,693.39
2028	11	89,551,171.49
2028	12	92,564,099.32
2029	1	101,628,603.15
2029	2	96,828,553.02
2029	3	95,672,114.01
2029	4	91,019,812.42
2029	5	93,166,295.40
2029	6	110,604,401.69
2029	7	124,606,888.30
2029	8	125,711,587.58
2029	9	121,474,227.16
2029	10	100,708,414.49
2029	11	89,541,798.00
2029	12	92,480,491.58
2030	1	101,253,174.97
2030	2	96,483,985.02
2030	3	95,365,631.13
2030	4	90,781,775.42
2030	5	92,962,029.34
2030	6	110,347,973.76
2030	7	124,265,440.11
2030	8	125,363,230.04
2030	9	121,161,176.58
2030	10	100,472,983.80
2030	11	89,289,464.34
2030	12	92,150,118.93
2031	1	100,939,552.99
2031	2	96,195,906.24
2031	3	95,116,843.39
2031	4	90,574,950.89
2031	5	92,788,674.68
2031	6	110,124,485.44
2031	7	123,959,428.94
2031	8	125,049,848.37
2031	9	120,883,105.94
2031	10	100,267,474.49
2031	11	89,066,170.88

2031	12	91,849,153.53
2032	1	100,636,404.39
2032	2	95,917,389.81
2032	3	97,792,561.76
2032	4	90,408,577.19
2032	5	92,654,594.23
2032	6	109,943,397.76
2032	7	123,725,998.56
2032	8	124,808,631.27
2032	9	120,675,553.97
2032	10	100,129,961.95
2032	11	88,909,443.65
2032	12	91,619,045.85
2033	1	100,378,229.40
2033	2	95,680,048.22
2033	3	94,679,585.92
2033	4	90,279,922.26
2033	5	92,555,360.51
2033	6	109,799,361.08
2033	7	123,535,676.76
2033	8	124,610,238.66
2033	9	120,510,009.06
2033	10	100,047,925.42
2033	11	88,809,164.70
2033	12	91,451,702.02
2034	1	100,228,250.98
2034	2	95,541,638.56
2034	3	94,580,577.34
2034	4	90,224,062.32
2034	5	92,527,280.95
2034	6	109,734,529.91
2034	7	123,410,760.81
2034	8	124,476,877.37
2034	9	120,408,004.06
2034	10	100,005,637.83
2034	11	88,747,728.60
2034	12	91,325,070.88
2035	1	100,076,749.60
2035	2	95,401,844.56
2035	3	94,480,032.05
2035	4	90,195,243.82
2035	5	92,524,777.42

2035	6	109,696,729.84
2035	7	123,326,653.24
2035	8	124,384,020.31
2035	9	120,345,817.07
2035	10	100,010,545.41
2035	11	88,733,334.03
2035	12	91,249,389.30
2036	1	99,998,369.01
2036	2	95,328,979.83
2036	3	97,363,766.28
2036	4	90,222,548.97
2036	5	92,575,097.51
2036	6	109,717,716.03
2036	7	123,311,458.89
2036	8	124,359,998.55
2036	9	120,349,934.65
2036	10	100,071,558.17
2036	11	88,775,685.27
2036	12	91,237,368.52
2037	1	99,959,150.18
2037	2	95,291,853.48
2037	3	94,447,559.72
2037	4	90,293,424.24
2037	5	92,670,534.92
2037	6	109,791,348.25
2037	7	123,369,475.36
2037	8	124,409,100.27
2037	9	120,424,392.52
2037	10	100,192,961.29
2037	11	88,873,266.38
2037	12	91,280,909.86
2038	1	99,974,399.91
2038	2	95,304,559.42
2038	3	94,499,554.54
2038	4	90,394,548.79
2038	5	92,795,436.38
2038	6	109,900,140.49
2038	7	123,441,154.46
2038	8	124,472,144.64
2038	9	120,511,345.05
2038	10	100,309,879.96
2038	11	88,966,241.94

2038	12	91,320,452.65
2039	1	99,982,836.65
2039	2	95,311,042.55
2039	3	94,545,087.79
2039	4	90,489,542.57
2039	5	92,914,083.42
2039	6	110,001,689.41
2039	7	123,500,725.12
2039	8	124,523,095.08
2039	9	120,586,660.21
2039	10	100,448,381.28
2039	11	89,080,352.77
2039	12	91,383,032.86
2040	1	100,013,585.60
2040	2	95,337,914.29
2040	3	97,552,664.20
2040	4	90,632,851.81
2040	5	93,080,946.06
2040	6	110,159,906.85
2040	7	123,620,656.03
2040	8	124,634,574.37
2040	9	120,719,470.34
2040	10	100,622,166.85
2040	11	89,227,025.94
2040	12	91,479,727.21
2041	1	100,018,858.71
2041	2	95,341,555.05
2041	3	94,652,355.11
2041	4	90,742,852.09
2041	5	93,214,182.78
2041	6	110,282,873.17
2041	7	123,691,706.87
2041	8	124,697,856.71
2041	9	120,803,941.15
2041	10	100,717,044.55
2041	11	89,297,950.03
2041	12	91,498,529.48
2042	1	99,998,680.03
2042	2	95,321,951.43
2042	3	94,668,872.90
2042	4	90,790,416.00
2042	5	93,286,286.68

2042	6	110,339,331.41
2042	7	123,779,157.84
2042	8	124,778,070.48
2042	9	120,902,981.67
2042	10	100,883,116.61
2042	11	89,436,751.21
2042	12	91,591,463.09
2043	1	100,042,280.16
2043	2	95,360,734.00
2043	3	94,742,076.51
2043	4	90,937,810.18
2043	5	93,454,262.20
2043	6	110,504,531.79
2043	7	123,910,717.16
2043	8	124,902,476.36
2043	9	121,044,181.31
2043	10	101,043,769.49
2043	11	89,572,451.34
2043	12	91,684,034.36
2044	1	100,139,805.44
2044	2	95,448,948.10
2044	3	97,824,966.65
2044	4	91,102,813.57
2044	5	93,636,241.72
2044	6	110,686,124.66
2044	7	124,087,831.77
2044	8	125,072,809.45
2044	9	121,228,331.44
2044	10	101,267,264.80
2044	11	89,772,138.79
2044	12	91,850,728.70
2045	1	100,196,452.01
2045	2	95,499,751.22
2045	3	94,943,622.04
2045	4	91,230,551.16
2045	5	93,783,244.52
2045	6	110,830,416.85
2045	7	124,205,288.97
2045	8	125,183,828.66
2045	9	121,354,488.77
2045	10	101,395,375.77
2045	11	89,877,601.37

2045	12	91,915,322.35
2046	1	100,294,855.15
2046	2	95,588,729.40
2046	3	95,064,368.07
2046	4	91,404,893.15
2046	5	93,977,498.05
2046	6	111,033,235.14
2046	7	124,415,544.86
2046	8	125,388,230.50
2046	9	121,568,326.57
2046	10	101,625,148.58
2046	11	90,078,083.00
2046	12	92,081,018.64
2047	1	100,471,260.27
2047	2	95,749,069.97
2047	3	95,255,579.54
2047	4	91,637,291.43
2047	5	94,228,485.46
2047	6	111,303,512.25
2047	7	124,690,499.69
2047	8	125,657,796.22
2047	9	121,843,198.08
2047	10	101,897,667.69
2047	11	90,319,171.97
2047	12	92,291,743.42
2048	1	100,627,123.89
2048	2	95,890,646.96
2048	3	98,420,863.86
2048	4	91,849,783.28
2048	5	94,460,313.75
2048	6	111,555,313.16
2048	7	124,948,230.59
2048	8	125,910,707.93
2048	9	122,100,302.88
2048	10	102,150,798.30
2048	11	90,540,357.93
2048	12	92,482,205.09
2049	1	100,761,026.49
2049	2	96,012,143.29
2049	3	95,578,734.03
2049	4	92,042,508.58
2049	5	94,671,738.79

2049	6	111,780,329.01
2049	7	125,173,108.16
2049	8	126,130,274.38
2049	9	122,326,998.65
2049	10	102,381,839.08
2049	11	90,742,289.37
2049	12	92,652,130.04
2050	1	100,876,084.24
2050	2	96,116,394.18
2050	3	95,712,526.47
2050	4	92,219,446.17
2050	5	94,872,885.72
2050	6	112,010,978.48
2050	7	125,419,594.44
2050	8	126,373,959.26
2050	9	122,568,827.70
2050	10	102,605,861.78
2050	11	90,927,408.17
2050	12	92,803,597.22

Variable	Coefficient	Mean	Elast	Units	Definition
XHeat	31132.574	275.745	0.076		
XCool	12510.181	1,051.86	0.116		
XOther	1193.398	77,059.82	0.809		
Jan	-3812802.597	0.083	-0.003		
Feb	955021.879	0.083	0.001		
Apr	-1099726.834	0.083	-0.001		
May	3451133.864	0.083	0.003		
Jun	7173244.794	0.083	0.005		
Jul	8682262.34	0.083	0.006		
Aug	9790625.638	0.083	0.007		
Sep	10561865.54	0.083	0.008		
Oct	6501426.592	0.083	0.005		
Nov	-1319811.091	0.083	-0.001		
Dec	-5955339.581	0.083	-0.004		
Aft13	-4735744.272	0.571	-0.024		
Aft16	-1876394.351	0.143	-0.002		

Year	Month	Pred	XHeat	XCool	XOther	Jan
2011	1	131,508,942.98	31,041,110.09		0 104,280,635.49	-3,812,802.60
2011	2	113,700,387.69	24,382,107.05		0 88,363,258.76	0
2011	3	111,259,187.75	16,243,847.72	295,989.93	94,719,350.10	0
2011	4	106,652,754.41	10,258,695.73	2,771,797.49	94,721,988.02	0
2011	5	110,331,320.80	4,209,644.96	6,913,633.21	95,756,908.76	0
2011	6	135,011,112.57	1,180,435.60	28,774,709.69	97,882,722.49	0
2011	7	142,703,531.42		0 40,134,245.85	93,887,023.23	0
2011	8	157,927,205.94		0 52,676,253.31	95,460,326.99	0
2011	9	142,230,010.37	383,426.29	32,541,389.93	98,743,328.62	0
2011	10	110,498,972.25	2,812,277.26	5,542,430.38	95,642,838.02	0
2011	11	96,742,715.62	8,699,712.26	592,957.15	88,769,857.30	0
2011	12	105,966,552.43	14,954,874.70	197,364.09	96,769,653.23	0
2012	1	119,276,942.30	21,112,071.92		0 101,977,672.98	-3,812,802.60
2012	2	110,417,104.62	18,778,288.85		0 90,683,793.90	0
2012	3	105,033,597.78	12,689,319.24	1,895,694.49	90,448,584.06	0
2012	4	103,101,292.93	4,128,838.94	6,478,043.53	93,594,137.30	0
2012	5	112,428,271.97	2,854,327.50	12,305,107.60	93,817,703.01	0
2012	6	130,334,074.12	218,543.78	26,446,408.48	96,495,877.07	0
2012	7	151,961,144.21	12,056.76	49,457,310.35	93,809,514.76	0
2012	8	149,244,655.75		0 46,186,216.63	93,267,813.49	0
2012	9	137,379,861.27	247,400.29	30,935,835.79	95,634,759.65	0
2012	10	106,059,744.06	3,524,603.17	5,586,078.96	90,447,635.34	0
2012	11	101,686,541.64	11,253,613.45	1,231,161.48	90,521,577.80	0
2012	12	102,708,180.80	15,379,227.86	260,493.17	93,023,799.35	0
2013	1	114,084,011.63	22,376,585.60		0 95,520,228.63	-3,812,802.60
2013	2	110,403,170.89	21,439,154.83		0 88,008,994.18	0
2013	3	106,287,084.29	19,659,234.40		0 86,627,849.89	0
2013	4	100,931,626.89	12,674,006.66	2,019,302.90	87,338,044.17	0
2013	5	101,351,642.87	4,035,375.43	5,817,355.59	88,047,777.98	0
2013	6	120,606,388.82	713,963.02	21,127,916.45	91,591,264.55	0
2013	7	133,878,060.28		0 33,475,335.41	91,720,462.54	0
2013	8	131,759,598.58		0.00 30,885,687.92	91,083,285.02	0
2013	9	138,508,646.51	71,541.33	33,834,608.17	94,040,631.46	0
2013	10	110,311,527.00	2,165,805.83	10,608,130.76	91,036,163.82	0
2013	11	98,959,587.38	10,858,555.60	527,789.86	88,893,053.01	0
2013	12	111,306,724.89	21,038,250.04		0 96,223,814.43	0
2014	1	120,394,118.89	27,923,248.23		0 101,019,417.53	-3,812,802.60
2014	2	112,466,084.81	27,310,458.28		0 88,936,348.93	0
2014	3	106,612,347.23	20,776,936.98	19,093.77	90,552,060.74	0
2014	4	95,921,481.28	9,221,223.10	1,716,781.26	90,818,948.03	0
2014	5	104,925,340.09	2,379,976.85	11,691,086.42	92,138,887.23	0

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2014	6	126,568,982.32	512,927.56	31,670,593.98	91,947,960.25	0
2014	7	133,273,675.41	0.00	36,116,310.89	93,210,846.45	0
2014	8	123,252,798.69	0.00	28,966,171.06	89,231,746.27	0
2014	9	129,597,074.59	415,472.43	30,073,425.34	93,282,055.56	0
2014	10	103,342,998.74	3,041,723.59	6,902,129.58	91,633,463.25	0
2014	11	97,049,965.49	12,484,617.71	389,159.87	90,231,743.28	0
2014	12	105,365,697.25	20,112,910.32	0	95,943,870.78	0
2015	1	112,232,935.49	24,408,283.73	0	96,373,198.63	-3,812,802.60
2015	2	108,849,964.05	24,518,455.05	0	88,112,231.39	0
2015	3	107,184,084.05	22,180,816.35	0	89,739,011.97	0
2015	4	95,791,237.94	7,894,796.66	1,514,678.85	92,217,233.54	0
2015	5	95,323,072.65	2,908,444.21	8,972,557.83	84,726,681.01	0
2015	6	121,704,532.89	627,820.47	25,712,513.61	92,926,698.29	0
2015	7	129,508,036.12	0	35,911,864.20	89,649,653.85	0
2015	8	131,725,437.02	0	36,881,120.25	89,789,435.41	0
2015	9	129,931,993.62	103,643.55	28,720,714.85	95,281,513.95	0
2015	10	101,699,799.82	2,247,281.59	9,044,123.89	88,642,712.02	0
2015	11	91,395,517.56	7,342,446.81	1,021,942.86	89,086,683.26	0
2015	12	96,361,382.69	12,963,368.01	252,715.62	93,836,382.91	0
2016	1	105,058,030.72	19,238,488.60	96,503.70	94,271,585.28	-3,812,802.60
2016	2	103,122,196.25	20,407,979.91	0	86,494,938.74	0
2016	3	92,956,589.91	12,448,680.90	211,417.90	85,032,235.38	0
2016	4	94,060,005.91	7,932,132.38	1,143,375.37	90,819,969.26	0
2016	5	94,397,553.84	2,860,434.80	5,397,840.99	87,423,888.45	0
2016	6	120,602,481.68	913,363.70	24,791,949.81	92,459,667.65	0
2016	7	137,702,738.87	0.00	40,272,491.80	93,483,729.01	0
2016	8	140,230,005.76	0	45,263,571.51	89,911,552.89	0
2016	9	137,710,536.96	46,346.16	38,490,668.14	93,347,401.40	0
2016	10	105,582,410.56	1,295,169.44	15,353,973.02	87,167,585.79	0
2016	11	93,519,548.79	5,999,816.24	4,461,225.55	89,114,062.37	0
2016	12	100,804,524.07	17,551,762.08	46,717.60	93,897,128.24	0
2017	1	105,964,478.98	20,372,419.74	69,106.88	95,947,893.59	-3,812,802.60
2017	2	95,387,292.70	14,457,459.70	69,060.30	86,517,889.44	0
2017	3	91,379,094.70	11,460,431.53	368,074.48	86,162,727.31	0
2017	4	91,952,856.65	5,895,579.31	3,953,395.59	89,815,747.20	0
2017	5	100,540,921.79	2,440,601.48	10,612,210.80	90,649,114.27	0
2017	6	117,921,598.60	334,545.69	23,610,587.38	93,415,359.37	0
2017	7	131,859,251.70	0.00	37,157,265.50	92,631,862.48	0
2017	8	124,564,805.26	0	33,726,574.51	87,659,743.74	0
2017	9	116,235,417.68	447,641.46	19,922,389.34	91,915,659.97	0
2017	10	105,286,298.57	1,414,102.58	13,555,552.07	90,427,355.96	0
2017	11	89,131,881.51	9,417,140.40	1,595,365.16	86,051,325.66	0

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2017	12	97,022,112.87	17,406,167.27	87,550.25	92,095,873.56	0
2018	1	106,650,629.29	22,087,314.31	39,632.07	94,948,624.13	-3,812,802.60
2018	2	100,496,508.81	20,374,712.26	7,890.25	85,771,023.05	0
2018	3	95,696,234.00	16,089,623.60	202,896.59	86,015,852.44	0
2018	4	95,343,454.28	8,451,319.10	2,266,536.30	92,337,464.34	0
2018	5	98,001,704.34	3,213,962.58	6,838,260.39	91,110,486.12	0
2018	6	113,038,491.67	673,862.68	21,477,206.38	90,326,316.43	0
2018	7	130,657,402.68	6,607.19	35,745,135.75	92,835,536.02	0
2018	8	131,007,063.99	2,427.52	37,711,228.32	90,114,921.13	0
2018	9	125,737,519.04	133,793.48	30,089,857.35	91,564,141.29	0
2018	10	103,730,456.38	2,236,433.02	10,220,672.62	91,384,062.77	0
2018	11	91,715,080.42	8,497,601.77	1,302,233.46	89,847,194.90	0
2018	12	97,897,241.91	16,346,141.28	113,983.78	94,004,595.06	0
2019	1	105,575,815.16	22,016,253.00	39,600.65	93,944,902.73	-3,812,802.60
2019	2	100,386,323.66	20,268,670.47	7,868.28	85,766,901.66	0
2019	3	98,723,227.47	15,973,917.32	201,927.44	89,159,521.32	0
2019	4	93,367,481.87	8,375,706.63	2,251,721.59	90,451,919.10	0
2019	5	95,156,750.47	3,178,822.49	6,779,944.69	88,358,988.05	0
2019	6	113,337,934.44	665,156.15	21,251,277.97	90,860,394.15	0
2019	7	128,260,530.18	6,508.13	35,294,871.29	90,889,027.04	0
2019	8	129,407,014.66	2,386.30	37,161,078.17	89,065,063.18	0
2019	9	124,586,146.61	131,255.79	29,590,937.10	90,914,226.80	0
2019	10	102,588,472.95	2,188,642.31	10,026,593.97	90,483,948.70	0
2019	11	91,429,930.59	8,299,118.04	1,274,909.84	89,787,852.43	0
2019	12	95,111,093.06	15,931,813.36	111,364.83	91,635,393.08	0
2020	1	104,419,617.55	21,596,622.03	39,076.33	93,208,860.41	-3,812,802.60
2020	2	99,404,511.53	19,896,852.02	7,769.76	85,157,006.49	0
2020	3	100,813,450.80	15,692,245.88	199,543.75	91,533,799.80	0
2020	4	92,630,048.29	8,229,244.22	2,225,472.81	89,887,196.71	0
2020	5	94,540,275.33	3,125,468.75	6,705,700.35	87,870,110.99	0
2020	6	112,670,907.05	654,456.57	21,033,492.17	90,421,852.14	0
2020	7	127,444,055.86	6,402.63	34,928,712.13	90,438,817.39	0
2020	8	128,668,181.37	2,349.26	36,801,336.14	88,686,008.96	0
2020	9	123,994,265.60	129,308.47	29,324,885.84	90,590,344.37	0
2020	10	102,130,309.90	2,155,893.26	9,935,163.05	90,149,965.63	0
2020	11	91,030,691.24	8,180,556.37	1,264,152.53	89,517,932.05	0
2020	12	94,680,276.48	15,714,936.56	110,500.59	91,422,317.53	0
2021	1	104,026,283.84	21,320,811.20	38,811.82	93,091,602.04	-3,812,802.60
2021	2	99,061,998.50	19,646,270.70	7,718.55	85,065,125.98	0
2021	3	97,593,434.02	15,497,393.54	198,264.07	88,509,915.03	0
2021	4	92,351,651.21	8,120,483.74	2,209,411.33	89,733,621.59	0
2021	5	94,317,881.16	3,084,713.31	6,658,495.70	87,735,676.91	0

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2021	6	112,395,962.26	646,038.09	20,889,161.54	90,299,656.46	0
2021	7	127,164,059.32	6,324.41	34,711,782.47	90,375,828.72	0
2021	8	128,400,179.50	2,320.97	36,579,306.42	88,640,065.09	0
2021	9	123,790,234.84	127,774.45	29,153,163.88	90,559,569.60	0
2021	10	102,132,462.04	2,132,748.06	9,888,254.46	90,222,171.55	0
2021	11	91,026,227.48	8,094,173.72	1,258,408.07	89,605,595.40	0
2021	12	94,622,444.04	15,551,763.30	110,018.05	91,528,140.89	0
2022	1	103,724,603.42	20,888,183.73	38,434.67	93,222,926.25	-3,812,802.60
2022	2	98,777,586.25	19,246,573.31	7,643.13	85,180,486.55	0
2022	3	97,390,572.16	15,181,276.59	196,316.03	88,625,118.17	0
2022	4	92,418,537.88	7,965,775.56	2,190,709.79	89,973,918.00	0
2022	5	94,432,378.55	3,025,779.68	6,601,775.08	87,965,828.54	0
2022	6	112,436,453.68	633,660.95	20,710,087.58	90,531,598.98	0
2022	7	127,066,758.74	6,201.67	34,405,474.31	90,584,959.04	0
2022	8	128,275,639.16	2,275.81	36,254,541.74	88,840,334.60	0
2022	9	123,726,989.86	125,280.99	28,892,755.58	90,759,226.37	0
2022	10	102,158,890.71	2,090,259.05	9,795,853.88	90,383,489.81	0
2022	11	91,008,033.22	7,932,487.35	1,246,580.90	89,760,914.69	0
2022	12	94,463,565.76	15,240,275.26	108,978.09	91,681,790.61	0
2023	1	103,632,902.00	20,802,592.80	38,212.62	93,217,037.80	-3,812,802.60
2023	2	98,669,004.97	19,163,246.83	7,597.21	85,155,277.68	0
2023	3	97,273,291.23	15,112,037.87	195,091.09	88,578,300.90	0
2023	4	92,185,588.57	7,918,710.75	2,174,093.38	89,804,649.91	0
2023	5	94,176,391.65	3,007,205.71	6,550,183.85	87,780,006.86	0
2023	6	112,053,699.83	629,625.60	20,543,493.53	90,319,474.53	0
2023	7	126,551,585.05	6,160.88	34,121,552.44	90,353,748.00	0
2023	8	127,720,991.07	2,260.32	35,947,078.82	88,593,164.92	0
2023	9	123,201,171.76	124,399.77	28,641,138.28	90,485,906.80	0
2023	10	101,754,383.22	2,074,898.10	9,707,466.24	90,082,730.91	0
2023	11	90,617,217.22	7,872,388.60	1,235,049.98	89,441,728.35	0
2023	12	93,996,695.45	15,121,351.05	107,945.35	91,334,877.26	0
2024	1	103,275,971.32	20,615,546.12	37,951.43	93,047,414.99	-3,812,802.60
2024	2	98,341,693.37	18,990,940.35	7,545.28	85,000,324.48	0
2024	3	99,913,317.86	14,976,157.86	193,757.60	91,355,541.02	0
2024	4	91,940,578.92	7,847,861.25	2,159,329.76	89,645,253.37	0
2024	5	93,949,202.60	2,980,299.94	6,505,703.52	87,624,203.91	0
2024	6	111,748,251.49	623,992.28	20,403,988.83	90,159,164.22	0
2024	7	126,142,751.12	6,104.94	33,885,282.74	90,181,239.72	0
2024	8	127,302,913.37	2,239.79	35,698,168.53	88,424,018.04	0
2024	9	122,828,960.18	123,270.16	28,442,816.90	90,313,146.20	0
2024	10	101,465,180.32	2,055,426.67	9,637,292.57	89,883,173.11	0
2024	11	90,336,274.72	7,798,511.88	1,226,122.01	89,243,590.55	0

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2024	12	93,651,680.44	14,979,448.01	107,165.03	91,132,545.61	0
2025	1	102,867,404.83	20,418,900.48	37,672.73	92,835,772.85	-3,812,802.60
2025	2	97,967,150.42	18,809,791.34	7,489.87	84,806,985.95	0
2025	3	96,629,509.52	14,833,304.69	192,334.72	88,216,008.74	0
2025	4	91,637,657.96	7,772,353.36	2,143,293.36	89,433,876.70	0
2025	5	93,665,601.56	2,951,625.10	6,457,388.50	87,417,592.72	0
2025	6	111,378,127.83	617,988.56	20,252,457.32	89,946,575.79	0
2025	7	125,660,083.76	6,045.31	33,628,647.54	89,955,267.20	0
2025	8	126,810,956.78	2,217.91	35,427,803.17	88,202,448.69	0
2025	9	122,386,037.11	122,066.03	28,227,401.02	90,086,843.15	0
2025	10	101,172,657.08	2,035,866.80	9,566,737.19	89,680,765.12	0
2025	11	90,052,118.19	7,724,299.60	1,217,145.47	89,042,622.83	0
2025	12	93,303,126.85	14,836,900.44	106,380.46	90,927,324.16	0
2026	1	102,398,017.92	20,146,329.45	37,356.08	92,639,273.61	-3,812,802.60
2026	2	97,536,491.12	18,558,700.25	7,426.91	84,627,480.71	0
2026	3	96,243,162.85	14,635,295.54	190,718.08	88,029,287.85	0
2026	4	91,340,619.34	7,669,686.74	2,125,579.34	89,257,218.72	0
2026	5	93,400,568.27	2,912,636.47	6,404,019.07	87,244,917.49	0
2026	6	111,024,910.20	609,825.42	20,085,073.54	89,768,905.08	0
2026	7	125,251,744.38	5,967.75	33,363,539.98	89,812,112.94	0
2026	8	126,391,272.50	2,189.46	35,148,512.17	88,062,083.85	0
2026	9	122,018,579.94	120,499.97	28,004,873.56	89,943,479.50	0
2026	10	100,937,677.83	2,009,931.88	9,492,190.27	89,546,267.71	0
2026	11	89,810,693.58	7,625,899.72	1,207,661.11	88,909,082.46	0
2026	12	92,976,923.65	14,647,893.11	105,551.51	90,790,957.23	0
2027	1	102,094,399.47	19,903,130.94	37,090.29	92,579,119.45	-3,812,802.60
2027	2	97,257,453.20	18,334,666.97	7,374.07	84,572,528.90	0
2027	3	96,007,973.69	14,458,624.05	189,361.15	87,972,127.12	0
2027	4	91,194,291.84	7,578,583.17	2,110,868.83	89,216,705.30	0
2027	5	93,282,050.46	2,878,039.03	6,359,698.75	87,205,317.44	0
2027	6	110,837,917.95	602,581.67	19,946,070.70	89,728,159.40	0
2027	7	124,959,034.01	5,895.85	33,126,986.60	89,756,027.84	0
2027	8	126,087,044.72	2,163.08	34,899,303.03	88,007,091.60	0
2027	9	121,762,401.66	119,048.30	27,806,314.08	89,887,312.36	0
2027	10	100,781,047.02	1,985,537.20	9,424,029.93	89,482,191.92	0
2027	11	89,645,845.84	7,533,343.64	1,198,989.28	88,845,462.62	0
2027	12	92,733,416.78	14,470,110.61	104,793.58	90,725,990.80	0
2028	1	101,836,582.16	19,663,793.31	36,837.75	92,560,892.32	-3,812,802.60
2028	2	97,020,275.55	18,114,190.31	7,323.86	84,555,878.12	0
2028	3	98,738,555.23	14,284,757.29	188,071.82	90,877,864.75	0
2028	4	91,071,487.56	7,487,469.98	2,096,501.97	89,199,381.07	0
2028	5	93,187,230.73	2,843,437.93	6,316,413.78	87,188,383.78	0

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2028	6	110,677,494.23	595,337.16	19,810,315.04	89,710,735.86	0
2028	7	124,736,196.94	5,825.93	32,906,919.88	89,753,327.42	0
2028	8	125,852,530.82	2,137.43	34,667,462.58	88,004,443.80	0
2028	9	121,573,564.51	117,636.35	27,621,593.25	89,884,608.00	0
2028	10	100,697,693.39	1,962,095.03	9,361,935.01	89,484,375.38	0
2028	11	89,551,171.49	7,444,401.52	1,191,089.14	88,847,630.54	0
2028	12	92,564,099.32	14,299,269.82	104,103.10	90,728,204.61	0
2029	1	101,628,603.15	19,417,142.09	36,608.74	92,599,793.54	-3,812,802.60
2029	2	96,828,553.02	17,886,976.41	7,278.33	84,591,415.02	0
2029	3	95,672,114.01	14,105,577.58	186,902.64	87,991,772.41	0
2029	4	91,019,812.42	7,394,883.81	2,083,844.12	89,252,949.95	0
2029	5	93,166,295.40	2,808,277.45	6,278,277.76	87,240,744.95	0
2029	6	110,604,401.69	587,975.53	19,690,708.16	89,764,611.83	0
2029	7	124,606,888.30	5,754.62	32,712,389.64	89,818,620.33	0
2029	8	125,711,587.58	2,111.26	34,462,524.85	88,068,464.44	0
2029	9	121,474,227.16	116,196.46	27,458,307.38	89,949,996.41	0
2029	10	100,708,414.49	1,938,558.97	9,308,898.46	89,571,669.09	0
2029	11	89,541,798.00	7,355,103.15	1,184,341.47	88,934,303.10	0
2029	12	92,480,491.58	14,127,744.74	103,513.34	90,816,711.70	0
2030	1	101,253,174.97	19,188,762.15	36,405.24	92,452,948.80	-3,812,802.60
2030	2	96,483,985.02	17,676,593.93	7,237.87	84,457,269.97	0
2030	3	95,365,631.13	13,939,671.04	185,863.64	87,852,235.07	0
2030	4	90,781,775.42	7,308,059.85	2,072,303.33	89,113,277.70	0
2030	5	92,962,029.34	2,775,305.22	6,243,507.27	87,104,221.61	0
2030	6	110,347,973.76	581,072.06	19,581,656.65	89,624,138.88	0
2030	7	124,265,440.11	5,686.14	32,525,989.47	89,663,640.78	0
2030	8	125,363,230.04	2,086.14	34,266,152.14	87,916,504.74	0
2030	9	121,161,176.58	114,813.72	27,301,845.77	89,794,790.18	0
2030	10	100,472,983.80	1,915,399.35	9,255,416.49	89,412,879.99	0
2030	11	89,289,464.34	7,267,233.03	1,177,537.13	88,776,643.89	0
2030	12	92,150,118.93	13,958,963.07	102,918.63	90,655,715.43	0
2031	1	100,939,552.99	18,965,245.52	36,214.47	92,363,034.22	-3,812,802.60
2031	2	96,195,906.24	17,470,691.50	7,199.95	84,375,131.54	0
2031	3	95,116,843.39	13,777,297.44	184,889.68	87,766,794.89	0
2031	4	90,574,950.89	7,221,157.37	2,060,937.28	89,004,721.70	0
2031	5	92,788,674.68	2,742,303.18	6,209,263.26	86,998,113.00	0
2031	6	110,124,485.44	574,162.35	19,474,256.37	89,514,960.56	0
2031	7	123,959,428.94	5,617.68	32,342,731.64	89,540,955.91	0
2031	8	125,049,848.37	2,061.02	34,073,089.89	87,796,210.44	0
2031	9	120,883,105.94	113,431.38	27,148,021.79	89,671,925.86	0
2031	10	100,267,474.49	1,892,188.25	9,202,539.92	89,283,458.35	0
2031	11	89,066,170.88	7,179,167.60	1,170,809.82	88,648,143.18	0

2031	12	91,849,153.53	13,789,806.25	102,330.65	90,524,494.83	0
2032	1	100,636,404.39	18,740,672.72	36,019.70	92,284,653.19	-3,812,802.60
2032	2	95,917,389.81	17,263,816.13	7,161.22	84,303,529.19	0
2032	3	97,792,561.76	13,614,156.59	183,895.34	90,606,648.46	0
2032	4	90,408,577.19	7,136,067.73	2,049,973.56	88,934,401.36	0
2032	5	92,654,594.23	2,709,989.58	6,176,231.38	86,929,378.03	0
2032	6	109,943,397.76	567,396.77	19,370,657.73	89,444,237.09	0
2032	7	123,725,998.56	5,551.91	32,173,171.03	89,477,151.90	0
2032	8	124,808,631.27	2,036.90	33,894,457.67	87,733,649.68	0
2032	9	120,675,553.97	112,103.47	27,005,695.06	89,608,028.52	0
2032	10	100,129,961.95	1,869,971.72	9,153,975.33	89,216,726.94	0
2032	11	88,909,443.65	7,094,875.66	1,164,631.10	88,581,886.61	0
2032	12	91,619,045.85	13,627,897.57	101,790.62	90,456,835.86	0
2033	1	100,378,229.40	18,528,570.31	35,831.97	92,238,768.34	-3,812,802.60
2033	2	95,680,048.22	17,068,428.43	7,123.90	84,261,612.64	0
2033	3	94,679,585.92	13,460,074.86	182,936.87	87,648,712.82	0
2033	4	90,279,922.26	7,055,808.40	2,039,435.02	88,896,544.30	0
2033	5	92,555,360.51	2,679,510.34	6,144,480.48	86,892,374.46	0
2033	6	109,799,361.08	561,015.26	19,271,076.63	89,406,163.01	0
2033	7	123,535,676.76	5,490.07	32,011,259.91	89,448,803.07	0
2033	8	124,610,238.66	2,014.21	33,723,884.20	87,705,853.24	0
2033	9	120,510,009.06	110,854.71	26,869,789.21	89,579,638.23	0
2033	10	100,047,925.42	1,849,383.88	9,109,101.93	89,200,151.64	0
2033	11	88,809,164.70	7,016,763.16	1,158,922.00	88,565,429.26	0
2033	12	91,451,702.02	13,477,858.41	101,291.64	90,440,030.17	0
2034	1	100,228,250.98	18,331,210.35	35,673.08	92,286,308.77	-3,812,802.60
2034	2	95,541,638.56	16,886,621.40	7,092.31	84,305,041.59	0
2034	3	94,580,577.34	13,316,702.76	182,125.69	87,693,887.51	0
2034	4	90,224,062.32	6,979,406.75	2,030,029.44	88,926,491.58	0
2034	5	92,527,280.95	2,650,496.08	6,116,143.04	86,921,646.58	0
2034	6	109,734,529.91	554,940.48	19,182,201.28	89,436,281.97	0
2034	7	123,410,760.81	5,430.29	31,861,696.48	89,473,510.32	0
2034	8	124,476,877.37	1,992.28	33,566,319.02	87,730,079.06	0
2034	9	120,408,004.06	109,647.71	26,744,247.82	89,604,381.62	0
2034	10	100,005,637.83	1,829,170.17	9,066,159.21	89,221,020.48	0
2034	11	88,747,728.60	6,940,070.18	1,153,458.53	88,586,149.60	0
2034	12	91,325,070.88	13,330,545.88	100,814.12	90,461,189.08	0
2035	1	100,076,749.60	18,134,125.45	35,507.46	92,332,057.91	-3,812,802.60
2035	2	95,401,844.56	16,705,067.75	7,059.38	84,346,834.17	0
2035	3	94,480,032.05	13,173,530.49	181,280.14	87,737,360.04	0
2035	4	90,195,243.82	6,905,184.18	2,020,843.32	88,981,081.77	0
2035	5	92,524,777.42	2,622,309.36	6,088,466.79	86,975,006.04	0

2035	6	109,696,729.84	549,038.96	19,095,399.60	89,491,185.11	0
2035	7	123,326,653.24	5,372.77	31,718,879.39	89,532,277.36	0
2035	8	124,384,020.31	1,971.17	33,415,861.12	87,787,701.00	0
2035	9	120,345,817.07	108,486.31	26,624,369.22	89,663,234.61	0
2035	10	100,010,545.41	1,809,909.72	9,026,090.69	89,285,257.03	0
2035	11	88,733,334.03	6,866,993.94	1,148,360.74	88,649,929.06	0
2035	12	91,249,389.30	13,190,180.42	100,368.57	90,526,318.52	0
2036	1	99,998,369.01	17,956,109.22	35,361.70	92,431,839.31	-3,812,802.60
2036	2	95,328,979.83	16,541,080.07	7,030.40	84,437,986.10	0
2036	3	97,363,766.28	13,044,210.65	180,535.95	90,751,158.30	0
2036	4	90,222,548.97	6,837,903.04	2,012,695.90	89,083,815.50	0
2036	5	92,575,097.51	2,596,758.70	6,063,919.93	87,075,423.63	0
2036	6	109,717,716.03	543,689.36	19,018,412.72	89,594,507.78	0
2036	7	123,311,458.89	5,320.83	31,593,439.82	89,642,574.52	0
2036	8	124,359,998.55	1,952.12	33,283,710.45	87,895,848.97	0
2036	9	120,349,934.65	107,437.57	26,519,077.06	89,773,693.11	0
2036	10	100,071,558.17	1,792,488.61	8,990,772.96	89,399,008.64	0
2036	11	88,775,685.27	6,800,896.36	1,143,867.38	88,762,871.24	0
2036	12	91,237,368.52	13,063,219.62	99,975.84	90,641,651.27	0
2037	1	99,959,150.18	17,774,752.91	35,231.16	92,574,107.32	-3,812,802.60
2037	2	95,291,853.48	16,374,015.53	7,004.45	84,567,950.24	0
2037	3	94,447,559.72	12,912,464.41	179,869.53	87,967,364.41	0
2037	4	90,293,424.24	6,769,548.56	2,005,476.04	89,230,265.10	0
2037	5	92,670,534.92	2,570,800.44	6,042,167.71	87,218,571.53	0
2037	6	109,791,348.25	538,254.42	18,950,190.73	89,741,796.93	0
2037	7	123,369,475.36	5,268.69	31,486,347.38	89,807,735.57	0
2037	8	124,409,100.27	1,932.99	33,170,888.49	88,057,791.78	0
2037	9	120,424,392.52	106,384.66	26,429,185.22	89,939,095.73	0
2037	10	100,192,961.29	1,775,005.58	8,960,719.78	89,567,947.96	0
2037	11	88,873,266.38	6,734,563.84	1,140,043.81	88,930,608.45	0
2037	12	91,280,909.86	12,935,807.56	99,641.65	90,812,938.84	0
2038	1	99,974,399.91	17,605,155.07	35,122.88	92,759,063.17	-3,812,802.60
2038	2	95,304,559.42	16,217,782.83	6,982.92	84,736,910.41	0
2038	3	94,499,554.54	12,789,260.11	179,316.71	88,143,116.35	0
2038	4	90,394,548.79	6,704,519.85	1,999,182.08	89,402,712.31	0
2038	5	92,795,436.38	2,546,105.17	6,023,205.04	87,387,130.93	0
2038	6	109,900,140.49	533,083.92	18,890,717.66	89,915,232.74	0
2038	7	123,441,154.46	5,217.95	31,386,750.75	89,979,062.04	0
2038	8	124,472,144.64	1,914.37	33,065,963.37	88,225,779.88	0
2038	9	120,511,345.05	105,360.10	26,345,585.24	90,110,672.80	0
2038	10	100,309,879.96	1,757,762.08	8,931,618.47	89,731,211.43	0
2038	11	88,966,241.94	6,669,140.13	1,136,341.34	89,092,710.18	0

2038	12	91,320,452.65	12,810,141.13	99,318.05	90,978,471.67	0
2039	1	99,982,836.65	17,435,456.72	35,012.17	92,937,308.98	-3,812,802.60
2039	2	95,311,042.55	16,061,457.54	6,960.91	84,899,740.85	0
2039	3	94,545,087.79	12,665,982.79	178,751.48	88,312,492.15	0
2039	4	90,489,542.57	6,639,496.91	1,992,761.15	89,569,149.97	0
2039	5	92,914,083.42	2,521,412.09	6,003,859.83	87,549,816.26	0
2039	6	110,001,689.41	527,913.87	18,830,044.83	90,082,624.54	0
2039	7	123,500,725.12	5,167.04	31,284,118.87	90,141,315.50	0
2039	8	124,523,095.08	1,895.69	32,957,840.61	88,384,871.76	0
2039	9	120,586,660.21	104,332.20	26,259,437.52	90,273,163.58	0
2039	10	100,448,381.28	1,741,012.19	8,904,453.88	89,913,627.24	0
2039	11	89,080,352.77	6,605,589.23	1,132,885.28	89,273,827.97	0
2039	12	91,383,032.86	12,688,072.03	99,015.99	91,163,423.05	0
2040	1	100,013,585.60	17,267,664.94	34,913.50	93,135,948.38	-3,812,802.60
2040	2	95,337,914.29	15,906,888.57	6,941.29	85,081,201.17	0
2040	3	97,552,664.20	12,544,090.49	178,247.72	91,442,464.61	0
2040	4	90,632,851.81	6,577,030.96	1,987,577.19	89,780,109.12	0
2040	5	93,080,946.06	2,497,690.05	5,988,241.43	87,756,019.34	0
2040	6	110,159,906.85	522,947.13	18,781,060.49	90,294,793.06	0
2040	7	123,620,656.03	5,117.97	31,199,927.22	90,345,487.13	0
2040	8	124,634,574.37	1,877.69	32,869,144.65	88,585,065.01	0
2040	9	120,719,470.34	103,341.31	26,188,768.26	90,477,633.85	0
2040	10	100,622,166.85	1,724,659.03	8,881,427.35	90,126,792.50	0
2040	11	89,227,025.94	6,543,543.56	1,129,955.69	89,485,476.41	0
2040	12	91,479,727.21	12,568,894.18	98,759.94	91,379,551.30	0
2041	1	100,018,858.71	17,105,453.15	34,816.54	93,303,530.24	-3,812,802.60
2041	2	95,341,555.05	15,757,459.86	6,922.02	85,234,289.92	0
2041	3	94,652,355.11	12,426,251.78	177,752.72	88,660,489.23	0
2041	4	90,742,852.09	6,516,289.70	1,982,375.03	89,956,052.81	0
2041	5	93,214,182.78	2,474,622.98	5,972,568.18	87,927,996.39	0
2041	6	110,282,873.17	518,117.53	18,731,904.09	90,471,745.39	0
2041	7	123,691,706.87	5,069.69	31,112,052.09	90,504,461.37	0
2041	8	124,697,856.71	1,859.98	32,776,568.15	88,740,941.57	0
2041	9	120,803,941.15	102,366.47	26,115,007.15	90,636,840.62	0
2041	10	100,717,044.55	1,708,010.02	8,854,443.09	90,265,303.47	0
2041	11	89,297,950.03	6,480,375.40	1,126,522.57	89,623,001.77	0
2041	12	91,498,529.48	12,447,560.24	98,459.88	91,519,987.56	0
2042	1	99,998,680.03	16,944,187.54	34,721.02	93,444,712.69	-3,812,802.60
2042	2	95,321,951.43	15,608,902.76	6,903.03	85,363,262.39	0
2042	3	94,668,872.90	12,309,100.42	177,265.05	88,794,646.06	0
2042	4	90,790,416.00	6,453,435.45	1,976,501.24	90,072,344.77	0
2042	5	93,286,286.68	2,450,753.48	5,954,871.41	88,041,666.55	0

2042	6	110,339,331.41	513,119.91	18,676,401.32	90,588,704.01	0
2042	7	123,779,157.84	5,023.37	31,035,851.34	90,668,159.42	0
2042	8	124,778,070.48	1,842.99	32,696,290.60	88,901,449.88	0
2042	9	120,902,981.67	101,431.31	26,051,045.34	90,800,778.10	0
2042	10	100,883,116.61	1,693,078.88	8,836,264.64	90,464,485.12	0
2042	11	89,436,751.21	6,423,725.03	1,124,209.78	89,820,766.11	0
2042	12	91,591,463.09	12,338,745.73	98,257.74	91,721,937.84	0
2043	1	100,042,280.16	16,800,800.43	34,645.19	93,631,775.76	-3,812,802.60
2043	2	95,360,734.00	15,476,815.26	6,887.95	85,534,147.54	0
2043	3	94,742,076.51	12,204,936.89	176,877.89	88,972,400.35	0
2043	4	90,937,810.18	6,400,511.98	1,972,704.51	90,276,459.15	0
2043	5	93,454,262.20	2,430,655.29	5,943,432.50	88,241,179.17	0
2043	6	110,504,531.79	508,911.91	18,640,525.20	90,793,988.52	0
2043	7	123,910,717.16	4,981.60	30,972,612.06	90,862,999.79	0
2043	8	124,902,476.36	1,827.66	32,629,667.97	89,092,493.71	0
2043	9	121,044,181.31	100,587.73	25,997,963.20	90,995,903.47	0
2043	10	101,043,769.49	1,678,970.31	8,818,114.64	90,657,396.58	0
2043	11	89,572,451.34	6,370,195.58	1,121,900.61	90,012,304.86	0
2043	12	91,684,034.36	12,235,925.91	98,055.91	91,917,530.75	0
2044	1	100,139,805.44	16,681,390.12	34,589.08	93,848,767.46	-3,812,802.60
2044	2	95,448,948.10	15,366,815.07	6,876.79	85,732,372.98	0
2044	3	97,824,966.65	12,118,191.31	176,591.41	92,142,322.56	0
2044	4	91,102,813.57	6,355,308.61	1,969,598.59	90,489,771.82	0
2044	5	93,636,241.72	2,413,488.88	5,934,074.89	88,449,682.72	0
2044	6	110,686,124.66	505,317.74	18,611,176.70	91,008,524.06	0
2044	7	124,087,831.77	4,946.87	30,926,690.14	91,086,071.04	0
2044	8	125,072,809.45	1,814.92	32,581,289.21	89,311,218.32	0
2044	9	121,228,331.44	99,886.51	25,959,417.01	91,219,301.00	0
2044	10	101,267,264.80	1,667,688.79	8,807,273.71	90,903,014.32	0
2044	11	89,772,138.79	6,327,392.29	1,120,521.36	90,256,174.86	0
2044	12	91,850,728.70	12,153,708.97	97,935.36	92,166,562.57	0
2045	1	100,196,452.01	16,552,635.67	34,527.15	94,034,230.41	-3,812,802.60
2045	2	95,499,751.22	15,248,207.09	6,864.48	85,901,796.39	0
2045	3	94,943,622.04	12,024,657.67	176,275.25	89,354,827.75	0
2045	4	91,230,551.16	6,306,350.58	1,966,101.98	90,669,964.06	0
2045	5	93,783,244.52	2,394,896.60	5,923,540.15	88,625,812.53	0
2045	6	110,830,416.85	501,425.03	18,578,136.37	91,189,749.29	0
2045	7	124,205,288.97	4,908.40	30,869,516.37	91,260,740.48	0
2045	8	125,183,828.66	1,800.80	32,521,056.60	89,482,484.25	0
2045	9	121,354,488.77	99,109.75	25,911,426.17	91,394,225.93	0
2045	10	101,395,375.77	1,654,443.73	8,789,523.51	91,062,120.56	0
2045	11	89,877,601.37	6,277,139.08	1,118,263.05	90,414,148.95	0

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2045	12	91,915,322.35	12,057,182.19	97,737.98	92,327,880.38	0
2046	1	100,294,855.15	16,430,265.71	34,492.21	94,255,038.45	-3,812,802.60
2046	2	95,588,729.40	15,135,480.49	6,857.54	86,103,508.12	0
2046	3	95,064,368.07	11,935,762.05	176,096.88	89,564,647.77	0
2046	4	91,404,893.15	6,260,363.57	1,964,311.56	90,892,083.47	0
2046	5	93,977,498.05	2,377,432.60	5,918,145.94	88,842,924.26	0
2046	6	111,033,235.14	497,768.55	18,561,218.38	91,413,142.04	0
2046	7	124,415,544.86	4,873.20	30,845,145.75	91,495,402.19	0
2046	8	125,388,230.50	1,787.89	32,495,382.13	89,712,573.47	0
2046	9	121,568,326.57	98,398.96	25,890,969.82	91,629,230.87	0
2046	10	101,625,148.58	1,642,811.37	8,783,829.98	91,309,219.27	0
2046	11	90,078,083.00	6,233,004.66	1,117,538.68	90,659,489.37	0
2046	12	92,081,018.64	11,972,408.42	97,674.67	92,578,413.75	0
2047	1	100,471,260.27	16,324,847.56	34,490.65	94,536,863.28	-3,812,802.60
2047	2	95,749,069.97	15,038,369.81	6,857.23	86,360,959.68	0
2047	3	95,255,579.54	11,859,181.07	176,088.88	89,832,448.22	0
2047	4	91,637,291.43	6,220,251.90	1,964,239.82	91,164,665.16	0
2047	5	94,228,485.46	2,362,199.81	5,917,929.80	89,109,360.60	0
2047	6	111,303,512.25	494,579.23	18,560,540.49	91,687,286.36	0
2047	7	124,690,499.69	4,842.04	30,844,452.28	91,771,081.66	0
2047	8	125,657,796.22	1,776.46	32,494,651.56	89,982,881.19	0
2047	9	121,843,198.08	97,769.87	25,890,387.73	91,905,313.57	0
2047	10	101,897,667.69	1,632,438.04	8,784,330.11	91,591,611.57	0
2047	11	90,319,171.97	6,193,647.11	1,117,602.31	90,939,872.26	0
2047	12	92,291,743.42	11,896,810.10	97,680.23	92,864,731.30	0
2048	1	100,627,123.89	16,219,948.31	34,492.67	94,797,624.13	-3,812,802.60
2048	2	95,890,646.96	14,941,737.13	6,857.63	86,599,168.95	0
2048	3	98,420,863.86	11,782,977.03	176,099.21	93,073,926.24	0
2048	4	91,849,783.28	6,180,337.23	1,964,372.60	91,416,938.90	0
2048	5	94,460,313.75	2,347,041.84	5,918,329.83	89,355,946.85	0
2048	6	111,555,313.16	491,405.57	18,561,795.10	91,941,006.32	0
2048	7	124,948,230.59	4,811.04	30,846,970.31	92,026,325.52	0
2048	8	125,910,707.93	1,765.08	32,497,304.31	90,233,151.52	0
2048	9	122,100,302.88	97,143.85	25,892,501.33	92,160,930.78	0
2048	10	102,150,798.30	1,622,114.46	8,785,744.96	91,853,650.92	0
2048	11	90,540,357.93	6,154,478.32	1,117,782.32	91,200,047.00	0
2048	12	92,482,205.09	11,821,574.36	97,695.96	93,130,412.98	0
2049	1	100,761,026.49	16,110,969.98	34,477.34	95,040,520.39	-3,812,802.60
2049	2	96,012,143.29	14,841,346.82	6,854.58	86,821,058.63	0
2049	3	95,578,734.03	11,703,809.75	176,020.94	90,311,041.96	0
2049	4	92,042,508.58	6,138,867.57	1,963,516.98	91,651,989.48	0
2049	5	94,671,738.79	2,331,293.34	5,915,752.00	89,585,698.22	0

2049	6	111,780,329.01	488,108.27	18,553,710.19	92,177,404.38	0
2049	7	125,173,108.16	4,778.82	30,833,967.29	92,264,238.32	0
2049	8	126,130,274.38	1,753.26	32,483,605.62	90,466,428.48	0
2049	9	122,326,998.65	96,493.38	25,881,586.79	92,399,191.57	0
2049	10	102,381,839.08	1,611,380.77	8,782,738.97	92,098,431.38	0
2049	11	90,742,289.37	6,113,753.53	1,117,399.88	91,443,085.68	0
2049	12	92,652,130.04	11,743,349.83	97,662.54	93,378,595.88	0
2050	1	100,876,084.24	16,002,217.64	34,506.91	95,264,300.91	-3,812,802.60
2050	2	96,116,394.18	14,741,164.70	6,860.46	87,025,485.77	0
2050	3	95,712,526.47	11,624,806.65	176,171.90	90,523,686.55	0
2050	4	92,219,446.17	6,097,483.28	1,965,218.47	91,868,609.88	0
2050	5	94,872,885.72	2,315,577.26	5,920,878.31	89,797,434.91	0
2050	6	112,010,978.48	484,817.76	18,569,787.96	92,395,266.60	0
2050	7	125,419,594.44	4,746.67	30,861,119.82	92,483,604.23	0
2050	8	126,373,959.26	1,741.47	32,512,210.83	90,681,519.94	0
2050	9	122,568,827.70	95,844.23	25,904,378.23	92,618,878.33	0
2050	10	102,605,861.78	1,600,667.47	8,791,171.24	92,324,735.10	0
2050	11	90,927,408.17	6,073,106.10	1,118,472.69	91,667,779.09	0
2050	12	92,803,597.22	11,665,273.91	97,756.30	93,608,045.22	0

Feb	Apr	May	Jun	Jul	Aug	Sep	
0	0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0	0
0	0.00	0	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0	0
0	0	0	7,173,244.79	0.00	0	0	0
0	0	0	0	8,682,262.34	0.00	0	0
0	0	0	0	0	9,790,625.64	0.00	0
0	0	0	0	0	0	10,561,865.54	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	0
955,021.88	0	0	0	0	0	0	0
0	0.00	0	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0	0
0	0	0	7,173,244.79	0.00	0	0	0
0	0	0	0	8,682,262.34	0.00	0	0
0	0	0	0	0	9,790,625.64	0.00	0
0	0	0	0	0	0	10,561,865.54	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0	0
0	0.00	0	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0	0
0	0	0	7,173,244.79	0.00	0	0	0
0	0	0	0	8,682,262.34	0.00	0	0
0	0	0	0	0	9,790,625.64	0.00	0
0	0	0	0	0	0	10,561,865.54	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0	0
0	0.00	0	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0	0

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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
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0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
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0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0

0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
0	0	0	0	0	0	0
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
0	0	0	0	0	0	0
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0

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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
0	0	0	0	0	0	0
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
0	0	0	0	0	0	0
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
0	0	0	0	0	0	0
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0	0	0	0	0	0	0
0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0

Case No. 2018-00295
Attachment 1 to Response to KIUC-1 Question No. 20b
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Sinclair

0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
0	0	0	0	0	0	0
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0	0	0	0	0	0	0
0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0

0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0

0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
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
955,021.88	0	0	0	0	0	0
0	0.00	0	0	0	0	0
0	-1,099,726.83	0.00	0	0	0	0
0	0	3,451,133.86	0.00	0	0	0
0	0	0	7,173,244.79	0.00	0	0
0	0	0	0	8,682,262.34	0.00	0
0	0	0	0	0	9,790,625.64	0.00
0	0	0	0	0	0	10,561,865.54
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Oct	Nov	Dec	Aft13	Aft16	X-Missing	
	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	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0.00	0	0	0	0	0
6,501,426.59		0.00	0	0	0	0
	0	-1,319,811.09	0	0	0	0
	0	0	-5,955,339.58	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0.00	0	0
	0	0	0	0.00	0	0
	0	0	0	0.00	0	0
	0	0	0	0.00	0	0
	0.00	0	0	0.00	0	0
6,501,426.59		0.00	0	0.00	0	0
	0	-1,319,811.09	0	0.00	0	0
	0	0	-5,955,339.58	0.00	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
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0.00	0	0	0	0	0
6,501,426.59		0.00	0	0	0	0
	0	-1,319,811.09	0	0	0	0
	0	0	-5,955,339.58	0	0	0
	0	0	0	-4,735,744.27	0	0
	0	0	0	-4,735,744.27	0	0
	0	0	0	-4,735,744.27	0	0
	0	0	0	-4,735,744.27	0	0
	0	0	0	-4,735,744.27	0	0

0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0.00	0	0	-4,735,744.27	0.00	0
6,501,426.59	0.00	0	-4,735,744.27	0.00	0
0	-1,319,811.09	0	-4,735,744.27	0.00	0
0	0	-5,955,339.58	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0.00	0	0	-4,735,744.27	0.00	0
6,501,426.59	0.00	0	-4,735,744.27	0.00	0
0	-1,319,811.09	0	-4,735,744.27	0.00	0
0	0	-5,955,339.58	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	0.00	0
0.00	0	0	-4,735,744.27	0.00	0
6,501,426.59	0.00	0	-4,735,744.27	0.00	0
0	-1,319,811.09	0	-4,735,744.27	0.00	0
0	0	-5,955,339.58	-4,735,744.27	0.00	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0

0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0

0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0

0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
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0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0

0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0

0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0

0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0

0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0

0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
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0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0.00	0		-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00		-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09		-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
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0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0
0	0		-4,735,744.27	-1,876,394.35	0

0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
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0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0	0	0	-4,735,744.27	-1,876,394.35	0
0.00	0	0	-4,735,744.27	-1,876,394.35	0
6,501,426.59	0.00	0	-4,735,744.27	-1,876,394.35	0
0	-1,319,811.09	0	-4,735,744.27	-1,876,394.35	0
0	0	-5,955,339.58	-4,735,744.27	-1,876,394.35	0

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Year	Month	Actual	Pred	Upper	Lower	Sigma
2011	1	127,476,120.00	131,508,942.98	136,034,197.41	126,983,688.56	2,267,797.12
2011	2	111,386,310.00	113,700,387.69	118,085,280.97	109,315,494.41	2,197,456.19
2011	3	110,240,669.00	111,259,187.75	115,650,233.08	106,868,142.42	2,200,539.25
2011	4	105,559,587.00	106,652,754.41	111,014,938.30	102,290,570.51	2,186,075.56
2011	5	109,440,834.00	110,331,320.80	114,698,190.58	105,964,451.03	2,188,423.85
2011	6	134,338,941.00	135,011,112.57	139,375,376.69	130,646,848.45	2,187,118.04
2011	7	146,321,265.00	142,703,531.42	147,057,724.31	138,349,338.52	2,182,070.92
2011	8	160,099,938.00	157,927,205.94	162,573,508.72	153,280,903.16	2,328,459.59
2011	9	142,288,577.00	142,230,010.37	146,589,908.43	137,870,112.32	2,184,930.02
2011	10	107,906,716.00	110,498,972.25	114,895,238.15	106,102,706.34	2,203,155.50
2011	11	97,579,757.00	96,742,715.62	101,101,386.44	92,384,044.81	2,184,315.00
2011	12	104,555,025.00	105,966,552.43	110,351,927.46	101,581,177.40	2,197,697.62
2012	1	117,050,157.00	119,276,942.30	123,686,040.86	114,867,843.75	2,209,586.48
2012	2	111,386,887.00	110,417,104.62	114,824,861.86	106,009,347.38	2,208,914.29
2012	3	103,482,827.00	105,033,597.78	109,461,052.64	100,606,142.92	2,218,785.60
2012	4	104,521,938.00	103,101,292.93	107,555,501.31	98,647,084.55	2,232,192.93
2012	5	113,855,455.00	112,428,271.97	116,800,450.63	108,056,093.31	2,191,084.36
2012	6	132,328,421.00	130,334,074.12	134,692,476.80	125,975,671.45	2,184,180.63
2012	7	152,327,017.00	151,961,144.21	156,494,948.54	147,427,339.88	2,272,081.84
2012	8	146,541,211.00	149,244,655.75	153,673,129.03	144,816,182.47	2,219,295.98
2012	9	140,095,091.00	137,379,861.27	141,733,095.66	133,026,626.87	2,181,590.58
2012	10	105,692,442.00	106,059,744.06	110,447,690.86	101,671,797.25	2,198,986.44
2012	11	101,271,270.00	101,686,541.64	106,049,705.24	97,323,378.05	2,186,566.52
2012	12	101,629,301.00	102,708,180.80	107,069,895.39	98,346,466.21	2,185,840.37
2013	1	114,287,989.00	114,084,011.63	118,439,453.68	109,728,569.59	2,182,696.93
2013	2	111,312,025.00	110,403,170.89	114,756,005.47	106,050,336.30	2,181,390.22
2013	3	108,412,058.00	106,287,084.29	110,670,333.56	101,903,835.01	2,196,632.31
2013	4	102,641,840.00	100,931,626.89	105,396,969.81	96,466,283.98	2,237,772.92
2013	5	100,710,470.00	101,351,642.87	105,727,458.28	96,975,827.46	2,192,906.88
2013	6	122,700,857.00	120,606,388.82	125,007,681.43	116,205,096.21	2,205,674.59
2013	7	132,064,779.00	133,878,060.28	138,292,719.75	129,463,400.82	2,212,373.29
2013	8	133,750,360.00	131,759,598.58	136,252,940.11	127,266,257.06	2,251,804.21
2013	9	137,782,896.00	138,508,646.51	142,874,303.85	134,142,989.16	2,187,816.25
2013	10	112,713,305.00	110,311,527.00	114,664,955.21	105,958,098.79	2,181,687.71
2013	11	98,402,254.00	98,959,587.38	103,322,000.05	94,597,174.71	2,186,190.20
2013	12	111,073,308.00	111,306,724.89	115,718,975.76	106,894,474.02	2,211,166.24
2014	1	122,551,172.00	120,394,118.89	124,795,676.37	115,992,561.41	2,205,807.33
2014	2	114,156,696.00	112,466,084.81	116,940,750.62	107,991,419.00	2,242,445.02
2014	3	107,649,316.00	106,612,347.23	111,034,198.08	102,190,496.37	2,215,977.20
2014	4	95,039,863.00	95,921,481.28	100,277,478.09	91,565,484.48	2,182,974.94
2014	5	103,218,689.00	104,925,340.09	109,298,233.78	100,552,446.39	2,191,442.69

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2014	6	121,364,895.00	126,568,982.32	130,982,342.84	122,155,621.79	2,211,722.34
2014	7	134,739,912.00	133,273,675.41	137,642,742.26	128,904,608.56	2,189,524.89
2014	8	121,683,758.00	123,252,798.69	127,793,826.66	118,711,770.73	2,275,701.91
2014	9	127,954,397.00	129,597,074.59	133,950,871.39	125,243,277.79	2,181,872.42
2014	10	104,735,940.00	103,342,998.74	107,707,020.13	98,978,977.36	2,186,996.40
2014	11	94,003,270.00	97,049,965.49	101,428,389.07	92,671,541.92	2,194,213.95
2014	12	106,045,991.00	105,365,697.25	109,744,444.92	100,986,949.57	2,194,376.37
2015	1	113,786,998.00	112,232,935.49	116,588,648.29	107,877,222.69	2,182,832.61
2015	2	109,968,129.00	108,849,964.05	113,232,336.95	104,467,591.15	2,196,193.12
2015	3	107,725,673.00	107,184,084.05	111,662,272.98	102,705,895.11	2,244,210.61
2015	4	92,908,335.00	95,791,237.94	100,151,808.45	91,430,667.43	2,185,267.02
2015	5	97,375,562.00	95,323,072.65	99,680,752.15	90,965,393.14	2,183,818.21
2015	6	119,560,032.00	121,704,532.89	126,058,113.54	117,350,952.24	2,181,764.10
2015	7	128,888,158.00	129,508,036.12	133,877,566.42	125,138,505.81	2,189,757.15
2015	8	132,393,594.00	131,725,437.02	136,088,690.72	127,362,183.33	2,186,611.68
2015	9	130,192,353.00	129,931,993.62	134,294,167.42	125,569,819.83	2,186,070.49
2015	10	103,099,071.00	101,699,799.82	106,053,961.49	97,345,638.16	2,182,055.28
2015	11	91,546,430.00	91,395,517.56	95,778,407.06	87,012,628.06	2,196,452.01
2015	12	99,907,040.00	96,361,382.69	100,800,731.99	91,922,033.39	2,224,746.41
2016	1	107,890,814.00	105,058,030.72	109,491,713.13	100,624,348.30	2,221,906.50
2016	2	103,231,690.00	103,122,196.25	107,483,357.91	98,761,034.60	2,185,563.27
2016	3	94,740,789.00	92,956,589.91	97,356,139.04	88,557,040.78	2,204,800.86
2016	4	92,793,274.00	94,060,005.91	98,420,639.99	89,699,371.83	2,185,298.88
2016	5	95,029,019.00	94,397,553.84	98,772,333.56	90,022,774.12	2,192,387.86
2016	6	120,658,218.00	120,602,481.68	124,958,166.43	116,246,796.94	2,182,818.55
2016	7	135,635,548.00	137,702,738.87	142,059,365.09	133,346,112.66	2,183,290.36
2016	8	139,281,618.00	140,230,005.76	144,650,800.21	135,809,211.31	2,215,447.79
2016	9	138,517,211.00	137,710,536.96	142,176,204.82	133,244,869.10	2,237,935.76
2016	10	103,120,425.00	105,582,410.56	109,999,948.72	101,164,872.40	2,213,815.93
2016	11	94,184,583.00	93,519,548.79	97,945,524.58	89,093,573.01	2,218,044.38
2016	12	100,646,719.00	100,804,524.07	105,157,794.68	96,451,253.46	2,181,608.73
2017	1	105,476,211.00	105,964,478.98	110,433,660.86	101,495,297.11	2,239,696.79
2017	2	92,904,464.00	95,387,292.70	99,976,580.00	90,798,005.40	2,299,886.71
2017	3	89,136,375.00	91,379,094.70	95,872,867.82	86,885,321.57	2,252,020.50
2017	4	94,946,419.00	91,952,856.65	96,419,233.65	87,486,479.64	2,238,291.15
2017	5	99,668,095.00	100,540,921.79	105,014,783.06	96,067,060.52	2,242,041.83
2017	6	121,797,807.00	117,921,598.60	122,384,028.32	113,459,168.88	2,236,312.99
2017	7	130,909,759.00	131,859,251.70	136,322,310.84	127,396,192.55	2,236,628.42
2017	8	124,954,028.00	124,564,805.26	129,063,568.66	120,066,041.85	2,254,521.35
2017	9	114,763,016.00	116,235,417.68	120,852,764.85	111,618,070.51	2,313,948.71
2017	10	105,513,852.00	105,286,298.57	109,792,347.33	100,780,249.81	2,258,172.35
2017	11	91,498,194.00	89,131,881.51	93,609,502.13	84,654,260.88	2,243,925.80

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2017	12	95,677,791.00	97,022,112.87	101,503,373.98	92,540,851.77	2,245,750.20
2018	1		106,650,629.29	111,110,911.49	102,190,347.09	2,235,236.78
2018	2		100,496,508.81	104,957,142.58	96,035,875.05	2,235,412.96
2018	3		95,696,234.00	100,155,620.99	91,236,847.01	2,234,788.15
2018	4		95,343,454.28	99,807,384.39	90,879,524.17	2,237,064.90
2018	5		98,001,704.34	102,464,599.68	93,538,809.00	2,236,546.34
2018	6		113,038,491.67	117,527,037.32	108,549,946.01	2,249,400.80
2018	7		130,657,402.68	135,125,178.34	126,189,627.02	2,238,992.07
2018	8		131,007,063.99	135,472,130.34	126,541,997.63	2,237,634.32
2018	9		125,737,519.04	130,210,115.44	121,264,922.64	2,241,407.95
2018	10		103,730,456.38	108,198,657.89	99,262,254.88	2,239,205.48
2018	11		91,715,080.42	96,172,444.06	87,257,716.77	2,233,774.17
2018	12		97,897,241.91	102,358,103.90	93,436,379.93	2,235,527.33
2019	1		105,575,815.16	110,037,280.06	101,114,350.25	2,235,829.48
2019	2		100,386,323.66	104,846,398.55	95,926,248.77	2,235,132.89
2019	3		98,723,227.47	103,191,650.01	94,254,804.92	2,239,316.25
2019	4		93,367,481.87	97,835,797.77	88,899,165.96	2,239,262.81
2019	5		95,156,750.47	99,626,878.05	90,686,622.89	2,240,170.72
2019	6		113,337,934.44	117,827,148.55	108,848,720.34	2,249,735.79
2019	7		128,260,530.18	132,735,831.08	123,785,229.28	2,242,763.29
2019	8		129,407,014.66	133,875,569.81	124,938,459.50	2,239,382.71
2019	9		124,586,146.61	129,059,573.57	120,112,719.65	2,241,824.18
2019	10		102,588,472.95	107,057,065.51	98,119,880.38	2,239,401.46
2019	11		91,429,930.59	95,886,844.36	86,973,016.82	2,233,548.72
2019	12		95,111,093.06	99,573,412.14	90,648,773.99	2,236,257.54
2020	1		104,419,617.55	108,880,669.43	99,958,565.68	2,235,622.50
2020	2		99,404,511.53	103,863,999.85	94,945,023.21	2,234,838.93
2020	3		100,813,450.80	105,291,780.85	96,335,120.74	2,244,281.33
2020	4		92,630,048.29	97,097,942.52	88,162,154.05	2,239,051.49
2020	5		94,540,275.33	99,011,323.79	90,069,226.87	2,240,632.21
2020	6		112,670,907.05	117,163,723.78	108,178,090.33	2,251,541.21
2020	7		127,444,055.86	131,923,451.81	122,964,659.91	2,244,815.49
2020	8		128,668,181.37	133,138,709.73	124,197,653.01	2,240,371.57
2020	9		123,994,265.60	128,468,404.46	119,520,126.73	2,242,180.94
2020	10		102,130,309.90	106,598,791.88	97,661,827.92	2,239,346.04
2020	11		91,030,691.24	95,487,607.91	86,573,774.57	2,233,550.17
2020	12		94,680,276.48	99,141,503.48	90,219,049.48	2,235,710.26
2021	1		104,026,283.84	108,487,172.52	99,565,395.16	2,235,540.71
2021	2		99,061,998.50	103,521,202.31	94,602,794.69	2,234,696.35
2021	3		97,593,434.02	102,056,304.79	93,130,563.26	2,236,534.02
2021	4		92,351,651.21	96,818,452.41	87,884,850.02	2,238,503.73
2021	5		94,317,881.16	98,788,842.93	89,846,919.39	2,240,588.77

2021	6	112,395,962.26	116,890,749.32	107,901,175.20	2,252,528.63
2021	7	127,164,059.32	131,645,550.85	122,682,567.80	2,245,865.68
2021	8	128,400,179.50	132,871,567.19	123,928,791.81	2,240,802.21
2021	9	123,790,234.84	128,264,271.99	119,316,197.69	2,242,129.97
2021	10	102,132,462.04	106,600,145.09	97,664,778.98	2,238,945.66
2021	11	91,026,227.48	95,483,092.03	86,569,362.93	2,233,524.05
2021	12	94,622,444.04	99,082,640.02	90,162,248.06	2,235,193.57
2022	1	103,724,603.42	108,186,402.95	99,262,803.89	2,235,997.18
2022	2	98,777,586.25	103,237,351.82	94,317,820.67	2,234,977.88
2022	3	97,390,572.16	101,853,141.69	92,928,002.63	2,236,383.06
2022	4	92,418,537.88	96,882,640.42	87,954,435.35	2,237,151.31
2022	5	94,432,378.55	98,901,861.48	89,962,895.61	2,239,847.66
2022	6	112,436,453.68	116,932,660.06	107,940,247.31	2,253,239.91
2022	7	127,066,758.74	131,550,715.59	122,582,801.88	2,247,101.15
2022	8	128,275,639.16	132,747,800.64	123,803,477.68	2,241,189.99
2022	9	123,726,989.86	128,200,147.10	119,253,832.61	2,241,689.01
2022	10	102,158,890.71	106,625,057.32	97,692,724.10	2,238,185.71
2022	11	91,008,033.22	95,465,059.30	86,551,007.15	2,233,605.00
2022	12	94,463,565.76	98,922,679.14	90,004,452.38	2,234,651.03
2023	1	103,632,902.00	108,095,100.21	99,170,703.80	2,236,196.97
2023	2	98,669,004.97	103,129,082.18	94,208,927.76	2,235,134.05
2023	3	97,273,291.23	101,735,554.19	92,811,028.27	2,236,229.42
2023	4	92,185,588.57	96,649,542.47	87,721,634.67	2,237,076.82
2023	5	94,176,391.65	98,646,306.86	89,706,476.44	2,240,064.29
2023	6	112,053,699.83	116,552,642.02	107,554,757.63	2,254,610.94
2023	7	126,551,585.05	131,039,216.96	122,063,953.14	2,248,942.88
2023	8	127,720,991.07	132,195,524.41	123,246,457.74	2,242,378.63
2023	9	123,201,171.76	127,675,476.17	118,726,867.36	2,242,263.90
2023	10	101,754,383.22	106,220,625.55	97,288,140.88	2,238,223.66
2023	11	90,617,217.22	95,074,322.12	86,160,112.33	2,233,644.50
2023	12	93,996,695.45	98,455,960.04	89,537,430.86	2,234,726.81
2024	1	103,275,971.32	107,739,196.00	98,812,746.64	2,236,711.38
2024	2	98,341,693.37	102,802,550.94	93,880,835.79	2,235,525.12
2024	3	99,913,317.86	104,392,172.84	95,434,462.87	2,244,544.39
2024	4	91,940,578.92	96,404,101.05	87,477,056.80	2,236,860.44
2024	5	93,949,202.60	98,419,332.65	89,479,072.56	2,240,171.95
2024	6	111,748,251.49	116,249,480.62	107,247,022.37	2,255,757.02
2024	7	126,142,751.12	130,633,599.36	121,651,902.88	2,250,554.72
2024	8	127,302,913.37	131,779,513.59	122,826,313.16	2,243,414.43
2024	9	122,828,960.18	127,304,157.72	118,353,762.63	2,242,711.49
2024	10	101,465,180.32	105,931,319.59	96,999,041.04	2,238,172.01
2024	11	90,336,274.72	94,793,514.31	85,879,035.13	2,233,712.00

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2024	12	93,651,680.44	98,111,030.91	89,192,329.97	2,234,769.85
2025	1	102,867,404.83	107,331,923.49	98,402,886.18	2,237,359.85
2025	2	97,967,150.42	102,429,011.59	93,505,289.24	2,236,028.07
2025	3	96,629,509.52	101,089,910.80	92,169,108.23	2,235,296.46
2025	4	91,637,657.96	96,100,844.95	87,174,470.98	2,236,692.49
2025	5	93,665,601.56	98,136,099.49	89,195,103.62	2,240,356.32
2025	6	111,378,127.83	115,882,027.94	106,874,227.73	2,257,095.56
2025	7	125,660,083.76	130,154,739.07	121,165,428.44	2,252,462.61
2025	8	126,810,956.78	131,290,154.11	122,331,759.46	2,244,715.95
2025	9	122,386,037.11	126,862,505.13	117,909,569.10	2,243,348.18
2025	10	101,172,657.08	105,638,717.48	96,706,596.68	2,238,132.48
2025	11	90,052,118.19	94,509,508.78	85,594,727.61	2,233,787.67
2025	12	93,303,126.85	97,762,666.30	88,843,587.40	2,234,864.56
2026	1	102,398,017.92	106,864,804.40	97,931,231.44	2,238,496.35
2026	2	97,536,491.12	102,000,146.74	93,072,835.50	2,236,927.34
2026	3	96,243,162.85	100,702,902.98	91,783,422.71	2,234,965.13
2026	4	91,340,619.34	95,803,117.17	86,878,121.50	2,236,347.13
2026	5	93,400,568.27	97,871,206.55	88,929,929.99	2,240,426.65
2026	6	111,024,910.20	115,531,668.30	106,518,152.11	2,258,527.83
2026	7	125,251,744.38	129,750,334.04	120,753,154.71	2,254,434.28
2026	8	126,391,272.50	130,873,153.46	121,909,391.53	2,246,060.84
2026	9	122,018,579.94	126,496,181.45	117,540,978.43	2,243,916.22
2026	10	100,937,677.83	105,403,398.83	96,471,956.83	2,237,962.39
2026	11	89,810,693.58	94,268,347.68	85,353,039.47	2,233,919.73
2026	12	92,976,923.65	97,436,839.96	88,517,007.34	2,235,053.42
2027	1	102,094,399.47	106,563,798.94	97,624,999.99	2,239,805.83
2027	2	97,257,453.20	101,723,210.65	92,791,695.75	2,237,980.66
2027	3	96,007,973.69	100,467,994.42	91,547,952.97	2,235,105.74
2027	4	91,194,291.84	95,655,953.49	86,732,630.19	2,235,928.08
2027	5	93,282,050.46	97,752,461.56	88,811,639.36	2,240,312.80
2027	6	110,837,917.95	115,346,808.21	106,329,027.69	2,259,596.34
2027	7	124,959,034.01	129,461,152.19	120,456,915.83	2,256,202.57
2027	8	126,087,044.72	130,571,340.24	121,602,749.21	2,247,270.87
2027	9	121,762,401.66	126,240,886.74	117,283,916.57	2,244,359.02
2027	10	100,781,047.02	105,246,310.43	96,315,783.60	2,237,733.08
2027	11	89,645,845.84	94,103,819.97	85,187,871.70	2,234,080.11
2027	12	92,733,416.78	97,193,914.11	88,272,919.46	2,235,344.59
2028	1	101,836,582.16	106,309,101.74	97,364,062.57	2,241,369.45
2028	2	97,020,275.55	101,488,567.50	92,551,983.59	2,239,250.81
2028	3	98,738,555.23	103,219,611.18	94,257,499.29	2,245,647.38
2028	4	91,071,487.56	95,532,330.63	86,610,644.50	2,235,517.85
2028	5	93,187,230.73	97,657,358.93	88,717,102.53	2,240,171.03

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2028	6	110,677,494.23	115,188,466.64	106,166,521.82	2,260,639.79
2028	7	124,736,196.94	129,241,646.84	120,230,747.04	2,257,872.23
2028	8	125,852,530.82	130,339,127.57	121,365,934.08	2,248,424.12
2028	9	121,573,564.51	126,052,809.79	117,094,319.23	2,244,739.98
2028	10	100,697,693.39	105,162,384.89	96,233,001.88	2,237,446.47
2028	11	89,551,171.49	94,009,546.14	85,092,796.85	2,234,280.82
2028	12	92,564,099.32	97,025,412.60	88,102,786.04	2,235,753.50
2029	1	101,628,603.15	106,104,992.37	97,152,213.94	2,243,308.69
2029	2	96,828,553.02	101,300,012.24	92,357,093.80	2,240,838.06
2029	3	95,672,114.01	100,134,338.63	91,209,889.38	2,236,210.21
2029	4	91,019,812.42	95,479,762.92	86,559,861.92	2,235,070.55
2029	5	93,166,295.40	97,635,930.30	88,696,660.51	2,239,923.81
2029	6	110,604,401.69	115,117,059.38	106,091,744.00	2,261,484.36
2029	7	124,606,888.30	129,115,261.25	120,098,515.36	2,259,337.09
2029	8	125,711,587.58	130,200,192.52	121,222,982.63	2,249,430.51
2029	9	121,474,227.16	125,953,995.74	116,994,458.57	2,245,002.23
2029	10	100,708,414.49	105,172,379.73	96,244,449.25	2,237,082.51
2029	11	89,541,798.00	94,000,713.51	85,082,882.50	2,234,551.87
2029	12	92,480,491.58	96,942,950.06	88,018,033.10	2,236,327.41
2030	1	101,253,174.97	105,733,181.36	96,773,168.58	2,245,121.41
2030	2	96,483,985.02	100,958,409.29	92,009,560.76	2,242,323.97
2030	3	95,365,631.13	99,828,255.61	90,903,006.64	2,236,410.60
2030	4	90,781,775.42	95,241,326.13	86,322,224.71	2,234,870.20
2030	5	92,962,029.34	97,431,759.73	88,492,298.95	2,239,971.67
2030	6	110,347,973.76	114,862,734.22	105,833,213.30	2,262,538.15
2030	7	124,265,440.11	128,777,262.13	119,753,618.09	2,261,065.57
2030	8	125,363,230.04	129,854,491.92	120,871,968.17	2,250,762.01
2030	9	121,161,176.58	125,642,331.46	116,680,021.69	2,245,696.97
2030	10	100,472,983.80	104,936,864.91	96,009,102.69	2,237,040.35
2030	11	89,289,464.34	93,748,798.48	84,830,130.20	2,234,761.67
2030	12	92,150,118.93	96,613,778.14	87,686,459.71	2,236,929.15
2031	1	100,939,552.99	105,423,608.01	96,455,497.96	2,247,150.35
2031	2	96,195,906.24	100,673,664.61	91,718,147.86	2,243,994.83
2031	3	95,116,843.39	99,580,397.97	90,653,288.81	2,236,876.71
2031	4	90,574,950.89	95,034,083.45	86,115,818.34	2,234,660.64
2031	5	92,788,674.68	97,258,416.14	88,318,933.22	2,239,977.22
2031	6	110,124,485.44	114,641,273.91	105,607,696.97	2,263,554.47
2031	7	123,959,428.94	128,474,683.47	119,444,174.41	2,262,785.75
2031	8	125,049,848.37	129,543,768.82	120,555,927.93	2,252,094.33
2031	9	120,883,105.94	125,365,596.79	116,400,615.09	2,246,366.48
2031	10	100,267,474.49	104,731,210.08	95,803,738.90	2,236,967.42
2031	11	89,066,170.88	93,525,985.80	84,606,355.96	2,235,002.61

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2031	12	91,849,153.53	96,314,226.93	87,384,080.14	2,237,637.85
2032	1	100,636,404.39	105,124,950.75	96,147,858.04	2,249,401.15
2032	2	95,917,389.81	100,398,858.81	91,435,920.80	2,245,854.39
2032	3	97,792,561.76	102,280,519.25	93,304,604.27	2,249,106.04
2032	4	90,408,577.19	94,867,283.22	85,949,871.16	2,234,446.90
2032	5	92,654,594.23	97,124,250.64	88,184,937.82	2,239,934.59
2032	6	109,943,397.76	114,462,082.01	105,424,713.51	2,264,504.53
2032	7	123,725,998.56	128,244,408.94	119,207,588.18	2,264,367.28
2032	8	124,808,631.27	129,304,988.74	120,312,273.79	2,253,315.63
2032	9	120,675,553.97	125,159,169.94	116,191,938.00	2,246,930.32
2032	10	100,129,961.95	104,593,432.55	95,666,491.35	2,236,834.62
2032	11	88,909,443.65	93,369,815.17	84,449,072.14	2,235,281.54
2032	12	91,619,045.85	96,085,731.39	87,152,360.32	2,238,445.76
2033	1	100,378,229.40	104,871,479.66	95,884,979.14	2,251,758.48
2033	2	95,680,048.22	100,165,414.87	91,194,681.58	2,247,807.66
2033	3	94,679,585.92	99,145,892.05	90,213,279.80	2,238,255.62
2033	4	90,279,922.26	94,738,227.59	85,821,616.92	2,234,246.09
2033	5	92,555,360.51	97,024,868.42	88,085,852.61	2,239,860.17
2033	6	109,799,361.08	114,319,820.98	105,278,901.18	2,265,394.38
2033	7	123,535,676.76	128,057,113.21	119,014,240.32	2,265,883.77
2033	8	124,610,238.66	129,108,937.36	120,111,539.96	2,254,488.92
2033	9	120,510,009.06	124,994,646.10	116,025,372.03	2,247,442.02
2033	10	100,047,925.42	104,511,048.35	95,584,802.49	2,236,660.39
2033	11	88,809,164.70	93,270,147.65	84,348,181.75	2,235,587.96
2033	12	91,451,702.02	95,920,136.45	86,983,267.59	2,239,322.21
2034	1	100,228,250.98	104,726,564.69	95,729,937.27	2,254,295.99
2034	2	95,541,638.56	100,031,214.16	91,052,062.95	2,249,916.95
2034	3	94,580,577.34	99,049,163.37	90,111,991.31	2,239,398.18
2034	4	90,224,062.32	94,681,943.30	85,766,181.34	2,234,033.43
2034	5	92,527,280.95	96,996,470.92	88,058,090.98	2,239,700.84
2034	6	109,734,529.91	114,256,425.21	105,212,634.60	2,266,113.72
2034	7	123,410,760.81	127,934,953.12	118,886,568.50	2,267,264.85
2034	8	124,476,877.37	128,977,693.90	119,976,060.85	2,255,550.25
2034	9	120,408,004.06	124,893,457.59	115,922,550.54	2,247,851.20
2034	10	100,005,637.83	104,468,344.88	95,542,930.78	2,236,451.98
2034	11	88,747,728.60	93,209,411.09	84,286,046.10	2,235,938.53
2034	12	91,325,070.88	95,795,483.19	86,854,658.58	2,240,313.41
2035	1	100,076,749.60	104,580,487.81	95,573,011.38	2,257,014.43
2035	2	95,401,844.56	99,895,936.97	90,907,752.15	2,252,180.51
2035	3	94,480,032.05	98,951,088.61	90,008,975.50	2,240,636.27
2035	4	90,195,243.82	94,652,741.64	85,737,746.01	2,233,841.41
2035	5	92,524,777.42	96,993,607.40	88,055,947.45	2,239,520.43

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2035	6	109,696,729.84	114,219,990.18	105,173,469.50	2,266,797.80
2035	7	123,326,653.24	127,853,471.67	118,799,834.81	2,268,580.91
2035	8	124,384,020.31	128,886,852.16	119,881,188.46	2,256,560.21
2035	9	120,345,817.07	124,831,980.03	115,859,654.10	2,248,206.73
2035	10	100,010,545.41	104,472,767.96	95,548,322.85	2,236,209.17
2035	11	88,733,334.03	93,195,803.21	84,270,864.84	2,236,332.77
2035	12	91,249,389.30	95,721,975.01	86,776,803.59	2,241,402.59
2036	1	99,998,369.01	104,507,598.14	95,489,139.87	2,259,766.17
2036	2	95,328,979.83	99,827,653.78	90,830,305.89	2,254,476.51
2036	3	97,363,766.28	101,863,838.52	92,863,694.04	2,255,177.26
2036	4	90,222,548.97	94,679,700.42	85,765,397.52	2,233,667.83
2036	5	92,575,097.51	97,043,479.36	88,106,715.65	2,239,295.86
2036	6	109,717,716.03	114,242,071.43	105,193,360.64	2,267,346.58
2036	7	123,311,458.89	127,840,517.56	118,782,400.23	2,269,703.59
2036	8	124,359,998.55	128,864,523.63	119,855,473.47	2,257,408.77
2036	9	120,349,934.65	124,836,562.90	115,863,306.40	2,248,439.90
2036	10	100,071,558.17	104,533,234.36	95,609,881.99	2,235,935.36
2036	11	88,775,685.27	93,239,012.90	84,312,357.64	2,236,762.97
2036	12	91,237,368.52	95,712,236.86	86,762,500.18	2,242,546.51
2037	1	99,959,150.18	104,474,525.96	95,443,774.40	2,262,846.51
2037	2	95,291,853.48	99,795,664.27	90,788,042.68	2,257,050.81
2037	3	94,447,559.72	98,924,955.70	89,970,163.74	2,243,813.22
2037	4	90,293,424.24	94,750,259.74	85,836,588.75	2,233,509.49
2037	5	92,670,534.92	97,138,368.45	88,202,701.39	2,239,021.07
2037	6	109,791,348.25	114,316,553.13	105,266,143.37	2,267,772.29
2037	7	123,369,475.36	127,900,348.64	118,838,602.07	2,270,612.97
2037	8	124,409,100.27	128,914,956.68	119,903,243.87	2,258,075.95
2037	9	120,424,392.52	124,911,214.79	115,937,570.24	2,248,537.14
2037	10	100,192,961.29	104,654,008.87	95,731,913.72	2,235,620.34
2037	11	88,873,266.38	93,337,625.12	84,408,907.64	2,237,279.71
2037	12	91,280,909.86	95,758,418.93	86,803,400.79	2,243,869.90
2038	1	99,974,399.91	104,496,144.47	95,452,655.35	2,266,038.18
2038	2	95,304,559.42	99,813,700.70	90,795,418.14	2,259,722.14
2038	3	94,499,554.54	98,980,831.48	90,018,277.61	2,245,758.13
2038	4	90,394,548.79	94,851,141.02	85,937,956.55	2,233,387.58
2038	5	92,795,436.38	97,262,691.98	88,328,180.78	2,238,731.45
2038	6	109,900,140.49	114,425,999.69	105,374,281.29	2,268,100.20
2038	7	123,441,154.46	127,973,732.46	118,908,576.46	2,271,467.27
2038	8	124,472,144.64	128,979,255.30	119,965,033.97	2,258,704.51
2038	9	120,511,345.05	124,998,331.33	116,024,358.78	2,248,619.33
2038	10	100,309,879.96	104,770,346.03	95,849,413.88	2,235,328.93
2038	11	88,966,241.94	93,431,698.49	84,500,785.39	2,237,829.87

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2038	12	91,320,452.65	95,800,781.54	86,840,123.76	2,245,283.03
2039	1	99,982,836.65	104,511,281.09	95,454,392.21	2,269,395.77
2039	2	95,311,042.55	99,825,796.73	90,796,288.37	2,262,535.00
2039	3	94,545,087.79	99,030,407.09	90,059,768.49	2,247,783.93
2039	4	90,489,542.57	94,945,984.17	86,033,100.97	2,233,312.09
2039	5	92,914,083.42	97,380,810.67	88,447,356.16	2,238,466.67
2039	6	110,001,689.41	114,528,273.11	105,475,105.70	2,268,463.28
2039	7	123,500,725.12	128,035,143.66	118,966,306.58	2,272,389.65
2039	8	124,523,095.08	129,031,591.04	120,014,599.11	2,259,398.74
2039	9	120,586,660.21	125,073,907.80	116,099,412.62	2,248,750.28
2039	10	100,448,381.28	104,908,266.57	95,988,495.99	2,235,037.87
2039	11	89,080,352.77	93,547,008.65	84,613,696.88	2,238,430.90
2039	12	91,383,032.86	95,866,391.56	86,899,674.16	2,246,801.39
2040	1	100,013,585.60	104,549,143.61	95,478,027.59	2,272,960.68
2040	2	95,337,914.29	99,858,634.16	90,817,194.42	2,265,524.66
2040	3	97,552,664.20	102,071,875.78	93,033,452.61	2,264,768.80
2040	4	90,632,851.81	95,089,214.10	86,176,489.53	2,233,272.34
2040	5	93,080,946.06	97,547,075.26	88,614,816.86	2,238,166.96
2040	6	110,159,906.85	114,686,919.42	105,632,894.27	2,268,678.20
2040	7	123,620,656.03	128,156,494.54	119,084,817.52	2,273,101.26
2040	8	124,634,574.37	129,144,098.08	120,125,050.65	2,259,913.79
2040	9	120,719,470.34	125,206,741.50	116,232,199.17	2,248,762.10
2040	10	100,622,166.85	105,081,460.01	96,162,873.69	2,234,741.13
2040	11	89,227,025.94	93,695,020.31	84,759,031.57	2,239,101.68
2040	12	91,479,727.21	95,966,383.49	86,993,070.92	2,248,453.95
2041	1	100,018,858.71	104,561,485.61	95,476,231.81	2,276,503.20
2041	2	95,341,555.05	99,868,207.32	90,814,902.78	2,268,497.64
2041	3	94,652,355.11	99,146,331.32	90,158,378.90	2,252,122.28
2041	4	90,742,852.09	95,199,236.63	86,286,467.54	2,233,283.50
2041	5	93,214,182.78	97,679,830.39	88,748,535.17	2,237,925.61
2041	6	110,282,873.17	114,810,428.96	105,755,317.38	2,268,950.43
2041	7	123,691,706.87	128,229,173.30	119,154,240.44	2,273,917.07
2041	8	124,697,856.71	129,208,619.10	120,187,094.31	2,260,534.55
2041	9	120,803,941.15	125,291,445.59	116,316,436.72	2,248,879.00
2041	10	100,717,044.55	105,175,900.56	96,258,188.53	2,234,522.06
2041	11	89,297,950.03	93,767,209.86	84,828,690.19	2,239,735.85
2041	12	91,498,529.48	95,988,476.39	87,008,582.56	2,250,103.03
2042	1	99,998,680.03	104,548,485.97	95,448,874.09	2,280,100.93
2042	2	95,321,951.43	99,854,632.44	90,789,270.42	2,271,518.90
2042	3	94,668,872.90	99,167,022.19	90,170,723.62	2,254,213.59
2042	4	90,790,416.00	95,246,910.80	86,333,921.20	2,233,338.75
2042	5	93,286,286.68	97,751,602.13	88,820,971.23	2,237,759.15

2042	6	110,339,331.41	114,867,707.93	105,810,954.90	2,269,361.73
2042	7	123,779,157.84	128,318,027.75	119,240,287.93	2,274,620.42
2042	8	124,778,070.48	129,289,893.40	120,266,247.57	2,261,066.02
2042	9	120,902,981.67	125,390,639.79	116,415,323.54	2,248,956.02
2042	10	100,883,116.61	105,341,489.77	96,424,743.46	2,234,280.08
2042	11	89,436,751.21	93,907,407.13	84,966,095.28	2,240,435.50
2042	12	91,591,463.09	96,084,834.12	87,098,092.07	2,251,819.00
2043	1	100,042,280.16	104,599,151.74	95,485,408.58	2,283,641.82
2043	2	95,360,734.00	99,899,354.54	90,822,113.46	2,274,495.45
2043	3	94,742,076.51	99,244,683.34	90,239,469.68	2,256,447.45
2043	4	90,937,810.18	95,394,464.95	86,481,155.42	2,233,418.92
2043	5	93,454,262.20	97,919,105.27	88,989,419.14	2,237,522.42
2043	6	110,504,531.79	115,033,183.58	105,975,880.01	2,269,499.68
2043	7	123,910,717.16	128,450,686.12	119,370,748.21	2,275,171.20
2043	8	124,902,476.36	129,415,096.81	120,389,855.90	2,261,465.70
2043	9	121,044,181.31	125,531,820.37	116,556,542.26	2,248,946.46
2043	10	101,043,769.49	105,501,705.61	96,585,833.38	2,234,061.06
2043	11	89,572,451.34	94,044,515.16	85,100,387.52	2,241,141.05
2043	12	91,684,034.36	96,180,839.27	87,187,229.45	2,253,539.86
2044	1	100,139,805.44	104,703,212.51	95,576,398.37	2,286,917.03
2044	2	95,448,948.10	99,993,067.34	90,904,828.85	2,277,251.08
2044	3	97,824,966.65	102,364,500.68	93,285,432.62	2,274,953.24
2044	4	91,102,813.57	95,559,679.76	86,645,947.37	2,233,524.87
2044	5	93,636,241.72	98,100,640.91	89,171,842.54	2,237,299.98
2044	6	110,686,124.66	115,214,933.30	106,157,316.03	2,269,578.29
2044	7	124,087,831.77	128,628,498.79	119,547,164.75	2,275,521.03
2044	8	125,072,809.45	129,585,883.87	120,559,735.04	2,261,693.20
2044	9	121,228,331.44	125,715,748.31	116,740,914.57	2,248,835.11
2044	10	101,267,264.80	105,724,748.28	96,809,781.31	2,233,834.22
2044	11	89,772,138.79	94,245,653.96	85,298,623.62	2,241,868.38
2044	12	91,850,728.70	96,350,823.24	87,350,634.17	2,255,188.43
2045	1	100,196,452.01	104,766,788.03	95,626,115.99	2,290,389.42
2045	2	95,499,751.22	100,049,702.13	90,949,800.32	2,280,173.57
2045	3	94,943,622.04	99,455,133.73	90,432,110.36	2,260,910.05
2045	4	91,230,551.16	95,687,700.45	86,773,401.87	2,233,666.75
2045	5	93,783,244.52	98,247,282.49	89,319,206.56	2,237,118.95
2045	6	110,830,416.85	115,359,542.12	106,301,291.58	2,269,736.97
2045	7	124,205,288.97	128,747,010.35	119,663,567.59	2,276,049.41
2045	8	125,183,828.66	129,697,687.48	120,669,969.84	2,262,086.30
2045	9	121,354,488.77	125,841,945.08	116,867,032.45	2,248,854.88
2045	10	101,395,375.77	105,852,533.32	96,938,218.21	2,233,670.89
2045	11	89,877,601.37	94,352,507.48	85,402,695.26	2,242,565.44

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2045	12	91,915,322.35	96,418,845.83	87,411,798.87	2,256,906.82
2046	1	100,294,855.15	104,872,334.40	95,717,375.91	2,293,969.20
2046	2	95,588,729.40	100,144,696.51	91,032,762.29	2,283,188.55
2046	3	95,064,368.07	99,580,707.79	90,548,028.35	2,263,329.58
2046	4	91,404,893.15	95,862,401.05	86,947,385.26	2,233,846.46
2046	5	93,977,498.05	98,441,119.42	89,513,876.67	2,236,910.18
2046	6	111,033,235.14	115,562,294.12	106,504,176.16	2,269,703.74
2046	7	124,415,544.86	128,957,511.27	119,873,578.44	2,276,172.21
2046	8	125,388,230.50	129,902,167.79	120,874,293.21	2,262,125.62
2046	9	121,568,326.57	126,055,384.31	117,081,268.83	2,248,655.14
2046	10	101,625,148.58	106,081,922.97	97,168,374.20	2,233,478.86
2046	11	90,078,083.00	94,554,612.35	85,601,553.65	2,243,378.92
2046	12	92,081,018.64	96,588,212.36	87,573,824.91	2,258,746.14
2047	1	100,471,260.27	105,055,813.16	95,886,707.39	2,297,514.10
2047	2	95,749,069.97	100,310,999.36	91,187,140.57	2,286,176.50
2047	3	95,255,579.54	99,777,157.58	90,734,001.49	2,265,954.73
2047	4	91,637,291.43	96,095,234.94	87,179,347.91	2,234,064.76
2047	5	94,228,485.46	98,691,640.06	89,765,330.85	2,236,676.27
2047	6	111,303,512.25	115,832,113.73	106,774,910.76	2,269,474.47
2047	7	124,690,499.69	129,232,138.92	120,148,860.46	2,276,008.24
2047	8	125,657,796.22	130,171,313.69	121,144,278.75	2,261,915.23
2047	9	121,843,198.08	126,329,558.63	117,356,837.53	2,248,305.75
2047	10	101,897,667.69	106,354,071.92	97,441,263.46	2,233,293.36
2047	11	90,319,171.97	94,797,428.86	85,840,915.07	2,244,244.66
2047	12	92,291,743.42	96,802,670.03	87,780,816.82	2,260,616.84
2048	1	100,627,123.89	105,218,765.19	96,035,482.60	2,301,066.40
2048	2	95,890,646.96	100,458,553.24	91,322,740.68	2,289,171.78
2048	3	98,420,863.86	102,982,962.40	93,858,765.32	2,286,261.27
2048	4	91,849,783.28	96,308,221.73	87,391,344.82	2,234,312.80
2048	5	94,460,313.75	98,923,066.66	89,997,560.84	2,236,474.96
2048	6	111,555,313.16	116,083,478.81	107,027,147.51	2,269,256.06
2048	7	124,948,230.59	129,489,519.50	120,406,941.68	2,275,832.68
2048	8	125,910,707.93	130,423,800.17	121,397,615.68	2,261,702.14
2048	9	122,100,302.88	126,586,014.33	117,614,591.43	2,247,980.46
2048	10	102,150,798.30	106,606,895.58	97,694,701.02	2,233,139.54
2048	11	90,540,357.93	95,020,345.41	86,060,370.45	2,245,111.93
2048	12	92,482,205.09	96,996,892.85	87,967,517.34	2,262,501.71
2049	1	100,761,026.49	105,360,004.97	96,162,048.02	2,304,743.37
2049	2	96,012,143.29	100,586,238.32	91,438,048.25	2,292,273.22
2049	3	95,578,734.03	100,110,631.92	91,046,836.14	2,271,126.44
2049	4	92,042,508.58	96,501,508.07	87,583,509.08	2,234,593.96
2049	5	94,671,738.79	99,134,161.94	90,209,315.64	2,236,309.70

2049	6	111,780,329.01	116,308,305.16	107,252,352.86	2,269,161.09
2049	7	125,173,108.16	129,714,450.10	120,631,766.21	2,275,859.26
2049	8	126,130,274.38	130,643,292.20	121,617,256.56	2,261,664.84
2049	9	122,326,998.65	126,812,273.62	117,841,723.67	2,247,761.72
2049	10	102,381,839.08	106,837,672.53	97,926,005.62	2,233,007.33
2049	11	90,742,289.37	95,224,049.12	86,260,529.62	2,246,000.09
2049	12	92,652,130.04	97,170,719.44	88,133,540.64	2,264,456.99
2050	1	100,876,084.24	105,482,421.41	96,269,747.07	2,308,431.12
2050	2	96,116,394.18	100,696,698.50	91,536,089.86	2,295,384.96
2050	3	95,712,526.47	100,249,514.32	91,175,538.62	2,273,677.24
2050	4	92,219,446.17	96,679,051.98	87,759,840.37	2,234,897.81
2050	5	94,872,885.72	99,334,988.37	90,410,783.07	2,236,149.09
2050	6	112,010,978.48	116,538,305.92	107,483,651.04	2,268,836.00
2050	7	125,419,594.44	129,960,092.84	120,879,096.05	2,275,436.52
2050	8	126,373,959.26	130,886,160.43	121,861,758.08	2,261,255.58
2050	9	122,568,827.70	127,053,346.34	118,084,309.07	2,247,382.69
2050	10	102,605,861.78	107,061,496.36	98,150,227.20	2,232,907.66
2050	11	90,927,408.17	95,410,936.08	86,443,880.26	2,246,886.19
2050	12	92,803,597.22	97,326,112.96	88,281,081.48	2,266,424.65

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Year	Month	LE_Sec_NonPVSales	JanHDD	FebHDD	MarHDD	DecHDD	MayCDD	JunCDD
2010	1	242,264,201.00	0.23		0	0	0	0
2010	2	223,477,751.00	0	0.212720265		0	0	0
2010	3	229,679,869.00	0	0	0.19	0	0	0
2010	4	230,286,466.00	0	0	0	0	0	0
2010	5	230,082,095.00	0	0	0	0	0.05	0
2010	6	272,463,243.00	0	0	0	0	0	0.21
2010	7	287,282,519.00	0	0	0	0	0	0
2010	8	290,446,163.00	0	0	0	0	0	0
2010	9	278,204,015.00	0	0	0	0	0	0
2010	10	242,495,457.00	0	0	0	0	0	0
2010	11	216,081,287.00	0	0	0	0	0	0
2010	12	236,316,627.00	0	0	0	0.17	0	0
2011	1	246,919,029.00	0.25		0	0	0	0
2011	2	216,489,906.00	0	0.200061036		0	0	0
2011	3	224,537,063.00	0	0	0.13	0	0	0
2011	4	220,407,324.00	0	0	0	0	0	0
2011	5	230,604,635.00	0	0	0	0	0.05	0
2011	6	265,690,312.00	0	0	0	0	0	0.2
2011	7	274,841,680.00	0	0	0	0	0	0
2011	8	295,537,975.00	0	0	0	0	0	0
2011	9	276,685,346.00	0	0	0	0	0	0
2011	10	233,895,721.00	0	0	0	0	0	0
2011	11	204,675,763.00	0	0	0	0	0	0
2011	12	215,661,178.00	0	0	0	0.12	0	0
2012	1	236,425,638.00	0.18		0	0	0	0
2012	2	219,987,944.00	0	0.158274276		0	0	0
2012	3	216,614,487.00	0	0	0.11	0	0	0
2012	4	227,795,633.00	0	0	0	0	0	0
2012	5	240,541,717.00	0	0	0	0	0.09	0
2012	6	264,516,328.00	0	0	0	0	0	0.19
2012	7	281,377,490.00	0	0	0	0	0	0
2012	8	277,035,391.00	0	0	0	0	0	0
2012	9	277,664,940.00	0	0	0	0	0	0
2012	10	226,097,670.00	0	0	0	0	0	0
2012	11	213,362,907.00	0	0	0	0	0	0
2012	12	217,207,108.00	0	0	0	0.13	0	0
2013	1	231,955,137.00	0.19		0	0	0	0
2013	2	223,261,866.00	0	0.186701027		0	0	0
2013	3	215,850,606.00	0	0	0.17	0	0	0
2013	4	215,883,056.00	0	0	0	0	0	0
2013	5	220,842,275.00	0	0	0	0	0.04	0

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2013	6	253,210,101.00	0	0	0	0	0	0.15
2013	7	267,112,011.00	0	0	0	0	0	0
2013	8	271,754,110.00	0	0	0	0	0	0
2013	9	282,939,932.00	0	0	0	0	0	0
2013	10	250,300,374.00	0	0	0	0	0	0
2013	11	222,621,311.00	0	0	0	0	0	0
2013	12	237,764,638.00	0	0	0	0.18	0	0
2014	1	255,499,583.00	0.24	0	0	0	0	0
2014	2	236,664,117.00	0	0.238502142	0	0	0	0
2014	3	233,246,255.00	0	0	0.18	0	0	0
2014	4	216,743,302.00	0	0	0	0	0	0
2014	5	234,058,865.00	0	0	0	0	0.08	0
2014	6	263,348,052.00	0	0	0	0	0	0.23
2014	7	278,467,516.00	0	0	0	0	0	0
2014	8	261,840,325.00	0	0	0	0	0	0
2014	9	277,512,946.00	0	0	0	0	0	0
2014	10	241,647,443.00	0	0	0	0	0	0
2014	11	221,605,500.00	0	0	0	0	0	0
2014	12	236,579,993.00	0	0	0	0.17	0	0
2015	1	243,626,701.00	0.22	0	0	0	0	0
2015	2	235,458,569.00	0	0.217863077	0	0	0	0
2015	3	236,235,288.00	0	0	0.2	0	0	0
2015	4	223,248,101.00	0	0	0	0	0	0
2015	5	225,493,021.00	0	0	0	0	0.07	0
2015	6	266,850,734.00	0	0	0	0	0	0.19
2015	7	274,828,187.00	0	0	0	0	0	0
2015	8	282,047,847.00	0	0	0	0	0	0
2015	9	285,965,681.00	0	0	0	0	0	0
2015	10	243,062,477.00	0	0	0	0	0	0
2015	11	225,037,079.00	0	0	0	0	0	0
2015	12	234,441,326.00	0	0	0	0.12	0	0
2016	1	242,276,605.00	0.18	0	0	0	0	0
2016	2	229,646,848.00	0	0.186994902	0	0	0	0
2016	3	219,312,814.00	0	0	0.11	0	0	0
2016	4	224,867,875.00	0	0	0	0	0	0
2016	5	229,979,893.00	0	0	0	0	0.04	0
2016	6	265,629,212.00	0	0	0	0	0	0.18
2016	7	287,960,395.00	0	0	0	0	0	0
2016	8	294,120,589.00	0	0	0	0	0	0
2016	9	296,683,093.00	0	0	0	0	0	0
2016	10	243,819,149.00	0	0	0	0	0	0
2016	11	229,926,868.00	0	0	0	0	0	0

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2016	12	233,617,377.00	0	0	0	0.16	0	0
2017	1	241,229,974.00	0.19	0	0	0	0	0
2017	2	216,515,598.00	0	0.132944514	0	0	0	0
2017	3	213,340,320.00	0	0	0.11	0	0	0
2017	4	225,438,790.00	0	0	0	0	0	0
2017	5	237,393,092.00	0	0	0	0	0.08	0
2017	6	270,440,679.00	0	0	0	0	0	0.18
2017	7	275,651,826.00	0	0	0	0	0	0
2017	8	268,437,119.00	0	0	0	0	0	0
2017	9	260,844,023.00	0	0	0	0	0	0
2017	10	251,255,403.00	0	0	0	0	0	0
2017	11	217,939,166.00	0	0	0	0	0	0
2017	12	224,753,322.00	0	0	0	0.16	0	0
2018	1		0.21	0	0	0	0	0
2018	2		0	0.191766415	0	0	0	0
2018	3		0	0	0.15	0	0	0
2018	4		0	0	0	0	0	0
2018	5		0	0	0	0	0.05	0
2018	6		0	0	0	0	0	0.16
2018	7		0	0	0	0	0	0
2018	8		0	0	0	0	0	0
2018	9		0	0	0	0	0	0
2018	10		0	0	0	0	0	0
2018	11		0	0	0	0	0	0
2018	12		0	0	0	0.15	0	0
2019	1		0.21	0	0	0	0	0
2019	2		0	0.191766415	0	0	0	0
2019	3		0	0	0.15	0	0	0
2019	4		0	0	0	0	0	0
2019	5		0	0	0	0	0.05	0
2019	6		0	0	0	0	0	0.16
2019	7		0	0	0	0	0	0
2019	8		0	0	0	0	0	0
2019	9		0	0	0	0	0	0
2019	10		0	0	0	0	0	0
2019	11		0	0	0	0	0	0
2019	12		0	0	0	0.15	0	0
2020	1		0.21	0	0	0	0	0
2020	2		0	0.191766415	0	0	0	0
2020	3		0	0	0.15	0	0	0
2020	4		0	0	0	0	0	0
2020	5		0	0	0	0	0.05	0

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2020	6	0	0	0	0	0	0.16
2020	7	0	0	0	0	0	0
2020	8	0	0	0	0	0	0
2020	9	0	0	0	0	0	0
2020	10	0	0	0	0	0	0
2020	11	0	0	0	0	0	0
2020	12	0	0	0	0.15	0	0
2021	1	0.21	0	0	0	0	0
2021	2	0	0.191766415	0	0	0	0
2021	3	0	0	0.15	0	0	0
2021	4	0	0	0	0	0	0
2021	5	0	0	0	0	0.05	0
2021	6	0	0	0	0	0	0.16
2021	7	0	0	0	0	0	0
2021	8	0	0	0	0	0	0
2021	9	0	0	0	0	0	0
2021	10	0	0	0	0	0	0
2021	11	0	0	0	0	0	0
2021	12	0	0	0	0.15	0	0
2022	1	0.21	0	0	0	0	0
2022	2	0	0.191766415	0	0	0	0
2022	3	0	0	0.15	0	0	0
2022	4	0	0	0	0	0	0
2022	5	0	0	0	0	0.05	0
2022	6	0	0	0	0	0	0.16
2022	7	0	0	0	0	0	0
2022	8	0	0	0	0	0	0
2022	9	0	0	0	0	0	0
2022	10	0	0	0	0	0	0
2022	11	0	0	0	0	0	0
2022	12	0	0	0	0.15	0	0
2023	1	0.21	0	0	0	0	0
2023	2	0	0.191766415	0	0	0	0
2023	3	0	0	0.15	0	0	0
2023	4	0	0	0	0	0	0
2023	5	0	0	0	0	0.05	0
2023	6	0	0	0	0	0	0.16
2023	7	0	0	0	0	0	0
2023	8	0	0	0	0	0	0
2023	9	0	0	0	0	0	0
2023	10	0	0	0	0	0	0
2023	11	0	0	0	0	0	0

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2023	12	0	0	0	0.15	0	0
2024	1	0.21	0	0	0	0	0
2024	2	0	0.191766415	0	0	0	0
2024	3	0	0	0.15	0	0	0
2024	4	0	0	0	0	0	0
2024	5	0	0	0	0	0.05	0
2024	6	0	0	0	0	0	0.16
2024	7	0	0	0	0	0	0
2024	8	0	0	0	0	0	0
2024	9	0	0	0	0	0	0
2024	10	0	0	0	0	0	0
2024	11	0	0	0	0	0	0
2024	12	0	0	0	0.15	0	0
2025	1	0.21	0	0	0	0	0
2025	2	0	0.191766415	0	0	0	0
2025	3	0	0	0.15	0	0	0
2025	4	0	0	0	0	0	0
2025	5	0	0	0	0	0.05	0
2025	6	0	0	0	0	0	0.16
2025	7	0	0	0	0	0	0
2025	8	0	0	0	0	0	0
2025	9	0	0	0	0	0	0
2025	10	0	0	0	0	0	0
2025	11	0	0	0	0	0	0
2025	12	0	0	0	0.15	0	0
2026	1	0.21	0	0	0	0	0
2026	2	0	0.191766415	0	0	0	0
2026	3	0	0	0.15	0	0	0
2026	4	0	0	0	0	0	0
2026	5	0	0	0	0	0.05	0
2026	6	0	0	0	0	0	0.16
2026	7	0	0	0	0	0	0
2026	8	0	0	0	0	0	0
2026	9	0	0	0	0	0	0
2026	10	0	0	0	0	0	0
2026	11	0	0	0	0	0	0
2026	12	0	0	0	0.15	0	0
2027	1	0.21	0	0	0	0	0
2027	2	0	0.191766415	0	0	0	0
2027	3	0	0	0.15	0	0	0
2027	4	0	0	0	0	0	0
2027	5	0	0	0	0	0.05	0

2027	6	0	0	0	0	0	0.16
2027	7	0	0	0	0	0	0
2027	8	0	0	0	0	0	0
2027	9	0	0	0	0	0	0
2027	10	0	0	0	0	0	0
2027	11	0	0	0	0	0	0
2027	12	0	0	0	0.15	0	0
2028	1	0.21	0	0	0	0	0
2028	2	0	0.191766415	0	0	0	0
2028	3	0	0	0.15	0	0	0
2028	4	0	0	0	0	0	0
2028	5	0	0	0	0	0.05	0
2028	6	0	0	0	0	0	0.16
2028	7	0	0	0	0	0	0
2028	8	0	0	0	0	0	0
2028	9	0	0	0	0	0	0
2028	10	0	0	0	0	0	0
2028	11	0	0	0	0	0	0
2028	12	0	0	0	0.15	0	0
2029	1	0.21	0	0	0	0	0
2029	2	0	0.191766415	0	0	0	0
2029	3	0	0	0.15	0	0	0
2029	4	0	0	0	0	0	0
2029	5	0	0	0	0	0.05	0
2029	6	0	0	0	0	0	0.16
2029	7	0	0	0	0	0	0
2029	8	0	0	0	0	0	0
2029	9	0	0	0	0	0	0
2029	10	0	0	0	0	0	0
2029	11	0	0	0	0	0	0
2029	12	0	0	0	0.15	0	0
2030	1	0.21	0	0	0	0	0
2030	2	0	0.191766415	0	0	0	0
2030	3	0	0	0.15	0	0	0
2030	4	0	0	0	0	0	0
2030	5	0	0	0	0	0.05	0
2030	6	0	0	0	0	0	0.16
2030	7	0	0	0	0	0	0
2030	8	0	0	0	0	0	0
2030	9	0	0	0	0	0	0
2030	10	0	0	0	0	0	0
2030	11	0	0	0	0	0	0

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2030	12	0	0	0	0.15	0	0
2031	1	0.21	0	0	0	0	0
2031	2	0	0.191766415	0	0	0	0
2031	3	0	0	0.15	0	0	0
2031	4	0	0	0	0	0	0
2031	5	0	0	0	0	0.05	0
2031	6	0	0	0	0	0	0.16
2031	7	0	0	0	0	0	0
2031	8	0	0	0	0	0	0
2031	9	0	0	0	0	0	0
2031	10	0	0	0	0	0	0
2031	11	0	0	0	0	0	0
2031	12	0	0	0	0.15	0	0
2032	1	0.21	0	0	0	0	0
2032	2	0	0.191766415	0	0	0	0
2032	3	0	0	0.15	0	0	0
2032	4	0	0	0	0	0	0
2032	5	0	0	0	0	0.05	0
2032	6	0	0	0	0	0	0.16
2032	7	0	0	0	0	0	0
2032	8	0	0	0	0	0	0
2032	9	0	0	0	0	0	0
2032	10	0	0	0	0	0	0
2032	11	0	0	0	0	0	0
2032	12	0	0	0	0.15	0	0
2033	1	0.21	0	0	0	0	0
2033	2	0	0.191766415	0	0	0	0
2033	3	0	0	0.15	0	0	0
2033	4	0	0	0	0	0	0
2033	5	0	0	0	0	0.05	0
2033	6	0	0	0	0	0	0.16
2033	7	0	0	0	0	0	0
2033	8	0	0	0	0	0	0
2033	9	0	0	0	0	0	0
2033	10	0	0	0	0	0	0
2033	11	0	0	0	0	0	0
2033	12	0	0	0	0.15	0	0
2034	1	0.21	0	0	0	0	0
2034	2	0	0.191766415	0	0	0	0
2034	3	0	0	0.15	0	0	0
2034	4	0	0	0	0	0	0
2034	5	0	0	0	0	0.05	0

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2034	6	0	0	0	0	0	0.16
2034	7	0	0	0	0	0	0
2034	8	0	0	0	0	0	0
2034	9	0	0	0	0	0	0
2034	10	0	0	0	0	0	0
2034	11	0	0	0	0	0	0
2034	12	0	0	0	0.15	0	0
2035	1	0.21	0	0	0	0	0
2035	2	0	0.191766415	0	0	0	0
2035	3	0	0	0.15	0	0	0
2035	4	0	0	0	0	0	0
2035	5	0	0	0	0	0.05	0
2035	6	0	0	0	0	0	0.16
2035	7	0	0	0	0	0	0
2035	8	0	0	0	0	0	0
2035	9	0	0	0	0	0	0
2035	10	0	0	0	0	0	0
2035	11	0	0	0	0	0	0
2035	12	0	0	0	0.15	0	0
2036	1	0.21	0	0	0	0	0
2036	2	0	0.191766415	0	0	0	0
2036	3	0	0	0.15	0	0	0
2036	4	0	0	0	0	0	0
2036	5	0	0	0	0	0.05	0
2036	6	0	0	0	0	0	0.16
2036	7	0	0	0	0	0	0
2036	8	0	0	0	0	0	0
2036	9	0	0	0	0	0	0
2036	10	0	0	0	0	0	0
2036	11	0	0	0	0	0	0
2036	12	0	0	0	0.15	0	0
2037	1	0.21	0	0	0	0	0
2037	2	0	0.191766415	0	0	0	0
2037	3	0	0	0.15	0	0	0
2037	4	0	0	0	0	0	0
2037	5	0	0	0	0	0.05	0
2037	6	0	0	0	0	0	0.16
2037	7	0	0	0	0	0	0
2037	8	0	0	0	0	0	0
2037	9	0	0	0	0	0	0
2037	10	0	0	0	0	0	0
2037	11	0	0	0	0	0	0

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2037	12	0	0	0	0.15	0	0
2038	1	0.21	0	0	0	0	0
2038	2	0	0.191766415	0	0	0	0
2038	3	0	0	0.15	0	0	0
2038	4	0	0	0	0	0	0
2038	5	0	0	0	0	0.05	0
2038	6	0	0	0	0	0	0.16
2038	7	0	0	0	0	0	0
2038	8	0	0	0	0	0	0
2038	9	0	0	0	0	0	0
2038	10	0	0	0	0	0	0
2038	11	0	0	0	0	0	0
2038	12	0	0	0	0.15	0	0
2039	1	0.21	0	0	0	0	0
2039	2	0	0.191766415	0	0	0	0
2039	3	0	0	0.15	0	0	0
2039	4	0	0	0	0	0	0
2039	5	0	0	0	0	0.05	0
2039	6	0	0	0	0	0	0.16
2039	7	0	0	0	0	0	0
2039	8	0	0	0	0	0	0
2039	9	0	0	0	0	0	0
2039	10	0	0	0	0	0	0
2039	11	0	0	0	0	0	0
2039	12	0	0	0	0.15	0	0
2040	1	0.21	0	0	0	0	0
2040	2	0	0.191766415	0	0	0	0
2040	3	0	0	0.15	0	0	0
2040	4	0	0	0	0	0	0
2040	5	0	0	0	0	0.05	0
2040	6	0	0	0	0	0	0.16
2040	7	0	0	0	0	0	0
2040	8	0	0	0	0	0	0
2040	9	0	0	0	0	0	0
2040	10	0	0	0	0	0	0
2040	11	0	0	0	0	0	0
2040	12	0	0	0	0.15	0	0
2041	1	0.21	0	0	0	0	0
2041	2	0	0.191766415	0	0	0	0
2041	3	0	0	0.15	0	0	0
2041	4	0	0	0	0	0	0
2041	5	0	0	0	0	0.05	0

2041	6	0	0	0	0	0	0.16
2041	7	0	0	0	0	0	0
2041	8	0	0	0	0	0	0
2041	9	0	0	0	0	0	0
2041	10	0	0	0	0	0	0
2041	11	0	0	0	0	0	0
2041	12	0	0	0	0.15	0	0
2042	1	0.21	0	0	0	0	0
2042	2	0	0.191766415	0	0	0	0
2042	3	0	0	0.15	0	0	0
2042	4	0	0	0	0	0	0
2042	5	0	0	0	0	0.05	0
2042	6	0	0	0	0	0	0.16
2042	7	0	0	0	0	0	0
2042	8	0	0	0	0	0	0
2042	9	0	0	0	0	0	0
2042	10	0	0	0	0	0	0
2042	11	0	0	0	0	0	0
2042	12	0	0	0	0.15	0	0
2043	1	0.21	0	0	0	0	0
2043	2	0	0.191766415	0	0	0	0
2043	3	0	0	0.15	0	0	0
2043	4	0	0	0	0	0	0
2043	5	0	0	0	0	0.05	0
2043	6	0	0	0	0	0	0.16
2043	7	0	0	0	0	0	0
2043	8	0	0	0	0	0	0
2043	9	0	0	0	0	0	0
2043	10	0	0	0	0	0	0
2043	11	0	0	0	0	0	0
2043	12	0	0	0	0.15	0	0
2044	1	0.21	0	0	0	0	0
2044	2	0	0.191766415	0	0	0	0
2044	3	0	0	0.15	0	0	0
2044	4	0	0	0	0	0	0
2044	5	0	0	0	0	0.05	0
2044	6	0	0	0	0	0	0.16
2044	7	0	0	0	0	0	0
2044	8	0	0	0	0	0	0
2044	9	0	0	0	0	0	0
2044	10	0	0	0	0	0	0
2044	11	0	0	0	0	0	0

2044	12	0	0	0	0.15	0	0
2045	1	0.21	0	0	0	0	0
2045	2	0	0.191766415	0	0	0	0
2045	3	0	0	0.15	0	0	0
2045	4	0	0	0	0	0	0
2045	5	0	0	0	0	0.05	0
2045	6	0	0	0	0	0	0.16
2045	7	0	0	0	0	0	0
2045	8	0	0	0	0	0	0
2045	9	0	0	0	0	0	0
2045	10	0	0	0	0	0	0
2045	11	0	0	0	0	0	0
2045	12	0	0	0	0.15	0	0
2046	1	0.21	0	0	0	0	0
2046	2	0	0.191766415	0	0	0	0
2046	3	0	0	0.15	0	0	0
2046	4	0	0	0	0	0	0
2046	5	0	0	0	0	0.05	0
2046	6	0	0	0	0	0	0.16
2046	7	0	0	0	0	0	0
2046	8	0	0	0	0	0	0
2046	9	0	0	0	0	0	0
2046	10	0	0	0	0	0	0
2046	11	0	0	0	0	0	0
2046	12	0	0	0	0.15	0	0
2047	1	0.21	0	0	0	0	0
2047	2	0	0.191766415	0	0	0	0
2047	3	0	0	0.15	0	0	0
2047	4	0	0	0	0	0	0
2047	5	0	0	0	0	0.05	0
2047	6	0	0	0	0	0	0.16
2047	7	0	0	0	0	0	0
2047	8	0	0	0	0	0	0
2047	9	0	0	0	0	0	0
2047	10	0	0	0	0	0	0
2047	11	0	0	0	0	0	0
2047	12	0	0	0	0.15	0	0
2048	1	0.21	0	0	0	0	0
2048	2	0	0.191766415	0	0	0	0
2048	3	0	0	0.15	0	0	0
2048	4	0	0	0	0	0	0
2048	5	0	0	0	0	0.05	0

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2048	6	0	0	0	0	0	0.16
2048	7	0	0	0	0	0	0
2048	8	0	0	0	0	0	0
2048	9	0	0	0	0	0	0
2048	10	0	0	0	0	0	0
2048	11	0	0	0	0	0	0
2048	12	0	0	0	0.15	0	0
2049	1	0.21	0	0	0	0	0
2049	2	0	0.191766415	0	0	0	0
2049	3	0	0	0.15	0	0	0
2049	4	0	0	0	0	0	0
2049	5	0	0	0	0	0.05	0
2049	6	0	0	0	0	0	0.16
2049	7	0	0	0	0	0	0
2049	8	0	0	0	0	0	0
2049	9	0	0	0	0	0	0
2049	10	0	0	0	0	0	0
2049	11	0	0	0	0	0	0
2049	12	0	0	0	0.15	0	0
2050	1	0.21	0	0	0	0	0
2050	2	0	0.191766415	0	0	0	0
2050	3	0	0	0.15	0	0	0
2050	4	0	0	0	0	0	0
2050	5	0	0	0	0	0.05	0
2050	6	0	0	0	0	0	0.16
2050	7	0	0	0	0	0	0
2050	8	0	0	0	0	0	0
2050	9	0	0	0	0	0	0
2050	10	0	0	0	0	0	0
2050	11	0	0	0	0	0	0
2050	12	0	0	0	0.15	0	0

JulCDD	AugCDD	SepCDD	OctCDD	AprCDD	NovCDD	Aft16	AftAug2013	LE_SEC_CustPlusFcst
0	0	0	0	0	0	0	0	3,297.00
0	0	0	0	0	0	0	0	3,301.00
0	0	0	0	0	0	0	0	3,287.00
0	0	0	0	0.02	0	0	0	3,284.00
0	0	0	0	0	0	0	0	3,282.00
0	0	0	0	0	0	0	0	3,279.00
0.33	0	0	0	0	0	0	0	3,275.00
0	0.36	0	0	0	0	0	0	3,246.00
0	0	0.28	0	0	0	0	0	3,222.00
0	0	0	0.11	0	0	0	0	3,212.00
0	0	0	0	0	0.01	0	0	3,185.00
0	0	0	0	0	0	0	0	3,150.00
0	0	0	0	0	0	0	0	3,146.00
0	0	0	0	0	0	0	0	3,139.00
0	0	0	0	0	0	0	0	3,131.00
0	0	0	0	0.02	0	0	0	3,116.00
0	0	0	0	0	0	0	0	3,115.00
0	0	0	0	0	0	0	0	3,121.00
0.28	0	0	0	0	0	0	0	3,120.00
0	0.37	0	0	0	0	0	0	3,122.00
0	0	0.23	0	0	0	0	0	3,127.00
0	0	0	0.04	0	0	0	0	3,122.00
0	0	0	0	0	0	0	0	3,058.00
0	0	0	0	0	0	0	0	3,047.00
0	0	0	0	0	0	0	0	3,069.00
0	0	0	0	0	0	0	0	3,062.00
0	0	0	0	0	0	0	0	3,059.00
0	0	0	0	0.05	0	0	0	3,064.00
0	0	0	0	0	0	0	0	3,047.00
0	0	0	0	0	0	0	0	3,030.00
0.35	0	0	0	0	0	0	0	3,030.00
0	0.33	0	0	0	0	0	0	3,027.00
0	0	0.22	0	0	0	0	0	3,024.00
0	0	0	0.04	0	0	0	0	3,016.00
0	0	0	0	0	0.01	0	0	3,016.00
0	0	0	0	0	0	0	0	3,021.00
0	0	0	0	0	0	0	0	3,025.00
0	0	0	0	0	0	0	0	3,022.00
0	0	0	0	0	0	0	0	3,019.00
0	0	0	0	0.01	0	0	0	3,032.00
0	0	0	0	0	0	0	0	3,035.00

0	0	0	0	0	0	0	0	3,042.00
0.24	0	0	0	0	0	0	0	3,072.00
0	0.22	0	0	0	0	0	1	3,073.00
0	0	0.24	0	0	0	0	1	3,085.00
0	0	0	0.08	0	0	0	1	3,093.00
0	0	0	0	0	0	0	1	3,095.00
0	0	0	0	0	0	0	1	3,105.00
0	0	0	0	0	0	0	1	3,124.00
0	0	0	0	0	0	0	1	3,110.00
0	0	0	0	0	0	0	1	3,111.00
0	0	0	0	0.01	0	0	1	3,113.00
0	0	0	0	0	0	0	1	3,115.00
0	0	0	0	0	0	0	1	3,140.00
0.26	0	0	0	0	0	0	1	3,149.00
0	0.21	0	0	0	0	0	1	3,153.00
0	0	0.22	0	0	0	0	1	3,147.00
0	0	0	0.05	0	0	0	1	3,159.00
0	0	0	0	0	0	0	1	3,159.00
0	0	0	0	0	0	0	1	3,177.00
0	0	0	0	0	0	0	1	3,192.00
0	0	0	0	0	0	0	1	3,201.00
0	0	0	0	0	0	0	1	3,202.00
0	0	0	0	0.01	0	0	1	3,201.00
0	0	0	0	0	0	0	1	3,207.00
0	0	0	0	0	0	0	1	3,222.00
0.26	0	0	0	0	0	0	1	3,208.00
0	0.27	0	0	0	0	0	1	3,212.00
0	0	0.21	0	0	0	0	1	3,205.00
0	0	0	0.07	0	0	0	1	3,203.00
0	0	0	0	0	0.01	0	1	3,228.00
0	0	0	0	0	0	0	1	3,232.00
0	0	0	0	0	0	0	1	3,232.00
0	0	0	0	0	0	0	1	3,235.00
0	0	0	0	0	0	0	1	3,235.00
0	0	0	0	0.01	0	0	1	3,232.00
0	0	0	0	0	0	0	1	3,232.00
0	0	0	0	0	0	0	1	3,240.00
0.3	0	0	0	0	0	0	1	3,231.00
0	0.34	0	0	0	0	0	1	3,245.00
0	0	0.28	0	0	0	0	1	3,240.00
0	0	0	0.11	0	0	0	1	3,230.00
0	0	0	0	0	0.03	0	1	3,237.00

0	0	0	0	0	0	0	1	3,246.00
0	0	0	0	0	0	1	1	3,250.00
0	0	0	0	0	0	1	1	3,251.00
0	0	0	0	0	0	1	1	3,247.00
0	0	0	0	0.03	0	1	1	3,241.00
0	0	0	0	0	0	1	1	3,256.00
0	0	0	0	0	0	1	1	3,259.00
0.28	0	0	0	0	0	1	1	3,265.00
0	0.25	0	0	0	0	1	1	3,297.00
0	0	0.15	0	0	0	1	1	3,309.00
0	0	0	0.1	0	0	1	1	3,278.00
0	0	0	0	0	0.01	1	1	3,274.00
0	0	0	0	0	0	1	1	3,279.00
0	0	0	0	0	0	1	1	3,281.62
0	0	0	0	0	0	1	1	3,284.17
0	0	0	0	0	0	1	1	3,286.66
0	0	0	0	0.02	0	1	1	3,289.13
0	0	0	0	0	0	1	1	3,291.55
0	0	0	0	0	0	1	1	3,293.89
0.27	0	0	0	0	0	1	1	3,296.26
0	0.29	0	0	0	0	1	1	3,298.56
0	0	0.23	0	0	0	1	1	3,300.80
0	0	0	0.08	0	0	1	1	3,303.07
0	0	0	0	0	0.01	1	1	3,305.27
0	0	0	0	0	0	1	1	3,307.42
0	0	0	0	0	0	1	1	3,309.58
0	0	0	0	0	0	1	1	3,311.69
0	0	0	0	0	0	1	1	3,313.75
0	0	0	0	0.02	0	1	1	3,315.82
0	0	0	0	0	0	1	1	3,317.85
0	0	0	0	0	0	1	1	3,319.82
0.27	0	0	0	0	0	1	1	3,321.80
0	0.29	0	0	0	0	1	1	3,323.73
0	0	0.23	0	0	0	1	1	3,325.61
0	0	0	0.08	0	0	1	1	3,327.49
0	0	0	0	0	0.01	1	1	3,329.32
0	0	0	0	0	0	1	1	3,331.11
0	0	0	0	0	0	1	1	3,332.89
0	0	0	0	0	0	1	1	3,334.63
0	0	0	0	0	0	1	1	3,336.33
0	0	0	0	0.02	0	1	1	3,338.04
0	0	0	0	0	0	1	1	3,339.70

0	0	0	0	0	0	1	1	3,341.32
0.27	0	0	0	0	0	1	1	3,342.92
0	0.29	0	0	0	0	1	1	3,344.48
0	0	0.23	0	0	0	1	1	3,346.00
0	0	0	0.08	0	0	1	1	3,347.48
0	0	0	0	0	0.01	1	1	3,348.92
0	0	0	0	0	0	1	1	3,350.33
0	0	0	0	0	0	1	1	3,351.73
0	0	0	0	0	0	1	1	3,353.10
0	0	0	0	0	0	1	1	3,354.43
0	0	0	0	0.02	0	1	1	3,355.75
0	0	0	0	0	0	1	1	3,357.03
0	0	0	0	0	0	1	1	3,358.28
0.27	0	0	0	0	0	1	1	3,359.51
0	0.29	0	0	0	0	1	1	3,360.70
0	0	0.23	0	0	0	1	1	3,361.86
0	0	0	0.08	0	0	1	1	3,363.01
0	0	0	0	0	0.01	1	1	3,364.13
0	0	0	0	0	0	1	1	3,365.22
0	0	0	0	0	0	1	1	3,366.30
0	0	0	0	0	0	1	1	3,367.35
0	0	0	0	0	0	1	1	3,368.37
0	0	0	0	0.02	0	1	1	3,369.38
0	0	0	0	0	0	1	1	3,370.36
0	0	0	0	0	0	1	1	3,371.31
0.27	0	0	0	0	0	1	1	3,372.25
0	0.29	0	0	0	0	1	1	3,373.18
0	0	0.23	0	0	0	1	1	3,374.07
0	0	0	0.08	0	0	1	1	3,374.96
0	0	0	0	0	0.01	1	1	3,375.83
0	0	0	0	0	0	1	1	3,376.67
0	0	0	0	0	0	1	1	3,377.50
0	0	0	0	0	0	1	1	3,378.31
0	0	0	0	0	0	1	1	3,379.10
0	0	0	0	0.02	0	1	1	3,379.88
0	0	0	0	0	0	1	1	3,380.64
0	0	0	0	0	0	1	1	3,381.37
0.27	0	0	0	0	0	1	1	3,382.10
0	0.29	0	0	0	0	1	1	3,382.82
0	0	0.23	0	0	0	1	1	3,383.51
0	0	0	0.08	0	0	1	1	3,384.19
0	0	0	0	0	0.01	1	1	3,384.86

0	0	0	0	0	0	1	1	3,385.50
0	0	0	0	0	0	1	1	3,386.14
0	0	0	0	0	0	1	1	3,386.77
0	0	0	0	0	0	1	1	3,387.37
0	0	0	0	0.02	0	1	1	3,387.96
0	0	0	0	0	0	1	1	3,388.54
0	0	0	0	0	0	1	1	3,389.10
0.27	0	0	0	0	0	1	1	3,389.65
0	0.29	0	0	0	0	1	1	3,390.19
0	0	0.23	0	0	0	1	1	3,390.71
0	0	0	0.08	0	0	1	1	3,391.23
0	0	0	0	0	0.01	1	1	3,391.73
0	0	0	0	0	0	1	1	3,392.22
0	0	0	0	0	0	1	1	3,392.70
0	0	0	0	0	0	1	1	3,393.18
0	0	0	0	0	0	1	1	3,393.64
0	0	0	0	0.02	0	1	1	3,394.09
0	0	0	0	0	0	1	1	3,394.53
0	0	0	0	0	0	1	1	3,394.96
0.27	0	0	0	0	0	1	1	3,395.38
0	0.29	0	0	0	0	1	1	3,395.79
0	0	0.23	0	0	0	1	1	3,396.19
0	0	0	0.08	0	0	1	1	3,396.59
0	0	0	0	0	0.01	1	1	3,396.97
0	0	0	0	0	0	1	1	3,397.35
0	0	0	0	0	0	1	1	3,397.72
0	0	0	0	0	0	1	1	3,398.09
0	0	0	0	0	0	1	1	3,398.45
0	0	0	0	0.02	0	1	1	3,398.80
0	0	0	0	0	0	1	1	3,399.15
0	0	0	0	0	0	1	1	3,399.49
0.27	0	0	0	0	0	1	1	3,399.84
0	0.29	0	0	0	0	1	1	3,400.18
0	0	0.23	0	0	0	1	1	3,400.51
0	0	0	0.08	0	0	1	1	3,400.85
0	0	0	0	0	0.01	1	1	3,401.19
0	0	0	0	0	0	1	1	3,401.51
0	0	0	0	0	0	1	1	3,401.84
0	0	0	0	0	0	1	1	3,402.16
0	0	0	0	0	0	1	1	3,402.47
0	0	0	0	0.02	0	1	1	3,402.79
0	0	0	0	0	0	1	1	3,403.10

0	0	0	0	0	0	1	1	3,403.40
0.27	0	0	0	0	0	1	1	3,403.71
0	0.29	0	0	0	0	1	1	3,404.00
0	0	0.23	0	0	0	1	1	3,404.30
0	0	0	0.08	0	0	1	1	3,404.59
0	0	0	0	0	0.01	1	1	3,404.88
0	0	0	0	0	0	1	1	3,405.17
0	0	0	0	0	0	1	1	3,405.45
0	0	0	0	0	0	1	1	3,405.73
0	0	0	0	0	0	1	1	3,406.01
0	0	0	0	0.02	0	1	1	3,406.28
0	0	0	0	0	0	1	1	3,406.55
0	0	0	0	0	0	1	1	3,406.81
0.27	0	0	0	0	0	1	1	3,407.08
0	0.29	0	0	0	0	1	1	3,407.35
0	0	0.23	0	0	0	1	1	3,407.61
0	0	0	0.08	0	0	1	1	3,407.86
0	0	0	0	0	0.01	1	1	3,408.12
0	0	0	0	0	0	1	1	3,408.36
0	0	0	0	0	0	1	1	3,408.63
0	0	0	0	0	0	1	1	3,408.88
0	0	0	0	0	0	1	1	3,409.13
0	0	0	0	0.02	0	1	1	3,409.39
0	0	0	0	0	0	1	1	3,409.65
0	0	0	0	0	0	1	1	3,409.90
0.27	0	0	0	0	0	1	1	3,410.16
0	0.29	0	0	0	0	1	1	3,410.42
0	0	0.23	0	0	0	1	1	3,410.67
0	0	0	0.08	0	0	1	1	3,410.93
0	0	0	0	0	0.01	1	1	3,411.18
0	0	0	0	0	0	1	1	3,411.43
0	0	0	0	0	0	1	1	3,411.69
0	0	0	0	0	0	1	1	3,411.93
0	0	0	0	0	0	1	1	3,412.17
0	0	0	0	0.02	0	1	1	3,412.47
0	0	0	0	0	0	1	1	3,412.75
0	0	0	0	0	0	1	1	3,413.03
0.27	0	0	0	0	0	1	1	3,413.31
0	0.29	0	0	0	0	1	1	3,413.57
0	0	0.23	0	0	0	1	1	3,413.83
0	0	0	0.08	0	0	1	1	3,414.09
0	0	0	0	0	0.01	1	1	3,414.34

0	0	0	0	0	0	1	1	3,414.59
0	0	0	0	0	0	1	1	3,414.84
0	0	0	0	0	0	1	1	3,415.10
0	0	0	0	0	0	1	1	3,415.34
0	0	0	0	0.02	0	1	1	3,415.60
0	0	0	0	0	0	1	1	3,415.85
0	0	0	0	0	0	1	1	3,416.10
0.27	0	0	0	0	0	1	1	3,416.36
0	0.29	0	0	0	0	1	1	3,416.62
0	0	0.23	0	0	0	1	1	3,416.87
0	0	0	0.08	0	0	1	1	3,417.14
0	0	0	0	0	0.01	1	1	3,417.39
0	0	0	0	0	0	1	1	3,417.64
0	0	0	0	0	0	1	1	3,417.91
0	0	0	0	0	0	1	1	3,418.17
0	0	0	0	0	0	1	1	3,418.42
0	0	0	0	0.02	0	1	1	3,418.68
0	0	0	0	0	0	1	1	3,418.93
0	0	0	0	0	0	1	1	3,419.18
0.27	0	0	0	0	0	1	1	3,419.44
0	0.29	0	0	0	0	1	1	3,419.69
0	0	0.23	0	0	0	1	1	3,419.93
0	0	0	0.08	0	0	1	1	3,420.18
0	0	0	0	0	0.01	1	1	3,420.43
0	0	0	0	0	0	1	1	3,420.67
0	0	0	0	0	0	1	1	3,420.93
0	0	0	0	0	0	1	1	3,421.18
0	0	0	0	0	0	1	1	3,421.42
0	0	0	0	0.02	0	1	1	3,421.68
0	0	0	0	0	0	1	1	3,421.93
0	0	0	0	0	0	1	1	3,422.17
0.27	0	0	0	0	0	1	1	3,422.42
0	0.29	0	0	0	0	1	1	3,422.67
0	0	0.23	0	0	0	1	1	3,422.91
0	0	0	0.08	0	0	1	1	3,423.16
0	0	0	0	0	0.01	1	1	3,423.41
0	0	0	0	0	0	1	1	3,423.65
0	0	0	0	0	0	1	1	3,423.92
0	0	0	0	0	0	1	1	3,424.18
0	0	0	0	0	0	1	1	3,424.43
0	0	0	0	0.02	0	1	1	3,424.69
0	0	0	0	0	0	1	1	3,424.95

0	0	0	0	0	0	1	1	3,425.19
0.27	0	0	0	0	0	1	1	3,425.45
0	0.29	0	0	0	0	1	1	3,425.70
0	0	0.23	0	0	0	1	1	3,425.94
0	0	0	0.08	0	0	1	1	3,426.20
0	0	0	0	0	0.01	1	1	3,426.45
0	0	0	0	0	0	1	1	3,426.70
0	0	0	0	0	0	1	1	3,426.95
0	0	0	0	0	0	1	1	3,427.20
0	0	0	0	0	0	1	1	3,427.45
0	0	0	0	0.02	0	1	1	3,427.70
0	0	0	0	0	0	1	1	3,427.95
0	0	0	0	0	0	1	1	3,428.20
0.27	0	0	0	0	0	1	1	3,428.45
0	0.29	0	0	0	0	1	1	3,428.70
0	0	0.23	0	0	0	1	1	3,428.94
0	0	0	0.08	0	0	1	1	3,429.20
0	0	0	0	0	0.01	1	1	3,429.45
0	0	0	0	0	0	1	1	3,429.69
0	0	0	0	0	0	1	1	3,429.96
0	0	0	0	0	0	1	1	3,430.21
0	0	0	0	0	0	1	1	3,430.46
0	0	0	0	0.02	0	1	1	3,430.72
0	0	0	0	0	0	1	1	3,430.97
0	0	0	0	0	0	1	1	3,431.22
0.27	0	0	0	0	0	1	1	3,431.48
0	0.29	0	0	0	0	1	1	3,431.73
0	0	0.23	0	0	0	1	1	3,431.98
0	0	0	0.08	0	0	1	1	3,432.24
0	0	0	0	0	0.01	1	1	3,432.50
0	0	0	0	0	0	1	1	3,432.74
0	0	0	0	0	0	1	1	3,433.01
0	0	0	0	0	0	1	1	3,433.27
0	0	0	0	0	0	1	1	3,433.53
0	0	0	0	0.02	0	1	1	3,433.80
0	0	0	0	0	0	1	1	3,434.06
0	0	0	0	0	0	1	1	3,434.32
0.27	0	0	0	0	0	1	1	3,434.59
0	0.29	0	0	0	0	1	1	3,434.86
0	0	0.23	0	0	0	1	1	3,435.12
0	0	0	0.08	0	0	1	1	3,435.40
0	0	0	0	0	0.01	1	1	3,435.67

0	0	0	0	0	0	1	1	3,435.94
0	0	0	0	0	0	1	1	3,436.22
0	0	0	0	0	0	1	1	3,436.50
0	0	0	0	0	0	1	1	3,436.77
0	0	0	0	0.02	0	1	1	3,437.06
0	0	0	0	0	0	1	1	3,437.34
0	0	0	0	0	0	1	1	3,437.61
0.27	0	0	0	0	0	1	1	3,437.91
0	0.29	0	0	0	0	1	1	3,438.19
0	0	0.23	0	0	0	1	1	3,438.47
0	0	0	0.08	0	0	1	1	3,438.77
0	0	0	0	0	0.01	1	1	3,439.05
0	0	0	0	0	0	1	1	3,439.33
0	0	0	0	0	0	1	1	3,439.63
0	0	0	0	0	0	1	1	3,439.92
0	0	0	0	0	0	1	1	3,440.20
0	0	0	0	0.02	0	1	1	3,440.49
0	0	0	0	0	0	1	1	3,440.78
0	0	0	0	0	0	1	1	3,441.06
0.27	0	0	0	0	0	1	1	3,441.36
0	0.29	0	0	0	0	1	1	3,441.65
0	0	0.23	0	0	0	1	1	3,441.94
0	0	0	0.08	0	0	1	1	3,442.24
0	0	0	0	0	0.01	1	1	3,442.54
0	0	0	0	0	0	1	1	3,442.82
0	0	0	0	0	0	1	1	3,443.13
0	0	0	0	0	0	1	1	3,443.43
0	0	0	0	0	0	1	1	3,443.72
0	0	0	0	0.02	0	1	1	3,444.07
0	0	0	0	0	0	1	1	3,444.41
0	0	0	0	0	0	1	1	3,444.73
0.27	0	0	0	0	0	1	1	3,445.06
0	0.29	0	0	0	0	1	1	3,445.37
0	0	0.23	0	0	0	1	1	3,445.67
0	0	0	0.08	0	0	1	1	3,445.98
0	0	0	0	0	0.01	1	1	3,446.28
0	0	0	0	0	0	1	1	3,446.57
0	0	0	0	0	0	1	1	3,446.88
0	0	0	0	0	0	1	1	3,447.18
0	0	0	0	0	0	1	1	3,447.47
0	0	0	0	0.02	0	1	1	3,447.78
0	0	0	0	0	0	1	1	3,448.08

0	0	0	0	0	0	1	1	3,448.38
0.27	0	0	0	0	0	1	1	3,448.69
0	0.29	0	0	0	0	1	1	3,449.00
0	0	0.23	0	0	0	1	1	3,449.30
0	0	0	0.08	0	0	1	1	3,449.62
0	0	0	0	0	0.01	1	1	3,449.93
0	0	0	0	0	0	1	1	3,450.23
0	0	0	0	0	0	1	1	3,450.55
0	0	0	0	0	0	1	1	3,450.87
0	0	0	0	0	0	1	1	3,451.17
0	0	0	0	0.02	0	1	1	3,451.50
0	0	0	0	0	0	1	1	3,451.82
0	0	0	0	0	0	1	1	3,452.13
0.27	0	0	0	0	0	1	1	3,452.46
0	0.29	0	0	0	0	1	1	3,452.78
0	0	0.23	0	0	0	1	1	3,453.09
0	0	0	0.08	0	0	1	1	3,453.42
0	0	0	0	0	0.01	1	1	3,453.75
0	0	0	0	0	0	1	1	3,454.07
0	0	0	0	0	0	1	1	3,454.40
0	0	0	0	0	0	1	1	3,454.73
0	0	0	0	0	0	1	1	3,455.05
0	0	0	0	0.02	0	1	1	3,455.39
0	0	0	0	0	0	1	1	3,455.72
0	0	0	0	0	0	1	1	3,456.04
0.27	0	0	0	0	0	1	1	3,456.38
0	0.29	0	0	0	0	1	1	3,456.72
0	0	0.23	0	0	0	1	1	3,457.04
0	0	0	0.08	0	0	1	1	3,457.40
0	0	0	0	0	0.01	1	1	3,457.74
0	0	0	0	0	0	1	1	3,458.07
0	0	0	0	0	0	1	1	3,458.42
0	0	0	0	0	0	1	1	3,458.75
0	0	0	0	0	0	1	1	3,459.08
0	0	0	0	0.02	0	1	1	3,459.43
0	0	0	0	0	0	1	1	3,459.78
0	0	0	0	0	0	1	1	3,460.11
0.27	0	0	0	0	0	1	1	3,460.47
0	0.29	0	0	0	0	1	1	3,460.81
0	0	0.23	0	0	0	1	1	3,461.15
0	0	0	0.08	0	0	1	1	3,461.51
0	0	0	0	0	0.01	1	1	3,461.87

0	0	0	0	0	0	1	1	3,462.21
0	0	0	0	0	0	1	1	3,462.57
0	0	0	0	0	0	1	1	3,462.91
0	0	0	0	0	0	1	1	3,463.24
0	0	0	0	0.02	0	1	1	3,463.60
0	0	0	0	0	0	1	1	3,463.94
0	0	0	0	0	0	1	1	3,464.27
0.27	0	0	0	0	0	1	1	3,464.63
0	0.29	0	0	0	0	1	1	3,464.97
0	0	0.23	0	0	0	1	1	3,465.31
0	0	0	0.08	0	0	1	1	3,465.67
0	0	0	0	0	0.01	1	1	3,466.02
0	0	0	0	0	0	1	1	3,466.36
0	0	0	0	0	0	1	1	3,466.70
0	0	0	0	0	0	1	1	3,467.04
0	0	0	0	0	0	1	1	3,467.37
0	0	0	0	0.02	0	1	1	3,467.71
0	0	0	0	0	0	1	1	3,468.04
0	0	0	0	0	0	1	1	3,468.37
0.27	0	0	0	0	0	1	1	3,468.71
0	0.29	0	0	0	0	1	1	3,469.05
0	0	0.23	0	0	0	1	1	3,469.37
0	0	0	0.08	0	0	1	1	3,469.72
0	0	0	0	0	0.01	1	1	3,470.06
0	0	0	0	0	0	1	1	3,470.39
0	0	0	0	0	0	1	1	3,470.74
0	0	0	0	0	0	1	1	3,471.09
0	0	0	0	0	0	1	1	3,471.42
0	0	0	0	0.02	0	1	1	3,471.76
0	0	0	0	0	0	1	1	3,472.10
0	0	0	0	0	0	1	1	3,472.43
0.27	0	0	0	0	0	1	1	3,472.77
0	0.29	0	0	0	0	1	1	3,473.11
0	0	0.23	0	0	0	1	1	3,473.43
0	0	0	0.08	0	0	1	1	3,473.79
0	0	0	0	0	0.01	1	1	3,474.13
0	0	0	0	0	0	1	1	3,474.46
0	0	0	0	0	0	1	1	3,474.82
0	0	0	0	0	0	1	1	3,475.16
0	0	0	0	0	0	1	1	3,475.50
0	0	0	0	0.02	0	1	1	3,475.85
0	0	0	0	0	0	1	1	3,476.18

0	0	0	0	0	0	1	1	3,476.51
0.27	0	0	0	0	0	1	1	3,476.86
0	0.29	0	0	0	0	1	1	3,477.20
0	0	0.23	0	0	0	1	1	3,477.53
0	0	0	0.08	0	0	1	1	3,477.88
0	0	0	0	0	0.01	1	1	3,478.23
0	0	0	0	0	0	1	1	3,478.56
0	0	0	0	0	0	1	1	3,478.92
0	0	0	0	0	0	1	1	3,479.27
0	0	0	0	0	0	1	1	3,479.61
0	0	0	0	0.02	0	1	1	3,479.96
0	0	0	0	0	0	1	1	3,480.30
0	0	0	0	0	0	1	1	3,480.63
0.27	0	0	0	0	0	1	1	3,480.98
0	0.29	0	0	0	0	1	1	3,481.32
0	0	0.23	0	0	0	1	1	3,481.65
0	0	0	0.08	0	0	1	1	3,482.01
0	0	0	0	0	0.01	1	1	3,482.35
0	0	0	0	0	0	1	1	3,482.69
0	0	0	0	0	0	1	1	3,483.05
0	0	0	0	0	0	1	1	3,483.40
0	0	0	0	0	0	1	1	3,483.75
0	0	0	0	0.02	0	1	1	3,484.10
0	0	0	0	0	0	1	1	3,484.44
0	0	0	0	0	0	1	1	3,484.78
0.27	0	0	0	0	0	1	1	3,485.13
0	0.29	0	0	0	0	1	1	3,485.47
0	0	0.23	0	0	0	1	1	3,485.80
0	0	0	0.08	0	0	1	1	3,486.16
0	0	0	0	0	0.01	1	1	3,486.51
0	0	0	0	0	0	1	1	3,486.85

Commercial Secondary is a combination of the following rates:

PS Secondary
TOD Secondary

Variable	Count	Mean	StdDev	Min	Max
LE_Sec_NonPVSales	96	244,913,929.51	24,489,110.36	204,675,763.00	296,683,093.00
JanHDD	96	0.018	0.059	0	0.254
FebHDD	96	0.016	0.054	0	0.239
MarHDD	96	0.012	0.043	0	0.197
DecHDD	96	0.013	0.043	0	0.182
MayCDD	96	0.005	0.018	0	0.087
JunCDD	96	0.016	0.054	0	0.228
JulCDD	96	0.024	0.081	0	0.351
AugCDD	96	0.024	0.083	0	0.37
SepCDD	96	0.019	0.065	0	0.285
OctCDD	96	0.006	0.022	0	0.114
AprCDD	96	0.002	0.007	0	0.046
NovCDD	96	0.001	0.004	0	0.033
Aft16	96	0.125	0.332	0	1
AftAug2013	96	0.552	0.5	0	1
LE_SEC_CustPlusFcst	96	3,164.15	87.828	3,016.00	3,309.00

Skewness	Kurtosis	Jarque-Bera	Probability	CorrYX	Units	Definition
0.518	1.985	8.4	1.48E-02	1		
3.125	11.022	413.6	0.00E+00	-0.022		
3.161	11.291	434.8	0.00E+00	-0.23		
3.324	12.669	550.8	0.00E+00	-0.237		
3.15	11.201	427.8	0.00E+00	-0.177		
3.478	14.019	679.3	0.00E+00	-0.148		
3.088	10.704	389.9	0.00E+00	0.254		
3.1	10.829	399	0.00E+00	0.419		
3.235	11.919	485.6	0.00E+00	0.452		
3.177	11.425	445.3	0.00E+00	0.438		
3.709	15.921	888	0.00E+00	-0.015		
4.595	25.886	2432.9	0.00E+00	-0.218		
6.3	47.959	8720.3	0.00E+00	-0.209		
2.268	6.143	121.8	0.00E+00	-0.046		
-0.209	1.044	16	3.34E-04	0.103		
-0.2	1.751	6.9	3.20E-02	0.142		

	LE_Sec_NonPVSales	JanHDD	FebHDD	MarHDD	DecHDD	MayCDD	JunCDD
LE_Sec_NonPVSales	1	-0.022	-0.23	-0.237	-0.177	-0.148	0.254
JanHDD	-0.022	1	-0.089	-0.087	-0.089	-0.086	-0.089
FebHDD	-0.23	-0.089	1	-0.087	-0.088	-0.086	-0.089
MarHDD	-0.237	-0.087	-0.087	1	-0.087	-0.084	-0.088
DecHDD	-0.177	-0.089	-0.088	-0.087	1	-0.086	-0.089
MayCDD	-0.148	-0.086	-0.086	-0.084	-0.086	1	-0.086
JunCDD	0.254	-0.089	-0.089	-0.088	-0.089	-0.086	1
JulCDD	0.419	-0.089	-0.089	-0.087	-0.089	-0.086	-0.09
AugCDD	0.452	-0.088	-0.088	-0.086	-0.088	-0.085	-0.088
SepCDD	0.438	-0.089	-0.088	-0.087	-0.088	-0.085	-0.089
OctCDD	-0.015	-0.084	-0.083	-0.082	-0.083	-0.081	-0.084
AprCDD	-0.218	-0.078	-0.077	-0.076	-0.077	-0.075	-0.078
NovCDD	-0.209	-0.067	-0.066	-0.065	-0.067	-0.064	-0.067
Aft16	-0.046	-0.013	-0.034	-0.033	0.006	0.031	-0.009
AftAug2013	0.103	-0.038	-0.028	-0.031	0.058	-0.004	-0.027
LE_SEC_CustPlusFcst	0.142	0.014	0.003	-0.008	-0.014	-0.025	0.018

JulCDD	AugCDD	SepCDD	OctCDD	AprCDD	NovCDD	Aft16	AftAug2013	LE_SEC_CustPlusFcst
0.419	0.452	0.438	-0.015	-0.218	-0.209	-0.046	0.103	0.142
-0.089	-0.088	-0.089	-0.084	-0.078	-0.067	-0.013	-0.038	0.014
-0.089	-0.088	-0.088	-0.083	-0.077	-0.066	-0.034	-0.028	0.003
-0.087	-0.086	-0.087	-0.082	-0.076	-0.065	-0.033	-0.031	-0.008
-0.089	-0.088	-0.088	-0.083	-0.077	-0.067	0.006	0.058	-0.014
-0.086	-0.085	-0.085	-0.081	-0.075	-0.064	0.031	-0.004	-0.025
-0.09	-0.088	-0.089	-0.084	-0.078	-0.067	-0.009	-0.027	0.018
1	-0.088	-0.089	-0.084	-0.078	-0.067	-0.004	-0.045	0.015
-0.088	1	-0.088	-0.083	-0.077	-0.066	-0.016	-0.002	0.029
-0.089	-0.088	1	-0.083	-0.077	-0.066	-0.039	0.031	0.011
-0.084	-0.083	-0.083	1	-0.073	-0.063	0.039	0.075	0.073
-0.078	-0.077	-0.077	-0.073	1	-0.058	0.042	-0.094	-0.035
-0.067	-0.066	-0.066	-0.063	-0.058	1	0.011	0.066	0.074
-0.004	-0.016	-0.039	0.039	0.042	0.011	1	0.34	0.446
-0.045	-0.002	0.031	0.075	-0.094	0.066	0.34	1	0.47
0.015	0.029	0.011	0.073	-0.035	0.074	0.446	0.47	1

Variable	Coefficient	StdErr	T-Stat	P-Value	Units
CONST	170507635.6	23585075.89	7.229	0.00%	
WeatherTrans.JanHDD	122462623.6	12282064.77	9.971	0.00%	
WeatherTrans.FebHDD	45843727.08	13396364.77	3.422	0.10%	
WeatherTrans.MarHDD	51744420.15	16769238.18	3.086	0.28%	
WeatherTrans.DecHDD	81800821.28	16765633.43	4.879	0.00%	
WeatherTrans.MayCDD	232459205.4	39514265.05	5.883	0.00%	
WeatherTrans.JunCDD	250140747	13533578.88	18.483	0.00%	
WeatherTrans.JulCDD	213409103.1	9026286.077	23.643	0.00%	
WeatherTrans.AugCDD	212357532.5	8660533.258	24.52	0.00%	
WeatherTrans.SepCDD	267297079.7	11158059.06	23.956	0.00%	
WeatherTrans.OctCDD	300215542.5	31902332.15	9.41	0.00%	
WeatherTrans.AprCDD	331568364.5	104002397.8	3.188	0.20%	
WeatherTrans.NovCDD	208969703.5	167390004.4	1.248	21.55%	
BinaryVars.Aft16	-5568476.276	1868710.18	-2.98	0.38%	
BinaryVars.AftAug2013	6174048.088	1271957.713	4.854	0.00%	
FcstTransform.LE_SEC_CustPlusFcst	13870.799	7645.879	1.814	7.34%	

Definition
Constant term

Model Statistics		Forecast Statistics	
Iterations	1	Forecast Observations	
Adjusted Observations	96	Mean Abs. Dev. (MAD)	
Deg. of Freedom for Error	80	Mean Abs. % Err. (MAPE)	
R-Squared	0.961	Avg. Forecast Error	
Adjusted R-Squared	0.953	Mean % Error	
AIC	31.114	Root Mean-Square Error	
BIC	31.542	Theil's Inequality Coefficient	
F-Statistic	130.3	#NAME?	
Prob (F-Statistic)	0	#NAME?	
Log-Likelihood	-1,613.71	#NAME?	
Model Sum of Squares	54,732,785,354,314,900.00		
Sum of Squared Errors	2,240,284,614,512,480.00		
Mean Squared Error	28,003,557,681,406.10		
Std. Error of Regression	5,291,838.78		
Mean Abs. Dev. (MAD)	3,819,958.08		
Mean Abs. % Err. (MAPE)	1.58%		
Durbin-Watson Statistic	1.614		
Durbin-H Statistic	#NA		
Ljung-Box Statistic	43.45		
Prob (Ljung-Box)	0.0088		
Skewness	-0.532		
Kurtosis	3.134		
Jarque-Bera	4.606		
Prob (Jarque-Bera)	0.0999		

0
0
0.00%
0
0.00%
0
0
0.00%
0.00%
0.00%

Year	Month	Actual	Pred	Resid	%Resid	StdResid
2010	1	242,264,201.00	245,002,937.38	-2,738,736.38	-1.13%	-0.518
2010	2	223,477,751.00	226,047,034.34	-2,569,283.34	-1.15%	-0.486
2010	3	229,679,869.00	225,774,556.73	3,905,312.27	1.70%	0.738
2010	4	230,286,466.00	224,075,430.47	6,211,035.53	2.70%	1.174
2010	5	230,082,095.00	227,111,025.49	2,971,069.51	1.29%	0.561
2010	6	272,463,243.00	269,553,316.11	2,909,926.89	1.07%	0.55
2010	7	287,282,519.00	286,102,862.61	1,179,656.40	0.41%	0.223
2010	8	290,446,163.00	292,835,849.15	-2,389,686.15	-0.82%	-0.452
2010	9	278,204,015.00	289,792,167.74	-11,588,152.74	-4.17%	-2.19
2010	10	242,495,457.00	247,411,009.27	-4,915,552.27	-2.03%	-0.929
2010	11	216,081,287.00	217,284,359.83	-1,203,072.83	-0.56%	-0.227
2010	12	236,316,627.00	228,420,773.34	7,895,853.66	3.34%	1.492
2011	1	246,919,029.00	245,261,553.95	1,657,475.05	0.67%	0.313
2011	2	216,489,906.00	223,219,618.58	-6,729,712.58	-3.11%	-1.272
2011	3	224,537,063.00	220,850,167.41	3,686,895.59	1.64%	0.697
2011	4	220,407,324.00	220,141,918.27	265,405.73	0.12%	0.05
2011	5	230,604,635.00	224,955,173.38	5,649,461.62	2.45%	1.068
2011	6	265,690,312.00	264,251,601.01	1,438,710.99	0.54%	0.272
2011	7	274,841,680.00	273,781,424.91	1,060,255.09	0.39%	0.2
2011	8	295,537,975.00	292,289,359.18	3,248,615.82	1.10%	0.614
2011	9	276,685,346.00	274,996,036.87	1,689,309.13	0.61%	0.319
2011	10	233,895,721.00	225,425,223.32	8,470,497.68	3.62%	1.601
2011	11	204,675,763.00	213,790,616.31	-9,114,853.31	-4.45%	-1.722
2011	12	215,661,178.00	222,831,447.86	-7,170,269.86	-3.32%	-1.355
2012	1	236,425,638.00	234,848,898.14	1,576,739.86	0.67%	0.298
2012	2	219,987,944.00	220,235,906.21	-247,962.21	-0.11%	-0.047
2012	3	216,614,487.00	218,477,631.02	-1,863,144.02	-0.86%	-0.352
2012	4	227,795,633.00	228,192,528.92	-396,895.92	-0.17%	-0.075
2012	5	240,541,717.00	233,011,985.59	7,529,731.41	3.13%	1.423
2012	6	264,516,328.00	259,386,792.42	5,129,535.58	1.94%	0.969
2012	7	281,377,490.00	287,348,011.08	-5,970,521.08	-2.12%	-1.128
2012	8	277,035,391.00	282,075,118.53	-5,039,727.53	-1.82%	-0.952
2012	9	277,664,940.00	271,167,080.63	6,497,859.37	2.34%	1.228
2012	10	226,097,670.00	224,328,192.03	1,769,477.97	0.78%	0.334
2012	11	213,362,907.00	214,182,378.23	-819,471.23	-0.38%	-0.155
2012	12	217,207,108.00	223,132,810.04	-5,925,702.04	-2.73%	-1.12
2013	1	231,955,137.00	236,320,390.81	-4,365,253.81	-1.88%	-0.825
2013	2	223,261,866.00	220,984,262.48	2,277,603.52	1.02%	0.43
2013	3	215,850,606.00	221,245,980.07	-5,395,374.07	-2.50%	-1.02
2013	4	215,883,056.00	217,419,359.45	-1,536,303.45	-0.71%	-0.29
2013	5	220,842,275.00	222,416,424.03	-1,574,149.03	-0.71%	-0.297

2013	6	253,210,101.00	251,060,862.57	2,149,238.43	0.85%	0.406
2013	7	267,112,011.00	264,727,854.24	2,384,156.76	0.89%	0.451
2013	8	271,754,110.00	266,708,278.23	5,045,831.77	1.86%	0.954
2013	9	282,939,932.00	284,861,827.46	-1,921,895.46	-0.68%	-0.363
2013	10	250,300,374.00	242,498,908.85	7,801,465.15	3.12%	1.474
2013	11	222,621,311.00	220,405,710.98	2,215,600.03	1.00%	0.419
2013	12	237,764,638.00	234,644,658.03	3,119,979.97	1.31%	0.59
2014	1	255,499,583.00	249,863,919.06	5,635,663.94	2.21%	1.065
2014	2	236,664,117.00	230,753,697.07	5,910,419.93	2.50%	1.117
2014	3	233,246,255.00	229,226,610.77	4,019,644.23	1.72%	0.76
2014	4	216,743,302.00	223,961,139.56	-7,217,837.56	-3.33%	-1.364
2014	5	234,058,865.00	239,470,905.32	-5,412,040.32	-2.31%	-1.023
2014	6	263,348,052.00	277,341,414.20	-13,993,362.20	-5.31%	-2.644
2014	7	278,467,516.00	275,706,861.23	2,760,654.77	0.99%	0.522
2014	8	261,840,325.00	264,605,515.60	-2,765,190.60	-1.06%	-0.523
2014	9	277,512,946.00	278,105,595.06	-592,649.06	-0.21%	-0.112
2014	10	241,647,443.00	235,389,002.39	6,258,440.61	2.59%	1.183
2014	11	221,605,500.00	221,084,140.44	521,359.56	0.24%	0.099
2014	12	236,579,993.00	235,036,827.73	1,543,165.27	0.65%	0.292
2015	1	243,626,701.00	247,467,105.27	-3,840,404.27	-1.58%	-0.726
2015	2	235,458,569.00	231,069,768.15	4,388,800.85	1.86%	0.829
2015	3	236,235,288.00	231,313,507.73	4,921,780.27	2.08%	0.93
2015	4	223,248,101.00	224,758,062.33	-1,509,961.33	-0.68%	-0.285
2015	5	225,493,021.00	236,459,762.68	-10,966,741.68	-4.86%	-2.072
2015	6	266,850,734.00	268,621,439.34	-1,770,705.34	-0.66%	-0.335
2015	7	274,828,187.00	277,476,049.14	-2,647,862.14	-0.96%	-0.5
2015	8	282,047,847.00	278,867,677.98	3,180,169.02	1.13%	0.601
2015	9	285,965,681.00	277,728,433.05	8,237,247.95	2.88%	1.557
2015	10	243,062,477.00	241,079,984.00	1,982,493.00	0.82%	0.375
2015	11	225,037,079.00	223,029,995.70	2,007,083.30	0.89%	0.379
2015	12	234,441,326.00	231,005,747.74	3,435,578.26	1.47%	0.649
2016	1	242,276,605.00	243,101,174.68	-824,569.68	-0.34%	-0.156
2016	2	229,646,848.00	230,126,263.17	-479,415.17	-0.21%	-0.091
2016	3	219,312,814.00	227,455,553.72	-8,142,739.72	-3.71%	-1.539
2016	4	224,867,875.00	224,340,641.94	527,233.07	0.23%	0.1
2016	5	229,979,893.00	230,873,419.70	-893,526.70	-0.39%	-0.169
2016	6	265,629,212.00	267,886,239.62	-2,257,027.62	-0.85%	-0.427
2016	7	287,960,395.00	285,114,109.07	2,846,285.93	0.99%	0.538
2016	8	294,120,589.00	292,835,208.34	1,285,380.66	0.44%	0.243
2016	9	296,683,093.00	297,766,829.97	-1,083,736.97	-0.37%	-0.205
2016	10	243,819,149.00	255,566,305.81	-11,747,156.81	-4.82%	-2.22
2016	11	229,926,868.00	228,473,982.97	1,452,885.03	0.63%	0.275

2016	12	233,617,377.00	234,647,716.93	-1,030,339.93	-0.44%	-0.195
2017	1	241,229,974.00	239,119,491.40	2,110,482.61	0.87%	0.399
2017	2	216,515,598.00	222,301,848.44	-5,786,250.44	-2.67%	-1.093
2017	3	213,340,320.00	221,608,447.71	-8,268,127.71	-3.88%	-1.562
2017	4	225,438,790.00	225,882,452.27	-443,662.27	-0.20%	-0.084
2017	5	237,393,092.00	234,758,297.73	2,634,794.27	1.11%	0.498
2017	6	270,440,679.00	260,594,281.81	9,846,397.20	3.64%	1.861
2017	7	275,651,826.00	275,779,130.07	-127,304.07	-0.05%	-0.024
2017	8	268,437,119.00	270,510,359.43	-2,073,240.43	-0.77%	-0.392
2017	9	260,844,023.00	256,939,149.44	3,904,873.56	1.50%	0.738
2017	10	251,255,403.00	247,044,949.17	4,210,453.83	1.68%	0.796
2017	11	217,939,166.00	219,023,390.59	-1,084,224.59	-0.50%	-0.205
2017	12	224,753,322.00	229,677,513.97	-4,924,191.97	-2.19%	-0.931
2018	1		242,118,756.20			
2018	2		225,458,583.74			
2018	3		224,528,808.36			
2018	4		222,469,337.10			
2018	5		228,882,674.49			
2018	6		257,692,563.82			
2018	7		274,718,692.12			
2018	8		277,561,963.05			
2018	9		277,783,474.69			
2018	10		240,089,456.01			
2018	11		219,011,468.54			
2018	12		229,360,284.81			
2019	1		242,506,604.75			
2019	2		225,840,299.69			
2019	3		224,904,552.88			
2019	4		222,839,553.12			
2019	5		229,247,507.30			
2019	6		258,052,154.88			
2019	7		275,072,991.07			
2019	8		277,911,108.96			
2019	9		278,127,602.97			
2019	10		240,428,274.76			
2019	11		219,345,117.28			
2019	12		229,688,899.40			
2020	1		242,829,947.42			
2020	2		226,158,508.97			
2020	3		225,217,763.67			
2020	4		223,147,664.59			
2020	5		229,550,653.45			

2020	6	258,350,466.18
2020	7	275,365,958.47
2020	8	278,198,872.88
2020	9	278,410,300.14
2020	10	240,705,483.83
2020	11	219,616,982.48
2020	12	229,955,561.15
2021	1	243,091,272.59
2021	2	226,414,637.80
2021	3	225,468,832.70
2021	4	223,393,307.70
2021	5	229,791,013.21
2021	6	258,585,681.43
2021	7	275,596,006.25
2021	8	278,423,889.00
2021	9	278,630,416.82
2021	10	240,920,960.53
2021	11	219,827,941.13
2021	12	230,162,120.47
2022	1	243,293,345.88
2022	2	226,612,342.96
2022	3	225,662,284.51
2022	4	223,582,392.99
2022	5	229,975,846.73
2022	6	258,766,374.91
2022	7	275,772,815.67
2022	8	278,596,916.41
2022	9	278,799,761.62
2022	10	241,086,688.98
2022	11	219,990,148.26
2022	12	230,320,898.81
2023	1	243,448,727.13
2023	2	226,764,416.37
2023	3	225,811,137.02
2023	4	223,728,072.95
2023	5	230,118,437.51
2023	6	258,905,957.70
2023	7	275,909,425.47
2023	8	278,730,631.36
2023	9	278,930,657.78
2023	10	241,214,728.15
2023	11	220,115,405.52

2023	12	230,443,447.27
2024	1	243,568,576.68
2024	2	226,881,637.93
2024	3	225,925,799.64
2024	4	223,840,156.41
2024	5	230,228,009.58
2024	6	259,013,084.36
2024	7	276,014,076.12
2024	8	278,832,871.06
2024	9	279,030,549.88
2024	10	241,312,298.65
2024	11	220,210,715.42
2024	12	230,536,555.98
2025	1	243,659,569.27
2025	2	226,970,570.02
2025	3	226,012,725.38
2025	4	223,925,161.48
2025	5	230,311,144.45
2025	6	259,094,398.18
2025	7	276,093,565.58
2025	8	278,910,584.10
2025	9	279,106,533.19
2025	10	241,386,628.23
2025	11	220,283,434.72
2025	12	230,607,707.32
2026	1	243,729,206.84
2026	2	227,038,733.60
2026	3	226,079,453.70
2026	4	223,990,548.65
2026	5	230,375,225.72
2026	6	259,157,207.87
2026	7	276,155,408.66
2026	8	278,971,485.97
2026	9	279,166,518.59
2026	10	241,445,834.35
2026	11	220,341,882.05
2026	12	230,665,415.79
2027	1	243,786,246.46
2027	2	227,095,121.95
2027	3	226,135,207.89
2027	4	224,045,801.16
2027	5	230,429,989.73

2027	6	259,211,496.22
2027	7	276,209,069.86
2027	8	279,024,536.50
2027	9	279,218,974.50
2027	10	241,497,708.98
2027	11	220,393,190.68
2027	12	230,716,173.29
2028	1	243,836,426.68
2028	2	227,144,740.04
2028	3	226,184,278.64
2028	4	224,094,277.74
2028	5	230,477,887.75
2028	6	259,258,830.89
2028	7	276,255,914.29
2028	8	279,070,903.57
2028	9	279,264,876.75
2028	10	241,543,070.73
2028	11	220,438,026.14
2028	12	230,760,496.28
2029	1	243,880,419.18
2029	2	227,188,410.74
2029	3	226,227,635.99
2029	4	224,137,446.18
2029	5	230,520,872.25
2029	6	259,301,636.28
2029	7	276,298,622.33
2029	8	279,113,516.82
2029	9	279,307,397.70
2029	10	241,585,603.43
2029	11	220,480,570.27
2029	12	230,803,051.55
2030	1	243,922,856.98
2030	2	227,230,734.16
2030	3	226,269,848.03
2030	4	224,180,095.00
2030	5	230,563,946.37
2030	6	259,345,124.51
2030	7	276,342,232.25
2030	8	279,157,245.22
2030	9	279,351,241.47
2030	10	241,629,419.63
2030	11	220,524,359.62

2030	12	230,846,814.75
2031	1	243,966,681.44
2031	2	227,274,618.28
2031	3	226,313,790.24
2031	4	224,223,560.17
2031	5	230,606,947.04
2031	6	259,387,672.90
2031	7	276,384,654.92
2031	8	279,199,545.49
2031	9	279,393,422.54
2031	10	241,671,677.63
2031	11	220,566,692.53
2031	12	230,889,220.60
2032	1	244,009,173.39
2032	2	227,317,194.06
2032	3	226,356,447.65
2032	4	224,266,229.75
2032	5	230,649,628.46
2032	6	259,430,365.85
2032	7	276,427,249.93
2032	8	279,242,045.12
2032	9	279,435,829.31
2032	10	241,713,962.51
2032	11	220,608,858.73
2032	12	230,931,271.24
2033	1	244,051,087.46
2033	2	227,358,975.16
2033	3	226,398,099.27
2033	4	224,307,818.75
2033	5	230,691,156.49
2033	6	259,471,834.50
2033	7	276,468,663.66
2033	8	279,283,405.39
2033	9	279,477,137.51
2033	10	241,755,276.45
2033	11	220,650,178.24
2033	12	230,972,596.19
2034	1	244,092,560.99
2034	2	227,400,593.37
2034	3	226,439,858.35
2034	4	224,349,645.60
2034	5	230,733,049.35

2034	6	259,513,791.62
2034	7	276,510,667.71
2034	8	279,325,455.13
2034	9	279,519,231.75
2034	10	241,797,411.05
2034	11	220,692,352.15
2034	12	231,014,808.37
2035	1	244,134,634.29
2035	2	227,442,531.42
2035	3	226,481,664.72
2035	4	224,391,406.80
2035	5	230,774,766.55
2035	6	259,555,466.00
2035	7	276,552,323.28
2035	8	279,367,092.39
2035	9	279,560,851.18
2035	10	241,839,019.73
2035	11	220,733,950.36
2035	12	231,056,396.39
2036	1	244,176,295.27
2036	2	227,484,263.46
2036	3	226,523,465.93
2036	4	224,433,240.86
2036	5	230,816,632.60
2036	6	259,597,363.19
2036	7	276,594,284.03
2036	8	279,409,115.02
2036	9	279,602,934.06
2036	10	241,881,174.49
2036	11	220,776,175.12
2036	12	231,098,689.30
2037	1	244,218,677.72
2037	2	227,526,733.08
2037	3	226,566,020.45
2037	4	224,475,940.88
2037	5	230,859,474.29
2037	6	259,640,342.83
2037	7	276,637,485.73
2037	8	279,452,532.96
2037	9	279,646,562.56
2037	10	241,925,034.41
2037	11	220,820,260.39

2037	12	231,142,993.99
2038	1	244,263,228.01
2038	2	227,571,522.51
2038	3	226,611,042.74
2038	4	224,521,207.93
2038	5	230,904,979.67
2038	6	259,686,080.29
2038	7	276,683,476.57
2038	8	279,498,770.51
2038	9	279,693,040.34
2038	10	241,971,727.06
2038	11	220,867,162.25
2038	12	231,190,099.57
2039	1	244,310,471.98
2039	2	227,618,901.24
2039	3	226,658,552.69
2039	4	224,568,834.10
2039	5	230,952,719.01
2039	6	259,733,929.82
2039	7	276,731,403.12
2039	8	279,546,772.05
2039	9	279,741,114.91
2039	10	242,019,918.45
2039	11	220,915,467.39
2039	12	231,238,515.48
2040	1	244,359,050.76
2040	2	227,667,638.62
2040	3	226,707,444.50
2040	4	224,618,418.39
2040	5	231,002,977.58
2040	6	259,784,844.95
2040	7	276,782,619.99
2040	8	279,598,282.74
2040	9	279,792,911.68
2040	10	242,071,758.33
2040	11	220,967,349.25
2040	12	231,290,438.21
2041	1	244,410,982.48
2041	2	227,719,579.09
2041	3	226,759,393.48
2041	4	224,669,887.09
2041	5	231,053,978.61

2041	6	259,835,390.60
2041	7	276,833,072.15
2041	8	279,648,643.86
2041	9	279,843,184.16
2041	10	242,122,214.50
2041	11	221,017,984.27
2041	12	231,341,247.39
2042	1	244,462,000.47
2042	2	227,770,800.40
2042	3	226,810,812.76
2042	4	224,721,503.99
2042	5	231,105,787.95
2042	6	259,887,387.31
2042	7	276,885,265.64
2042	8	279,701,028.97
2042	9	279,895,755.85
2042	10	242,174,997.60
2042	11	221,070,973.24
2042	12	231,394,436.82
2043	1	244,515,382.26
2043	2	227,824,369.49
2043	3	226,864,564.25
2043	4	224,775,441.81
2043	5	231,159,907.19
2043	6	259,941,683.22
2043	7	276,939,765.28
2043	8	279,755,726.98
2043	9	279,950,647.01
2043	10	242,230,102.62
2043	11	221,126,286.48
2043	12	231,449,952.81
2044	1	244,571,050.16
2044	2	227,880,185.32
2044	3	226,920,524.11
2044	4	224,831,558.16
2044	5	231,216,175.93
2044	6	259,998,100.33
2044	7	276,996,364.29
2044	8	279,812,503.10
2044	9	280,007,595.59
2044	10	242,287,240.52
2044	11	221,183,608.74

2044	12	231,507,454.57
2045	1	244,628,621.35
2045	2	227,937,824.12
2045	3	226,978,228.74
2045	4	224,889,261.13
2045	5	231,273,877.29
2045	6	260,055,800.12
2045	7	277,054,069.64
2045	8	279,870,213.86
2045	9	280,065,311.63
2045	10	242,344,873.24
2045	11	221,241,160.33
2045	12	231,564,927.17
2046	1	244,686,003.23
2046	2	227,995,117.66
2046	3	227,035,436.27
2046	4	224,946,355.07
2046	5	231,330,860.62
2046	6	260,112,675.76
2046	7	277,110,755.81
2046	8	279,926,715.54
2046	9	280,121,633.67
2046	10	242,401,083.12
2046	11	221,297,260.99
2046	12	231,620,921.49
2047	1	244,742,053.15
2047	2	228,051,221.72
2047	3	227,091,593.04
2047	4	225,002,549.86
2047	5	231,387,092.43
2047	6	260,168,943.62
2047	7	277,167,051.49
2047	8	279,983,038.32
2047	9	280,177,982.83
2047	10	242,457,467.72
2047	11	221,353,680.10
2047	12	231,677,374.19
2048	1	244,798,557.72
2048	2	228,107,776.78
2048	3	227,148,197.27
2048	4	225,059,188.51
2048	5	231,443,764.59

2048	6	260,225,648.41
2048	7	277,223,780.69
2048	8	280,039,791.29
2048	9	280,234,758.95
2048	10	242,514,276.21
2048	11	221,410,520.12
2048	12	231,734,244.91
2049	1	244,855,477.66
2049	2	228,164,744.66
2049	3	227,205,211.83
2049	4	225,116,234.90
2049	5	231,500,841.98
2049	6	260,282,755.97
2049	7	277,280,910.20
2049	8	280,096,942.16
2049	9	280,291,930.62
2049	10	242,571,478.06
2049	11	221,467,751.36
2049	12	231,791,504.77
2050	1	244,912,784.93
2050	2	228,222,098.08
2050	3	227,262,610.20
2050	4	225,173,663.26
2050	5	231,558,299.54
2050	6	260,340,241.97
2050	7	277,338,416.34
2050	8	280,154,467.91
2050	9	280,349,475.47
2050	10	242,629,051.54
2050	11	221,525,352.71
2050	12	231,849,133.26

Variable	Coefficient	Mean	Elast	Units	Definition
JanHDD	122462623.6	0.018	0.009		
FebHDD	45843727.08	0.016	0.003		
MarHDD	51744420.15	0.012	0.003		
DecHDD	81800821.28	0.013	0.004		
MayCDD	232459205.4	0.005	0.005		
JunCDD	250140747	0.016	0.016		
JulCDD	213409103.1	0.024	0.021		
AugCDD	212357532.5	0.024	0.021		
SepCDD	267297079.7	0.019	0.021		
OctCDD	300215542.5	0.006	0.008		
AprCDD	331568364.5	0.002	0.002		
NovCDD	208969703.5	0.001	0.001		
Aft16	-5568476.276	0.125	-0.003		
AftAug2013	6174048.088	0.552	0.014		
LE_SEC_CustPlusFcst	13870.799	3,164.15	0.179		

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Year	Month	Pred	CONST	JanHDD	FebHDD	MarHDD
2010	1	245,002,937.38	170,507,635.64	28,763,276.01		0
2010	2	226,047,034.34	170,507,635.64	0.00	9,751,889.77	0
2010	3	225,774,556.73	170,507,635.64	0	0.00	9,673,603.35
2010	4	224,075,430.47	170,507,635.64	0	0	0.00
2010	5	227,111,025.49	170,507,635.64	0	0	0
2010	6	269,553,316.11	170,507,635.64	0	0	0
2010	7	286,102,862.61	170,507,635.64	0	0	0
2010	8	292,835,849.15	170,507,635.64	0	0	0
2010	9	289,792,167.74	170,507,635.64	0	0	0
2010	10	247,411,009.27	170,507,635.64	0	0	0
2010	11	217,284,359.83	170,507,635.64	0	0	0
2010	12	228,420,773.34	170,507,635.64	0	0	0
2011	1	245,261,553.95	170,507,635.64	31,116,383.29		0
2011	2	223,219,618.58	170,507,635.64	0.00	9,171,543.51	0
2011	3	220,850,167.41	170,507,635.64	0	0.00	6,913,058.74
2011	4	220,141,918.27	170,507,635.64	0	0	0.00
2011	5	224,955,173.38	170,507,635.64	0	0	0
2011	6	264,251,601.01	170,507,635.64	0	0	0
2011	7	273,781,424.91	170,507,635.64	0	0	0
2011	8	292,289,359.18	170,507,635.64	0	0	0
2011	9	274,996,036.87	170,507,635.64	0	0	0
2011	10	225,425,223.32	170,507,635.64	0	0	0
2011	11	213,790,616.31	170,507,635.64	0	0	0
2011	12	222,831,447.86	170,507,635.64	0	0	0
2012	1	234,848,898.14	170,507,635.64	21,771,779.03		0
2012	2	220,235,906.21	170,507,635.64	0.00	7,255,882.70	0
2012	3	218,477,631.02	170,507,635.64	0	0.00	5,539,219.91
2012	4	228,192,528.92	170,507,635.64	0	0	0.00
2012	5	233,011,985.59	170,507,635.64	0	0	0
2012	6	259,386,792.42	170,507,635.64	0	0	0
2012	7	287,348,011.08	170,507,635.64	0	0	0
2012	8	282,075,118.53	170,507,635.64	0	0	0
2012	9	271,167,080.63	170,507,635.64	0	0	0
2012	10	224,328,192.03	170,507,635.64	0	0	0
2012	11	214,182,378.23	170,507,635.64	0	0	0
2012	12	223,132,810.04	170,507,635.64	0	0	0
2013	1	236,320,390.81	170,507,635.64	23,853,586.88		0
2013	2	220,984,262.48	170,507,635.64	0.00	8,559,070.95	0
2013	3	221,245,980.07	170,507,635.64	0	0.00	8,862,400.94
2013	4	217,419,359.45	170,507,635.64	0	0	0.00
2013	5	222,416,424.03	170,507,635.64	0	0	0

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2013	6	251,060,862.57	170,507,635.64	0	0	0
2013	7	264,727,854.24	170,507,635.64	0	0	0
2013	8	266,708,278.23	170,507,635.64	0	0	0
2013	9	284,861,827.46	170,507,635.64	0	0	0
2013	10	242,498,908.85	170,507,635.64	0	0	0
2013	11	220,405,710.98	170,507,635.64	0	0	0
2013	12	234,644,658.03	170,507,635.64	0	0	0
2014	1	249,863,919.06	170,507,635.64	29,849,857.90	0	0
2014	2	230,753,697.07	170,507,635.64	0.00	10,933,827.10	0
2014	3	229,226,610.77	170,507,635.64	0	0.00	9,392,870.00
2014	4	223,961,139.56	170,507,635.64	0	0	0.00
2014	5	239,470,905.32	170,507,635.64	0	0	0
2014	6	277,341,414.20	170,507,635.64	0	0	0
2014	7	275,706,861.23	170,507,635.64	0	0	0
2014	8	264,605,515.60	170,507,635.64	0	0	0
2014	9	278,105,595.06	170,507,635.64	0	0	0
2014	10	235,389,002.39	170,507,635.64	0	0	0
2014	11	221,084,140.44	170,507,635.64	0	0	0
2014	12	235,036,827.73	170,507,635.64	0	0	0
2015	1	247,467,105.27	170,507,635.64	26,509,829.75	0	0
2015	2	231,069,768.15	170,507,635.64	0.00	9,987,655.44	0
2015	3	231,313,507.73	170,507,635.64	0	0.00	10,217,524.22
2015	4	224,758,062.33	170,507,635.64	0	0	0.00
2015	5	236,459,762.68	170,507,635.64	0	0	0
2015	6	268,621,439.34	170,507,635.64	0	0	0
2015	7	277,476,049.14	170,507,635.64	0	0	0
2015	8	278,867,677.98	170,507,635.64	0	0	0
2015	9	277,728,433.05	170,507,635.64	0	0	0
2015	10	241,079,984.00	170,507,635.64	0	0	0
2015	11	223,029,995.70	170,507,635.64	0	0	0
2015	12	231,005,747.74	170,507,635.64	0	0	0
2016	1	243,101,174.68	170,507,635.64	21,589,067.18	0	0
2016	2	230,126,263.17	170,507,635.64	0.00	8,572,543.27	0
2016	3	227,455,553.72	170,507,635.64	0	0.00	5,901,833.82
2016	4	224,340,641.94	170,507,635.64	0	0	0.00
2016	5	230,873,419.70	170,507,635.64	0	0	0
2016	6	267,886,239.62	170,507,635.64	0	0	0
2016	7	285,114,109.07	170,507,635.64	0	0	0
2016	8	292,835,208.34	170,507,635.64	0	0	0
2016	9	297,766,829.97	170,507,635.64	0	0	0
2016	10	255,566,305.81	170,507,635.64	0	0	0
2016	11	228,473,982.97	170,507,635.64	0	0	0

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2016	12	234,647,716.93	170,507,635.64	0	0	0
2017	1	239,119,491.40	170,507,635.64	22,926,185.78	0	0
2017	2	222,301,848.44	170,507,635.64	0.00	6,094,672.02	0
2017	3	221,608,447.71	170,507,635.64	0	0.00	5,456,754.49
2017	4	225,882,452.27	170,507,635.64	0	0	0.00
2017	5	234,758,297.73	170,507,635.64	0	0	0
2017	6	260,594,281.81	170,507,635.64	0	0	0
2017	7	275,779,130.07	170,507,635.64	0	0	0
2017	8	270,510,359.43	170,507,635.64	0	0	0
2017	9	256,939,149.44	170,507,635.64	0	0	0
2017	10	247,044,949.17	170,507,635.64	0	0	0
2017	11	219,023,390.59	170,507,635.64	0	0	0
2017	12	229,677,513.97	170,507,635.64	0	0	0
2018	1	242,118,756.20	170,507,635.64	25,486,850.96	0	0
2018	2	225,458,583.74	170,507,635.64	0.00	8,791,287.18	0
2018	3	224,528,808.36	170,507,635.64	0	0.00	7,827,050.50
2018	4	222,469,337.10	170,507,635.64	0	0	0.00
2018	5	228,882,674.49	170,507,635.64	0	0	0
2018	6	257,692,563.82	170,507,635.64	0	0	0
2018	7	274,718,692.12	170,507,635.64	0	0	0
2018	8	277,561,963.05	170,507,635.64	0	0	0
2018	9	277,783,474.69	170,507,635.64	0	0	0
2018	10	240,089,456.01	170,507,635.64	0	0	0
2018	11	219,011,468.54	170,507,635.64	0	0	0
2018	12	229,360,284.81	170,507,635.64	0	0	0
2019	1	242,506,604.75	170,507,635.64	25,486,850.96	0	0
2019	2	225,840,299.69	170,507,635.64	0.00	8,791,287.18	0
2019	3	224,904,552.88	170,507,635.64	0	0.00	7,827,050.50
2019	4	222,839,553.12	170,507,635.64	0	0	0.00
2019	5	229,247,507.30	170,507,635.64	0	0	0
2019	6	258,052,154.88	170,507,635.64	0	0	0
2019	7	275,072,991.07	170,507,635.64	0	0	0
2019	8	277,911,108.96	170,507,635.64	0	0	0
2019	9	278,127,602.97	170,507,635.64	0	0	0
2019	10	240,428,274.76	170,507,635.64	0	0	0
2019	11	219,345,117.28	170,507,635.64	0	0	0
2019	12	229,688,899.40	170,507,635.64	0	0	0
2020	1	242,829,947.42	170,507,635.64	25,486,850.96	0	0
2020	2	226,158,508.97	170,507,635.64	0.00	8,791,287.18	0
2020	3	225,217,763.67	170,507,635.64	0	0.00	7,827,050.50
2020	4	223,147,664.59	170,507,635.64	0	0	0.00
2020	5	229,550,653.45	170,507,635.64	0	0	0

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2020	6	258,350,466.18	170,507,635.64	0	0	0
2020	7	275,365,958.47	170,507,635.64	0	0	0
2020	8	278,198,872.88	170,507,635.64	0	0	0
2020	9	278,410,300.14	170,507,635.64	0	0	0
2020	10	240,705,483.83	170,507,635.64	0	0	0
2020	11	219,616,982.48	170,507,635.64	0	0	0
2020	12	229,955,561.15	170,507,635.64	0	0	0
2021	1	243,091,272.59	170,507,635.64	25,486,850.96	0	0
2021	2	226,414,637.80	170,507,635.64	0.00	8,791,287.18	0
2021	3	225,468,832.70	170,507,635.64	0	0.00	7,827,050.50
2021	4	223,393,307.70	170,507,635.64	0	0	0.00
2021	5	229,791,013.21	170,507,635.64	0	0	0
2021	6	258,585,681.43	170,507,635.64	0	0	0
2021	7	275,596,006.25	170,507,635.64	0	0	0
2021	8	278,423,889.00	170,507,635.64	0	0	0
2021	9	278,630,416.82	170,507,635.64	0	0	0
2021	10	240,920,960.53	170,507,635.64	0	0	0
2021	11	219,827,941.13	170,507,635.64	0	0	0
2021	12	230,162,120.47	170,507,635.64	0	0	0
2022	1	243,293,345.88	170,507,635.64	25,486,850.96	0	0
2022	2	226,612,342.96	170,507,635.64	0.00	8,791,287.18	0
2022	3	225,662,284.51	170,507,635.64	0	0.00	7,827,050.50
2022	4	223,582,392.99	170,507,635.64	0	0	0.00
2022	5	229,975,846.73	170,507,635.64	0	0	0
2022	6	258,766,374.91	170,507,635.64	0	0	0
2022	7	275,772,815.67	170,507,635.64	0	0	0
2022	8	278,596,916.41	170,507,635.64	0	0	0
2022	9	278,799,761.62	170,507,635.64	0	0	0
2022	10	241,086,688.98	170,507,635.64	0	0	0
2022	11	219,990,148.26	170,507,635.64	0	0	0
2022	12	230,320,898.81	170,507,635.64	0	0	0
2023	1	243,448,727.13	170,507,635.64	25,486,850.96	0	0
2023	2	226,764,416.37	170,507,635.64	0.00	8,791,287.18	0
2023	3	225,811,137.02	170,507,635.64	0	0.00	7,827,050.50
2023	4	223,728,072.95	170,507,635.64	0	0	0.00
2023	5	230,118,437.51	170,507,635.64	0	0	0
2023	6	258,905,957.70	170,507,635.64	0	0	0
2023	7	275,909,425.47	170,507,635.64	0	0	0
2023	8	278,730,631.36	170,507,635.64	0	0	0
2023	9	278,930,657.78	170,507,635.64	0	0	0
2023	10	241,214,728.15	170,507,635.64	0	0	0
2023	11	220,115,405.52	170,507,635.64	0	0	0

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2023	12	230,443,447.27	170,507,635.64	0	0	0
2024	1	243,568,576.68	170,507,635.64	25,486,850.96	0	0
2024	2	226,881,637.93	170,507,635.64	0.00	8,791,287.18	0
2024	3	225,925,799.64	170,507,635.64	0	0.00	7,827,050.50
2024	4	223,840,156.41	170,507,635.64	0	0	0.00
2024	5	230,228,009.58	170,507,635.64	0	0	0
2024	6	259,013,084.36	170,507,635.64	0	0	0
2024	7	276,014,076.12	170,507,635.64	0	0	0
2024	8	278,832,871.06	170,507,635.64	0	0	0
2024	9	279,030,549.88	170,507,635.64	0	0	0
2024	10	241,312,298.65	170,507,635.64	0	0	0
2024	11	220,210,715.42	170,507,635.64	0	0	0
2024	12	230,536,555.98	170,507,635.64	0	0	0
2025	1	243,659,569.27	170,507,635.64	25,486,850.96	0	0
2025	2	226,970,570.02	170,507,635.64	0.00	8,791,287.18	0
2025	3	226,012,725.38	170,507,635.64	0	0.00	7,827,050.50
2025	4	223,925,161.48	170,507,635.64	0	0	0.00
2025	5	230,311,144.45	170,507,635.64	0	0	0
2025	6	259,094,398.18	170,507,635.64	0	0	0
2025	7	276,093,565.58	170,507,635.64	0	0	0
2025	8	278,910,584.10	170,507,635.64	0	0	0
2025	9	279,106,533.19	170,507,635.64	0	0	0
2025	10	241,386,628.23	170,507,635.64	0	0	0
2025	11	220,283,434.72	170,507,635.64	0	0	0
2025	12	230,607,707.32	170,507,635.64	0	0	0
2026	1	243,729,206.84	170,507,635.64	25,486,850.96	0	0
2026	2	227,038,733.60	170,507,635.64	0.00	8,791,287.18	0
2026	3	226,079,453.70	170,507,635.64	0	0.00	7,827,050.50
2026	4	223,990,548.65	170,507,635.64	0	0	0.00
2026	5	230,375,225.72	170,507,635.64	0	0	0
2026	6	259,157,207.87	170,507,635.64	0	0	0
2026	7	276,155,408.66	170,507,635.64	0	0	0
2026	8	278,971,485.97	170,507,635.64	0	0	0
2026	9	279,166,518.59	170,507,635.64	0	0	0
2026	10	241,445,834.35	170,507,635.64	0	0	0
2026	11	220,341,882.05	170,507,635.64	0	0	0
2026	12	230,665,415.79	170,507,635.64	0	0	0
2027	1	243,786,246.46	170,507,635.64	25,486,850.96	0	0
2027	2	227,095,121.95	170,507,635.64	0.00	8,791,287.18	0
2027	3	226,135,207.89	170,507,635.64	0	0.00	7,827,050.50
2027	4	224,045,801.16	170,507,635.64	0	0	0.00
2027	5	230,429,989.73	170,507,635.64	0	0	0

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2027	6	259,211,496.22	170,507,635.64	0	0	0
2027	7	276,209,069.86	170,507,635.64	0	0	0
2027	8	279,024,536.50	170,507,635.64	0	0	0
2027	9	279,218,974.50	170,507,635.64	0	0	0
2027	10	241,497,708.98	170,507,635.64	0	0	0
2027	11	220,393,190.68	170,507,635.64	0	0	0
2027	12	230,716,173.29	170,507,635.64	0	0	0
2028	1	243,836,426.68	170,507,635.64	25,486,850.96	0	0
2028	2	227,144,740.04	170,507,635.64	0.00	8,791,287.18	0
2028	3	226,184,278.64	170,507,635.64	0	0.00	7,827,050.50
2028	4	224,094,277.74	170,507,635.64	0	0	0.00
2028	5	230,477,887.75	170,507,635.64	0	0	0
2028	6	259,258,830.89	170,507,635.64	0	0	0
2028	7	276,255,914.29	170,507,635.64	0	0	0
2028	8	279,070,903.57	170,507,635.64	0	0	0
2028	9	279,264,876.75	170,507,635.64	0	0	0
2028	10	241,543,070.73	170,507,635.64	0	0	0
2028	11	220,438,026.14	170,507,635.64	0	0	0
2028	12	230,760,496.28	170,507,635.64	0	0	0
2029	1	243,880,419.18	170,507,635.64	25,486,850.96	0	0
2029	2	227,188,410.74	170,507,635.64	0.00	8,791,287.18	0
2029	3	226,227,635.99	170,507,635.64	0	0.00	7,827,050.50
2029	4	224,137,446.18	170,507,635.64	0	0	0.00
2029	5	230,520,872.25	170,507,635.64	0	0	0
2029	6	259,301,636.28	170,507,635.64	0	0	0
2029	7	276,298,622.33	170,507,635.64	0	0	0
2029	8	279,113,516.82	170,507,635.64	0	0	0
2029	9	279,307,397.70	170,507,635.64	0	0	0
2029	10	241,585,603.43	170,507,635.64	0	0	0
2029	11	220,480,570.27	170,507,635.64	0	0	0
2029	12	230,803,051.55	170,507,635.64	0	0	0
2030	1	243,922,856.98	170,507,635.64	25,486,850.96	0	0
2030	2	227,230,734.16	170,507,635.64	0.00	8,791,287.18	0
2030	3	226,269,848.03	170,507,635.64	0	0.00	7,827,050.50
2030	4	224,180,095.00	170,507,635.64	0	0	0.00
2030	5	230,563,946.37	170,507,635.64	0	0	0
2030	6	259,345,124.51	170,507,635.64	0	0	0
2030	7	276,342,232.25	170,507,635.64	0	0	0
2030	8	279,157,245.22	170,507,635.64	0	0	0
2030	9	279,351,241.47	170,507,635.64	0	0	0
2030	10	241,629,419.63	170,507,635.64	0	0	0
2030	11	220,524,359.62	170,507,635.64	0	0	0

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2030	12	230,846,814.75	170,507,635.64	0	0	0
2031	1	243,966,681.44	170,507,635.64	25,486,850.96	0	0
2031	2	227,274,618.28	170,507,635.64	0.00	8,791,287.18	0
2031	3	226,313,790.24	170,507,635.64	0	0.00	7,827,050.50
2031	4	224,223,560.17	170,507,635.64	0	0	0.00
2031	5	230,606,947.04	170,507,635.64	0	0	0
2031	6	259,387,672.90	170,507,635.64	0	0	0
2031	7	276,384,654.92	170,507,635.64	0	0	0
2031	8	279,199,545.49	170,507,635.64	0	0	0
2031	9	279,393,422.54	170,507,635.64	0	0	0
2031	10	241,671,677.63	170,507,635.64	0	0	0
2031	11	220,566,692.53	170,507,635.64	0	0	0
2031	12	230,889,220.60	170,507,635.64	0	0	0
2032	1	244,009,173.39	170,507,635.64	25,486,850.96	0	0
2032	2	227,317,194.06	170,507,635.64	0.00	8,791,287.18	0
2032	3	226,356,447.65	170,507,635.64	0	0.00	7,827,050.50
2032	4	224,266,229.75	170,507,635.64	0	0	0.00
2032	5	230,649,628.46	170,507,635.64	0	0	0
2032	6	259,430,365.85	170,507,635.64	0	0	0
2032	7	276,427,249.93	170,507,635.64	0	0	0
2032	8	279,242,045.12	170,507,635.64	0	0	0
2032	9	279,435,829.31	170,507,635.64	0	0	0
2032	10	241,713,962.51	170,507,635.64	0	0	0
2032	11	220,608,858.73	170,507,635.64	0	0	0
2032	12	230,931,271.24	170,507,635.64	0	0	0
2033	1	244,051,087.46	170,507,635.64	25,486,850.96	0	0
2033	2	227,358,975.16	170,507,635.64	0.00	8,791,287.18	0
2033	3	226,398,099.27	170,507,635.64	0	0.00	7,827,050.50
2033	4	224,307,818.75	170,507,635.64	0	0	0.00
2033	5	230,691,156.49	170,507,635.64	0	0	0
2033	6	259,471,834.50	170,507,635.64	0	0	0
2033	7	276,468,663.66	170,507,635.64	0	0	0
2033	8	279,283,405.39	170,507,635.64	0	0	0
2033	9	279,477,137.51	170,507,635.64	0	0	0
2033	10	241,755,276.45	170,507,635.64	0	0	0
2033	11	220,650,178.24	170,507,635.64	0	0	0
2033	12	230,972,596.19	170,507,635.64	0	0	0
2034	1	244,092,560.99	170,507,635.64	25,486,850.96	0	0
2034	2	227,400,593.37	170,507,635.64	0.00	8,791,287.18	0
2034	3	226,439,858.35	170,507,635.64	0	0.00	7,827,050.50
2034	4	224,349,645.60	170,507,635.64	0	0	0.00
2034	5	230,733,049.35	170,507,635.64	0	0	0

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2034	6	259,513,791.62	170,507,635.64	0	0	0
2034	7	276,510,667.71	170,507,635.64	0	0	0
2034	8	279,325,455.13	170,507,635.64	0	0	0
2034	9	279,519,231.75	170,507,635.64	0	0	0
2034	10	241,797,411.05	170,507,635.64	0	0	0
2034	11	220,692,352.15	170,507,635.64	0	0	0
2034	12	231,014,808.37	170,507,635.64	0	0	0
2035	1	244,134,634.29	170,507,635.64	25,486,850.96	0	0
2035	2	227,442,531.42	170,507,635.64	0.00	8,791,287.18	0
2035	3	226,481,664.72	170,507,635.64	0	0.00	7,827,050.50
2035	4	224,391,406.80	170,507,635.64	0	0	0.00
2035	5	230,774,766.55	170,507,635.64	0	0	0
2035	6	259,555,466.00	170,507,635.64	0	0	0
2035	7	276,552,323.28	170,507,635.64	0	0	0
2035	8	279,367,092.39	170,507,635.64	0	0	0
2035	9	279,560,851.18	170,507,635.64	0	0	0
2035	10	241,839,019.73	170,507,635.64	0	0	0
2035	11	220,733,950.36	170,507,635.64	0	0	0
2035	12	231,056,396.39	170,507,635.64	0	0	0
2036	1	244,176,295.27	170,507,635.64	25,486,850.96	0	0
2036	2	227,484,263.46	170,507,635.64	0.00	8,791,287.18	0
2036	3	226,523,465.93	170,507,635.64	0	0.00	7,827,050.50
2036	4	224,433,240.86	170,507,635.64	0	0	0.00
2036	5	230,816,632.60	170,507,635.64	0	0	0
2036	6	259,597,363.19	170,507,635.64	0	0	0
2036	7	276,594,284.03	170,507,635.64	0	0	0
2036	8	279,409,115.02	170,507,635.64	0	0	0
2036	9	279,602,934.06	170,507,635.64	0	0	0
2036	10	241,881,174.49	170,507,635.64	0	0	0
2036	11	220,776,175.12	170,507,635.64	0	0	0
2036	12	231,098,689.30	170,507,635.64	0	0	0
2037	1	244,218,677.72	170,507,635.64	25,486,850.96	0	0
2037	2	227,526,733.08	170,507,635.64	0.00	8,791,287.18	0
2037	3	226,566,020.45	170,507,635.64	0	0.00	7,827,050.50
2037	4	224,475,940.88	170,507,635.64	0	0	0.00
2037	5	230,859,474.29	170,507,635.64	0	0	0
2037	6	259,640,342.83	170,507,635.64	0	0	0
2037	7	276,637,485.73	170,507,635.64	0	0	0
2037	8	279,452,532.96	170,507,635.64	0	0	0
2037	9	279,646,562.56	170,507,635.64	0	0	0
2037	10	241,925,034.41	170,507,635.64	0	0	0
2037	11	220,820,260.39	170,507,635.64	0	0	0

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2037	12	231,142,993.99	170,507,635.64	0	0	0
2038	1	244,263,228.01	170,507,635.64	25,486,850.96	0	0
2038	2	227,571,522.51	170,507,635.64	0.00	8,791,287.18	0
2038	3	226,611,042.74	170,507,635.64	0	0.00	7,827,050.50
2038	4	224,521,207.93	170,507,635.64	0	0	0.00
2038	5	230,904,979.67	170,507,635.64	0	0	0
2038	6	259,686,080.29	170,507,635.64	0	0	0
2038	7	276,683,476.57	170,507,635.64	0	0	0
2038	8	279,498,770.51	170,507,635.64	0	0	0
2038	9	279,693,040.34	170,507,635.64	0	0	0
2038	10	241,971,727.06	170,507,635.64	0	0	0
2038	11	220,867,162.25	170,507,635.64	0	0	0
2038	12	231,190,099.57	170,507,635.64	0	0	0
2039	1	244,310,471.98	170,507,635.64	25,486,850.96	0	0
2039	2	227,618,901.24	170,507,635.64	0.00	8,791,287.18	0
2039	3	226,658,552.69	170,507,635.64	0	0.00	7,827,050.50
2039	4	224,568,834.10	170,507,635.64	0	0	0.00
2039	5	230,952,719.01	170,507,635.64	0	0	0
2039	6	259,733,929.82	170,507,635.64	0	0	0
2039	7	276,731,403.12	170,507,635.64	0	0	0
2039	8	279,546,772.05	170,507,635.64	0	0	0
2039	9	279,741,114.91	170,507,635.64	0	0	0
2039	10	242,019,918.45	170,507,635.64	0	0	0
2039	11	220,915,467.39	170,507,635.64	0	0	0
2039	12	231,238,515.48	170,507,635.64	0	0	0
2040	1	244,359,050.76	170,507,635.64	25,486,850.96	0	0
2040	2	227,667,638.62	170,507,635.64	0.00	8,791,287.18	0
2040	3	226,707,444.50	170,507,635.64	0	0.00	7,827,050.50
2040	4	224,618,418.39	170,507,635.64	0	0	0.00
2040	5	231,002,977.58	170,507,635.64	0	0	0
2040	6	259,784,844.95	170,507,635.64	0	0	0
2040	7	276,782,619.99	170,507,635.64	0	0	0
2040	8	279,598,282.74	170,507,635.64	0	0	0
2040	9	279,792,911.68	170,507,635.64	0	0	0
2040	10	242,071,758.33	170,507,635.64	0	0	0
2040	11	220,967,349.25	170,507,635.64	0	0	0
2040	12	231,290,438.21	170,507,635.64	0	0	0
2041	1	244,410,982.48	170,507,635.64	25,486,850.96	0	0
2041	2	227,719,579.09	170,507,635.64	0.00	8,791,287.18	0
2041	3	226,759,393.48	170,507,635.64	0	0.00	7,827,050.50
2041	4	224,669,887.09	170,507,635.64	0	0	0.00
2041	5	231,053,978.61	170,507,635.64	0	0	0

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2041	6	259,835,390.60	170,507,635.64	0	0	0
2041	7	276,833,072.15	170,507,635.64	0	0	0
2041	8	279,648,643.86	170,507,635.64	0	0	0
2041	9	279,843,184.16	170,507,635.64	0	0	0
2041	10	242,122,214.50	170,507,635.64	0	0	0
2041	11	221,017,984.27	170,507,635.64	0	0	0
2041	12	231,341,247.39	170,507,635.64	0	0	0
2042	1	244,462,000.47	170,507,635.64	25,486,850.96	0	0
2042	2	227,770,800.40	170,507,635.64	0.00	8,791,287.18	0
2042	3	226,810,812.76	170,507,635.64	0	0.00	7,827,050.50
2042	4	224,721,503.99	170,507,635.64	0	0	0.00
2042	5	231,105,787.95	170,507,635.64	0	0	0
2042	6	259,887,387.31	170,507,635.64	0	0	0
2042	7	276,885,265.64	170,507,635.64	0	0	0
2042	8	279,701,028.97	170,507,635.64	0	0	0
2042	9	279,895,755.85	170,507,635.64	0	0	0
2042	10	242,174,997.60	170,507,635.64	0	0	0
2042	11	221,070,973.24	170,507,635.64	0	0	0
2042	12	231,394,436.82	170,507,635.64	0	0	0
2043	1	244,515,382.26	170,507,635.64	25,486,850.96	0	0
2043	2	227,824,369.49	170,507,635.64	0.00	8,791,287.18	0
2043	3	226,864,564.25	170,507,635.64	0	0.00	7,827,050.50
2043	4	224,775,441.81	170,507,635.64	0	0	0.00
2043	5	231,159,907.19	170,507,635.64	0	0	0
2043	6	259,941,683.22	170,507,635.64	0	0	0
2043	7	276,939,765.28	170,507,635.64	0	0	0
2043	8	279,755,726.98	170,507,635.64	0	0	0
2043	9	279,950,647.01	170,507,635.64	0	0	0
2043	10	242,230,102.62	170,507,635.64	0	0	0
2043	11	221,126,286.48	170,507,635.64	0	0	0
2043	12	231,449,952.81	170,507,635.64	0	0	0
2044	1	244,571,050.16	170,507,635.64	25,486,850.96	0	0
2044	2	227,880,185.32	170,507,635.64	0.00	8,791,287.18	0
2044	3	226,920,524.11	170,507,635.64	0	0.00	7,827,050.50
2044	4	224,831,558.16	170,507,635.64	0	0	0.00
2044	5	231,216,175.93	170,507,635.64	0	0	0
2044	6	259,998,100.33	170,507,635.64	0	0	0
2044	7	276,996,364.29	170,507,635.64	0	0	0
2044	8	279,812,503.10	170,507,635.64	0	0	0
2044	9	280,007,595.59	170,507,635.64	0	0	0
2044	10	242,287,240.52	170,507,635.64	0	0	0
2044	11	221,183,608.74	170,507,635.64	0	0	0

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2044	12	231,507,454.57	170,507,635.64	0	0	0
2045	1	244,628,621.35	170,507,635.64	25,486,850.96	0	0
2045	2	227,937,824.12	170,507,635.64	0.00	8,791,287.18	0
2045	3	226,978,228.74	170,507,635.64	0	0.00	7,827,050.50
2045	4	224,889,261.13	170,507,635.64	0	0	0.00
2045	5	231,273,877.29	170,507,635.64	0	0	0
2045	6	260,055,800.12	170,507,635.64	0	0	0
2045	7	277,054,069.64	170,507,635.64	0	0	0
2045	8	279,870,213.86	170,507,635.64	0	0	0
2045	9	280,065,311.63	170,507,635.64	0	0	0
2045	10	242,344,873.24	170,507,635.64	0	0	0
2045	11	221,241,160.33	170,507,635.64	0	0	0
2045	12	231,564,927.17	170,507,635.64	0	0	0
2046	1	244,686,003.23	170,507,635.64	25,486,850.96	0	0
2046	2	227,995,117.66	170,507,635.64	0.00	8,791,287.18	0
2046	3	227,035,436.27	170,507,635.64	0	0.00	7,827,050.50
2046	4	224,946,355.07	170,507,635.64	0	0	0.00
2046	5	231,330,860.62	170,507,635.64	0	0	0
2046	6	260,112,675.76	170,507,635.64	0	0	0
2046	7	277,110,755.81	170,507,635.64	0	0	0
2046	8	279,926,715.54	170,507,635.64	0	0	0
2046	9	280,121,633.67	170,507,635.64	0	0	0
2046	10	242,401,083.12	170,507,635.64	0	0	0
2046	11	221,297,260.99	170,507,635.64	0	0	0
2046	12	231,620,921.49	170,507,635.64	0	0	0
2047	1	244,742,053.15	170,507,635.64	25,486,850.96	0	0
2047	2	228,051,221.72	170,507,635.64	0.00	8,791,287.18	0
2047	3	227,091,593.04	170,507,635.64	0	0.00	7,827,050.50
2047	4	225,002,549.86	170,507,635.64	0	0	0.00
2047	5	231,387,092.43	170,507,635.64	0	0	0
2047	6	260,168,943.62	170,507,635.64	0	0	0
2047	7	277,167,051.49	170,507,635.64	0	0	0
2047	8	279,983,038.32	170,507,635.64	0	0	0
2047	9	280,177,982.83	170,507,635.64	0	0	0
2047	10	242,457,467.72	170,507,635.64	0	0	0
2047	11	221,353,680.10	170,507,635.64	0	0	0
2047	12	231,677,374.19	170,507,635.64	0	0	0
2048	1	244,798,557.72	170,507,635.64	25,486,850.96	0	0
2048	2	228,107,776.78	170,507,635.64	0.00	8,791,287.18	0
2048	3	227,148,197.27	170,507,635.64	0	0.00	7,827,050.50
2048	4	225,059,188.51	170,507,635.64	0	0	0.00
2048	5	231,443,764.59	170,507,635.64	0	0	0

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2048	6	260,225,648.41	170,507,635.64	0	0	0
2048	7	277,223,780.69	170,507,635.64	0	0	0
2048	8	280,039,791.29	170,507,635.64	0	0	0
2048	9	280,234,758.95	170,507,635.64	0	0	0
2048	10	242,514,276.21	170,507,635.64	0	0	0
2048	11	221,410,520.12	170,507,635.64	0	0	0
2048	12	231,734,244.91	170,507,635.64	0	0	0
2049	1	244,855,477.66	170,507,635.64	25,486,850.96	0	0
2049	2	228,164,744.66	170,507,635.64	0.00	8,791,287.18	0
2049	3	227,205,211.83	170,507,635.64	0	0.00	7,827,050.50
2049	4	225,116,234.90	170,507,635.64	0	0	0.00
2049	5	231,500,841.98	170,507,635.64	0	0	0
2049	6	260,282,755.97	170,507,635.64	0	0	0
2049	7	277,280,910.20	170,507,635.64	0	0	0
2049	8	280,096,942.16	170,507,635.64	0	0	0
2049	9	280,291,930.62	170,507,635.64	0	0	0
2049	10	242,571,478.06	170,507,635.64	0	0	0
2049	11	221,467,751.36	170,507,635.64	0	0	0
2049	12	231,791,504.77	170,507,635.64	0	0	0
2050	1	244,912,784.93	170,507,635.64	25,486,850.96	0	0
2050	2	228,222,098.08	170,507,635.64	0	8,791,287.18	0
2050	3	227,262,610.20	170,507,635.64	0	0	7,827,050.50
2050	4	225,173,663.26	170,507,635.64	0	0	0
2050	5	231,558,299.54	170,507,635.64	0	0	0
2050	6	260,340,241.97	170,507,635.64	0	0	0
2050	7	277,338,416.34	170,507,635.64	0	0	0
2050	8	280,154,467.91	170,507,635.64	0	0	0
2050	9	280,349,475.47	170,507,635.64	0	0	0
2050	10	242,629,051.54	170,507,635.64	0	0	0
2050	11	221,525,352.71	170,507,635.64	0	0	0
2050	12	231,849,133.26	170,507,635.64	0	0	0

DecHDD	MayCDD	JunCDD	JulCDD	AugCDD	SepCDD	
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0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0.00	11,079,426.11	0	0	0	0	0
0	0	53,563,329.13	0	0	0	0
0	0.00	0	70,168,358.82	0	0	0
0	0	0.00	0	77,303,598.55	0	0
0	0	0	0.00	0	74,592,816.33	0
0	0	0	0	0	0.00	0
0	0	0	0	0	0	0.00
14,220,119.49	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	0	0
0.00	11,239,997.50	0	0	0	0	0
0	0	50,453,200.34	0	0	0	0
0	0.00	0	59,996,895.04	0	0	0
0	0	0.00	0	78,477,087.71	0	0
0	0	0	0.00	0	61,114,411.40	0
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0	0	0	0	0	0	0.00
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0	0	0	0	0	0	0
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0	0	46,850,634.49	0	0	0	0
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0	0	0	0.00	0	58,714,147.50	0
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10,721,489.31	0	0	0	0	0	0
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0.00	9,810,912.10	0	0	0	0	0

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0	0	0.00	0	47,401,627.84	0
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0	0	0	0	0	0.00
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0	0	57,105,420.25	0	0	0
0	0.00	0	55,346,030.08	0	0
0	0	0.00	0	44,189,201.26	0
0	0	0	0.00	0	57,772,505.52
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0	0	0	0	0	0.00
14,287,614.20	0	0	0	0	0
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9,493,640.24	0	0	0	0	0
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0.00	9,361,312.20	0	0	0	0
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0.00	18,481,767.32	0	0	0	0
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0	0	0.00	0	53,665,126.24	0
0	0	0	0.00	0	39,927,466.66
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0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0

0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
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12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
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0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
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0	0.00	0	57,883,736.59	0	0
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0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00

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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
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0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
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0	0	0.00	0	60,695,059.75	0
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0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0

0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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12,370,579.37	0	0	0	0	0
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0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
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0	0	0	0	0	0
0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00

12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0

0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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12,370,579.37	0	0	0	0	0
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0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0

0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
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0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
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0	0	0	0	0	0
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00

12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0

0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	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
0.00	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0.00	0	57,883,736.59	0	0
0	0	0.00	0	60,695,059.75	0
0	0	0	0.00	0	60,885,463.15
0	0	0	0	0.00	0
0	0	0	0	0	0.00
12,370,579.37	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
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0	0	0	0	0	0
0	12,113,104.45	0	0	0	0
0	0	40,890,418.24	0	0	0
0	0	0	57,883,736.59	0	0
0	0	0	0	60,695,059.75	0
0	0	0	0	0	60,885,463.15
0	0	0	0	0	0
0	0	0	0	0	0
12,370,579.37	0	0	0	0	0

OctCDD	AprCDD	NovCDD	Aft16	AftAug2013	LE_SEC_CustPlusFcst	
0	0.00	0	0	0.00	0	45,732,025.73
0	0	0	0	0.00	0.00	45,787,508.93
0	0	0	0	0.00	0.00	45,593,317.74
0	8,016,089.49	0	0	0.00	0.00	45,551,705.34
0	0	0	0	0.00	0.00	45,523,963.74
0	0	0.00	0.00	0.00	0.00	45,482,351.34
0	0	0.00	0.00	0.00	0.00	45,426,868.15
0	0	0.00	0.00	0.00	0.00	45,024,614.96
0	0	0.00	0.00	0.00	0.00	44,691,715.78
32,350,365.84	0	0.00	0.00	0.00	0.00	44,553,007.78
0	0	2,598,227.99	0.00	0.00	0.00	44,178,496.20
0.00	0	0	0	0.00	0.00	43,693,018.22
0	0.00	0	0	0.00	0.00	43,637,535.02
0	0	0	0	0.00	0.00	43,540,439.42
0	0	0	0	0.00	0.00	43,429,473.03
0	6,412,871.59	0	0	0.00	0.00	43,221,411.04
0	0	0	0	0.00	0.00	43,207,540.24
0	0	0.00	0.00	0.00	0.00	43,290,765.03
0	0	0.00	0.00	0.00	0.00	43,276,894.23
0	0	0.00	0.00	0.00	0.00	43,304,635.83
0	0	0.00	0.00	0.00	0.00	43,373,989.83
11,612,951.84	0	0.00	0.00	0.00	0.00	43,304,635.83
0	0	866,076.00	0.00	0.00	0.00	42,416,904.67
0.00	0	0	0	0.00	0.00	42,264,325.88
0	0.00	0	0	0.00	0.00	42,569,483.46
0	0	0	0	0	0.00	42,472,387.87
0	0	0	0	0	0.00	42,430,775.47
0	15,184,763.81	0	0	0	0.00	42,500,129.47
0	0	0	0	0	0.00	42,264,325.88
0	0	0.00	0.00	0	0.00	42,028,522.29
0	0	0.00	0.00	0	0.00	42,028,522.29
0	0	0.00	0.00	0	0.00	41,986,909.89
0	0	0.00	0.00	0	0.00	41,945,297.49
11,986,225.29	0	0.00	0.00	0	0.00	41,834,331.09
0	0	1,840,411.49	0	0	0.00	41,834,331.09
0.00	0	0	0	0	0.00	41,903,685.09
0	0.00	0	0	0	0.00	41,959,168.29
0	0	0	0	0	0.00	41,917,555.89
0	0	0	0	0	0.00	41,875,943.49
0	4,855,459.92	0	0	0	0.00	42,056,263.88
0	0	0	0	0	0.00	42,097,876.28

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Sinclair

0	0	0.00	0	0.00	42,194,971.88
0	0	0.00	0	0.00	42,611,095.86
0	0	0.00	0	6,174,048.09	42,624,966.66
0	0	0.00	0	6,174,048.09	42,791,416.25
22,914,842.47	0	0.00	0	6,174,048.09	42,902,382.65
0	0	793,903.00	0	6,174,048.09	42,930,124.25
0.00	0	0	0	6,174,048.09	43,068,832.24
0	0.00	0	0	6,174,048.09	43,332,377.43
0	0	0	0	6,174,048.09	43,138,186.24
0	0	0	0	6,174,048.09	43,152,057.04
0	4,099,657.20	0	0	6,174,048.09	43,179,798.64
0	0	0	0	6,174,048.09	43,207,540.24
0	0	0.00	0	6,174,048.09	43,554,310.22
0	0	0.00	0	6,174,048.09	43,679,147.42
0	0	0.00	0	6,174,048.09	43,734,630.62
0	0	0.00	0	6,174,048.09	43,651,405.82
14,889,463.25	0	0.00	0	6,174,048.09	43,817,855.41
0	0	584,601.30	0	6,174,048.09	43,817,855.41
0.00	0	0	0	6,174,048.09	44,067,529.80
0	0.00	0	0	6,174,048.09	44,275,591.79
0	0	0	0	6,174,048.09	44,400,428.99
0	0	0	0	6,174,048.09	44,414,299.79
0	3,675,949.61	0	0	6,174,048.09	44,400,428.99
0	0	0	0	6,174,048.09	44,483,653.78
0	0	0.00	0	6,174,048.09	44,691,715.78
0	0	0.00	0	6,174,048.09	44,497,524.58
0	0	0.00	0	6,174,048.09	44,553,007.78
0	0	0.00	0	6,174,048.09	44,455,912.19
19,970,129.68	0	0.00	0	6,174,048.09	44,428,170.59
0	0	1,573,371.40	0	6,174,048.09	44,774,940.57
0.00	0	0	0	6,174,048.09	44,830,423.77
0	0.00	0	0	6,174,048.09	44,830,423.77
0	0	0	0	6,174,048.09	44,872,036.17
0	0	0	0	6,174,048.09	44,872,036.17
0	2,828,534.44	0	0	6,174,048.09	44,830,423.77
0	0	0	0	6,174,048.09	44,830,423.77
0	0	0.00	0	6,174,048.09	44,941,390.17
0	0	0.00	0	6,174,048.09	44,816,552.97
0	0	0.00	0	6,174,048.09	45,010,744.16
0	0	0.00	0	6,174,048.09	44,941,390.17
34,081,939.91	0	0.00	0	6,174,048.09	44,802,682.17
0	0	6,892,521.48	0	6,174,048.09	44,899,777.77

0.00	0	0	0	6,174,048.09	45,024,614.96
0	0.00	0	-5,568,476.28	6,174,048.09	45,080,098.16
0	0	0	-5,568,476.28	6,174,048.09	45,093,968.96
0	0	0	-5,568,476.28	6,174,048.09	45,038,485.76
0	9,813,983.85	0	-5,568,476.28	6,174,048.09	44,955,260.97
0	0	0	-5,568,476.28	6,174,048.09	45,163,322.96
0	0	0.00	-5,568,476.28	6,174,048.09	45,204,935.36
0	0	0.00	-5,568,476.28	6,174,048.09	45,288,160.15
0	0	0.00	-5,568,476.28	6,174,048.09	45,732,025.73
0	0	0.00	-5,568,476.28	6,174,048.09	45,898,475.33
30,463,261.17	0	0.00	-5,568,476.28	6,174,048.09	45,468,480.54
0	0	2,497,185.79	-5,568,476.28	6,174,048.09	45,412,997.35
0.00	0	0	-5,568,476.28	6,174,048.09	45,482,351.34
0	0.00	0	-5,568,476.28	6,174,048.09	45,518,697.79
0	0	0	-5,568,476.28	6,174,048.09	45,554,089.11
0	0	0	-5,568,476.28	6,174,048.09	45,588,550.41
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	45,622,907.93
0	0	0	-5,568,476.28	6,174,048.09	45,656,362.59
0	0	0.00	-5,568,476.28	6,174,048.09	45,688,938.12
0	0	0.00	-5,568,476.28	6,174,048.09	45,721,748.08
0	0	0.00	-5,568,476.28	6,174,048.09	45,753,695.85
0	0	0.00	-5,568,476.28	6,174,048.09	45,784,804.09
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	45,816,186.16
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	45,846,743.57
0.00	0	0	-5,568,476.28	6,174,048.09	45,876,497.99
0	0.00	0	-5,568,476.28	6,174,048.09	45,906,546.33
0	0	0	-5,568,476.28	6,174,048.09	45,935,805.06
0	0	0	-5,568,476.28	6,174,048.09	45,964,294.92
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	45,993,123.95
0	0	0	-5,568,476.28	6,174,048.09	46,021,195.40
0	0	0.00	-5,568,476.28	6,174,048.09	46,048,529.18
0	0	0.00	-5,568,476.28	6,174,048.09	46,076,047.03
0	0	0.00	-5,568,476.28	6,174,048.09	46,102,841.76
0	0	0.00	-5,568,476.28	6,174,048.09	46,128,932.37
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	46,155,004.91
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	46,180,392.31
0.00	0	0	-5,568,476.28	6,174,048.09	46,205,112.58
0	0.00	0	-5,568,476.28	6,174,048.09	46,229,889.00
0	0	0	-5,568,476.28	6,174,048.09	46,254,014.34
0	0	0	-5,568,476.28	6,174,048.09	46,277,505.72
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	46,301,235.42
0	0	0	-5,568,476.28	6,174,048.09	46,324,341.55

0	0	0.00	-5,568,476.28	6,174,048.09	46,346,840.49
0	0	0.00	-5,568,476.28	6,174,048.09	46,369,014.43
0	0	0.00	-5,568,476.28	6,174,048.09	46,390,605.67
0	0	0.00	-5,568,476.28	6,174,048.09	46,411,629.54
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	46,432,213.99
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	46,452,257.51
0.00	0	0	-5,568,476.28	6,174,048.09	46,471,774.33
0	0.00	0	-5,568,476.28	6,174,048.09	46,491,214.17
0	0	0	-5,568,476.28	6,174,048.09	46,510,143.17
0	0	0	-5,568,476.28	6,174,048.09	46,528,574.75
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	46,546,878.52
0	0	0	-5,568,476.28	6,174,048.09	46,564,701.30
0	0	0.00	-5,568,476.28	6,174,048.09	46,582,055.73
0	0	0.00	-5,568,476.28	6,174,048.09	46,599,062.21
0	0	0.00	-5,568,476.28	6,174,048.09	46,615,621.79
0	0	0.00	-5,568,476.28	6,174,048.09	46,631,746.22
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	46,647,690.68
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	46,663,216.15
0.00	0	0	-5,568,476.28	6,174,048.09	46,678,333.64
0	0.00	0	-5,568,476.28	6,174,048.09	46,693,287.47
0	0	0	-5,568,476.28	6,174,048.09	46,707,848.33
0	0	0	-5,568,476.28	6,174,048.09	46,722,026.56
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	46,735,963.82
0	0	0	-5,568,476.28	6,174,048.09	46,749,534.83
0	0	0.00	-5,568,476.28	6,174,048.09	46,762,749.21
0	0	0.00	-5,568,476.28	6,174,048.09	46,775,871.63
0	0	0.00	-5,568,476.28	6,174,048.09	46,788,649.21
0	0	0.00	-5,568,476.28	6,174,048.09	46,801,091.02
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	46,813,419.13
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	46,825,423.28
0.00	0	0	-5,568,476.28	6,174,048.09	46,837,111.99
0	0.00	0	-5,568,476.28	6,174,048.09	46,848,668.71
0	0	0	-5,568,476.28	6,174,048.09	46,859,921.74
0	0	0	-5,568,476.28	6,174,048.09	46,870,879.07
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	46,881,643.78
0	0	0	-5,568,476.28	6,174,048.09	46,892,125.61
0	0	0.00	-5,568,476.28	6,174,048.09	46,902,332.00
0	0	0.00	-5,568,476.28	6,174,048.09	46,912,481.43
0	0	0.00	-5,568,476.28	6,174,048.09	46,922,364.16
0	0	0.00	-5,568,476.28	6,174,048.09	46,931,987.18
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	46,941,458.31
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	46,950,680.55

0.00	0	0	-5,568,476.28	6,174,048.09	46,959,660.45
0	0.00	0	-5,568,476.28	6,174,048.09	46,968,518.26
0	0	0	-5,568,476.28	6,174,048.09	46,977,143.30
0	0	0	-5,568,476.28	6,174,048.09	46,985,541.69
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	46,993,727.24
0	0	0	-5,568,476.28	6,174,048.09	47,001,697.68
0	0	0.00	-5,568,476.28	6,174,048.09	47,009,458.67
0	0	0.00	-5,568,476.28	6,174,048.09	47,017,132.08
0	0	0.00	-5,568,476.28	6,174,048.09	47,024,603.85
0	0	0.00	-5,568,476.28	6,174,048.09	47,031,879.28
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,039,028.80
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,045,990.45
0.00	0	0	-5,568,476.28	6,174,048.09	47,052,769.16
0	0.00	0	-5,568,476.28	6,174,048.09	47,059,510.86
0	0	0	-5,568,476.28	6,174,048.09	47,066,075.40
0	0	0	-5,568,476.28	6,174,048.09	47,072,467.43
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,078,732.30
0	0	0	-5,568,476.28	6,174,048.09	47,084,832.55
0	0	0.00	-5,568,476.28	6,174,048.09	47,090,772.49
0	0	0.00	-5,568,476.28	6,174,048.09	47,096,621.54
0	0	0.00	-5,568,476.28	6,174,048.09	47,102,316.90
0	0	0.00	-5,568,476.28	6,174,048.09	47,107,862.59
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,113,358.38
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,118,709.75
0.00	0	0	-5,568,476.28	6,174,048.09	47,123,920.50
0	0.00	0	-5,568,476.28	6,174,048.09	47,129,148.43
0	0	0	-5,568,476.28	6,174,048.09	47,134,238.97
0	0	0	-5,568,476.28	6,174,048.09	47,139,195.75
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,144,119.48
0	0	0	-5,568,476.28	6,174,048.09	47,148,913.82
0	0	0.00	-5,568,476.28	6,174,048.09	47,153,582.18
0	0	0.00	-5,568,476.28	6,174,048.09	47,158,464.63
0	0	0.00	-5,568,476.28	6,174,048.09	47,163,218.77
0	0	0.00	-5,568,476.28	6,174,048.09	47,167,847.99
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,172,564.50
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,177,157.08
0.00	0	0	-5,568,476.28	6,174,048.09	47,181,628.97
0	0.00	0	-5,568,476.28	6,174,048.09	47,186,188.05
0	0	0	-5,568,476.28	6,174,048.09	47,190,627.32
0	0	0	-5,568,476.28	6,174,048.09	47,194,949.94
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,199,371.99
0	0	0	-5,568,476.28	6,174,048.09	47,203,677.83

0	0	0.00	-5,568,476.28	6,174,048.09	47,207,870.53
0	0	0.00	-5,568,476.28	6,174,048.09	47,212,125.83
0	0	0.00	-5,568,476.28	6,174,048.09	47,216,269.30
0	0	0.00	-5,568,476.28	6,174,048.09	47,220,303.89
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,224,439.14
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,228,465.71
0.00	0	0	-5,568,476.28	6,174,048.09	47,232,386.47
0	0.00	0	-5,568,476.28	6,174,048.09	47,236,368.26
0	0	0	-5,568,476.28	6,174,048.09	47,240,245.41
0	0	0	-5,568,476.28	6,174,048.09	47,244,020.68
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,247,848.56
0	0	0	-5,568,476.28	6,174,048.09	47,251,575.85
0	0	0.00	-5,568,476.28	6,174,048.09	47,255,205.19
0	0	0.00	-5,568,476.28	6,174,048.09	47,258,970.25
0	0	0.00	-5,568,476.28	6,174,048.09	47,262,636.37
0	0	0.00	-5,568,476.28	6,174,048.09	47,266,206.14
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,269,800.89
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,273,301.16
0.00	0	0	-5,568,476.28	6,174,048.09	47,276,709.46
0	0.00	0	-5,568,476.28	6,174,048.09	47,280,360.76
0	0	0	-5,568,476.28	6,174,048.09	47,283,916.11
0	0	0	-5,568,476.28	6,174,048.09	47,287,378.04
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,291,017.01
0	0	0	-5,568,476.28	6,174,048.09	47,294,560.35
0	0	0.00	-5,568,476.28	6,174,048.09	47,298,010.58
0	0	0.00	-5,568,476.28	6,174,048.09	47,301,678.29
0	0	0.00	-5,568,476.28	6,174,048.09	47,305,249.62
0	0	0.00	-5,568,476.28	6,174,048.09	47,308,727.10
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,312,333.59
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,315,845.30
0.00	0	0	-5,568,476.28	6,174,048.09	47,319,264.73
0	0.00	0	-5,568,476.28	6,174,048.09	47,322,798.56
0	0	0	-5,568,476.28	6,174,048.09	47,326,239.53
0	0	0	-5,568,476.28	6,174,048.09	47,329,590.08
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,333,665.82
0	0	0	-5,568,476.28	6,174,048.09	47,337,634.47
0	0	0.00	-5,568,476.28	6,174,048.09	47,341,498.82
0	0	0.00	-5,568,476.28	6,174,048.09	47,345,288.21
0	0	0.00	-5,568,476.28	6,174,048.09	47,348,978.02
0	0	0.00	-5,568,476.28	6,174,048.09	47,352,570.87
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,356,149.78
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,359,634.64

0.00	0	0	-5,568,476.28	6,174,048.09	47,363,027.93
0	0.00	0	-5,568,476.28	6,174,048.09	47,366,623.03
0	0	0	-5,568,476.28	6,174,048.09	47,370,123.65
0	0	0	-5,568,476.28	6,174,048.09	47,373,532.28
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,377,131.00
0	0	0	-5,568,476.28	6,174,048.09	47,380,635.14
0	0	0.00	-5,568,476.28	6,174,048.09	47,384,047.20
0	0	0.00	-5,568,476.28	6,174,048.09	47,387,710.88
0	0	0.00	-5,568,476.28	6,174,048.09	47,391,278.29
0	0	0.00	-5,568,476.28	6,174,048.09	47,394,751.94
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,398,407.78
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,401,967.55
0.00	0	0	-5,568,476.28	6,174,048.09	47,405,433.78
0	0.00	0	-5,568,476.28	6,174,048.09	47,409,114.97
0	0	0	-5,568,476.28	6,174,048.09	47,412,699.43
0	0	0	-5,568,476.28	6,174,048.09	47,416,189.70
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,419,800.57
0	0	0	-5,568,476.28	6,174,048.09	47,423,316.56
0	0	0.00	-5,568,476.28	6,174,048.09	47,426,740.16
0	0	0.00	-5,568,476.28	6,174,048.09	47,430,305.89
0	0	0.00	-5,568,476.28	6,174,048.09	47,433,777.92
0	0	0.00	-5,568,476.28	6,174,048.09	47,437,158.71
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,440,692.66
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,444,133.75
0.00	0	0	-5,568,476.28	6,174,048.09	47,447,484.42
0	0.00	0	-5,568,476.28	6,174,048.09	47,451,029.05
0	0	0	-5,568,476.28	6,174,048.09	47,454,480.53
0	0	0	-5,568,476.28	6,174,048.09	47,457,841.32
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,461,389.57
0	0	0	-5,568,476.28	6,174,048.09	47,464,844.58
0	0	0.00	-5,568,476.28	6,174,048.09	47,468,208.80
0	0	0.00	-5,568,476.28	6,174,048.09	47,471,719.62
0	0	0.00	-5,568,476.28	6,174,048.09	47,475,138.18
0	0	0.00	-5,568,476.28	6,174,048.09	47,478,466.91
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,482,006.60
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,485,453.27
0.00	0	0	-5,568,476.28	6,174,048.09	47,488,809.37
0	0.00	0	-5,568,476.28	6,174,048.09	47,492,502.58
0	0	0	-5,568,476.28	6,174,048.09	47,496,098.74
0	0	0	-5,568,476.28	6,174,048.09	47,499,600.40
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,503,216.43
0	0	0	-5,568,476.28	6,174,048.09	47,506,737.44

0	0	0.00	-5,568,476.28	6,174,048.09	47,510,165.93
0	0	0.00	-5,568,476.28	6,174,048.09	47,513,723.67
0	0	0.00	-5,568,476.28	6,174,048.09	47,517,187.93
0	0	0.00	-5,568,476.28	6,174,048.09	47,520,561.15
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,524,141.20
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,527,627.18
0.00	0	0	-5,568,476.28	6,174,048.09	47,531,021.55
0	0.00	0	-5,568,476.28	6,174,048.09	47,534,575.87
0	0	0	-5,568,476.28	6,174,048.09	47,538,036.79
0	0	0	-5,568,476.28	6,174,048.09	47,541,406.77
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,544,977.63
0	0	0	-5,568,476.28	6,174,048.09	47,548,454.65
0	0	0.00	-5,568,476.28	6,174,048.09	47,551,840.30
0	0	0.00	-5,568,476.28	6,174,048.09	47,555,379.25
0	0	0.00	-5,568,476.28	6,174,048.09	47,558,825.19
0	0	0.00	-5,568,476.28	6,174,048.09	47,562,180.58
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,565,749.88
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,569,225.39
0.00	0	0	-5,568,476.28	6,174,048.09	47,572,609.57
0	0.00	0	-5,568,476.28	6,174,048.09	47,576,236.86
0	0	0	-5,568,476.28	6,174,048.09	47,579,768.83
0	0	0	-5,568,476.28	6,174,048.09	47,583,207.98
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,586,811.69
0	0	0	-5,568,476.28	6,174,048.09	47,590,320.70
0	0	0.00	-5,568,476.28	6,174,048.09	47,593,737.50
0	0	0.00	-5,568,476.28	6,174,048.09	47,597,339.99
0	0	0.00	-5,568,476.28	6,174,048.09	47,600,847.81
0	0	0.00	-5,568,476.28	6,174,048.09	47,604,263.46
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,607,904.64
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,611,450.15
0.00	0	0	-5,568,476.28	6,174,048.09	47,614,902.48
0	0.00	0	-5,568,476.28	6,174,048.09	47,618,619.30
0	0	0	-5,568,476.28	6,174,048.09	47,622,238.45
0	0	0	-5,568,476.28	6,174,048.09	47,625,762.50
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,629,511.70
0	0	0	-5,568,476.28	6,174,048.09	47,633,162.38
0	0	0.00	-5,568,476.28	6,174,048.09	47,636,717.13
0	0	0.00	-5,568,476.28	6,174,048.09	47,640,541.69
0	0	0.00	-5,568,476.28	6,174,048.09	47,644,265.76
0	0	0.00	-5,568,476.28	6,174,048.09	47,647,891.95
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,651,764.57
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,655,535.42

0.00	0	0	-5,568,476.28	6,174,048.09	47,659,207.17
0	0.00	0	-5,568,476.28	6,174,048.09	47,663,169.59
0	0	0	-5,568,476.28	6,174,048.09	47,667,027.88
0	0	0	-5,568,476.28	6,174,048.09	47,670,784.79
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,674,778.76
0	0	0	-5,568,476.28	6,174,048.09	47,678,667.77
0	0	0.00	-5,568,476.28	6,174,048.09	47,682,454.59
0	0	0.00	-5,568,476.28	6,174,048.09	47,686,532.53
0	0	0.00	-5,568,476.28	6,174,048.09	47,690,503.31
0	0	0.00	-5,568,476.28	6,174,048.09	47,694,369.74
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,698,457.22
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,702,437.28
0.00	0	0	-5,568,476.28	6,174,048.09	47,706,312.75
0	0.00	0	-5,568,476.28	6,174,048.09	47,710,413.56
0	0	0	-5,568,476.28	6,174,048.09	47,714,406.61
0	0	0	-5,568,476.28	6,174,048.09	47,718,294.73
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,722,404.93
0	0	0	-5,568,476.28	6,174,048.09	47,726,407.11
0	0	0.00	-5,568,476.28	6,174,048.09	47,730,304.12
0	0	0.00	-5,568,476.28	6,174,048.09	47,734,459.08
0	0	0.00	-5,568,476.28	6,174,048.09	47,738,504.85
0	0	0.00	-5,568,476.28	6,174,048.09	47,742,444.30
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,746,648.60
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,750,742.42
0.00	0	0	-5,568,476.28	6,174,048.09	47,754,728.66
0	0.00	0	-5,568,476.28	6,174,048.09	47,758,992.35
0	0	0	-5,568,476.28	6,174,048.09	47,763,144.00
0	0	0	-5,568,476.28	6,174,048.09	47,767,186.55
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,771,989.21
0	0	0	-5,568,476.28	6,174,048.09	47,776,665.68
0	0	0.00	-5,568,476.28	6,174,048.09	47,781,219.25
0	0	0.00	-5,568,476.28	6,174,048.09	47,785,675.95
0	0	0.00	-5,568,476.28	6,174,048.09	47,790,015.53
0	0	0.00	-5,568,476.28	6,174,048.09	47,794,241.08
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,798,488.49
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,802,624.28
0.00	0	0	-5,568,476.28	6,174,048.09	47,806,651.39
0	0.00	0	-5,568,476.28	6,174,048.09	47,810,924.06
0	0	0	-5,568,476.28	6,174,048.09	47,815,084.46
0	0	0	-5,568,476.28	6,174,048.09	47,819,135.53
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,823,457.91
0	0	0	-5,568,476.28	6,174,048.09	47,827,666.71

0	0	0.00	-5,568,476.28	6,174,048.09	47,831,764.91
0	0	0.00	-5,568,476.28	6,174,048.09	47,836,128.11
0	0	0.00	-5,568,476.28	6,174,048.09	47,840,376.66
0	0	0.00	-5,568,476.28	6,174,048.09	47,844,513.56
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,848,944.65
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,853,259.30
0.00	0	0	-5,568,476.28	6,174,048.09	47,857,460.57
0	0.00	0	-5,568,476.28	6,174,048.09	47,861,942.05
0	0	0	-5,568,476.28	6,174,048.09	47,866,305.77
0	0	0	-5,568,476.28	6,174,048.09	47,870,554.81
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,875,074.82
0	0	0	-5,568,476.28	6,174,048.09	47,879,476.05
0	0	0.00	-5,568,476.28	6,174,048.09	47,883,761.62
0	0	0.00	-5,568,476.28	6,174,048.09	47,888,321.60
0	0	0.00	-5,568,476.28	6,174,048.09	47,892,761.76
0	0	0.00	-5,568,476.28	6,174,048.09	47,897,085.24
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,901,727.76
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,906,248.27
0.00	0	0	-5,568,476.28	6,174,048.09	47,910,649.99
0	0.00	0	-5,568,476.28	6,174,048.09	47,915,323.84
0	0	0	-5,568,476.28	6,174,048.09	47,919,874.87
0	0	0	-5,568,476.28	6,174,048.09	47,924,306.30
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,929,012.63
0	0	0	-5,568,476.28	6,174,048.09	47,933,595.29
0	0	0.00	-5,568,476.28	6,174,048.09	47,938,057.53
0	0	0.00	-5,568,476.28	6,174,048.09	47,942,821.24
0	0	0.00	-5,568,476.28	6,174,048.09	47,947,459.77
0	0	0.00	-5,568,476.28	6,174,048.09	47,951,976.41
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	47,956,832.77
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	47,961,561.51
0.00	0	0	-5,568,476.28	6,174,048.09	47,966,165.99
0	0.00	0	-5,568,476.28	6,174,048.09	47,970,991.75
0	0	0	-5,568,476.28	6,174,048.09	47,975,690.69
0	0	0	-5,568,476.28	6,174,048.09	47,980,266.16
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	47,985,128.99
0	0	0	-5,568,476.28	6,174,048.09	47,989,864.03
0	0	0.00	-5,568,476.28	6,174,048.09	47,994,474.64
0	0	0.00	-5,568,476.28	6,174,048.09	47,999,420.25
0	0	0.00	-5,568,476.28	6,174,048.09	48,004,235.89
0	0	0.00	-5,568,476.28	6,174,048.09	48,008,924.99
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	48,013,970.67
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	48,018,883.76

0.00	0	0	-5,568,476.28	6,174,048.09	48,023,667.75
0	0.00	0	-5,568,476.28	6,174,048.09	48,028,562.94
0	0	0	-5,568,476.28	6,174,048.09	48,033,329.49
0	0	0	-5,568,476.28	6,174,048.09	48,037,970.79
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	48,042,831.96
0	0	0	-5,568,476.28	6,174,048.09	48,047,565.39
0	0	0.00	-5,568,476.28	6,174,048.09	48,052,174.43
0	0	0.00	-5,568,476.28	6,174,048.09	48,057,125.60
0	0	0.00	-5,568,476.28	6,174,048.09	48,061,946.66
0	0	0.00	-5,568,476.28	6,174,048.09	48,066,641.03
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	48,071,603.39
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	48,076,435.36
0.00	0	0	-5,568,476.28	6,174,048.09	48,081,140.34
0	0.00	0	-5,568,476.28	6,174,048.09	48,085,944.81
0	0	0	-5,568,476.28	6,174,048.09	48,090,623.03
0	0	0	-5,568,476.28	6,174,048.09	48,095,178.32
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	48,099,925.90
0	0	0	-5,568,476.28	6,174,048.09	48,104,548.72
0	0	0.00	-5,568,476.28	6,174,048.09	48,109,050.07
0	0	0.00	-5,568,476.28	6,174,048.09	48,113,811.77
0	0	0.00	-5,568,476.28	6,174,048.09	48,118,448.34
0	0	0.00	-5,568,476.28	6,174,048.09	48,122,963.07
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	48,127,813.27
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	48,132,536.02
0.00	0	0	-5,568,476.28	6,174,048.09	48,137,134.67
0	0.00	0	-5,568,476.28	6,174,048.09	48,141,994.74
0	0	0	-5,568,476.28	6,174,048.09	48,146,727.09
0	0	0	-5,568,476.28	6,174,048.09	48,151,335.08
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	48,156,120.69
0	0	0	-5,568,476.28	6,174,048.09	48,160,780.53
0	0	0.00	-5,568,476.28	6,174,048.09	48,165,317.92
0	0	0.00	-5,568,476.28	6,174,048.09	48,170,107.45
0	0	0.00	-5,568,476.28	6,174,048.09	48,174,771.11
0	0	0.00	-5,568,476.28	6,174,048.09	48,179,312.23
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	48,184,197.87
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	48,188,955.13
0.00	0	0	-5,568,476.28	6,174,048.09	48,193,587.37
0	0.00	0	-5,568,476.28	6,174,048.09	48,198,499.30
0	0	0	-5,568,476.28	6,174,048.09	48,203,282.15
0	0	0	-5,568,476.28	6,174,048.09	48,207,939.32
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	48,212,759.33
0	0	0	-5,568,476.28	6,174,048.09	48,217,452.69

0	0	0.00	-5,568,476.28	6,174,048.09	48,222,022.71
0	0	0.00	-5,568,476.28	6,174,048.09	48,226,836.65
0	0	0.00	-5,568,476.28	6,174,048.09	48,231,524.09
0	0	0.00	-5,568,476.28	6,174,048.09	48,236,088.35
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	48,241,006.37
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	48,245,795.15
0.00	0	0	-5,568,476.28	6,174,048.09	48,250,458.09
0	0.00	0	-5,568,476.28	6,174,048.09	48,255,419.25
0	0	0	-5,568,476.28	6,174,048.09	48,260,250.03
0	0	0	-5,568,476.28	6,174,048.09	48,264,953.88
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	48,269,805.73
0	0	0	-5,568,476.28	6,174,048.09	48,274,530.08
0	0	0.00	-5,568,476.28	6,174,048.09	48,279,130.28
0	0	0.00	-5,568,476.28	6,174,048.09	48,283,966.16
0	0	0.00	-5,568,476.28	6,174,048.09	48,288,674.95
0	0	0.00	-5,568,476.28	6,174,048.09	48,293,260.01
23,160,062.39	0	0.00	-5,568,476.28	6,174,048.09	48,298,208.22
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	48,303,026.39
0.00	0	0	-5,568,476.28	6,174,048.09	48,307,717.95
0	0.00	0	-5,568,476.28	6,174,048.09	48,312,726.51
0	0	0	-5,568,476.28	6,174,048.09	48,317,603.46
0	0	0	-5,568,476.28	6,174,048.09	48,322,352.24
0	5,733,221.72	0	-5,568,476.28	6,174,048.09	48,327,234.08
0	0	0	-5,568,476.28	6,174,048.09	48,331,987.63
0	0	0	-5,568,476.28	6,174,048.09	48,336,616.27
0	0	0	-5,568,476.28	6,174,048.09	48,341,472.30
0	0	0	-5,568,476.28	6,174,048.09	48,346,200.71
0	0	0	-5,568,476.28	6,174,048.09	48,350,804.87
23,160,062.39	0	0	-5,568,476.28	6,174,048.09	48,355,781.70
0	0	2,051,517.52	-5,568,476.28	6,174,048.09	48,360,627.74
0	0	0	-5,568,476.28	6,174,048.09	48,365,346.44

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Sinclair

Year	Month	Actual	Pred	Upper	Lower	Sigma
2010	1	242,264,201.00	245,002,937.38	256,634,948.14	233,370,926.63	5,845,106.45
2010	2	223,477,751.00	226,047,034.34	237,693,101.74	214,400,966.94	5,852,169.94
2010	3	229,679,869.00	225,774,556.73	237,544,122.05	214,004,991.42	5,914,227.86
2010	4	230,286,466.00	224,075,430.47	235,626,170.85	212,524,690.10	5,804,267.94
2010	5	230,082,095.00	227,111,025.49	238,465,472.48	215,756,578.50	5,705,630.15
2010	6	272,463,243.00	269,553,316.11	281,139,022.35	257,967,609.88	5,821,838.34
2010	7	287,282,519.00	286,102,862.61	297,702,643.90	274,503,081.31	5,828,911.09
2010	8	290,446,163.00	292,835,849.15	304,491,185.05	281,180,513.25	5,856,827.38
2010	9	278,204,015.00	289,792,167.74	301,411,166.52	278,173,168.97	5,838,567.90
2010	10	242,495,457.00	247,411,009.27	259,274,502.71	235,547,515.83	5,961,426.92
2010	11	216,081,287.00	217,284,359.83	228,533,394.77	206,035,324.89	5,652,660.41
2010	12	236,316,627.00	228,420,773.34	239,870,076.54	216,971,470.15	5,753,295.57
2011	1	246,919,029.00	245,261,553.95	256,758,660.40	233,764,447.50	5,777,316.79
2011	2	216,489,906.00	223,219,618.58	234,483,237.30	211,955,999.86	5,659,988.78
2011	3	224,537,063.00	220,850,167.41	231,941,228.87	209,759,105.95	5,573,278.45
2011	4	220,407,324.00	220,141,918.27	231,197,569.46	209,086,267.08	5,555,484.72
2011	5	230,604,635.00	224,955,173.38	235,968,838.63	213,941,508.13	5,534,386.71
2011	6	265,690,312.00	264,251,601.01	275,532,954.55	252,970,247.48	5,668,900.56
2011	7	274,841,680.00	273,781,424.91	284,966,219.69	262,596,630.14	5,620,379.61
2011	8	295,537,975.00	292,289,359.18	303,863,241.18	280,715,477.18	5,815,896.64
2011	9	276,685,346.00	274,996,036.87	286,225,475.08	263,766,598.66	5,642,813.02
2011	10	233,895,721.00	225,425,223.32	236,385,034.82	214,465,411.82	5,507,325.11
2011	11	204,675,763.00	213,790,616.31	224,832,024.82	202,749,207.80	5,548,327.75
2011	12	215,661,178.00	222,831,447.86	233,919,014.04	211,743,881.69	5,571,522.06
2012	1	236,425,638.00	234,848,898.14	245,929,777.20	223,768,019.08	5,568,161.77
2012	2	219,987,944.00	220,235,906.21	231,307,890.35	209,163,922.08	5,563,692.06
2012	3	216,614,487.00	218,477,631.02	229,471,262.49	207,483,999.55	5,524,319.70
2012	4	227,795,633.00	228,192,528.92	241,246,806.40	215,138,251.43	6,559,798.05
2012	5	240,541,717.00	233,011,985.59	244,831,361.97	221,192,609.20	5,939,258.02
2012	6	264,516,328.00	259,386,792.42	270,669,871.39	248,103,713.45	5,669,767.60
2012	7	281,377,490.00	287,348,011.08	298,983,797.13	275,712,225.03	5,847,003.54
2012	8	277,035,391.00	282,075,118.53	293,542,677.91	270,607,559.14	5,762,469.34
2012	9	277,664,940.00	271,167,080.63	282,443,846.25	259,890,315.02	5,666,595.12
2012	10	226,097,670.00	224,328,192.03	235,357,032.46	213,299,351.60	5,542,012.27
2012	11	213,362,907.00	214,182,378.23	225,306,794.18	203,057,962.27	5,590,039.14
2012	12	217,207,108.00	223,132,810.04	234,302,300.37	211,963,319.71	5,612,689.10
2013	1	231,955,137.00	236,320,390.81	247,547,498.83	225,093,282.80	5,641,642.09
2013	2	223,261,866.00	220,984,262.48	232,268,578.23	209,699,946.72	5,670,389.08
2013	3	215,850,606.00	221,245,980.07	232,732,977.88	209,758,982.27	5,772,237.18
2013	4	215,883,056.00	217,419,359.45	228,418,636.81	206,420,082.08	5,527,156.77
2013	5	220,842,275.00	222,416,424.03	233,417,542.86	211,415,305.19	5,528,082.12

2013	6	253,210,101.00	251,060,862.57	262,143,641.38	239,978,083.76	5,569,116.40
2013	7	267,112,011.00	264,727,854.24	275,802,353.24	253,653,355.23	5,564,955.78
2013	8	271,754,110.00	266,708,278.23	277,822,645.35	255,593,911.10	5,584,989.59
2013	9	282,939,932.00	284,861,827.46	296,253,448.50	273,470,206.43	5,724,310.18
2013	10	250,300,374.00	242,498,908.85	253,770,441.22	231,227,376.48	5,663,965.41
2013	11	222,621,311.00	220,405,710.98	231,448,315.31	209,363,106.64	5,548,928.65
2013	12	237,764,638.00	234,644,658.03	246,171,342.80	223,117,973.25	5,792,179.95
2014	1	255,499,583.00	249,863,919.06	261,379,680.58	238,348,157.53	5,786,691.00
2014	2	236,664,117.00	230,753,697.07	242,413,369.22	219,094,024.92	5,859,006.35
2014	3	233,246,255.00	229,226,610.77	240,792,219.91	217,661,001.63	5,811,739.52
2014	4	216,743,302.00	223,961,139.56	234,959,400.95	212,962,878.18	5,526,646.24
2014	5	234,058,865.00	239,470,905.32	251,229,655.53	227,712,155.12	5,908,793.25
2014	6	263,348,052.00	277,341,414.20	288,890,553.97	265,792,274.43	5,803,463.63
2014	7	278,467,516.00	275,706,861.23	286,861,001.52	264,552,720.93	5,604,975.68
2014	8	261,840,325.00	264,605,515.60	275,580,772.22	253,630,258.98	5,515,086.31
2014	9	277,512,946.00	278,105,595.06	289,257,532.85	266,953,657.28	5,603,868.91
2014	10	241,647,443.00	235,389,002.39	246,334,263.54	224,443,741.25	5,500,013.52
2014	11	221,605,500.00	221,084,140.44	232,125,883.34	210,042,397.54	5,548,495.78
2014	12	236,579,993.00	235,036,827.73	246,437,511.40	223,636,144.07	5,728,864.17
2015	1	243,626,701.00	247,467,105.27	258,744,090.96	236,190,119.58	5,666,705.71
2015	2	235,458,569.00	231,069,768.15	242,479,204.93	219,660,331.38	5,733,262.62
2015	3	236,235,288.00	231,313,507.73	242,987,660.47	219,639,354.99	5,866,282.87
2015	4	223,248,101.00	224,758,062.33	235,753,148.76	213,762,975.89	5,525,050.82
2015	5	225,493,021.00	236,459,762.68	247,748,935.70	225,170,589.67	5,672,829.86
2015	6	266,850,734.00	268,621,439.34	279,855,381.06	257,387,497.63	5,645,076.04
2015	7	274,828,187.00	277,476,049.14	288,636,946.92	266,315,151.36	5,608,371.33
2015	8	282,047,847.00	278,867,677.98	290,006,592.74	267,728,763.21	5,597,324.82
2015	9	285,965,681.00	277,728,433.05	288,854,546.96	266,602,319.15	5,590,892.37
2015	10	243,062,477.00	241,079,984.00	252,150,536.99	230,009,431.01	5,562,972.91
2015	11	225,037,079.00	223,029,995.70	234,054,663.27	212,005,328.13	5,539,915.40
2015	12	234,441,326.00	231,005,747.74	242,046,331.66	219,965,163.82	5,547,913.39
2016	1	242,276,605.00	243,101,174.68	254,201,036.99	232,001,312.36	5,577,700.89
2016	2	229,646,848.00	230,126,263.17	241,349,266.39	218,903,259.95	5,639,579.42
2016	3	219,312,814.00	227,455,553.72	238,500,736.92	216,410,370.53	5,550,224.54
2016	4	224,867,875.00	224,340,641.94	235,388,103.70	213,293,180.17	5,551,369.52
2016	5	229,979,893.00	230,873,419.70	241,884,724.36	219,862,115.04	5,533,200.51
2016	6	265,629,212.00	267,886,239.62	279,112,759.96	256,659,719.28	5,641,346.78
2016	7	287,960,395.00	285,114,109.07	296,425,787.71	273,802,430.43	5,684,138.98
2016	8	294,120,589.00	292,835,208.34	304,253,735.42	281,416,681.26	5,737,830.52
2016	9	296,683,093.00	297,766,829.97	309,331,970.58	286,201,689.35	5,811,504.08
2016	10	243,819,149.00	255,566,305.81	267,473,275.17	243,659,336.46	5,983,273.64
2016	11	229,926,868.00	228,473,982.97	242,504,656.76	214,443,309.18	7,050,438.96

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2016	12	233,617,377.00	234,647,716.93	245,957,458.00	223,337,975.85	5,683,165.35
2017	1	241,229,974.00	239,119,491.40	250,533,910.06	227,705,072.73	5,735,766.03
2017	2	216,515,598.00	222,301,848.44	233,581,114.90	211,022,581.97	5,667,851.81
2017	3	213,340,320.00	221,608,447.71	232,890,811.38	210,326,084.03	5,669,408.16
2017	4	225,438,790.00	225,882,452.27	237,723,629.36	214,041,275.17	5,950,212.91
2017	5	237,393,092.00	234,758,297.73	246,583,968.91	222,932,626.55	5,942,421.16
2017	6	270,440,679.00	260,594,281.81	272,038,640.15	249,149,923.46	5,750,810.77
2017	7	275,651,826.00	275,779,130.07	287,266,933.34	264,291,326.79	5,772,641.93
2017	8	268,437,119.00	270,510,359.43	281,896,542.54	259,124,176.32	5,721,577.61
2017	9	260,844,023.00	256,939,149.44	268,231,374.02	245,646,924.86	5,674,363.28
2017	10	251,255,403.00	247,044,949.17	258,931,983.05	235,157,915.28	5,973,256.03
2017	11	217,939,166.00	219,023,390.59	230,447,278.33	207,599,502.85	5,740,524.26
2017	12	224,753,322.00	229,677,513.97	241,253,947.73	218,101,080.22	5,817,178.91
2018	1		242,118,756.20	253,634,440.78	230,603,071.62	5,786,652.34
2018	2		225,458,583.74	237,003,544.82	213,913,622.66	5,801,363.83
2018	3		224,528,808.36	236,068,927.33	212,988,689.40	5,798,930.66
2018	4		222,469,337.10	233,771,109.33	211,167,564.87	5,679,160.99
2018	5		228,882,674.49	240,218,620.51	217,546,728.48	5,696,333.38
2018	6		257,692,563.82	269,073,365.20	246,311,762.43	5,718,873.29
2018	7		274,718,692.12	286,183,227.32	263,254,156.92	5,760,949.68
2018	8		277,561,963.05	289,055,711.42	266,068,214.68	5,775,629.35
2018	9		277,783,474.69	289,332,508.87	266,234,440.51	5,803,410.57
2018	10		240,089,456.01	251,564,397.65	228,614,514.36	5,766,178.94
2018	11		219,011,468.54	230,363,627.92	207,659,309.16	5,704,480.63
2018	12		229,360,284.81	240,889,107.35	217,831,462.26	5,793,254.19
2019	1		242,506,604.75	254,033,068.36	230,980,141.14	5,792,068.82
2019	2		225,840,299.69	237,398,205.66	214,282,393.72	5,807,868.66
2019	3		224,904,552.88	236,460,723.03	213,348,382.72	5,806,996.41
2019	4		222,839,553.12	234,170,055.16	211,509,051.09	5,693,597.77
2019	5		229,247,507.30	240,612,235.25	217,882,779.35	5,710,796.35
2019	6		258,052,154.88	269,452,678.35	246,651,631.41	5,728,783.67
2019	7		275,072,991.07	286,555,287.26	263,590,694.89	5,769,874.61
2019	8		277,911,108.96	289,422,910.74	266,399,307.19	5,784,701.22
2019	9		278,127,602.97	289,697,807.47	266,557,398.47	5,814,048.69
2019	10		240,428,274.76	251,923,618.14	228,932,931.38	5,776,430.84
2019	11		219,345,117.28	230,726,383.39	207,963,851.17	5,719,106.81
2019	12		229,688,899.40	241,247,369.97	218,130,428.83	5,808,152.37
2020	1		242,829,947.42	254,377,377.33	231,282,517.50	5,802,604.42
2020	2		226,158,508.97	237,738,772.47	214,578,245.48	5,819,103.36
2020	3		225,217,763.67	236,798,512.92	213,637,014.42	5,819,347.45
2020	4		223,147,664.59	234,513,090.81	211,782,238.38	5,711,147.23
2020	5		229,550,653.45	240,949,934.21	218,151,372.69	5,728,159.20

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2020	6	258,350,466.18	269,777,662.89	246,923,269.48	5,742,187.02
2020	7	275,365,958.47	286,872,839.61	263,859,077.33	5,782,228.59
2020	8	278,198,872.88	289,735,095.53	266,662,650.23	5,796,972.75
2020	9	278,410,300.14	290,007,063.94	266,813,536.34	5,827,394.79
2020	10	240,705,483.83	252,226,413.71	229,184,553.96	5,789,288.11
2020	11	219,616,982.48	231,030,591.49	208,203,373.48	5,735,359.17
2020	12	229,955,561.15	241,546,277.21	218,364,845.08	5,824,355.79
2021	1	243,091,272.59	254,663,566.00	231,518,979.18	5,815,098.38
2021	2	226,414,637.80	238,020,494.20	214,808,781.40	5,831,963.84
2021	3	225,468,832.70	237,076,592.42	213,861,072.99	5,832,920.26
2021	4	223,393,307.70	234,793,681.68	211,992,933.72	5,728,708.55
2021	5	229,791,013.21	241,224,492.53	218,357,533.88	5,745,344.04
2021	6	258,585,681.43	270,040,459.23	247,130,903.62	5,756,046.57
2021	7	275,596,006.25	287,128,434.37	264,063,578.14	5,795,065.99
2021	8	278,423,889.00	289,985,177.70	266,862,600.30	5,809,568.49
2021	9	278,630,416.82	290,253,548.94	267,007,284.70	5,840,644.92
2021	10	240,920,960.53	252,467,273.02	229,374,648.04	5,802,042.92
2021	11	219,827,941.13	231,271,940.36	208,383,941.90	5,750,630.32
2021	12	230,162,120.47	241,782,814.70	218,541,426.24	5,839,419.87
2022	1	243,293,345.88	254,889,688.15	231,697,003.62	5,827,182.97
2022	2	226,612,342.96	238,242,558.52	214,982,127.40	5,844,204.36
2022	3	225,662,284.51	237,295,261.74	214,029,307.28	5,845,592.10
2022	4	223,582,392.99	235,013,922.56	212,150,863.42	5,744,364.29
2022	5	229,975,846.73	241,439,680.25	218,512,013.21	5,760,597.08
2022	6	258,766,374.91	270,246,234.98	247,286,514.84	5,768,650.45
2022	7	275,772,815.67	287,328,586.17	264,217,045.16	5,806,795.59
2022	8	278,596,916.41	290,181,020.53	267,012,812.29	5,821,033.28
2022	9	278,799,761.62	290,446,546.86	267,152,976.38	5,852,530.65
2022	10	241,086,688.98	252,655,771.94	229,517,606.01	5,813,485.12
2022	11	219,990,148.26	231,460,635.29	208,519,661.22	5,763,940.49
2022	12	230,320,898.81	241,967,581.23	218,674,216.39	5,852,478.99
2023	1	243,448,727.13	255,066,404.27	231,831,049.98	5,837,903.78
2023	2	226,764,416.37	238,416,081.15	215,112,751.60	5,854,982.63
2023	3	225,811,137.02	237,466,111.42	214,156,162.61	5,856,645.72
2023	4	223,728,072.95	235,186,109.52	212,270,036.38	5,757,684.10
2023	5	230,118,437.51	241,608,078.19	218,628,796.84	5,773,565.22
2023	6	258,905,957.70	270,407,494.75	247,404,420.64	5,779,543.18
2023	7	275,909,425.47	287,485,424.53	264,333,426.42	5,816,960.47
2023	8	278,730,631.36	290,334,463.28	267,126,799.44	5,830,946.53
2023	9	278,930,657.78	290,597,719.83	267,263,595.73	5,862,719.79
2023	10	241,214,728.15	252,803,325.58	229,626,130.73	5,823,291.17
2023	11	220,115,405.52	231,608,189.96	208,622,621.08	5,775,144.97

2023	12	230,443,447.27	242,111,926.15	218,774,968.40	5,863,431.75
2024	1	243,568,576.68	255,204,388.98	231,932,764.37	5,847,016.73
2024	2	226,881,637.93	238,551,436.93	215,211,838.93	5,864,095.11
2024	3	225,925,799.64	237,599,247.85	214,252,351.43	5,865,928.84
2024	4	223,840,156.41	235,320,059.56	212,360,253.26	5,768,672.10
2024	5	230,228,009.58	241,738,886.38	218,717,132.78	5,784,236.41
2024	6	259,013,084.36	270,532,610.80	247,493,557.93	5,788,582.87
2024	7	276,014,076.12	287,606,857.91	264,421,294.34	5,825,393.82
2024	8	278,832,871.06	290,453,013.56	267,212,728.55	5,839,142.63
2024	9	279,030,549.88	290,714,249.52	267,346,850.23	5,871,080.21
2024	10	241,312,298.65	252,916,886.10	229,707,711.20	5,831,326.19
2024	11	220,210,715.42	231,721,536.16	208,699,894.68	5,784,208.25
2024	12	230,536,555.98	242,222,601.82	218,850,510.14	5,872,259.18
2025	1	243,659,569.27	255,310,122.16	232,009,016.38	5,854,423.90
2025	2	226,970,570.02	238,655,052.16	215,286,087.89	5,871,473.41
2025	3	226,012,725.38	237,701,061.16	214,324,389.61	5,873,409.87
2025	4	223,925,161.48	235,422,497.44	212,427,825.51	5,777,432.12
2025	5	230,311,144.45	241,838,943.66	218,783,345.24	5,792,739.96
2025	6	259,094,398.18	270,628,359.93	247,560,436.43	5,795,836.64
2025	7	276,093,565.58	287,699,837.60	264,487,293.57	5,832,172.69
2025	8	278,910,584.10	290,543,832.38	267,277,335.82	5,845,728.31
2025	9	279,106,533.19	290,803,559.83	267,409,506.54	5,877,777.05
2025	10	241,386,628.23	253,004,043.91	229,769,212.54	5,837,772.40
2025	11	220,283,434.72	231,808,635.66	208,758,233.79	5,791,434.32
2025	12	230,607,707.32	242,307,760.63	218,907,654.01	5,879,297.95
2026	1	243,729,206.84	255,391,605.34	232,066,808.34	5,860,376.35
2026	2	227,038,733.60	238,735,008.24	215,342,458.96	5,877,399.16
2026	3	226,079,453.70	237,779,732.27	214,379,175.13	5,879,411.15
2026	4	223,990,548.65	235,501,790.22	212,479,307.08	5,784,419.71
2026	5	230,375,225.72	241,916,543.77	218,833,907.67	5,799,533.20
2026	6	259,157,207.87	270,702,779.35	247,611,636.39	5,801,670.56
2026	7	276,155,408.66	287,772,617.97	264,538,199.36	5,837,668.69
2026	8	278,971,485.97	290,615,430.83	267,327,541.11	5,851,103.36
2026	9	279,166,518.59	290,874,474.72	267,458,562.46	5,883,269.14
2026	10	241,445,834.35	253,073,867.13	229,817,801.57	5,843,107.51
2026	11	220,341,882.05	231,879,027.71	208,804,736.39	5,797,436.57
2026	12	230,665,415.79	242,377,199.80	218,953,631.78	5,885,192.65
2027	1	243,786,246.46	255,458,711.11	232,113,781.81	5,865,434.60
2027	2	227,095,121.95	238,801,503.93	215,388,739.97	5,882,478.12
2027	3	226,135,207.89	237,845,806.67	214,424,609.12	5,884,597.07
2027	4	224,045,801.16	235,569,127.99	212,522,474.33	5,790,492.58
2027	5	230,429,989.73	241,983,187.43	218,876,792.04	5,805,502.74

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2027	6	259,211,496.22	270,767,423.94	247,655,568.50	5,806,874.58
2027	7	276,209,069.86	287,836,081.84	264,582,057.89	5,842,594.55
2027	8	279,024,536.50	290,678,103.07	267,370,969.94	5,855,938.28
2027	9	279,218,974.50	290,936,782.72	267,501,166.27	5,888,219.83
2027	10	241,497,708.98	253,135,334.09	229,860,083.87	5,847,927.67
2027	11	220,393,190.68	231,941,105.37	208,845,275.99	5,802,848.02
2027	12	230,716,173.29	242,438,547.92	218,993,798.67	5,890,514.46
2028	1	243,836,426.68	255,518,016.90	232,154,836.46	5,870,020.22
2028	2	227,144,740.04	238,860,278.75	215,429,201.34	5,887,079.39
2028	3	226,184,278.64	237,904,217.04	214,464,340.23	5,889,290.25
2028	4	224,094,277.74	235,628,459.62	212,560,095.86	5,795,947.26
2028	5	230,477,887.75	242,041,721.53	218,914,053.98	5,810,847.39
2028	6	259,258,830.89	270,824,031.01	247,693,630.77	5,811,533.99
2028	7	276,255,914.29	287,891,720.37	264,620,108.21	5,847,013.60
2028	8	279,070,903.57	290,733,110.99	267,408,696.15	5,860,280.33
2028	9	279,264,876.75	290,991,531.03	267,538,222.46	5,892,664.99
2028	10	241,543,070.73	253,189,305.24	229,896,836.22	5,852,253.91
2028	11	220,438,026.14	231,995,567.41	208,880,484.86	5,807,685.40
2028	12	230,760,496.28	242,492,327.26	219,028,665.31	5,895,266.29
2029	1	243,880,419.18	255,570,217.06	232,190,621.29	5,874,144.58
2029	2	227,188,410.74	238,912,211.77	215,464,609.72	5,891,231.22
2029	3	226,227,635.99	237,956,025.98	214,499,245.99	5,893,537.19
2029	4	224,137,446.18	235,681,492.09	212,593,400.27	5,800,903.95
2029	5	230,520,872.25	242,094,445.80	218,947,298.71	5,815,741.64
2029	6	259,301,636.28	270,875,415.75	247,727,856.80	5,815,845.12
2029	7	276,298,622.33	287,942,637.82	264,654,606.84	5,851,138.85
2029	8	279,113,516.82	290,783,855.39	267,443,178.26	5,864,366.24
2029	9	279,307,397.70	291,042,433.24	267,572,362.17	5,896,876.58
2029	10	241,585,603.43	253,240,097.62	229,931,109.24	5,856,404.41
2029	11	220,480,570.27	232,047,432.12	208,913,708.43	5,812,369.00
2029	12	230,803,051.55	242,544,144.02	219,061,959.08	5,899,920.21
2030	1	243,922,856.98	255,620,755.66	232,224,958.30	5,878,215.25
2030	2	227,230,734.16	238,962,723.70	215,498,744.62	5,895,345.97
2030	3	226,269,848.03	238,006,645.68	214,533,050.38	5,897,762.05
2030	4	224,180,095.00	235,734,068.52	212,626,121.48	5,805,892.60
2030	5	230,563,946.37	242,147,464.30	218,980,428.43	5,820,738.72
2030	6	259,345,124.51	270,927,808.63	247,762,440.40	5,820,319.72
2030	7	276,342,232.25	287,994,818.90	264,689,645.60	5,855,445.87
2030	8	279,157,245.22	290,836,116.33	267,478,374.11	5,868,653.86
2030	9	279,351,241.47	291,095,106.72	267,607,376.22	5,901,313.53
2030	10	241,629,419.63	253,292,611.80	229,966,227.45	5,860,775.17
2030	11	220,524,359.62	232,101,003.48	208,947,715.75	5,817,284.48

2030	12	230,846,814.75	242,597,617.41	219,096,012.10	5,904,799.59
2031	1	243,966,681.44	255,673,134.03	232,260,228.85	5,882,513.60
2031	2	227,274,618.28	239,015,286.14	215,533,950.42	5,899,706.84
2031	3	226,313,790.24	238,059,527.67	214,568,052.80	5,902,254.31
2031	4	224,223,560.17	235,787,837.30	212,659,283.04	5,811,070.18
2031	5	230,606,947.04	242,200,575.99	219,013,318.09	5,825,819.52
2031	6	259,387,672.90	270,979,252.59	247,796,093.20	5,824,789.77
2031	7	276,384,654.92	288,045,761.66	264,723,548.18	5,859,727.23
2031	8	279,199,545.49	290,886,851.89	267,512,239.09	5,872,892.61
2031	9	279,393,422.54	291,145,962.16	267,640,882.93	5,905,672.42
2031	10	241,671,677.63	253,343,439.83	229,999,915.43	5,865,081.62
2031	11	220,566,692.53	232,152,974.53	208,980,410.53	5,822,127.67
2031	12	230,889,220.60	242,649,611.56	219,128,829.64	5,909,617.73
2032	1	244,009,173.39	255,724,102.20	232,294,244.58	5,886,772.92
2032	2	227,317,194.06	239,066,463.88	215,567,924.24	5,904,029.34
2032	3	226,356,447.65	238,111,046.07	214,601,849.22	5,906,706.97
2032	4	224,266,229.75	235,840,804.01	212,691,655.48	5,816,244.51
2032	5	230,649,628.46	242,253,474.26	219,045,782.67	5,830,953.51
2032	6	259,430,365.85	271,031,053.24	247,829,678.46	5,829,366.40
2032	7	276,427,249.93	288,097,091.81	264,757,408.05	5,864,116.66
2032	8	279,242,045.12	290,938,005.83	267,546,084.41	5,877,241.42
2032	9	279,435,829.31	291,197,266.75	267,674,391.87	5,910,143.59
2032	10	241,713,962.51	253,394,478.03	230,033,446.99	5,869,480.18
2032	11	220,608,858.73	232,204,917.81	209,012,799.64	5,827,040.67
2032	12	230,931,271.24	242,701,344.02	219,161,198.45	5,914,482.87
2033	1	244,051,087.46	255,774,552.79	232,327,622.14	5,891,062.53
2033	2	227,358,975.16	239,116,860.62	215,601,089.71	5,908,358.71
2033	3	226,398,099.27	238,161,522.92	214,634,675.62	5,911,141.67
2033	4	224,307,818.75	235,892,602.56	212,723,034.93	5,821,374.83
2033	5	230,691,156.49	242,305,115.57	219,077,197.40	5,836,035.45
2033	6	259,471,834.50	271,081,542.43	247,862,126.57	5,833,899.24
2033	7	276,468,663.66	288,147,171.41	264,790,155.91	5,868,471.27
2033	8	279,283,405.39	290,987,960.55	267,578,850.23	5,881,560.14
2033	9	279,477,137.51	291,247,412.59	267,706,862.44	5,914,584.52
2033	10	241,755,276.45	253,444,515.74	230,066,037.15	5,873,863.89
2033	11	220,650,178.24	232,255,988.93	209,044,367.56	5,831,940.87
2033	12	230,972,596.19	242,752,351.94	219,192,840.44	5,919,348.57
2034	1	244,092,560.99	255,824,644.34	232,360,477.64	5,895,393.11
2034	2	227,400,593.37	239,167,232.07	215,633,954.66	5,912,757.24
2034	3	226,439,858.35	238,212,301.36	214,667,415.33	5,915,673.91
2034	4	224,349,645.60	235,944,869.34	212,754,421.87	5,826,620.90
2034	5	230,733,049.35	242,357,382.54	219,108,716.15	5,841,248.46

2034	6	259,513,791.62	271,132,800.48	247,894,782.77	5,838,572.97
2034	7	276,510,667.71	288,198,138.67	264,823,196.76	5,872,975.30
2034	8	279,325,455.13	291,038,921.70	267,611,988.56	5,886,038.14
2034	9	279,519,231.75	291,298,685.11	267,739,778.38	5,919,196.63
2034	10	241,797,411.05	253,495,721.54	230,099,100.56	5,878,422.18
2034	11	220,692,352.15	232,308,290.02	209,076,414.28	5,837,029.80
2034	12	231,014,808.37	242,804,626.72	219,224,990.02	5,924,405.05
2035	1	244,134,634.29	255,875,633.96	232,393,634.62	5,899,873.57
2035	2	227,442,531.42	239,218,163.12	215,666,899.73	5,917,276.23
2035	3	226,481,664.72	238,263,308.81	214,700,020.63	5,920,297.47
2035	4	224,391,406.80	235,997,225.66	212,785,587.95	5,831,944.97
2035	5	230,774,766.55	242,409,601.54	219,139,931.57	5,846,525.63
2035	6	259,555,466.00	271,183,886.07	247,927,045.93	5,843,302.12
2035	7	276,552,323.28	288,248,855.56	264,855,791.01	5,877,528.63
2035	8	279,367,092.39	291,089,555.12	267,644,629.66	5,890,558.73
2035	9	279,560,851.18	291,349,550.11	267,772,152.26	5,923,842.54
2035	10	241,839,019.73	253,546,460.36	230,131,579.10	5,883,010.10
2035	11	220,733,950.36	232,360,048.88	209,107,851.85	5,842,135.54
2035	12	231,056,396.39	242,856,297.86	219,256,494.93	5,929,471.83
2036	1	244,176,295.27	255,926,295.84	232,426,294.70	5,904,396.54
2036	2	227,484,263.46	239,269,015.41	215,699,511.50	5,921,859.18
2036	3	226,523,465.93	238,314,481.11	214,732,450.76	5,925,006.46
2036	4	224,433,240.86	236,049,844.76	212,816,636.96	5,837,364.48
2036	5	230,816,632.60	242,462,178.11	219,171,087.09	5,851,907.68
2036	6	259,597,363.19	271,235,418.13	247,959,308.25	5,848,143.66
2036	7	276,594,284.03	288,300,117.25	264,888,450.81	5,882,202.37
2036	8	279,409,115.02	291,140,830.47	267,677,399.56	5,895,208.24
2036	9	279,602,934.06	291,401,153.76	267,804,714.36	5,928,626.74
2036	10	241,881,174.49	253,598,039.15	230,164,309.83	5,887,745.69
2036	11	220,776,175.12	232,412,761.24	209,139,588.99	5,847,405.58
2036	12	231,098,689.30	242,909,016.68	219,288,361.92	5,934,710.87
2037	1	244,218,677.72	255,978,010.24	232,459,345.20	5,909,085.87
2037	2	227,526,733.08	239,320,941.67	215,732,524.49	5,926,611.15
2037	3	226,566,020.45	238,366,750.98	214,765,289.93	5,929,888.44
2037	4	224,475,940.88	236,103,729.53	212,848,152.23	5,842,984.83
2037	5	230,859,474.29	242,516,157.03	219,202,791.54	5,857,504.17
2037	6	259,640,342.83	271,288,461.71	247,992,223.94	5,853,200.81
2037	7	276,637,485.73	288,353,076.20	264,921,895.27	5,887,105.40
2037	8	279,452,532.96	291,193,990.80	267,711,075.12	5,900,103.81
2037	9	279,646,562.56	291,454,835.13	267,838,289.98	5,933,678.33
2037	10	241,925,034.41	253,651,889.82	230,198,179.01	5,892,766.06
2037	11	220,820,260.39	232,467,982.70	209,172,538.08	5,853,001.53

2037	12	231,142,993.99	242,964,428.64	219,321,559.35	5,940,292.29
2038	1	244,263,228.01	256,032,559.81	232,493,896.20	5,914,110.52
2038	2	227,571,522.51	239,375,895.28	215,767,149.74	5,931,718.67
2038	3	226,611,042.74	238,422,244.16	214,799,841.32	5,935,150.08
2038	4	224,521,207.93	236,161,047.83	212,881,368.03	5,849,040.61
2038	5	230,904,979.67	242,573,687.78	219,236,271.57	5,863,546.93
2038	6	259,686,080.29	271,345,108.73	248,027,051.84	5,858,682.89
2038	7	276,683,476.57	288,409,655.77	264,957,297.37	5,892,426.26
2038	8	279,498,770.51	291,250,806.77	267,746,734.26	5,905,419.48
2038	9	279,693,040.34	291,512,226.12	267,873,854.57	5,939,162.23
2038	10	241,971,727.06	253,709,425.86	230,234,028.26	5,898,214.88
2038	11	220,867,162.25	232,526,940.76	209,207,383.74	5,859,059.80
2038	12	231,190,099.57	243,023,551.16	219,356,647.99	5,946,330.83
2039	1	244,310,471.98	256,090,619.88	232,530,324.08	5,919,545.63
2039	2	227,618,901.24	239,434,238.64	215,803,563.85	5,937,228.42
2039	3	226,658,552.69	238,481,017.23	214,836,088.14	5,940,809.82
2039	4	224,568,834.10	236,221,568.27	212,916,099.93	5,855,520.00
2039	5	230,952,719.01	242,634,258.79	219,271,179.24	5,869,994.87
2039	6	259,733,929.82	271,404,591.55	248,063,268.09	5,864,528.63
2039	7	276,731,403.12	288,468,837.28	264,993,968.96	5,898,081.90
2039	8	279,546,772.05	291,310,011.60	267,783,532.50	5,911,049.16
2039	9	279,741,114.91	291,571,809.38	267,910,420.43	5,944,945.38
2039	10	242,019,918.45	253,769,032.36	230,270,804.54	5,903,950.99
2039	11	220,915,467.39	232,587,886.86	209,243,047.93	5,865,411.90
2039	12	231,238,515.48	243,084,540.47	219,392,490.49	5,952,648.99
2040	1	244,359,050.76	256,150,547.53	232,567,554.00	5,925,248.46
2040	2	227,667,638.62	239,494,482.77	215,840,794.48	5,943,010.58
2040	3	226,707,444.50	238,541,728.20	214,873,160.79	5,946,748.97
2040	4	224,618,418.39	236,284,810.42	212,952,026.36	5,862,383.10
2040	5	231,002,977.58	242,698,264.33	219,307,690.83	5,876,902.75
2040	6	259,784,844.95	271,468,131.52	248,101,558.37	5,870,872.64
2040	7	276,782,619.99	288,532,329.91	265,032,910.07	5,904,250.49
2040	8	279,598,282.74	291,373,794.65	267,822,770.83	5,917,216.04
2040	9	279,792,911.68	291,636,256.21	267,949,567.15	5,951,302.05
2040	10	242,071,758.33	253,833,404.46	230,310,112.20	5,910,248.46
2040	11	220,967,349.25	232,653,598.04	209,281,100.46	5,872,361.16
2040	12	231,290,438.21	243,150,196.80	219,430,679.62	5,959,550.15
2041	1	244,410,982.48	256,214,865.40	232,607,099.55	5,931,472.52
2041	2	227,719,579.09	239,558,939.66	215,880,218.52	5,949,300.11
2041	3	226,759,393.48	238,606,488.51	214,912,298.46	5,953,186.68
2041	4	224,669,887.09	236,350,707.04	212,989,067.13	5,869,633.16
2041	5	231,053,978.61	242,763,464.27	219,344,492.96	5,884,037.73

2041	6	259,835,390.60	271,531,460.74	248,139,320.47	5,877,296.40
2041	7	276,833,072.15	288,595,124.39	265,071,019.91	5,910,452.53
2041	8	279,648,643.86	291,436,403.76	267,860,883.96	5,923,370.67
2041	9	279,843,184.16	291,699,053.97	267,987,314.35	5,957,596.03
2041	10	242,122,214.50	253,896,309.28	230,348,119.71	5,916,503.93
2041	11	221,017,984.27	232,717,981.22	209,317,987.33	5,879,269.63
2041	12	231,341,247.39	243,214,694.17	219,467,800.61	5,966,428.49
2042	1	244,462,000.47	256,278,306.41	232,645,694.52	5,937,715.11
2042	2	227,770,800.40	239,622,759.39	215,918,841.40	5,955,630.84
2042	3	226,810,812.76	238,670,844.49	214,950,781.04	5,959,687.40
2042	4	224,721,503.99	236,417,049.27	213,025,958.72	5,877,032.66
2042	5	231,105,787.95	242,829,953.29	219,381,622.61	5,891,414.29
2042	6	259,887,387.31	271,596,867.39	248,177,907.23	5,884,034.92
2042	7	276,885,265.64	288,660,346.33	265,110,184.96	5,916,999.35
2042	8	279,701,028.97	291,501,790.02	267,900,267.91	5,929,903.78
2042	9	279,895,755.85	291,764,983.71	268,026,527.98	5,964,308.47
2042	10	242,174,997.60	253,962,379.23	230,387,615.98	5,923,180.59
2042	11	221,070,973.24	232,785,622.21	209,356,324.28	5,886,632.30
2042	12	231,394,436.82	243,282,476.10	219,506,397.53	5,973,761.25
2043	1	244,515,382.26	256,344,956.29	232,685,808.22	5,944,382.35
2043	2	227,824,369.49	239,689,774.71	215,958,964.28	5,962,387.59
2043	3	226,864,564.25	238,738,390.82	214,990,737.68	5,966,619.33
2043	4	224,775,441.81	236,486,647.23	213,064,236.39	5,884,901.91
2043	5	231,159,907.19	242,899,680.91	219,420,133.48	5,899,257.53
2043	6	259,941,683.22	271,665,446.02	248,217,920.42	5,891,212.02
2043	7	276,939,765.28	288,728,731.46	265,150,799.10	5,923,976.83
2043	8	279,755,726.98	291,570,346.23	267,941,107.73	5,936,867.55
2043	9	279,950,647.01	291,834,104.92	268,067,189.11	5,971,459.10
2043	10	242,230,102.62	254,031,642.70	230,428,562.54	5,930,295.24
2043	11	221,126,286.48	232,856,517.89	209,396,055.07	5,894,462.51
2043	12	231,449,952.81	243,353,508.85	219,546,396.77	5,981,558.44
2044	1	244,571,050.16	256,414,753.06	232,727,347.27	5,951,482.13
2044	2	227,880,185.32	239,759,893.73	216,000,476.91	5,969,574.97
2044	3	226,920,524.11	238,809,005.99	215,032,042.24	5,973,983.65
2044	4	224,831,558.16	236,559,350.88	213,103,765.45	5,893,237.06
2044	5	231,216,175.93	242,972,473.86	219,459,878.00	5,907,560.98
2044	6	259,998,100.33	271,737,005.57	248,259,195.10	5,898,821.12
2044	7	276,996,364.29	288,800,054.07	265,192,674.50	5,931,375.47
2044	8	279,812,503.10	291,641,811.78	267,983,194.41	5,944,249.02
2044	9	280,007,595.59	291,906,120.98	268,109,070.20	5,979,030.53
2044	10	242,287,240.52	254,103,770.01	230,470,711.03	5,937,827.45
2044	11	221,183,608.74	232,930,297.45	209,436,920.02	5,902,732.33

2044	12	231,507,454.57	243,427,389.11	219,587,520.03	5,989,788.67
2045	1	244,628,621.35	256,487,249.23	232,769,993.47	5,958,981.96
2045	2	227,937,824.12	239,832,615.59	216,043,032.64	5,977,154.24
2045	3	226,978,228.74	238,882,135.47	215,074,322.01	5,981,734.67
2045	4	224,889,261.13	236,634,422.14	213,144,100.12	5,901,964.65
2045	5	231,273,877.29	243,047,432.13	219,500,322.45	5,916,232.61
2045	6	260,055,800.12	271,810,508.92	248,301,091.33	5,906,762.43
2045	7	277,054,069.64	288,873,087.71	265,235,051.56	5,939,077.97
2045	8	279,870,213.86	291,714,770.75	268,025,656.97	5,951,911.26
2045	9	280,065,311.63	291,979,422.32	268,151,200.94	5,986,862.18
2045	10	242,344,873.24	254,176,839.06	230,512,907.41	5,945,584.23
2045	11	221,241,160.33	233,004,687.16	209,477,633.50	5,911,193.51
2045	12	231,564,927.17	243,501,542.51	219,628,311.82	5,998,170.80
2046	1	244,686,003.23	256,559,822.58	232,812,183.88	5,966,615.71
2046	2	227,995,117.66	239,905,215.57	216,085,019.75	5,984,845.75
2046	3	227,035,436.27	238,954,947.10	215,115,925.43	5,989,575.76
2046	4	224,946,355.07	236,709,011.06	213,183,699.08	5,910,755.91
2046	5	231,330,860.62	243,121,766.32	219,539,954.93	5,924,951.44
2046	6	260,112,675.76	271,883,274.72	248,342,076.81	5,914,747.27
2046	7	277,110,755.81	288,945,141.79	265,276,369.82	5,946,800.37
2046	8	279,926,715.54	291,786,509.56	268,066,921.53	5,959,567.95
2046	9	280,121,633.67	292,051,257.54	268,192,009.80	5,994,657.58
2046	10	242,401,083.12	254,248,409.79	230,553,756.45	5,953,303.08
2046	11	221,297,260.99	233,077,503.92	209,517,018.07	5,919,593.38
2046	12	231,620,921.49	243,574,086.00	219,667,756.98	6,006,486.79
2047	1	244,742,053.15	256,631,014.36	232,853,091.94	5,974,224.52
2047	2	228,051,221.72	239,976,610.23	216,125,833.21	5,992,529.30
2047	3	227,091,593.04	239,026,722.45	215,156,463.62	5,997,424.12
2047	4	225,002,549.86	236,782,725.09	213,222,374.63	5,919,559.36
2047	5	231,387,092.43	243,195,419.52	219,578,765.34	5,933,705.73
2047	6	260,168,943.62	271,955,566.82	248,382,320.41	5,922,799.48
2047	7	277,167,051.49	289,017,002.73	265,317,100.24	5,954,621.94
2047	8	279,983,038.32	291,858,323.71	268,107,752.93	5,967,352.39
2047	9	280,177,982.83	292,123,426.96	268,232,538.70	6,002,607.29
2047	10	242,457,467.72	254,320,504.97	230,594,430.46	5,961,197.68
2047	11	221,353,680.10	233,151,033.88	209,556,326.32	5,928,191.62
2047	12	231,677,374.19	243,647,519.26	219,707,229.13	6,015,019.55
2048	1	244,798,557.72	256,703,085.54	232,894,029.89	5,982,046.77
2048	2	228,107,776.78	240,048,880.02	216,166,673.54	6,000,425.98
2048	3	227,148,197.27	239,099,370.38	215,197,024.16	6,005,486.11
2048	4	225,059,188.51	236,857,320.93	213,261,056.08	5,928,582.89
2048	5	231,443,764.59	243,269,949.07	219,617,580.11	5,942,679.10

2048	6	260,225,648.41	272,028,724.84	248,422,571.97	5,931,067.26
2048	7	277,223,780.69	289,089,721.51	265,357,839.86	5,962,656.73
2048	8	280,039,791.29	291,930,990.67	268,148,591.91	5,975,349.20
2048	9	280,234,758.95	292,196,445.12	268,273,072.78	6,010,768.94
2048	10	242,514,276.21	254,393,446.84	230,635,105.58	5,969,304.73
2048	11	221,410,520.12	233,225,415.18	209,595,625.06	5,937,006.14
2048	12	231,734,244.91	243,721,795.41	219,746,694.41	6,023,765.81
2049	1	244,855,477.66	256,775,991.85	232,934,963.48	5,990,079.94
2049	2	228,164,744.66	240,121,981.87	216,207,507.46	6,008,533.33
2049	3	227,205,211.83	239,172,848.88	215,237,574.79	6,013,759.27
2049	4	225,116,234.90	236,932,756.42	213,299,713.38	5,937,823.44
2049	5	231,500,841.98	243,345,314.12	219,656,369.83	5,951,868.68
2049	6	260,282,755.97	272,102,710.19	248,462,801.75	5,939,548.38
2049	7	277,280,910.20	289,163,261.05	265,398,559.34	5,970,902.80
2049	8	280,096,942.16	292,004,474.53	268,189,409.79	5,983,556.56
2049	9	280,291,930.62	292,270,276.94	268,313,584.29	6,019,140.70
2049	10	242,571,478.06	254,467,201.52	230,675,754.61	5,977,622.56
2049	11	221,467,751.36	233,300,614.11	209,634,888.62	5,946,034.94
2049	12	231,791,504.77	243,796,881.81	219,786,127.72	6,032,723.68
2050	1	244,912,784.93	256,849,702.56	232,975,867.29	5,998,322.71
2050	2	228,222,098.08	240,195,885.95	216,248,310.22	6,016,850.06
2050	3	227,262,610.20	239,247,128.85	215,278,091.55	6,022,242.30
2050	4	225,173,663.26	237,009,002.35	213,338,324.17	5,947,279.30
2050	5	231,558,299.54	243,421,486.44	219,695,112.63	5,961,272.88
2050	6	260,340,241.97	272,177,496.34	248,502,987.59	5,948,241.74
2050	7	277,338,416.34	289,237,595.87	265,439,236.80	5,979,359.24
2050	8	280,154,467.91	292,078,750.68	268,230,185.15	5,991,973.66
2050	9	280,349,475.47	292,344,898.45	268,354,052.50	6,027,721.75
2050	10	242,629,051.54	254,541,745.88	230,716,357.20	5,986,150.46
2050	11	221,525,352.71	233,376,607.64	209,674,097.79	5,955,277.04
2050	12	231,849,133.26	243,872,756.24	219,825,510.28	6,041,892.30

LGE Primary

Forecast includes data from individually forecasted "Major Accounts" and is a com

Time of Day Primary Service
Power Service Primary

Variables:

KUBCDD - Billed Cooling Degree Days from LEX Blue Grass Air
fabmetals_ipi - KY Industrial Production Index for Fabricated M
Q2_2015 - Quarterly dummy variable

19 BP of 18 BP

PROC AUTOREG DATA=LGEPri;

MODEL LGE_Pri = LGEBCDD fabmetals_IPI Q2_2015 / nlag = 1;

OUTPUT OUT = outLGEPri2 Pred = PredLGEPri resid = ResidLGEPri;

Yule-Walker Estimates

SSE	1215096186	DFE	27
MSE	45003562	Root MSE	6708
SBC	666.675309	AIC	659.347
MAE	4856.71727	AICC	661.654
MAPE	0.92693565	HQC	661.776
Durbin-Watson	1.6983	Regress R-Square	0.9772
		Total R-Square	0.9745

Parameter Estimates

Variable	DF	Estimate	Standard Error
Intercept	1	410572	27990
LGEBCDD	1	81.9281	2.4172
fabmetals_IPI	1	865.8448	281.889
Q2_2015	1	-5542	3686

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Combination of the following rates:

sort
Metals_IHS data and forecast

t Value	Approx Pr > t
14.67	<.0001
33.89	<.0001
3.07	0.0048
-1.5	0.1443