

LIBERTY UTILITIES
EMPIRE DISTRICT ELECTRIC COMPANY

2018
ANNUAL RENEWABLE ENERGY STANDARD
COMPLIANCE REPORT

Prepared in Compliance with 4 CSR 240-20.100

April 2019



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2018 ANNUAL RENEWABLE ENERGY STANDARD COMPLIANCE REPORT

INTRODUCTION

Pursuant to the Missouri Public Service Commission's (Commission) renewable energy standards rule, 4 CSR 240-20.100(8), The Empire District Electric Company (EDE or Empire), a Kansas corporation, is filing the Annual Renewable Energy Standard (RES) Compliance Report. The rule became effective in September 2010, and pursuant to the rule EDE must file the 2018 RES Compliance Report on or before April 15, 2019.

EDE began to develop its wind renewable energy portfolio on December 10, 2004, when it entered into a 20-year contract with Elk River Windfarm, LLC (owned by Avangrid Renewables, LLC) to purchase all of the energy generated at the 150-megawatt Elk River Windfarm located in Butler County, Kansas.

On June 19, 2007, EDE enhanced its renewable energy portfolio when it entered into a 20-year purchased power agreement with Cloud County Wind Farm, LLC. EDP Renewables North America, LLC is an indirect parent company of Cloud County Wind Farm, LLC. Pursuant to the terms of the agreement, EDE purchases all of the output from the 105-megawatt Phase 1 Meridian Way Wind Farm located in Cloud County, Kansas.

In addition, the Ozark Beach Hydroelectric Project, owned by EDE has produced renewable hydropower for many years. The RES rules allow for the banking of Renewable Energy Credits (REC) for up to a three year time period. In the past, this has allowed the use of eligible Ozark Beach RECs generated in earlier years. In 2018, RECs generated in 2018 were used for the RES requirement.

Effective May 16, 2015, Empire began offering rebates for Missouri customers for qualifying solar installations in accordance with the Missouri RES and Empire's Solar Rebate Rider approved by the Commission, which continued in 2018.

The following sections provide information required to indicate compliance with the rule:

SECTION (8) (A) 1 A, B: TOTAL MISSOURI RETAIL ELECTRIC SALES AND REVENUE

The following table represents the number of megawatt-hours (MWh) of electricity delivered in 2018 by EDE to its Missouri retail customers, as reflected in the monthly billing statements. In addition, a column is provided capturing the revenue from total retail electric sales to Missouri customers:

Table 1: Missouri 2018 Total Retail Sales

Year	MWh	Revenue
2018	4,321,595	\$522,849,829

Data Source: Customers Kilowatt Hours Revenue Report

SECTION (8) (A) 1 C: TOTAL RETAIL ELECTRIC SALES SUPPLIED BY RENEWABLE ENERGY RESOURCES

The following table indicates the renewable generation sources used during 2018 and the MWhs that were supplied.

Table 2: Total 2018 Retail Electric Sales supplied by Renewable Energy

Facility	Generation (MWh)	Percentage	Energy Supplied to MO Retail Customers (MWH)
Elk River	450,910	88.76%	400,228
Cloud County Meridian Way	309,259	88.76%	274,498
Ozark Beach	49,431	88.76%	43,875
TOTAL			718,601

SECTION (8) (A) 1 D: CURRENT NUMBER AND VALUE OF RECS CREATED BY EDE OWNED FACILITY.

In 2018, EDE-owned Ozark Beach generated energy which allowed for the creation of 49,431 RECs. Using the provision of the Missouri RES allowing for additional credit of 0.25, the resultant RECs available for compliance totaled 61,788 RECs (49,431 x 1.25). The RECs generated from the EDE-owned source are utilized first to meet compliance as additional costs are not incurred to the rate payer in order to acquire RECs. The RECs generated from Ozark Beach have little value as they typically cannot be used to meet Renewable Portfolio Standards (RPS) in other states. The value of the energy generated by Ozark Beach for calendar year 2018 was **\$confidential information**/MWh as determined by the locational marginal pricing through the Southwest Power Pool (SPP). The value of the customer generated solar energy was \$67.88/SREC. This value is determined using the rebate amount of \$15,940,554.05 paid in solar rebates divided by 23,482 (the amount of SRECs received). The rebate entitles EDE to receive SRECs from these systems for 10 years.

SECTION (8) (A) 1 E, F: SOURCE AND NUMBER OF RECS ACQUIRED, SOLD, TRANSFERRED, RETIRED

EDE receives renewable energy from four sources: ownership of Ozark Beach; two purchased power agreements (one with the Elk River Windfarm and the other with the Cloud County Meridian Way Wind Farm); and customer-generated solar. (See ATTACHMENT 1)

Pursuant to the terms of the two 20-year windfarm agreements, EDE will purchase all of the output from the 150-megawatt Elk River Windfarm, and 105-megawatts from the Cloud County Meridian Way Wind Farm. EDE anticipates annual generation of approximately 530,000 MWhs from Elk River and approximately 330,000 MWhs from Meridian Way.

During 2018, 40,583 vintage 2018 RECs from hydroelectric generation at Ozark Beach were retired to help fulfill the non-solar Missouri compliance obligation. In addition, 323,692 vintage 2017 and 2018 RECs from generation at the Elk River Windfarm were retired for the non-solar RES obligation for 2018. In March of 2019, 8,848 additional 2018 RECs from hydroelectric generation at Ozark Beach, plus 25,952 RECs generated in 2018 at the Elk River Windfarm were retired.

To meet the compliance obligation, 16,587 SRECs generated from EDE customers in 2017 were utilized. In total, 16,587 SRECs were retired in December of 2018 to fulfill the Missouri compliance obligation. Any remaining SRECs will be banked for future use. RECs from Ozark Beach and SRECs from customer installed net metered systems are entitled to the 1.25 multiplying factor as they represent Missouri based generation.

EDE utilizes the North American Renewable Registry (NARR) as recommended by Staff and approved by the Commission for tracking all RECs. In total, 399,075 RECs and 16,587 SRECs were retired to fulfill the 2018 Missouri compliance obligation. (See ATTACHMENT 2)

SECTION (8) (A) 1 G: IDENTIFICATION OF RECS CARRIED FORWARD

As indicated earlier, RECs and SRECs generated by Ozark Beach, Elk River Windfarm, and EDE Solar Aggregates 1 through 17 which were used for compliance are registered with the NARR. Registration of additional EDE Solar Aggregates 18 – 25 been approved by the NARR for 2018. ATTACHMENT 3 included with this report indicates by source and serial number RECs registered with the NARR that have been carried forward for future use. For 2018

compliance, 2018 Ozark Beach vintage RECs totaling 49,431 were retired. For the 2018 compliance year 349,644 Elk River RECs, vintage 2017 and 2018, were retired for compliance. Carried forward are additional 2018 Elk River RECs totaling 141,477 and 2018 Meridian Way RECs totaling 177,108. The majority of the remaining RECs will be sold after all compliance obligations are met. A portion of the Elk River RECs were retired for compliance with the Kansas voluntary RES. Customer-generated solar SRECS totaling 23,482 will be carried forward for use in future compliance.

In addition to the RECs registered with the NARR EDE receives additional RECs from the Cloud County Meridian Way Wind Farm. The Meridian Way Wind Farm was added to the registry in 2018. The RECs from Meridian Way are not being used for Missouri compliance. EDE does not anticipate utilizing RECs from the Meridian Way Wind Farm for compliance throughout the entirety of the RES compliance period specified in Section 393.1030, RSMo.

SECTION (8) (A) 1 H: GAINS AND LOSSES FROM SALE OR PURCHASE

EDE utilized wind RECs from the Elk River Windfarm purchased power agreement in order to comply with the Missouri non-solar RES. SRECs from customer generation were utilized in order to comply with the solar portion of the Missouri RES.

ATTACHMENTS 4 and 5 include a REC report indicating sales of RECs, and the amount of wind generation allocated for Missouri retail customers by each wind farm. Any gains from sale or purchase were returned to the customers through the fuel adjustment.

SECTION (8) (A) 1 I: ACQUISITION OF RENEWABLE ENERGY

Non-Solar renewable energy is purchased for EDE from the following non-utility owned facilities:

Elk River

Wind (Resource)

Avangrid Renewables (Owner)

14980 SE 190th Rd.

Latham, KS 67072

Meridian Way I (Cloud County)

Wind (Resource)

EDP Renewables North America LLC (Owner)

1409 Iron Road

Concordia, KS 66901

All energy was derived from eligible renewable energy technology (wind, hydro and solar). ATTACHMENT 6 includes information to certify that the renewable energy attributes of the energy from Elk River Windfarm and the Cloud County Meridian Way Wind Farm, have not been used to meet the requirements of any other local or state mandate.

SECTION (8) (A) 1 J: ACQUISITION OF ELECTRICAL ENERGY AND/OR RECS FROM CUSTOMER GENERATORS

ATTACHMENT 7 shows the system operational dates and estimated amounts of SRECs generated from customer generators using the Commission–approved estimation method, PVWatts. The SRECS were acquired by EDE as a condition of receiving the solar rebate instituted in May of 2015 and extending through 2018.

SECTION (8) (A) 1 K: CUSTOMERS RECEIVING SOLAR REBATE

For the calendar year 2018, the annual number of customers that applied and received a solar rebate by December 31, 2018 in accordance with section (4) of the Rule was 572. A total of 1,829 Missouri solar net metering customers have been connected to the Empire system as of that date.

SECTION (8) (A) 1 L: CUSTOMERS DENIED SOLAR REBATE

There were no customers that were denied a solar rebate

SECTION (8) (A) 1 M: FUNDS EXPENDED BY EDE FOR SOLAR REBATES

Annual funds expended by EDE for 2018 solar rebates totaled \$3,086,744. Since the beginning of the rebate program over \$15.9 million has been expended for solar rebates.

SECTION (8) (A) 1 N: ANNUAL COMPLIANCE WITH RES COMPLIANCE PLAN

See Affidavit of Compliance with 2018 Compliance Plan, ATTACHMENT 8.

SECTION (8) (A) 1 O: NON-COMPLIANCE WITH RES COMPLIANCE PLAN

EDE has made every effort to comply and believes it has achieved compliance with the Missouri RES Compliance Plan for the 2018 compliance period.

SECTION (8) (A) 1 P: CALCULATION OF ACTUAL CALENDAR YEAR RETAIL RATE IMPACT

ATTACHMENT 1: RECS ACQUIRED

HIGHLY CONFIDENTIAL

PURCHASED POWER FROM CLOUD COUNTY MERIDIAN WAY WIND FARM

<u>Payment Amount</u>	<u>Date</u>	<u>Supplier Name</u>	<u>Meter Readings</u>
Confidential	2/9/2018	Cloud County Wind Farm LLC	Confidential
Confidential	3/8/2018	Cloud County Wind Farm LLC	Confidential
Confidential	4/6/2018	Cloud County Wind Farm LLC	Confidential
Confidential	5/1/2018	Cloud County Wind Farm LLC	Confidential
Confidential	6/11/2018	Cloud County Wind Farm LLC	Confidential
Confidential	7/9/2018	Cloud County Wind Farm LLC	Confidential
Confidential	8/10/2018	Cloud County Wind Farm LLC	Confidential
Confidential	9/10/2018	Cloud County Wind Farm LLC	Confidential
Confidential	10/10/2018	Cloud County Wind Farm LLC	Confidential
Confidential	11/9/2018	Cloud County Wind Farm LLC	Confidential
Confidential	12/7/2018	Cloud County Wind Farm LLC	Confidential
Confidential	1/8/2019	Cloud County Wind Farm LLC	Confidential
\$ -			-

PURCHASED POWER FROM ELK RIVER WINDFARM

<u>Payment Amount</u>	<u>Date</u>	<u>Supplier Name</u>	<u>Meter Readings</u>
Confidential	2/5/2018	Avangrid Renewables, LLC	Confidential
Confidential	3/22/2018	Avangrid Renewables, LLC	Confidential
Confidential	4/3/2018	Avangrid Renewables, LLC	Confidential
Confidential	5/2/2018	Avangrid Renewables, LLC	Confidential
Confidential	6/4/2018	Avangrid Renewables, LLC	Confidential
Confidential	7/6/2018	Avangrid Renewables, LLC	Confidential
Confidential	8/29/2018	Avangrid Renewables, LLC	Confidential
Confidential	9/21/2018	Avangrid Renewables, LLC	Confidential
Confidential	10/2/2018	Avangrid Renewables, LLC	Confidential
Confidential	11/2/2018	Avangrid Renewables, LLC	Confidential
Confidential	12/5/2018	Avangrid Renewables, LLC	Confidential
Confidential	1/4/2019	Avangrid Renewables, LLC	Confidential

ATTACHMENT 2: RECS RETIRED FOR MISSOURI COMPLIANCE

Retirement Type	State	Compliance Period	NAR ID	Asset	Fuel/Project Type	Certificate Vintage	Certificate Serial Numbers	MO Compliance	
								Quantity	Equivalency
RPS	MO	2018	AGG2380	EDE Solar Agg # 10	Solar	Dec-17	NAR-AGG-2380-MO-12-2017-76131-1 to 1075	1075	1343.75
RPS	MO	2018	AGG2372	EDE Solar Agg # 4	Solar	Dec-17	NAR-AGG-2372-MO-12-2017-76125-1 to 1244	1244	1555
RPS	MO	2018	AGG2375	EDE Solar Agg # 5	Solar	Dec-17	NAR-AGG-2375-MO-12-2017-76126-1 to 1282	1282	1602.5
RPS	MO	2018	AGG2376	EDE Solar Agg # 6	Solar	Dec-17	NAR-AGG-2376-MO-12-2017-76127-1 to 1201	1201	1501.25
RPS	MO	2018	AGG2377	EDE Solar Agg # 7	Solar	Dec-17	NAR-AGG-2377-MO-12-2017-76128-1 to 1250	1250	1562.5
RPS	MO	2018	AGG2378	EDE Solar Agg # 8	Solar	Dec-17	NAR-AGG-2378-MO-12-2017-76129-1 to 1247	1247	1558.75
RPS	MO	2018	AGG2379	EDE Solar Agg # 9	Solar	Dec-17	NAR-AGG-2379-MO-12-2017-76130-1 to 993	993	1241.25
RPS	MO	2018	AGG2381	EDE Solar Agg #11	Solar	Dec-17	NAR-AGG-2381-MO-12-2017-76132-1 to 990	990	1237.5
RPS	MO	2018	AGG2475	EDE Solar Agg #12	Solar	Dec-17	NAR-AGG-2475-MO-12-2017-76133-1 to 981	981	1226.25
RPS	MO	2018	AGG2476	EDE Solar Agg #13	Solar	Dec-17	NAR-AGG-2476-MO-12-2017-76134-1 to 1087	1087	1358.75
RPS	MO	2018	AGG2516	EDE Solar Agg #14	Solar	Dec-17	NAR-AGG-2516-MO-12-2017-76135-1 to 1049	1049	1311.25
RPS	MO	2018	AGG2517	EDE Solar Agg #15	Solar	Dec-17	NAR-AGG-2517-MO-12-2017-76136-1 to 656	656	820
RPS	MO	2018	AGG2560	EDE SOLAR AGG #16	Solar	Dec-17	NAR-AGG-2560-MO-12-2017-76137-1 to 252	252	315
RPS	MO	2018	AGG2561	EDE Solar Agg #17	Solar	Dec-17	NAR-AGG-2561-MO-12-2017-76138-1 to 36	36	45
RPS	MO	2018	AGG2321	EDE Solar Aggregate #1	Solar	Dec-17	NAR-AGG-2321-MO-12-2017-76122-1 to 840	840	1050
RPS	MO	2018	AGG2322	EDE Solar Aggregate #2	Solar	Dec-17	NAR-AGG-2322-MO-12-2017-76123-1 to 1240	1240	1550
RPS	MO	2018	AGG2323	EDE Solar Aggregate #3	Solar	Dec-17	NAR-AGG-2323-MO-12-2017-76124-1 to 1164	1164	1455
								16587	20733.75
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Oct-17	NAR-REC-97-KS-10-2017-71766-34770 to 43301	8532	8532
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Nov-17	NAR-REC-97-KS-11-2017-73440-1 to 34529	34529	34529
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Dec-17	NAR-REC-97-KS-12-2017-74675-1 to 37827	37827	37827
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Jan-18	NAR-REC-97-KS-01-2018-76185-7627 to 48663	41037	41037
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Feb-18	NAR-REC-97-KS-02-2018-76596-1 to 33414	33414	33414
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Mar-18	NAR-REC-97-KS-03-2018-76942-1 to 46054	46054	46054
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Apr-18	NAR-REC-97-KS-04-2018-77292-1 to 53783	53783	53783
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	May-18	NAR-REC-97-KS-05-2018-77626-1 to 36202	36202	36202
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Jun-18	NAR-REC-97-KS-06-2018-77937-1 to 32314	32314	32314
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Jun-18	NAR-REC-97-KS-06-2018-77937-32315 to 36595	4281	4281
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Jul-18	NAR-REC-97-KS-07-2018-78093-1 to 12512	12512	12512
RPS	MO	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Aug-18	NAR-REC-97-KS-08-2018-78341-1 to 9159	9159	9159
								349644	
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Jan-18	NAR-REC-99-MO-01-2018-76355-1 to 5547	5547	6933.75
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Feb-18	NAR-REC-99-MO-02-2018-76597-1 to 5508	5508	6885
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Mar-18	NAR-REC-99-MO-03-2018-76941-1 to 7295	7295	9118.75
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Apr-18	NAR-REC-99-MO-04-2018-77293-1 to 5535	5535	6918.75
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	May-18	NAR-REC-99-MO-05-2018-77628-1 to 2904	2904	3630
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Jun-18	NAR-REC-99-MO-06-2018-77939-1 to 3019	3019	3773.75
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Jul-18	NAR-REC-99-MO-07-2018-78095-1 to 4610	4610	5762.5
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Aug-18	NAR-REC-99-MO-08-2018-78343-1 to 2779	2779	3473.75
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Sep-18	NAR-REC-99-MO-09-2018-78646-1 to 3386	3386	4232.5
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Oct-18	NAR-REC-99-MO-10-2018-80913-1 to 2364	2364	2955
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Nov-18	NAR-REC-99-MO-11-2018-82876-1 to 3127	3127	3908.75
RPS	MO	2018	GEN99	Ozark Beach - Ozark Beach Hydro	Hydroelectric	Dec-18	NAR-REC-99-MO-12-2018-83605-1 to 3357	3357	4196.25
								49431	61788.75
TOTAL MISSOURI RETIREMENT								415662	432166.5
RPS	KS	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Sep-18	NAR-REC-97-KS-09-2018-78644-1 to 3971	3971	
RPS	KS	2018	GEN97	Elk River Wind - Elk River Wind	Wind	Aug-18	NAR-REC-97-KS-08-2018-78341-9160 to 38235	29080	
TOTAL KANSAS RETIREMENT									33051

The Empire District Electric Company
 Liberty Utilities
 2018 RES Compliance Report

ATTACHMENT 3: RECS CARRIED FORWARD

NAR ID	Asset	Fuel/Project	Certificate Validity	Certificate Serial Number	Quantity	Transferor	MO Compliance
GEN366	Stanton So Solar		May-15	NAR-REC-366-FL-05-	952	3Degrees C	952
AGG2323	EDE Solar / Solar		Dec-18	NAR-AGG-2323-MO-	1164		1455
AGG2379	EDE Solar / Solar		Dec-18	NAR-AGG-2379-MO-	1025		1281.25
AGG2321	EDE Solar / Solar		Dec-18	NAR-AGG-2321-MO-	1288		1610
AGG2372	EDE Solar / Solar		Dec-18	NAR-AGG-2372-MO-	1254		1567.5
AGG2377	EDE Solar / Solar		Dec-18	NAR-AGG-2377-MO-	1250		1562.5
AGG2380	EDE Solar / Solar		Dec-18	NAR-AGG-2380-MO-	1076		1345
AGG2648	EDE Solar / Solar		Dec-18	NAR-AGG-2648-MO-	1129		1411.25
AGG2847	EDE Solar / Solar		Dec-18	NAR-AGG-2847-MO-	527		527
AGG2850	EDE Solar / Solar		Dec-18	NAR-AGG-2850-MO-	30		30
AGG2560	EDE SOLAR Solar		Dec-18	NAR-AGG-2560-MO-	1150		1437.5
AGG2649	EDE Solar / Solar		Dec-18	NAR-AGG-2649-MO-	1042		1302.5
AGG2476	EDE Solar / Solar		Dec-18	NAR-AGG-2476-MO-	1086		1357.5
AGG2848	EDE Solar / Solar		Dec-18	NAR-AGG-2848-MO-	302		302
AGG2851	EDE Solar / Solar		Dec-18	NAR-AGG-2851-MO-	12		12
AGG2322	EDE Solar / Solar		Dec-18	NAR-AGG-2322-MO-	1253		1566.25
AGG2375	EDE Solar / Solar		Dec-18	NAR-AGG-2375-MO-	1241		1551.25
AGG2516	EDE Solar / Solar		Dec-18	NAR-AGG-2516-MO-	1213		1516.25
AGG2378	EDE Solar / Solar		Dec-18	NAR-AGG-2378-MO-	1247		1558.75
AGG2381	EDE Solar / Solar		Dec-18	NAR-AGG-2381-MO-	991		1238.75
AGG2376	EDE Solar / Solar		Dec-18	NAR-AGG-2376-MO-	1192		1490
AGG2517	EDE Solar / Solar		Dec-18	NAR-AGG-2517-MO-	1210		1512.5
AGG2475	EDE Solar / Solar		Dec-18	NAR-AGG-2475-MO-	1004		1255
AGG2561	EDE Solar / Solar		Dec-18	NAR-AGG-2561-MO-	884		1105
AGG2650	EDE Solar / Solar		Dec-18	NAR-AGG-2650-MO-	739		923.75
AGG2849	EDE Solar / Solar		Dec-18	NAR-AGG-2849-MO-	173		173
TOTAL					24434		30043.5

NAR ID	Asset	Fuel/Project	Certificate Validity	Certificate Serial Number	Quantity	Transferor	MO Compliance
GEN97	Elk River V Wind		Dec-18	NAR-REC-97-KS-12-2	45099		45099
GEN98	Meridian V Wind		Aug-18	NAR-REC-98-KS-08-2	19249		19249
GEN98	Meridian V Wind		May-18	NAR-REC-98-KS-05-2	18163		18163
GEN98	Meridian V Wind		Dec-18	NAR-REC-98-KS-12-2	29268		29268
GEN97	Elk River V Wind		Nov-18	NAR-REC-97-KS-11-2	37381		37381
GEN98	Meridian V Wind		Jul-18	NAR-REC-98-KS-07-2	11990		11990
GEN98	Meridian V Wind		Oct-18	NAR-REC-98-KS-10-2	22736		22736
GEN97	Elk River V Wind		Sep-18	NAR-REC-97-KS-09-2	26603		26603
GEN98	Meridian V Wind		Nov-18	NAR-REC-98-KS-11-2	24912		24912
GEN98	Meridian V Wind		Jun-18	NAR-REC-98-KS-06-2	27157		27157
GEN98	Meridian V Wind		Sep-18	NAR-REC-98-KS-09-2	23633		23633
GEN97	Elk River V Wind		Oct-18	NAR-REC-97-KS-10-2	32394		32394
TOTAL					318585		318585

ATTACHMENT 5:

WIND GENERATION ALLOCATION FOR MO RETAIL CUSTOMERS 2018

Facility	Generation (MWh)	Percentage*	Energy Supplied to Missouri Retail Customers (MWh)
Elk River Windfarm	450,910	88.76%	400,227.72
Cloud County Meridian Way Windfarm	309,259	88.76%	274,498.29

* Allocation based on 12-month average CP Demand Factor



GREEN-E ENERGY RENEWABLE GENERATOR REGISTRATION FORM AND ATTESTATION

I. Facility information

Name of Generation Facility ("Facility"): Elk River

Company or Person that Owns Facility ("Seller"): Elk River Windfarm, LLC

Address of Facility: 15936 SE 190th, Latham, KS 67072

North American Electricity Reliability Corporation (NERC) region in which Facility is located:¹ SPP

Facility ID Number:² 56303 EIA or QF? (check one) Nameplate Capacity (MW): 150

Date Facility was First Operational: 12/15/2005 Date of Capacity Upgrade or Repowering:³ ___/___/___

Contact Person: Adam Cherry Title: Origination Analyst

Telephone: 503-423-2086 Email Address: adam.cherry@avangrid.com

II. Renewable electricity or RECs⁴ supplied to Purchaser indicated below, by fuel type

On the table below, list the renewable megawatt-hours (MWh) sold or transferred to Purchaser, broken down by quarter of generation in separate rows:

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Fuel Type ⁵	# MWh RECs / Renewable Elec. Sold	Period of Generation (quarter/yy or mm/yy)
Wind		Q1 2018
Wind		Q2 2018
Wind		Q3 2018
Wind		Q4 2018

¹ If you are unsure of which re

[c.com/regional/](http://www.greeneenergy.com/regional/)

² Enter Energy Information Administration (EIA) identification number for the generating facility; if no EIA number, enter the utility-assigned Qualifying Facility (QF) identification number.

³ If applicable. Repowered facilities must meet Green-e Energy's criteria for repowering, available at [http://www.Green-e Energy.org/docs/Repowering Defin and Instructions.doc](http://www.Green-e Energy.org/docs/Repowering_Defin_and_Instructions.doc)

⁴ Renewable Energy Certificates, which represent the renewable attributes of 1 MWh of renewable electricity generation.

⁵ If using biomass fuels, list out the specific type (i.e. landfill gas, wood waste, etc.) and fill in section IV below.

III. Declaration

I, Ryan Ohira, Manager, Risk Control, declare that the renewable electricity (electricity bundled with renewable attributes) / renewable attributes only⁶ (check one) generated by Facility during the Period of Generation were sold exclusively from Seller to Empire District Electric Company ("Purchaser").

I further declare that:

- 1) all the renewable attributes (including CO₂ benefits), including any emissions offsets, reductions or claims, represented by the renewable electricity generation listed above were transferred to Purchaser;
- 2) to the best of my knowledge, the renewable attributes were not sold, marketed or otherwise claimed by a third party other than Purchaser;
- 3) Seller sold the renewable attributes only once;
- 4) the renewable attributes or the electricity that was generated with the attributes was not used to meet any federal, state or local renewable energy requirement, renewable energy procurement, renewable portfolio standard, or other renewable energy mandate by Seller, nor to the best of my knowledge, by any other entity other than Purchaser;⁷
- 5) the renewable electricity sold or electricity associated with the attributes sold was not used on-site for powering electric generation equipment (parasitic load);
- 6) if Purchaser is receiving electricity bundled with renewable attributes from Seller, the renewable electricity was delivered into the NERC region in which Facility is located;
- 7) if Facility is located in Canada, it is EcoLogo certified and was throughout the Period of Generation; and
- 8) the electricity that was generated with the attributes was not separately sold, separately marketed or otherwise separately represented as renewable energy by Seller, or, to the best of my knowledge, any other/entity other than Purchaser.

Please indicate the following:

Is Facility owner reporting its direct greenhouse gas emissions in a legally binding cap and trade program for the time period of generation listed on this form?

- Yes,⁸ list the cap and trade program: _____
 No

If Seller is providing only RECs to Purchaser and selling the associated electricity to a utility or load-serving entity, please write the name of the utility or load-serving entity here: Empire District Electric Company

- Check box if sale is part of a Qualifying Facility (QF) contract

⁶ If selling renewable attributes to Purchaser without electricity, please fill in the name of the load serving entity buying the undifferentiated electricity, if applicable, at the bottom of this Declaration section.

⁷ Renewable attributes used by Purchaser for any of the purposes listed in 4) are ineligible for Green-e Energy certification.

⁸ In this case the renewable energy or RECs reported on this form may be ineligible for Green-e Energy certification. For more information, contact Green-e Energy Staff at 415-561-2100.

IV. Additional statement required for and applicable to biomass facilities only

- 1) I attest that no more than five percent (5%) fossil fuels and other fuels that are not Green-e Energy eligible, measured on a BTU basis, were used, including as a start-up, pilot or supplemental fuel, to produce the electricity and/or RECs in the above Green-e Energy eligible biomass generation plant or biomass boiler;
- 2) I attest that this facility was in substantial compliance with its operating permit regarding emissions during the Period of Generation reported above;
- 3) I attest that if this facility is subject to New Source Review (NSR), it was compliant with all standards pertaining to NSR during the period of generation reported above; and
- 4) I attest that Seller owned the renewable and environmental attributes of the biomass fuels I have listed in the table below at the time of the fuel's use for electricity generation.

Biomass Fuel Type	Facility that Produced Fuel or Origin/Source of Fuel

V. Signature

As an authorized agent of Seller, I attest that the above statements are true and correct.

Ryan M O
Signature
Portland, OR
Place of Execution

2/4/19
Date

This Attestation form is used by the Center for Resource Solutions to verify the accuracy of claims made by Participant renewable energy providers. The information on this form is held strictly confidential and will not be shared with any other party except in aggregate form.



Energy

GREEN-E ENERGY RENEWABLE GENERATOR REGISTRATION FORM AND ATTESTATION

I. Facility information

Name of Generation Facility ("Facility"): Meridian Way Wind Farm

Company or Person that Owns Facility ("Seller"): Cloud County Wind Farm, LLC

Address of Facility: 1409 Iron Road, Suite A Concordia, KS 66901

North American Electricity Reliability Corporation (NERC) region in which Facility is located:¹ SPP

Facility ID Number:² 56784 EIA or QF? (check one) Nameplate Capacity (MW): 105

Date Facility was First Operational: 12/05/2008 Date of Capacity Upgrade or Repowering:³ ___/___/___

Contact Person: Adrian Dever Title: Settlements Analyst

Telephone: (713) 428-6766 Email Address: adrian.dever@edpr.com

II. Renewable electricity or RECs⁴ supplied to Purchaser indicated below, by fuel type

On the table below, list the renewable megawatt-hours (MWh) sold or transferred to Purchaser, broken down by quarter of generation in separate rows:

¹ If you are unsure of which region Facility is in, see <http://www.nerc.com/regional/>

² Enter Energy Information Administration (EIA) identification number for the generating facility; if no EIA number, enter the utility-assigned Qualifying Facility (QF) identification number.

³ If applicable. Repowered facilities must meet Green-e Energy's criteria for repowering, available at http://www.Green-e Energy.org/docs/Repowering_Defin_and_Instructions.doc

⁴ Renewable Energy Certificates, which represent the renewable attributes of 1 MWh of renewable electricity generation.



Fuel Type ⁵	# MWh RECs / Renewable Elec. Sold	Period of Generation (quarter/yy or mm/yy)
Wind		01/2018
Wind		02/2018
Wind		03/2018

III. Declaration

I, Brian Hayes, Executive Vice President, Asset Operations, declare that the renewable electricity (electricity bundled with renewable attributes) / renewable attributes only⁶ (check one) generated by Facility during the Period of Generation were sold exclusively from Seller to The Empire District Electric Company ("Purchaser").

I further declare that:

- 1) all the renewable attributes (including CO₂ benefits), including any emissions offsets, reductions or claims, represented by the renewable electricity generation listed above were transferred to Purchaser;
- 2) to the best of my knowledge, the renewable attributes were not sold, marketed or otherwise claimed by a third party other than Purchaser;
- 3) Seller sold the renewable attributes only once;
- 4) the renewable attributes or the electricity that was generated with the attributes was not used to meet any federal, state or local renewable energy requirement, renewable energy procurement, renewable portfolio standard, or other renewable energy mandate by Seller, nor to the best of my knowledge, by any other entity other than Purchaser;⁷
- 5) the renewable electricity sold or electricity associated with the attributes sold was not used on-site for powering electric generation equipment (parasitic load);
- 6) if Purchaser is receiving electricity bundled with renewable attributes from Seller, the renewable electricity was delivered into the NERC region in which Facility is located;
- 7) if Facility is located in Canada, it is EcoLogo certified and was throughout the Period of Generation; and
- 8) the electricity that was generated with the attributes was not separately sold, separately marketed or otherwise separately represented as renewable energy by Seller, or, to the best of my knowledge, any other entity other than Purchaser.

⁵ If using biomass fuels, list out the specific type (i.e. landfill gas, wood waste, etc.) and fill in section IV below.
⁶ If selling renewable attributes to Purchaser without electricity, please fill in the name of the load serving entity buying the undifferentiated electricity, if applicable, at the bottom of this Declaration section.
⁷ Renewable attributes used by Purchaser for any of the purposes listed in 4) are ineligible for Green-e Energy certification.

Please indicate the following:

Is Facility owner reporting its direct greenhouse gas emissions in a legally binding cap and trade program for the time period of generation listed on this form?

- Yes,⁸ list the cap and trade program: _____
 No

If Seller is providing only RECs to Purchaser and selling the associated electricity to a utility or load-serving entity, please write the name of the utility or load-serving entity here: _____

Check box if sale is part of a Qualifying Facility (QF) contract

IV. Additional statement required for and applicable to biomass facilities only

- 1) I attest that no more than five percent (5%) fossil fuels and other fuels that are not Green-e Energy eligible, measured on a BTU basis, were used, including as a start-up, pilot or supplemental fuel, to produce the electricity and/or RECs in the above Green-e Energy eligible biomass generation plant or biomass boiler;
- 2) I attest that this facility was in substantial compliance with its operating permit regarding emissions during the Period of Generation reported above;
- 3) I attest that if this facility is subject to New Source Review (NSR), it was compliant with all standards pertaining to NSR during the period of generation reported above; and
- 4) I attest that Seller owned the renewable and environmental attributes of the biomass fuels I have listed in the table below at the time of the fuel's use for electricity generation.

Biomass Fuel Type	Facility that Produced Fuel or Origin/Source of Fuel

V. Signature

As an authorized agent of Seller, I attest that the above statements are true and correct.


Signature

5/25/18
Date

Houston, TX
Place of Execution

This Attestation form is used by the Center for Resource Solutions to verify the accuracy of claims made by Participant renewable energy providers. The information on this form is held strictly confidential and will not be shared with any other party except in aggregate form.

⁸ In this case the renewable energy or RECs reported on this form may be ineligible for Green-e Energy certification. For more information, contact Green-e Energy Staff at 415-561-2100.



Energy

GREEN-E ENERGY RENEWABLE GENERATOR REGISTRATION FORM AND ATTESTATION

I. Facility information

Name of Generation Facility ("Facility"): Meridian Way Wind Farm

Company or Person that Owns Facility ("Seller"): Cloud County Wind Farm, LLC

Address of Facility: 1409 Iron Road, Suite A Concordia, KS 66901

North American Electricity Reliability Corporation (NERC) region in which Facility is located:¹ SPP

Facility ID Number:² 56784 EIA or QF? (check one) Nameplate Capacity (MW): 105

Date Facility was First Operational: 12/05/2008 Date of Capacity Upgrade or Repowering:³ ___/___/___

Contact Person: Adrian Dever Title: Settlements Analyst

Telephone: (713) 428-6766

Email Address: adrian.dever@edpr.com

II. Renewable electricity or RECs⁴ supplied to Purchaser indicated below, by fuel type

On the table below, list the renewable megawatt-hours (MWh) sold or transferred to Purchaser, broken down by quarter of generation in separate rows:

¹ If you are unsure of which region Facility is in, see <http://www.nerc.com/regional/>

² Enter Energy Information Administration (EIA) identification number for the generating facility; if no EIA number, enter the utility-assigned Qualifying Facility (QF) identification number.

³ If applicable. Repowered facilities must meet Green-e Energy's criteria for repowering, available at http://www.Green-e Energy.org/docs/Repowering_Defin_and_Instructions.doc

⁴ Renewable Energy Certificates, which represent the renewable attributes of 1 MWh of renewable electricity generation.

Please indicate the following:

Is Facility owner reporting its direct greenhouse gas emissions in a legally binding cap and trade program for the time period of generation listed on this form?

- Yes;⁹ list the cap and trade program: _____
 No

If Seller is providing only RECs to Purchaser and selling the associated electricity to a utility or load-serving entity, please write the name of the utility or load-serving entity here: _____

Check box if sale is part of a Qualifying Facility (QF) contract

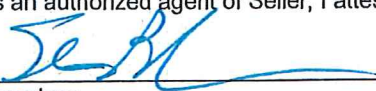
IV. Additional statement required for and applicable to biomass facilities only

- 1) I attest that no more than five percent (5%) fossil fuels and other fuels that are not Green-e Energy eligible, measured on a BTU basis, were used, including as a start-up, pilot or supplemental fuel, to produce the electricity and/or RECs in the above Green-e Energy eligible biomass generation plant or biomass boiler;
- 2) I attest that this facility was in substantial compliance with its operating permit regarding emissions during the Period of Generation reported above;
- 3) I attest that if this facility is subject to New Source Review (NSR), it was compliant with all standards pertaining to NSR during the period of generation reported above; and
- 4) I attest that Seller owned the renewable and environmental attributes of the biomass fuels I have listed in the table below at the time of the fuel's use for electricity generation.

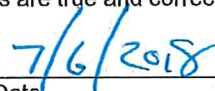
Biomass Fuel Type	Facility that Produced Fuel or Origin/Source of Fuel

V. Signature

As an authorized agent of Seller, I attest that the above statements are true and correct.



Signature



Date

Houston, TX
Place of Execution

Steve Irvin
Executive Vice President
Western and Central Region and Mexico

This Attestation form is used by the Center for Resource Solutions to verify the accuracy of claims made by Participant renewable energy providers. The information on this form is held strictly confidential and will not be shared with any other party except in aggregate form.

⁹ In this case the renewable energy or RECs reported on this form may be ineligible for Green-e Energy certification. For more information, contact Green-e Energy Staff at 415-561-2100.



Energy

GREEN-E ENERGY RENEWABLE GENERATOR REGISTRATION FORM AND ATTESTATION

I. Facility information

Name of Generation Facility ("Facility"): Meridian Way Wind Farm

Company or Person that Owns Facility ("Seller"): Cloud County Wind Farm, LLC

Address of Facility: 1409 Iron Road, Suite A Concordia, KS 66901

North American Electricity Reliability Corporation (NERC) region in which Facility is located:¹ SPP

Facility ID Number:² 56784 EIA or QF? (check one) Nameplate Capacity (MW): 105

Date Facility was First Operational: 12/05/2008 Date of Capacity Upgrade or Repowering:³ ___/___/___

Contact Person: Bryan Maynard Title: Settlements Analyst

Telephone: (713) 217-2620 Email Address: bryan.maynard@edpr.com

II. Renewable electricity or RECs⁴ supplied to Purchaser indicated below, by fuel type

On the table below, list the renewable megawatt-hours (MWh) sold or transferred to Purchaser, broken down by quarter of generation in separate rows:

¹ If you are unsure of which region Facility is in, see <http://www.nerc.com/regional/>

² Enter Energy Information Administration (EIA) identification number for the generating facility; if no EIA number, enter the utility-assigned Qualifying Facility (QF) identification number.

³ If applicable. Repowered facilities must meet Green-e Energy's criteria for repowering, available at [http://www.Green-e Energy.org/docs/Repowering Defin and Instructions.doc](http://www.Green-e Energy.org/docs/Repowering_Defin_and_Instructions.doc)

⁴ Renewable Energy Certificates, which represent the renewable attributes of 1 MWh of renewable electricity generation.



Fuel Type ⁵	# MWh RECs / Renewable Elec. Sold	Period of Generation (quarter/yy or mm/yy)
Wind		07/2018
Wind		08/2018
Wind		09/2018

III. Declaration

I, Brian Hayes, Executive Vice President, Asset Operations, declare that the renewable electricity (electricity bundled with renewable attributes) / renewable attributes only⁶ (check one) generated by Facility during the Period of Generation were sold exclusively from Seller to The Empire District Electric Company ("Purchaser").

I further declare that:

- 1) all the renewable attributes (including CO₂ benefits), including any emissions offsets, reductions or claims, represented by the renewable electricity generation listed above were transferred to Purchaser;
- 2) to the best of my knowledge, the renewable attributes were not sold, marketed or otherwise claimed by a third party other than Purchaser;
- 3) Seller sold the renewable attributes only once;
- 4) the renewable attributes or the electricity that was generated with the attributes was not used to meet any federal, state or local renewable energy requirement, renewable energy procurement, renewable portfolio standard, or other renewable energy mandate by Seller, nor to the best of my knowledge, by any other entity other than Purchaser;⁷
- 5) the renewable electricity sold or electricity associated with the attributes sold was not used on-site for powering electric generation equipment (parasitic load);
- 6) if Purchaser is receiving electricity bundled with renewable attributes from Seller, the renewable electricity was delivered into the NERC region in which Facility is located;
- 7) if Facility is located in Canada, it is EcoLogo certified and was throughout the Period of Generation; and
- 8) the electricity that was generated with the attributes was not separately sold, separately marketed or otherwise separately represented as renewable energy by Seller, or, to the best of my knowledge, any other entity other than Purchaser.

⁵ If using biomass fuels, list out the specific type (i.e. landfill gas, wood waste, etc.) and fill in section IV below.

⁶ If selling renewable attributes to Purchaser without electricity, please fill in the name of the load serving entity buying the undifferentiated electricity, if applicable, at the bottom of this Declaration section.

⁷ Renewable attributes used by Purchaser for any of the purposes listed in 4) are ineligible for Green-e Energy certification.

Please indicate the following:

Is Facility owner reporting its direct greenhouse gas emissions in a legally binding cap and trade program for the time period of generation listed on this form?

Yes,⁸ list the cap and trade program: _____
 No

If Seller is providing only RECs to Purchaser and selling the associated electricity to a utility or load-serving entity, please write the name of the utility or load-serving entity here: _____

Check box if sale is part of a Qualifying Facility (QF) contract

IV. Additional statement required for and applicable to biomass facilities only

- 1) I attest that no more than five percent (5%) fossil fuels and other fuels that are not Green-e Energy eligible, measured on a BTU basis, were used, including as a start-up, pilot or supplemental fuel, to produce the electricity and/or RECs in the above Green-e Energy eligible biomass generation plant or biomass boiler;
- 2) I attest that this facility was in substantial compliance with its operating permit regarding emissions during the Period of Generation reported above;
- 3) I attest that if this facility is subject to New Source Review (NSR), it was compliant with all standards pertaining to NSR during the period of generation reported above; and
- 4) I attest that Seller owned the renewable and environmental attributes of the biomass fuels I have listed in the table below at the time of the fuel's use for electricity generation.

Biomass Fuel Type	Facility that Produced Fuel or Origin/Source of Fuel

V. Signature

As an authorized agent of Seller, I attest that the above statements are true and correct.



Signature

10/11/2018
Date

Houston, TX
Place of Execution

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⁸ In this case the renewable energy or RECs reported on this form may be ineligible for Green-e Energy certification. For more information, contact Green-e Energy Staff at 415-561-2100.



Energy

GREEN-E ENERGY RENEWABLE GENERATOR REGISTRATION FORM AND ATTESTATION

I. Facility information

Name of Generation Facility ("Facility"): Meridian Way Wind Farm

Company or Person that Owns Facility ("Seller"): Cloud County Wind Farm, LLC

Address of Facility: 1409 Iron Road, Suite A Concordia, KS 66901

North American Electricity Reliability Corporation (NERC) region in which Facility is located:¹ SPP

Facility ID Number:² 56784 EIA or QF? (check one) Nameplate Capacity (MW): 105

Date Facility was First Operational: 12/05/2008 Date of Capacity Upgrade or Repowering:³ ___/___/___

Contact Person: Bryan Maynard Title: Settlements Analyst

Telephone: (713) 217-2620

Email Address: bryan.maynard@edpr.com

II. Renewable electricity or RECs⁴ supplied to Purchaser indicated below, by fuel type

On the table below, list the renewable megawatt-hours (MWh) sold or transferred to Purchaser, broken down by quarter of generation in separate rows:

¹ If you are unsure of which region Facility is in, see <http://www.nerc.com/regional/>

² Enter Energy Information Administration (EIA) identification number for the generating facility; if no EIA number, enter the utility-assigned Qualifying Facility (QF) identification number.

³ If applicable. Repowered facilities must meet Green-e Energy's criteria for repowering, available at http://www.Green-e Energy.org/docs/Repowering_Defin_and_Instructions.doc

⁴ Renewable Energy Certificates, which represent the renewable attributes of 1 MWh of renewable electricity generation.

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Fuel Type ⁵	# MWh RECs / Renewable Elec. Sold	Period of Generation (quarter/yy or mm/yy)
Wind		10/2018
Wind		11/2018
Wind		12/2018

III. Declaration

I, Brian Hayes, Executive Vice President, Operations, declare that the renewable electricity (electricity bundled with renewable attributes) / renewable attributes only⁶ (check one) generated by Facility during the Period of Generation were sold exclusively from Seller to The Empire District Electric Company ("Purchaser").

I further declare that:

- 1) all the renewable attributes (including CO₂ benefits), including any emissions offsets, reductions or claims, represented by the renewable electricity generation listed above were transferred to Purchaser;
- 2) to the best of my knowledge, the renewable attributes were not sold, marketed or otherwise claimed by a third party other than Purchaser;
- 3) Seller sold the renewable attributes only once;
- 4) the renewable attributes or the electricity that was generated with the attributes was not used to meet any federal, state or local renewable energy requirement, renewable energy procurement, renewable portfolio standard, or other renewable energy mandate by Seller, nor to the best of my knowledge, by any other entity other than Purchaser;⁷
- 5) the renewable electricity sold or electricity associated with the attributes sold was not used on-site for powering electric generation equipment (parasitic load);
- 6) if Purchaser is receiving electricity bundled with renewable attributes from Seller, the renewable electricity was delivered into the NERC region in which Facility is located;
- 7) if Facility is located in Canada, it is EcoLogo certified and was throughout the Period of Generation; and
- 8) the electricity that was generated with the attributes was not separately sold, separately marketed or otherwise separately represented as renewable energy by Seller, or, to the best of my knowledge, any other entity other than Purchaser.

⁵ If using biomass fuels, list out the specific type (i.e. landfill gas, wood waste, etc.) and fill in section IV below.

⁶ If selling renewable attributes to Purchaser without electricity, please fill in the name of the load serving entity buying the undifferentiated electricity, if applicable, at the bottom of this Declaration section.

⁷ Renewable attributes used by Purchaser for any of the purposes listed in 4) are ineligible for Green-e Energy certification.

Please indicate the following:

Is Facility owner reporting its direct greenhouse gas emissions in a legally binding cap and trade program for the time period of generation listed on this form?

- Yes;⁸ list the cap and trade program: _____
 No

If Seller is providing only RECs to Purchaser and selling the associated electricity to a utility or load-serving entity, please write the name of the utility or load-serving entity here: _____

Check box if sale is part of a Qualifying Facility (QF) contract

IV. Additional statement required for and applicable to biomass facilities only

- 1) I attest that no more than five percent (5%) fossil fuels and other fuels that are not Green-e Energy eligible, measured on a BTU basis, were used, including as a start-up, pilot or supplemental fuel, to produce the electricity and/or RECs in the above Green-e Energy eligible biomass generation plant or biomass boiler;
- 2) I attest that this facility was in substantial compliance with its operating permit regarding emissions during the Period of Generation reported above;
- 3) I attest that if this facility is subject to New Source Review (NSR), it was compliant with all standards pertaining to NSR during the period of generation reported above; and
- 4) I attest that Seller owned the renewable and environmental attributes of the biomass fuels I have listed in the table below at the time of the fuel's use for electricity generation.

Biomass Fuel Type	Facility that Produced Fuel or Origin/Source of Fuel

V. Signature

As an authorized agent of Seller, I attest that the above statements are true and correct.


Signature


Date

Houston, TX
Place of Execution

This Attestation form is used by the Center for Resource Solutions to verify the accuracy of claims made by Participant renewable energy providers. The information on this form is held strictly confidential and will not be shared with any other party except in aggregate form.

⁸ In this case the renewable energy or RECs reported on this form may be ineligible for Green-e Energy certification. For more information, contact Green-e Energy Staff at 415-561-2100.

ATTACHMENT 7 : SOLAR CUSTOMER NET GENERATION

SOLAR 2018 SYSTEMS

operational_date	endrebate_date	service_state	service_zip	narr_aggaccount	empire_srec	srec TOTAL	
11/30/2015	11/30/2025	MO	65616		1	35	1287.38 AGG2321
10/5/2015	10/5/2025	MO	65721		1	35	
7/6/2015	7/6/2025	MO	64850		1	35	
6/30/2015	6/30/2025	MO	64850		1	38.8	
12/23/2015	12/23/2025	MO	65616		1	35.85	
12/23/2015	12/23/2025	MO	65616		1	35.83	
8/25/2015	8/25/2025	MO	65616		1	35.5	
6/29/2015	6/29/2025	MO	65785		1	35.2	
6/29/2015	6/29/2025	MO	65785		1	35.2	
9/22/2015	9/22/2025	MO	65616		1	35.2	
6/12/2015	6/12/2025	MO	64836		1	34.9	
11/23/2015	11/23/2025	MO	65616		1	34.44	
8/25/2015	8/25/2025	MO	64804		1	33.9	
12/23/2015	12/23/2025	MO	65616		1	32.83	
12/22/2015	12/22/2025	MO	65616		1	29.93	
6/30/2015	6/30/2025	MO	65723		1	25.28	
6/30/2015	6/30/2025	MO	64836		1	22.5	
9/22/2015	9/22/2025	MO	65616		1	22.24	
8/20/2015	8/20/2025	MO	65723		1	22.2	
7/24/2015	7/24/2025	MO	65785		1	20.9	
6/30/2015	6/30/2025	MO	65737		1	20.6	
6/30/2015	6/30/2025	MO	65785		1	20.4	
6/22/2015	6/22/2025	MO	65613		1	19.9	
8/10/2015	8/10/2025	MO	65757		1	19.43	
6/26/2015	6/26/2025	MO	64804		1	19.4	
6/15/2015	6/15/2025	MO	64804		1	19.2	
6/29/2015	6/29/2025	MO	64801		1	17.8	
8/20/2015	8/20/2025	MO	65605		1	17.8	
6/18/2015	6/18/2025	MO	65616		1	17.7	
6/26/2015	6/26/2025	MO	65613		1	17.6	
6/26/2015	6/26/2025	MO	64804		1	17.2	
6/30/2015	6/30/2025	MO	64836		1	16.4	
6/26/2015	6/26/2025	MO	64804		1	15.3	
6/11/2015	6/11/2025	MO	65781		1	15.2	
6/26/2015	6/26/2025	MO	65707		1	15.1	
6/2/2015	6/2/2025	MO	65672		1	14.9	
6/11/2015	6/11/2025	MO	64870		1	14.3	
6/19/2015	6/19/2025	MO	64836		1	14.1	
6/22/2015	6/22/2025	MO	64804		1	14.1	
6/25/2015	6/25/2025	MO	64836		1	13.6	
6/12/2015	6/12/2025	MO	64804		1	13.24	
6/19/2015	6/19/2025	MO	64801		1	12.9	
6/30/2015	6/30/2025	MO	64850		1	12.9	
6/26/2015	6/26/2025	MO	64834		1	12.8	
7/20/2015	7/20/2025	MO	65785		1	12.36	
6/18/2015	6/18/2025	MO	65653		1	12.3	
8/21/2015	8/21/2025	MO	65646		1	12.2	
8/20/2015	8/20/2025	MO	64836		1	12.1	
8/11/2015	8/11/2025	MO	64801		1	11.7	
6/26/2015	6/26/2025	MO	64834		1	11.6	
6/9/2015	6/9/2025	MO	65613		1	11.1	
6/26/2015	6/26/2025	MO	64859		1	10.64	
6/23/2015	6/23/2025	MO	64801		1	10.6	
6/24/2015	6/24/2025	MO	64870		1	10.4	
6/17/2015	6/17/2025	MO	64836		1	10.2	
6/26/2015	6/26/2025	MO	64836		1	10.2	
6/23/2015	6/23/2025	MO	64850		1	10.1	
6/25/2015	6/25/2025	MO	64870		1	9.8	
6/24/2015	6/24/2025	MO	64850		1	9.4	
8/21/2015	8/21/2025	MO	65646		1	9.15	
6/4/2015	6/4/2025	MO	65785		1	9	

7/14/2015	7/14/2025 MO	64801	1	8.6
7/30/2015	7/30/2025 MO	64801	1	8.6
6/16/2015	6/16/2025 MO	64801	1	8.5
10/20/2015	10/20/2025 MO	64804	1	7.69
6/26/2015	6/26/2025 MO	64755	1	7.6
9/3/2015	9/3/2025 MO	64804	1	7.27
8/27/2015	8/27/2025 MO	64850	1	6.7
6/9/2015	6/9/2025 MO	65738	1	6.3
7/16/2015	7/16/2025 MO	64801	1	6.2
6/22/2015	6/22/2025 MO	64804	1	5.2
6/5/2015	6/5/2025 MO	64801	1	4.3
12/10/2015	12/10/2025 MO	65616	2	31.36
12/11/2015	12/11/2025 MO	64801	2	30.5
12/15/2015	12/15/2025 MO	65723	2	30.15
12/1/2015	12/1/2025 MO	64804	2	29.02
9/9/2015	9/9/2025 MO	64836	2	23.8
11/6/2015	11/6/2025 MO	64734	2	23.5
10/22/2015	10/22/2025 MO	65640	2	23.4
12/7/2015	12/7/2025 MO	65785	2	22.1
9/14/2015	9/14/2025 MO	64836	2	21.2
11/25/2015	11/25/2025 MO	65613	2	21
9/21/2015	9/21/2025 MO	65622	2	20.8
12/9/2015	12/9/2025 MO	65653	2	20.6
9/3/2015	9/3/2025 MO	64834	2	20.5
10/19/2015	10/19/2025 MO	64834	2	20.5
12/2/2015	12/2/2025 MO	64865	2	20.18
9/30/2015	9/30/2025 MO	65757	2	19.95
11/6/2015	11/6/2025 MO	65721	2	19.7
9/30/2015	9/30/2025 MO	64755	2	18.9
10/23/2015	10/23/2025 MO	64836	2	18.9
11/9/2015	11/9/2025 MO	65616	2	18.51
10/12/2015	10/12/2025 MO	64801	2	18.03
5/27/2015	5/27/2025 MO	64804	2	18
11/18/2015	11/18/2025 MO	65616	2	17.99
10/21/2015	10/21/2025 MO	65672	2	17.7
11/16/2015	11/16/2025 MO	65672	2	17.63
8/26/2015	8/26/2025 MO	65781	2	17.59
10/26/2015	10/26/2025 MO	65723	2	17.33
7/30/2015	7/30/2025 MO	64836	2	17.2
11/30/2015	11/30/2025 MO	65781	2	17.06
9/30/2015	9/30/2025 MO	64850	2	16.49
11/6/2015	11/6/2025 MO	65653	2	16.04
11/18/2015	11/18/2025 MO	65738	2	15.82
10/22/2015	10/22/2025 MO	65653	2	15.8
9/18/2015	9/18/2025 MO	64801	2	15.2
11/10/2015	11/10/2025 MO	64870	2	15.1
12/22/2015	12/22/2025 MO	65616	2	15.02
12/18/2015	12/18/2025 MO	65753	2	14.88
10/7/2015	10/7/2025 MO	65738	2	14.67
11/3/2015	11/3/2025 MO	65721	2	14.66
11/25/2015	11/25/2025 MO	65610	2	14.63
9/18/2015	9/18/2025 MO	65738	2	14.6
10/27/2015	10/27/2025 MO	65721	2	14.58
11/13/2015	11/13/2025 MO	65737	2	14.36
11/25/2015	11/25/2025 MO	65613	2	14.3
9/18/2015	9/18/2025 MO	64804	2	14.2
10/23/2015	10/23/2025 MO	64870	2	14.1
11/12/2015	11/12/2025 MO	64836	2	13.9
11/18/2015	11/18/2025 MO	64834	2	13.5
11/12/2015	11/12/2025 MO	64854	2	13.48
10/7/2015	10/7/2025 MO	64804	2	13.46
11/24/2015	11/24/2025 MO	64801	2	12.9
8/26/2015	8/26/2025 MO	65781	2	12.79
12/18/2015	12/18/2025 MO	65648	2	12.58
10/1/2015	10/1/2025 MO	64844	2	12.1
11/10/2015	11/10/2025 MO	64804	2	11.8
11/10/2015	11/10/2025 MO	64804	2	11.8
12/18/2015	12/18/2025 MO	65721	2	11.7

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9/30/2015	9/30/2025 MO	65721	2	11.58
10/30/2015	10/30/2025 MO	65705	2	11.43
12/11/2015	12/11/2025 MO	65781	2	11.04
8/31/2015	8/31/2025 MO	65738	2	10.9
11/5/2015	11/5/2025 MO	64804	2	10.79
9/4/2015	9/4/2025 MO	64836	2	10.6
9/16/2015	9/16/2025 MO	65721	2	10.5
11/12/2015	11/12/2025 MO	65721	2	10.45
11/19/2015	11/19/2025 MO	65606	2	9.62
10/22/2015	10/22/2025 MO	64859	2	9.53
10/23/2015	10/23/2025 MO	64850	2	9.22
9/9/2015	9/9/2025 MO	65781	2	8.94
11/4/2015	11/4/2025 MO	65708	2	8.9
10/21/2015	10/21/2025 MO	64804	2	8.87
11/20/2015	11/20/2025 MO	65721	2	8.31
10/29/2015	10/29/2025 MO	65663	2	8.12
11/24/2015	11/24/2025 MO	65616	2	8.03
9/9/2015	9/9/2025 MO	65804	2	7.52
9/25/2015	9/25/2025 MO	65672	2	7.52
11/18/2015	11/18/2025 MO	65605	2	7.25
11/19/2015	11/19/2025 MO	65781	2	6.95
8/3/2015	8/3/2025 MO	64801	2	6.8
12/2/2015	12/2/2025 MO	65721	2	6.8
10/29/2015	10/29/2025 MO	65781	2	6.61
11/13/2015	11/13/2025 MO	65616	2	6.55
11/6/2015	11/6/2025 MO	64804	2	6.4
9/25/2015	9/25/2025 MO	65788	2	6.37
11/25/2015	11/25/2025 MO	65738	2	6.21
9/15/2015	9/15/2025 MO	65653	2	2.9
12/23/2015	12/23/2025 MO	65622	3	35.95
12/29/2015	12/29/2025 MO	64801	3	35.88
12/11/2015	12/11/2025 MO	65770	3	35.35
11/4/2015	11/4/2025 MO	65707	3	35.26
11/4/2015	11/4/2025 MO	65707	3	35.23
12/17/2015	12/17/2025 MO	64855	3	31.63
10/12/2015	10/12/2025 MO	65707	3	29.1
12/22/2015	12/22/2025 MO	64870	3	26.1
12/11/2015	12/11/2025 MO	64850	3	25.8
11/25/2015	11/25/2025 MO	65613	3	24.4
11/30/2015	11/30/2025 MO	65781	3	24.15
10/27/2015	10/27/2025 MO	65721	3	24.1
12/10/2015	12/10/2025 MO	64850	3	24.08
12/29/2015	12/29/2025 MO	64840	3	23.99
11/18/2015	11/18/2025 MO	65708	3	23.57
11/25/2015	11/25/2025 MO	65650	3	20.7
12/9/2015	12/9/2025 MO	64870	3	20.2
10/1/2015	10/1/2025 MO	65785	3	20
12/22/2015	12/22/2025 MO	65785	3	19.8
10/12/2015	10/12/2025 MO	65707	3	19.4
11/18/2015	11/18/2025 MO	65769	3	18
10/27/2015	10/27/2025 MO	64844	3	16.9
12/21/2015	12/21/2025 MO	64870	3	16.9
11/18/2015	11/18/2025 MO	65616	3	16.89
12/17/2015	12/17/2025 MO	65622	3	16.8
11/30/2015	11/30/2025 MO	65604	3	16.72
12/22/2015	12/22/2025 MO	64836	3	16.4
12/18/2015	12/18/2025 MO	65672	3	16.35
11/23/2015	11/23/2025 MO	65605	3	16.21
11/13/2015	11/13/2025 MO	65613	3	16.1
11/25/2015	11/25/2025 MO	65613	3	16.1
11/20/2015	11/20/2025 MO	65721	3	16.04
11/20/2015	11/20/2025 MO	65721	3	15.86
11/30/2015	11/30/2025 MO	65781	3	14.51
12/18/2015	12/18/2025 MO	65612	3	14.49
10/12/2015	10/12/2025 MO	65707	3	14.3
10/28/2015	10/28/2025 MO	65785	3	13.8
12/18/2015	12/18/2025 MO	64873	3	13.8
12/17/2015	12/17/2025 MO	64804	3	13.75

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12/17/2015	12/17/2025 MO	65721	3	13.71
10/2/2015	10/2/2025 MO	65622	3	13
12/8/2015	12/8/2025 MO	65708	3	12.94
12/22/2015	12/22/2025 MO	65738	3	12.48
12/3/2015	12/3/2025 MO	64804	3	12.27
12/17/2015	12/17/2025 MO	64804	3	12.25
12/7/2015	12/7/2025 MO	64870	3	12.1
12/9/2015	12/9/2025 MO	64804	3	12.1
12/18/2015	12/18/2025 MO	65648	3	11.87
12/3/2015	12/3/2025 MO	64804	3	11.5
10/12/2015	10/12/2025 MO	65707	3	11.3
12/16/2015	12/16/2025 MO	65705	3	11.3
12/22/2015	12/22/2025 MO	64836	3	11.2
12/15/2015	12/15/2025 MO	64755	3	10.9
12/7/2015	12/7/2025 MO	64870	3	10.8
12/4/2015	12/4/2025 MO	64804	3	9.87
11/30/2015	11/30/2025 MO	65604	3	9.81
10/13/2015	10/13/2025 MO	64834	3	9.8
12/3/2015	12/3/2025 MO	64804	3	8.63
11/10/2015	11/10/2025 MO	64801	3	8.3
12/14/2015	12/14/2025 MO	65781	3	7.93
12/17/2015	12/17/2025 MO	65721	3	7.69
10/20/2015	10/20/2025 MO	64836	3	7.4
12/18/2015	12/18/2025 MO	65610	3	6.9
9/29/2015	9/29/2025 MO	64804	3	6.86
12/22/2015	12/22/2025 MO	65738	3	6.74
10/12/2015	10/12/2025 MO	65707	3	6.47
11/23/2015	11/23/2025 MO	64804	3	6.4
11/6/2015	11/6/2025 MO	64801	3	6.33
12/29/2015	12/29/2025 MO	64804	3	6.28
11/16/2015	11/16/2025 MO	65653	3	6.21
12/18/2015	12/18/2025 MO	65616	3	5.78
12/23/2015	12/23/2025 MO	65616	3	5.62
11/25/2015	11/25/2025 MO	65738	3	5.54
11/6/2015	11/6/2025 MO	65672	3	5.42
11/6/2015	11/6/2025 MO	65653	3	5.31
1/6/2016	1/6/2026 MO	64850	4	35.72
1/14/2016	1/14/2026 MO	64801	4	35.46
1/15/2016	1/15/2026 MO	64801	4	35.16
1/29/2016	1/29/2026 MO	65663	4	35.09
1/19/2016	1/19/2026 MO	64862	4	33.88
1/20/2016	1/20/2026 MO	65781	4	33.81
1/6/2016	1/6/2026 MO	64801	4	33.57
1/14/2016	1/14/2026 MO	64804	4	33.28
1/14/2016	1/14/2026 MO	64804	4	33.27
1/29/2016	1/29/2026 MO	65613	4	31.13
1/28/2016	1/28/2026 MO	64801	4	31
1/8/2016	1/8/2026 MO	65616	4	30.21
1/22/2016	1/22/2026 MO	65836	4	30.2
1/14/2016	1/14/2026 MO	64870	4	25.4
1/6/2016	1/6/2026 MO	64850	4	24.73
1/18/2016	1/18/2026 MO	65612	4	23.45
1/5/2016	1/5/2026 MO	65616	4	23.32
1/5/2016	1/5/2026 MO	64840	4	22.4
1/25/2016	1/25/2026 MO	64862	4	21.99
1/11/2016	1/11/2026 MO	65707	4	21.4
1/12/2016	1/12/2026 MO	64870	4	19.7
1/27/2016	1/27/2026 MO	64850	4	19.35
1/8/2016	1/8/2026 MO	65708	4	19.1
1/12/2016	1/12/2026 MO	64834	4	18.2
1/26/2016	1/26/2026 MO	65708	4	17.9
1/6/2016	1/6/2026 MO	65653	4	17.65
1/14/2016	1/14/2026 MO	64865	4	17.5
1/22/2016	1/22/2026 MO	64843	4	17.3
1/19/2016	1/19/2026 MO	65649	4	17.1
1/8/2016	1/8/2026 MO	64804	4	16.98
1/7/2016	1/7/2026 MO	64862	4	16.61
1/27/2016	1/27/2026 MO	65714	4	16.2

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1/29/2016	1/29/2026 MO	64834	4	16.2
1/8/2016	1/8/2026 MO	64804	4	16.11
1/5/2016	1/5/2026 MO	64870	4	15.5
1/6/2016	1/6/2026 MO	64850	4	15.41
1/7/2016	1/7/2026 MO	65616	4	15.38
1/13/2016	1/13/2026 MO	64755	4	15.2
1/6/2016	1/6/2026 MO	64850	4	14.99
1/7/2016	1/7/2026 MO	65721	4	14.95
1/25/2016	1/25/2026 MO	64862	4	14.51
1/12/2016	1/12/2026 MO	64834	4	13.6
1/5/2016	1/5/2026 MO	64801	4	13.4
1/20/2016	1/20/2026 MO	65721	4	13.07
1/6/2016	1/6/2026 MO	65738	4	13.01
1/18/2016	1/18/2026 MO	65738	4	12.82
1/21/2016	1/21/2026 MO	65616	4	12.57
1/6/2016	1/6/2026 MO	65738	4	12.39
1/6/2016	1/6/2026 MO	65781	4	12.24
1/22/2016	1/22/2026 MO	65757	4	12.1
2/1/2016	2/1/2026 MO	64970	4	11.5
1/13/2016	1/13/2026 MO	64804	4	11.4
2/1/2016	2/1/2026 MO	64870	4	11.1
1/25/2016	1/25/2026 MO	64801	4	10.97
1/29/2016	1/29/2026 MO	65767	4	10.93
1/26/2016	1/26/2026 MO	65738	4	10.73
1/29/2016	1/29/2026 MO	65767	4	10.7
1/21/2016	1/21/2026 MO	65616	4	10.11
1/21/2016	1/21/2026 MO	65616	4	10.11
1/28/2016	1/28/2026 MO	64804	4	10.03
1/15/2016	1/15/2026 MO	65721	4	9.93
1/25/2016	1/25/2026 MO	65781	4	9.9
1/8/2016	1/8/2026 MO	65631	4	9.2
1/28/2016	1/28/2026 MO	64804	4	8.64
1/12/2016	1/12/2026 MO	65781	4	8.6
1/12/2016	1/12/2026 MO	65622	4	8.5
1/28/2016	1/28/2026 MO	64804	4	7.46
2/1/2016	2/1/2026 MO	65781	4	7.25
1/2/2016	1/2/2026 MO	65721	4	7.03
1/5/2016	1/5/2026 MO	65653	4	4.61
1/21/2016	1/21/2026 MO	65616	4	3.54
2/19/2016	2/19/2026 MO	65622	5	35.26
2/24/2016	2/24/2026 MO	64836	5	34.96
2/24/2016	2/24/2026 MO	64836	5	32.28
2/24/2016	2/24/2026 MO	64836	5	32.28
2/12/2016	2/12/2026 MO	64804	5	30.37
2/19/2016	2/19/2026 MO	64804	5	29.63
2/5/2016	2/5/2026 MO	64836	5	27.8
2/3/2016	2/3/2026 MO	65661	5	27.7
2/25/2016	2/25/2026 MO	64804	5	27.45
2/5/2016	2/5/2026 MO	64804	5	26.83
3/1/2016	3/1/2026 MO	64870	5	26.4
2/26/2016	2/26/2026 MO	65781	5	26.2
2/24/2016	2/24/2026 MO	64836	5	25.7
2/10/2016	2/10/2026 MO	64850	5	25.34
2/5/2016	2/5/2026 MO	65721	5	24.95
2/24/2016	2/24/2026 MO	64801	5	23.74
2/17/2016	2/17/2026 MO	64836	5	23.71
3/7/2016	3/7/2026 MO	64801	5	23
2/24/2016	2/24/2026 MO	64804	5	21.56
3/4/2016	3/4/2026 MO	65672	5	21.52
2/25/2016	2/25/2026 MO	64850	5	20.77
2/8/2016	2/8/2026 MO	65616	5	20.65
2/19/2016	2/19/2026 MO	65613	5	20.43
2/10/2016	2/10/2026 MO	65613	5	19.3
2/3/2016	2/3/2026 MO	65649	5	19.1
2/17/2016	2/17/2026 MO	64844	5	19.02
2/19/2016	2/19/2026 MO	64870	5	18
2/18/2016	2/18/2026 MO	65757	5	17.84
2/17/2016	2/17/2026 MO	64850	5	17.68

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2/16/2016	2/16/2026 MO	64801	5	16.8
2/12/2016	2/12/2026 MO	65616	5	15.92
2/25/2016	2/25/2026 MO	65616	5	15.91
2/2/2016	2/2/2026 MO	65738	5	15.46
2/9/2016	2/9/2026 MO	65708	5	15.42
2/19/2016	2/19/2026 MO	64870	5	15.25
2/19/2016	2/19/2026 MO	65785	5	15.2
3/2/2016	3/2/2026 MO	64804	5	15.08
2/26/2016	2/26/2026 MO	65613	5	15
3/1/2016	3/1/2026 MO	65781	5	14.78
2/24/2016	2/24/2026 MO	64804	5	14.71
2/26/2016	2/26/2026 MO	64870	5	14.71
2/22/2016	2/22/2026 MO	64834	5	14.59
2/16/2016	2/16/2026 MO	65770	5	14.11
2/24/2016	2/24/2026 MO	65721	5	14.1
2/16/2016	2/16/2026 MO	64870	5	14
3/1/2016	3/1/2026 MO	65781	5	13.46
2/17/2016	2/17/2026 MO	64855	5	13.4
2/5/2016	2/5/2026 MO	64804	5	12.92
3/2/2016	3/2/2026 MO	64801	5	12.9
2/24/2016	2/24/2026 MO	64804	5	12.81
3/2/2016	3/2/2026 MO	65714	5	12.64
2/5/2016	2/5/2026 MO	65648	5	12.62
2/12/2016	2/12/2026 MO	64804	5	12.43
2/23/2016	2/23/2026 MO	64834	5	12.42
2/15/2016	2/15/2026 MO	65604	5	12.37
2/26/2016	2/26/2026 MO	65679	5	12.28
2/25/2016	2/25/2026 MO	65707	5	12.2
2/3/2016	2/3/2026 MO	65738	5	10.8
2/26/2016	2/26/2026 MO	65672	5	10.7
2/26/2016	2/26/2026 MO	65757	5	10.5
2/4/2016	2/4/2026 MO	64870	5	10.3
2/5/2016	2/5/2026 MO	64804	5	10.26
3/1/2016	3/1/2026 MO	65617	5	10
2/18/2016	2/18/2026 MO	65721	5	9.09
3/1/2016	3/1/2026 MO	65738	5	8.37
2/18/2016	2/18/2026 MO	65721	5	8.35
2/12/2016	2/12/2026 MO	64804	5	7.46
2/5/2016	2/5/2026 MO	65721	5	7.2
2/12/2016	2/12/2026 MO	64804	5	6.88
3/4/2016	3/4/2026 MO	65738	5	6.55
3/1/2016	3/1/2026 MO	65679	5	6.08
3/2/2016	3/2/2026 MO	64836	5	5.7
3/31/2016	3/31/2026 MO	64804	6	35.12
3/8/2016	3/8/2026 MO	65613	6	32.37
3/18/2016	3/18/2026 MO	65616	6	31.11
3/22/2016	3/22/2026 MO	65705	6	30.28
4/8/2016	4/8/2026 MO	65616	6	30.24
3/30/2016	3/30/2026 MO	64804	6	27.6
3/10/2016	3/10/2026 MO	64804	6	27.45
4/1/2016	4/1/2026 MO	64801	6	27.1
4/6/2016	4/6/2026 MO	65781	6	25.57
4/5/2016	4/5/2026 MO	64840	6	24.93
3/16/2016	3/16/2026 MO	65616	6	22.95
3/14/2016	3/14/2026 MO	64836	6	21.8
4/7/2016	4/7/2026 MO	65622	6	21.1
4/7/2016	4/7/2026 MO	65685	6	20.8
3/14/2016	3/14/2026 MO	64804	6	20.72
3/7/2016	3/7/2026 MO	64850	6	20.71
3/21/2016	3/21/2026 MO	65613	6	20.3
4/5/2016	4/5/2026 MO	64844	6	19.37
3/31/2016	3/31/2026 MO	64859	6	19.2
3/17/2016	3/17/2026 MO	64866	6	19.16
3/16/2016	3/16/2026 MO	64804	6	19.1
3/30/2016	3/30/2026 MO	64870	6	18.79
3/24/2016	3/24/2026 MO	65648	6	17.7
3/17/2016	3/17/2026 MO	65613	6	17.26
3/11/2016	3/11/2026 MO	65870	6	16.97

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3/17/2016	3/17/2026 MO	65613	6	16.8
3/8/2016	3/8/2026 MO	64801	6	16.57
3/23/2016	3/23/2026 MO	65785	6	16.17
3/22/2016	3/22/2026 MO	64801	6	15.69
3/10/2016	3/10/2026 MO	64804	6	15.56
3/31/2016	3/31/2026 MO	64858	6	15.26
3/10/2016	3/10/2026 MO	64804	6	15.25
3/8/2016	3/8/2026 MO	65633	6	14.59
3/7/2016	3/7/2026 MO	64850	6	14.57
3/22/2016	3/22/2026 MO	65721	6	14.29
3/23/2016	3/23/2026 MO	65721	6	14.1
3/16/2016	3/16/2026 MO	64844	6	13.85
3/10/2016	3/10/2026 MO	64804	6	13.7
3/31/2016	3/31/2026 MO	64833	6	13.6
4/5/2016	4/5/2026 MO	64804	6	13.56
3/16/2016	3/16/2026 MO	64844	6	13.48
3/16/2016	3/16/2026 MO	65613	6	13.2
3/23/2016	3/23/2026 MO	64804	6	13.2
4/7/2016	4/7/2026 MO	64870	6	12.24
3/29/2016	3/29/2026 MO	65721	6	12.2
3/24/2016	3/24/2026 MO	65725	6	12.1
3/16/2016	3/16/2026 MO	65616	6	12.06
3/22/2016	3/22/2026 MO	64804	6	11.97
3/16/2016	3/16/2026 MO	65781	6	11.8
4/4/2016	4/4/2026 MO	65738	6	11.8
3/7/2016	3/7/2026 MO	65769	6	11.7
4/5/2016	4/5/2026 MO	65672	6	11.48
4/8/2016	4/8/2026 MO	65653	6	11.46
4/11/2016	4/11/2026 MO	65605	6	11.28
3/29/2016	3/29/2026 MO	65721	6	11.2
4/6/2016	4/6/2026 MO	64801	6	11.1
4/11/2016	4/11/2026 MO	65605	6	10.86
4/5/2016	4/5/2026 MO	64804	6	10.73
3/23/2016	3/23/2026 MO	64850	6	10.48
4/4/2016	4/4/2026 MO	65738	6	10.37
3/9/2016	3/9/2026 MO	64804	6	10.27
3/31/2016	3/31/2026 MO	64865	6	9.98
4/7/2016	4/7/2026 MO	65721	6	9.81
4/7/2016	4/7/2026 MO	64801	6	9.57
4/5/2016	4/5/2026 MO	65672	6	9.15
4/12/2016	4/12/2026 MO	64801	6	8.78
4/1/2016	4/1/2026 MO	64836	6	8.5
3/17/2016	3/17/2026 MO	64850	6	8.47
3/29/2016	3/29/2026 MO	65721	6	8.2
4/6/2016	4/6/2026 MO	65604	6	8.03
3/14/2016	3/14/2026 MO	65738	6	7.98
3/29/2016	3/29/2026 MO	65631	6	7.3
3/18/2016	3/18/2026 MO	65653	6	7.15
3/29/2016	3/29/2026 MO	65721	6	7
3/31/2016	3/31/2026 MO	65785	6	6.86
3/9/2016	3/9/2026 MO	64804	6	6.7
3/18/2016	3/18/2026 MO	65785	6	6.1
3/16/2016	3/16/2026 MO	64850	6	5.98
4/19/2016	4/19/2026 MO	64836	7	35.86
4/15/2016	4/15/2026 MO	64804	7	35.45
4/14/2016	4/14/2026 MO	64801	7	34.3
4/13/2016	4/13/2026 MO	65605	7	34.06
4/13/2016	4/13/2026 MO	65738	7	32.78
4/12/2016	4/12/2026 MO	65613	7	32
4/15/2016	4/15/2026 MO	64802	7	31.9
4/15/2016	4/15/2026 MO	64802	7	31.9
4/19/2016	4/19/2026 MO	65613	7	31.89
4/21/2016	4/21/2026 MO	64108	7	31.38
4/21/2016	4/21/2026 MO	65753	7	31.3
4/15/2016	4/15/2026 MO	64802	7	31.23
4/19/2016	4/19/2026 MO	65613	7	30.4
4/25/2016	4/25/2026 MO	65605	7	30.15
4/19/2016	4/19/2026 MO	65613	7	30.1

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4/21/2016	4/21/2026 MO	64804	7	29.56
4/14/2016	4/14/2026 MO	64836	7	29.4
4/21/2016	4/21/2026 MO	64841	7	27.7
4/20/2016	4/20/2026 MO	65738	7	27
4/26/2016	4/26/2026 MO	64836	7	25.25
4/27/2016	4/27/2026 MO	64850	7	23.94
4/19/2016	4/19/2026 MO	65613	7	23.9
4/22/2016	4/22/2026 MO	64855	7	23.17
4/15/2016	4/15/2026 MO	65781	7	22.7
4/27/2016	4/27/2026 MO	64844	7	21.5
4/21/2016	4/21/2026 MO	65721	7	21.4
4/13/2016	4/13/2026 MO	64801	7	20.43
4/27/2016	4/27/2026 MO	64850	7	19.97
4/27/2016	4/27/2026 MO	64858	7	19.24
4/14/2016	4/14/2026 MO	65648	7	19.02
4/20/2016	4/20/2026 MO	64841	7	18.54
4/14/2016	4/14/2026 MO	65672	7	16.99
4/19/2016	4/19/2026 MO	64850	7	16.84
4/14/2016	4/14/2026 MO	65653	7	15.65
4/13/2016	4/13/2026 MO	64804	7	15.3
4/20/2016	4/20/2026 MO	65783	7	15.23
4/21/2016	4/21/2026 MO	64804	7	14.8
4/13/2016	4/13/2026 MO	64801	7	14.37
4/26/2016	4/26/2026 MO	64804	7	14.1
4/19/2016	4/19/2026 MO	65613	7	14
4/22/2016	4/22/2026 MO	64801	7	13.91
4/20/2016	4/20/2026 MO	65738	7	13.9
4/19/2016	4/19/2026 MO	64844	7	13.81
4/13/2016	4/13/2026 MO	64801	7	13.77
4/15/2016	4/15/2026 MO	64804	7	13.42
4/26/2016	4/26/2026 MO	65781	7	13.34
4/13/2016	4/13/2026 MO	64804	7	12.76
4/14/2016	4/14/2026 MO	65721	7	12.69
4/21/2016	4/21/2026 MO	64804	7	12.39
4/15/2016	4/15/2026 MO	64804	7	12.1
4/27/2016	4/27/2026 MO	65721	7	11.8
4/22/2016	4/22/2026 MO	64804	7	11.02
4/20/2016	4/20/2026 MO	64801	7	10.51
4/14/2016	4/14/2026 MO	65738	7	9.91
4/14/2016	4/14/2026 MO	65770	7	9.51
4/20/2016	4/20/2026 MO	65738	7	9.3
4/25/2016	4/25/2026 MO	65672	7	8.62
4/19/2016	4/19/2026 MO	65613	7	8.35
4/26/2016	4/26/2026 MO	65781	7	7.95
4/12/2016	4/12/2026 MO	65721	7	7.64
4/25/2016	4/25/2026 MO	64804	7	7.53
4/26/2016	4/26/2026 MO	64804	7	7.15
4/21/2016	4/21/2026 MO	65721	7	7.14
4/15/2016	4/15/2026 MO	64804	7	7.02
5/11/2016	5/11/2026 MO	64870	8	35.94
5/9/2016	5/9/2026 MO	64850	8	35.93
5/18/2016	5/18/2026 MO	64836	8	35.54
5/3/2016	5/3/2026 MO	65785	8	35.32
5/10/2016	5/10/2026 MO	65721	8	35.18
5/17/2016	5/17/2026 MO	65708	8	34.24
5/3/2016	5/3/2026 MO	65605	8	33.7
5/4/2016	5/4/2026 MO	65622	8	33.51
5/23/2016	5/23/2026 MO	65785	8	32.58
5/19/2016	5/19/2026 MO	64804	8	32.51
5/4/2016	5/4/2026 MO	64850	8	31.95
5/4/2016	5/4/2026 MO	64850	8	31.95
4/28/2016	4/28/2026 MO	65616	8	31.81
4/28/2016	4/28/2026 MO	65616	8	31.43
5/20/2016	5/20/2026 MO	65682	8	30.6
5/17/2016	5/17/2026 MO	65613	8	30.3
5/4/2016	5/4/2026 MO	64850	8	25.76
5/17/2016	5/17/2026 MO	65613	8	25.3
4/28/2016	4/28/2026 MO	65850	8	24.99

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4/28/2016	4/28/2026 MO	64804	8	22.52
5/20/2016	5/20/2026 MO	65603	8	22.2
5/11/2016	5/11/2026 MO	65616	8	22.05
5/2/2016	5/2/2026 MO	64865	8	21.6
5/13/2016	5/13/2026 MO	65738	8	21.37
4/28/2016	4/28/2026 MO	64804	8	21
5/9/2016	5/9/2026 MO	65661	8	20.6
5/19/2016	5/19/2026 MO	65721	8	20.3
5/3/2016	5/3/2026 MO	65785	8	20.03
5/11/2016	5/11/2026 MO	65685	8	19.86
5/12/2016	5/12/2026 MO	65723	8	17.5
5/18/2016	5/18/2026 MO	64804	8	17.31
5/2/2016	5/2/2026 MO	64834	8	17
5/4/2016	5/4/2026 MO	65685	8	16.92
5/16/2016	5/16/2026 MO	65679	8	15.94
5/4/2016	5/4/2026 MO	64804	8	15.93
5/9/2016	5/9/2026 MO	65661	8	15.9
5/3/2016	5/3/2026 MO	64870	8	15.8
5/18/2016	5/18/2026 MO	64804	8	15.3
5/18/2016	5/18/2026 MO	64870	8	15.27
5/11/2016	5/11/2026 MO	65685	8	14.96
4/28/2016	4/28/2026 MO	65604	8	14.65
5/9/2016	5/9/2026 MO	65752	8	14.5
5/16/2016	5/16/2026 MO	65707	8	14.2
5/3/2016	5/3/2026 MO	64804	8	13.8
5/4/2016	5/4/2026 MO	64850	8	13.49
5/2/2016	5/2/2026 MO	65604	8	12.95
5/13/2016	5/13/2026 MO	64866	8	12.16
5/3/2016	5/3/2026 MO	65785	8	12.03
5/9/2016	5/9/2026 MO	65661	8	11
5/13/2016	5/13/2026 MO	65616	8	10.95
5/23/2016	5/23/2026 MO	65785	8	10.9
4/28/2016	4/28/2026 MO	65604	8	10.85
5/3/2016	5/3/2026 MO	64836	8	10.8
5/11/2016	5/11/2026 MO	64804	8	10.74
5/20/2016	5/20/2026 MO	64804	8	9.9
5/11/2016	5/11/2026 MO	65721	8	9.7
5/17/2016	5/17/2026 MO	64870	8	9.6
4/29/2016	4/29/2026 MO	64801	8	9.37
5/17/2016	5/17/2026 MO	65721	8	8.8
5/9/2016	5/9/2026 MO	65738	8	6.7
5/20/2016	5/20/2026 MO	64804	8	6.58
5/11/2016	5/11/2026 MO	65723	8	5.9
5/19/2016	5/19/2026 MO	64850	8	5.7
5/11/2016	5/11/2026 MO	65723	8	4.1
6/16/2016	6/16/2026 MO	64834	9	35.95
6/16/2016	6/16/2026 MO	64834	9	35.86
6/16/2016	6/16/2026 MO	64834	9	35.7
6/16/2016	6/16/2026 MO	64834	9	35.55
5/23/2016	5/23/2026 MO	64804	9	35.2
5/23/2016	5/23/2026 MO	65785	9	34.56
5/26/2016	5/26/2026 MO	65770	9	31.76
5/26/2016	5/26/2026 MO	64801	9	31.3
5/26/2016	5/26/2026 MO	65781	9	31.28
6/3/2016	6/3/2026 MO	64801	9	31.03
6/1/2016	6/1/2026 MO	65854	9	30.85
5/27/2016	5/27/2026 MO	65653	9	30.84
6/14/2016	6/14/2026 MO	65738	9	30.82
6/7/2016	6/7/2026 MO	65653	9	30.56
5/27/2016	5/27/2026 MO	65616	9	30.51
6/14/2016	6/14/2026 MO	65616	9	29.62
6/7/2016	6/7/2026 MO	65622	9	28.8
6/14/2016	6/14/2026 MO	65616	9	24.16
6/9/2016	6/9/2026 MO	64801	9	20.6
6/16/2016	6/16/2026 MO	64834	9	20.23
6/13/2016	6/13/2026 MO	65767	9	19.25
6/13/2016	6/13/2026 MO	64804	9	18.2
6/7/2016	6/7/2026 MO	65731	9	17.85

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6/10/2016	6/10/2026 MO	65672	9	17.78
6/7/2016	6/7/2026 MO	65738	9	17.5
5/23/2016	5/23/2026 MO	65708	9	16.3
6/15/2016	6/15/2026 MO	64832	9	15.4
6/14/2016	6/14/2026 MO	65738	9	15.29
5/31/2016	5/31/2026 MO	65721	9	15
6/2/2016	6/2/2026 MO	65721	9	14.4
6/8/2016	6/8/2026 MO	65714	9	14.05
6/8/2016	6/8/2026 MO	65714	9	14
6/15/2016	6/15/2026 MO	64840	9	13.88
5/25/2016	5/25/2026 MO	64801	9	13.8
6/8/2016	6/8/2026 MO	65714	9	13
5/26/2016	5/26/2026 MO	64870	9	12.4
6/7/2016	6/7/2026 MO	65613	9	12
6/14/2016	6/14/2026 MO	65622	9	11.7
6/7/2016	6/7/2026 MO	65613	9	10.5
5/25/2016	5/25/2026 MO	65605	9	9.65
6/14/2016	6/14/2026 MO	64804	9	9.1
6/1/2016	6/1/2026 MO	64850	9	9
5/26/2016	5/26/2026 MO	65648	9	8.9
6/7/2016	6/7/2026 MO	65738	9	8.74
6/7/2016	6/7/2026 MO	65601	9	8.4
6/15/2016	6/15/2026 MO	64850	9	8.07
6/15/2016	6/15/2026 MO	64850	9	7.8
5/26/2016	5/26/2026 MO	65610	9	7.69
6/8/2016	6/8/2026 MO	64801	9	7.34
6/7/2016	6/7/2026 MO	65601	9	7.2
5/25/2016	5/25/2026 MO	64840	9	6.7
6/1/2016	6/1/2026 MO	65721	9	5.51
6/13/2016	6/13/2026 MO	65757	9	5.51
5/25/2016	5/25/2026 MO	65601	9	5.5
6/10/2016	6/10/2026 MO	64801	9	4.76
6/16/2016	6/16/2026 MO	65604	9	4.2
6/13/2016	6/13/2026 MO	65757	9	2.95
6/20/2016	6/20/2026 MO	64801	10	35.93
6/20/2016	6/20/2026 MO	64801	10	35.93
6/20/2016	6/20/2026 MO	64801	10	35.93
6/24/2016	6/24/2026 MO	64804	10	35.62
6/24/2016	6/24/2026 MO	64801	10	35.01
6/27/2016	6/27/2026 MO	65723	10	34.89
6/24/2016	6/24/2026 MO	65622	10	34.33
6/17/2016	6/17/2026 MO	65616	10	34.24
6/27/2016	6/27/2026 MO	65723	10	34.23
6/27/2016	6/27/2026 MO	65723	10	34.08
6/23/2016	6/23/2026 MO	65613	10	34.03
6/17/2016	6/17/2026 MO	64804	10	33.94
6/17/2016	6/17/2026 MO	64801	10	33.65
6/22/2016	6/22/2026 MO	64801	10	33.65
6/17/2016	6/17/2026 MO	65605	10	33.56
6/16/2016	6/16/2026 MO	64804	10	33.29
6/23/2016	6/23/2026 MO	65613	10	33.09
6/21/2016	6/21/2026 MO	65781	10	32.91
6/21/2016	6/21/2026 MO	65785	10	32.58
6/22/2016	6/22/2026 MO	65721	10	31.65
6/20/2016	6/20/2026 MO	65721	10	31.3
6/22/2016	6/22/2026 MO	65661	10	30.2
6/27/2016	6/27/2026 MO	65723	10	30.19
6/20/2016	6/20/2026 MO	64870	10	28.02
6/20/2016	6/20/2026 MO	65721	10	26.02
6/22/2016	6/22/2026 MO	65661	10	22.4
6/24/2016	6/24/2026 MO	65705	10	21.3
6/24/2016	6/24/2026 MO	64804	10	21.29
6/24/2016	6/24/2026 MO	65605	10	20.6
6/21/2016	6/21/2026 MO	64801	10	17.26
6/20/2016	6/20/2026 MO	65738	10	16.1
6/20/2016	6/20/2026 MO	65738	10	15
6/21/2016	6/21/2026 MO	64804	10	14.55
6/23/2016	6/23/2026 MO	65613	10	14.4

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6/17/2016	6/17/2026 MO	64804	10	13.96
6/22/2016	6/22/2026 MO	65785	10	13.6
6/21/2016	6/21/2026 MO	65757	10	11.46
6/24/2016	6/24/2026 MO	64804	10	8.42
6/27/2016	6/27/2026 MO	65723	10	7.12
6/27/2016	6/27/2026 MO	64801	10	7.01
6/17/2016	6/17/2026 MO	65738	10	6.2
6/20/2016	6/20/2026 MO	65721	10	6
6/22/2016	6/22/2026 MO	65785	10	5.5
6/21/2016	6/21/2026 MO	65757	10	2.87
6/20/2016	6/20/2026 MO	65721	10	1.8
6/28/2016	6/28/2026 MO	64801	11	35.93
6/29/2016	6/29/2026 MO	64850	11	35.56
7/6/2016	7/6/2026 MO	65672	11	35.56
6/29/2016	6/29/2026 MO	64865	11	34.24
6/28/2016	6/28/2026 MO	65616	11	34.18
6/30/2016	6/30/2026 MO	64801	11	33.97
6/28/2016	6/28/2026 MO	64801	11	33.89
6/29/2016	6/29/2026 MO	65661	11	33.71
6/29/2016	6/29/2026 MO	65661	11	33.7
6/29/2016	6/29/2026 MO	65661	11	33.7
6/30/2016	6/30/2026 MO	64804	11	33.28
6/28/2016	6/28/2026 MO	64801	11	32.82
6/29/2016	6/29/2026 MO	65661	11	32.61
6/28/2016	6/28/2026 MO	64801	11	31.05
6/28/2016	6/28/2026 MO	65672	11	30.9
6/28/2016	6/28/2026 MO	64834	11	30.52
6/28/2016	6/28/2026 MO	65605	11	25.36
6/27/2016	6/27/2026 MO	64804	11	25.03
6/28/2016	6/28/2026 MO	64801	11	24.61
6/30/2016	6/30/2026 MO	65721	11	22.79
6/30/2016	6/30/2026 MO	65779	11	22.7
7/6/2016	7/6/2026 MO	65616	11	22.33
6/30/2016	6/30/2026 MO	65613	11	21
6/30/2016	6/30/2026 MO	64836	11	19.7
7/6/2016	7/6/2026 MO	65613	11	19.7
6/28/2016	6/28/2026 MO	65613	11	18.76
7/6/2016	7/6/2026 MO	65672	11	18.52
7/7/2016	7/7/2026 MO	64855	11	16.7
7/1/2016	7/1/2026 MO	65679	11	15.74
7/11/2016	7/11/2026 MO	64859	11	15.61
7/5/2016	7/5/2026 MO	65738	11	15.44
7/6/2016	7/6/2026 MO	65616	11	14.45
6/30/2016	6/30/2026 MO	64804	11	14.39
7/6/2016	7/6/2026 MO	65617	11	14.1
7/8/2016	7/8/2026 MO	65610	11	12.84
6/28/2016	6/28/2026 MO	64804	11	12.09
7/8/2016	7/8/2026 MO	65672	11	11.73
7/6/2016	7/6/2026 MO	64801	11	10.74
6/29/2016	6/29/2026 MO	64836	11	10.58
7/6/2016	7/6/2026 MO	65672	11	10.11
7/1/2016	7/1/2026 MO	65653	11	9.44
7/6/2016	7/6/2026 MO	64801	11	9.17
6/29/2016	6/29/2026 MO	64850	11	8.51
6/28/2016	6/28/2026 MO	65616	11	7.83
7/8/2016	7/8/2026 MO	65679	11	5.02
9/27/2016	9/27/2026 MO	65679	12	35.53
7/21/2016	7/21/2026 MO	65661	12	33.7
8/22/2016	8/22/2026 MO	65723	12	32.68
9/16/2016	9/16/2026 MO	65721	12	31.26
7/13/2016	7/13/2026 MO	64870	12	30.25
9/28/2016	9/28/2026 MO	65738	12	28.4
8/24/2016	8/24/2026 MO	65622	12	24.9
9/16/2016	9/16/2026 MO	64855	12	22.4
7/11/2016	7/11/2026 MO	65605	12	19.95
7/14/2016	7/14/2026 MO	64870	12	19.7
9/30/2016	9/30/2026 MO	64804	12	17.94
9/14/2016	9/14/2026 MO	64804	12	17.78

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8/9/2016	8/9/2026 MO	65610	12	17.52
8/24/2016	8/24/2026 MO	65707	12	17
9/16/2016	9/16/2026 MO	65714	12	16.97
9/2/2016	9/2/2026 MO	65785	12	16.8
8/16/2016	8/16/2026 MO	65601	12	16.5
7/11/2016	7/11/2026 MO	64801	12	16.16
7/28/2016	7/28/2026 MO	65753	12	16.01
7/28/2016	7/28/2026 MO	65661	12	15.77
7/28/2016	7/28/2026 MO	65648	12	14.72
9/7/2016	9/7/2026 MO	64844	12	14.59
7/27/2016	7/27/2026 MO	64836	12	14.45
8/18/2016	8/18/2026 MO	64801	12	14.42
9/13/2016	9/13/2026 MO	65616	12	14.15
8/8/2016	8/8/2026 MO	65785	12	13.96
8/9/2016	8/9/2026 MO	65774	12	13.8
9/2/2016	9/2/2026 MO	65707	12	13.46
7/21/2016	7/21/2026 MO	65613	12	13.3
9/6/2016	9/6/2026 MO	64831	12	13.14
7/28/2016	7/28/2026 MO	65613	12	12.9
7/26/2016	7/26/2026 MO	64804	12	12.43
7/28/2016	7/28/2026 MO	65723	12	12.28
7/13/2016	7/13/2026 MO	65723	12	11.97
7/19/2016	7/19/2026 MO	64870	12	11.8
9/21/2016	9/21/2026 MO	64804	12	11.49
7/28/2016	7/28/2026 MO	65721	12	11.36
8/9/2016	8/9/2026 MO	65610	12	11.26
9/20/2016	9/20/2026 MO	64801	12	11.25
9/28/2016	9/28/2026 MO	64804	12	11.1
7/27/2016	7/27/2026 MO	64844	12	11.06
8/2/2016	8/2/2026 MO	65605	12	10.94
8/18/2016	8/18/2026 MO	64834	12	10.89
9/28/2016	9/28/2026 MO	65601	12	10.8
8/10/2016	8/10/2026 MO	65679	12	10.5
7/28/2016	7/28/2026 MO	65753	12	10.33
7/21/2016	7/21/2026 MO	64759	12	10.3
9/14/2016	9/14/2026 MO	64834	12	10.23
8/25/2016	8/25/2026 MO	64834	12	10.18
9/20/2016	9/20/2026 MO	64801	12	10.08
8/4/2016	8/4/2026 MO	64801	12	9.96
9/19/2016	9/19/2026 MO	64801	12	9.92
9/14/2016	9/14/2026 MO	64870	12	9.84
7/28/2016	7/28/2026 MO	65661	12	9
8/30/2016	8/30/2026 MO	65721	12	8.97
9/14/2016	9/14/2026 MO	65721	12	8.85
8/5/2016	8/5/2026 MO	65721	12	8.8
9/14/2016	9/14/2026 MO	64870	12	8.78
7/29/2016	7/29/2026 MO	65616	12	8.64
7/19/2016	7/19/2026 MO	65604	12	8.54
8/24/2016	8/24/2026 MO	65785	12	8.36
9/21/2016	9/21/2026 MO	64804	12	8.24
9/1/2016	9/1/2026 MO	65738	12	7.67
9/13/2016	9/13/2026 MO	65721	12	7.2
7/29/2016	7/29/2026 MO	64804	12	7.15
9/28/2016	9/28/2026 MO	65781	12	7.1
7/15/2016	7/15/2026 MO	64804	12	7.09
7/19/2016	7/19/2026 MO	65781	12	7.07
8/8/2016	8/8/2026 MO	65781	12	7.02
8/8/2016	8/8/2026 MO	65785	12	6.6
8/9/2016	8/9/2026 MO	65738	12	6.52
8/11/2016	8/11/2026 MO	64804	12	6.23
8/16/2016	8/16/2026 MO	65738	12	6
9/21/2016	9/21/2026 MO	64843	12	5.6
9/1/2016	9/1/2026 MO	65705	12	4.27
12/16/2016	12/16/2026 MO	65613	13	35.76
11/7/2016	11/7/2026 MO	64801	13	35.19
11/22/2016	11/22/2026 MO	65714	13	35.19
10/7/2016	10/7/2026 MO	64801	13	35.1
12/14/2016	12/14/2026 MO	65616	13	34.95

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12/9/2016	12/9/2026 MO	64801	13	34.89
12/2/2016	12/2/2026 MO	65613	13	32.33
12/16/2016	12/16/2026 MO	65622	13	32.06
11/8/2016	11/8/2026 MO	65616	13	31.66
12/14/2016	12/14/2026 MO	65616	13	30.03
12/16/2016	12/16/2026 MO	65613	13	29.96
11/8/2016	11/8/2026 MO	65616	13	29.93
11/7/2016	11/7/2026 MO	64804	13	23.04
12/30/2016	12/30/2026 MO	64804	13	22.55
11/10/2016	11/10/2026 MO	65738	13	21
10/14/2016	10/14/2026 MO	65646	13	20.92
10/13/2016	10/13/2026 MO	65721	13	19.63
12/22/2016	12/22/2026 MO	65781	13	18.46
12/2/2016	12/2/2026 MO	64804	13	17.7
10/11/2016	10/11/2026 MO	64834	13	17.62
12/9/2016	12/9/2026 MO	65712	13	16
12/20/2016	12/20/2026 MO	64870	13	15.81
10/18/2016	10/18/2026 MO	65770	13	15.21
11/16/2016	11/16/2026 MO	64836	13	14.5
10/31/2016	10/31/2026 MO	65617	13	14.04
10/19/2016	10/19/2026 MO	64859	13	13.93
9/30/2016	9/30/2026 MO	64804	13	13.89
11/21/2016	11/21/2026 MO	64804	13	13.7
11/22/2016	11/22/2026 MO	65753	13	13.43
12/2/2016	12/2/2026 MO	64841	13	13.41
11/10/2016	11/10/2026 MO	65721	13	13.24
11/28/2016	11/28/2026 MO	65202	13	12.95
12/21/2016	12/21/2026 MO	64804	13	12.62
10/26/2016	10/26/2026 MO	65738	13	12.5
12/21/2016	12/21/2026 MO	64804	13	11.69
11/22/2016	11/22/2026 MO	65656	13	11.65
11/17/2016	11/17/2026 MO	65738	13	11.4
10/25/2016	10/25/2026 MO	65721	13	11.38
11/29/2016	11/29/2026 MO	65672	13	11.35
11/22/2016	11/22/2026 MO	65710	13	11.24
11/2/2016	11/2/2026 MO	65613	13	11.2
11/17/2016	11/17/2026 MO	65738	13	10.9
12/22/2016	12/22/2026 MO	65738	13	10.86
11/21/2016	11/21/2026 MO	64801	13	10.76
10/26/2016	10/26/2026 MO	65738	13	10.68
12/28/2016	12/28/2026 MO	64834	13	10.41
12/2/2016	12/2/2026 MO	64801	13	10.39
10/13/2016	10/13/2026 MO	65721	13	10.24
10/25/2016	10/25/2026 MO	64804	13	10.23
10/4/2016	10/4/2026 MO	65672	13	9.87
12/1/2016	12/1/2026 MO	65738	13	9.45
12/1/2016	12/1/2026 MO	65738	13	9.3
11/22/2016	11/22/2026 MO	65701	13	9.15
11/10/2016	11/10/2026 MO	64804	13	8.82
12/30/2016	12/30/2026 MO	64854	13	8.48
12/1/2016	12/1/2026 MO	64804	13	8.45
12/20/2016	12/20/2026 MO	65721	13	8.37
11/9/2016	11/9/2026 MO	64862	13	8.12
11/10/2016	11/10/2026 MO	64801	13	8.01
10/13/2016	10/13/2026 MO	65721	13	7.65
12/20/2016	12/20/2026 MO	65721	13	7.47
10/13/2016	10/13/2026 MO	65721	13	7.22
10/13/2016	10/13/2026 MO	65721	13	7.12
11/21/2016	11/21/2026 MO	64804	13	7.07
12/22/2016	12/22/2026 MO	65738	13	6.32
11/17/2016	11/17/2026 MO	65648	13	6.06
10/25/2016	10/25/2026 MO	64804	13	6.02
11/17/2016	11/17/2026 MO	65648	13	5.44
10/26/2016	10/26/2026 MO	65738	13	4.82
10/25/2016	10/25/2026 MO	64841	13	4.36
12/12/2016	12/12/2026 MO	64840	13	4.36
10/25/2016	10/25/2026 MO	64804	13	4.12
10/3/2016	10/3/2026 MO	64850	13	3.13

2/15/2017	2/15/2017 MO	65616	14	35
2/15/2017	2/15/2017 MO	65616	14	34.99
3/9/2017	3/9/2017 MO	64804	14	33.75
2/17/2017	2/17/2017 MO	65622	14	33.44
2/17/2017	2/17/2017 MO	65767	14	33.27
2/15/2017	2/15/2017 MO	65616	14	30.02
1/6/2017	1/6/2017 MO	64836	14	23.61
3/10/2017	3/10/2017 MO	64865	14	23.59
2/15/2017	2/15/2017 MO	64870	14	22.6
1/23/2017	1/23/2017 MO	64873	14	20.3
3/9/2017	3/9/2017 MO	65721	14	20.12
1/9/2017	1/9/2017 MO	65605	14	20.08
2/15/2017	2/15/2017 MO	65656	14	19
2/15/2017	2/15/2017 MO	65679	14	18.92
4/25/2017	4/25/2017 MO	65756	14	18.69
1/11/2017	1/11/2017 MO	65613	14	17.88
3/14/2017	3/14/2017 MO	65605	14	17.83
2/1/2017	2/1/2017 MO	64836	14	17.4
3/31/2017	3/31/2017 MO	64844	14	17.31
1/9/2017	1/9/2017 MO	65605	14	17.1
4/24/2017	4/24/2017 MO	64870	14	15.92
1/18/2017	1/18/2017 MO	65721	14	15.85
2/1/2017	2/1/2017 MO	64804	14	15.82
1/19/2017	1/19/2017 MO	64804	14	15.38
4/10/2017	4/10/2017 MO	64801	14	15.33
1/9/2017	1/9/2017 MO	64804	14	15.15
1/18/2017	1/18/2017 MO	65721	14	15.14
3/10/2017	3/10/2017 MO	64850	14	14.75
3/7/2017	3/7/2017 MO	65613	14	14.62
1/10/2017	1/10/2017 MO	64804	14	14.5
3/27/2017	3/27/2017 MO	65721	14	14.47
1/20/2017	1/20/2017 MO	64804	14	14.42
4/10/2017	4/10/2017 MO	64834	14	14.14
1/23/2017	1/23/2017 MO	64804	14	14.12
1/16/2017	1/16/2017 MO	64865	14	14.03
1/11/2017	1/11/2017 MO	64755	14	13.39
3/9/2017	3/9/2017 MO	64804	14	13.38
1/26/2017	1/26/2017 MO	64804	14	13.22
2/22/2017	2/22/2017 MO	65803	14	13.15
1/4/2017	1/4/2017 MO	64850	14	13.13
4/13/2017	4/13/2017 MO	65721	14	12.91
1/9/2017	1/9/2017 MO	64850	14	12.3
2/2/2017	2/2/2017 MO	64738	14	11.92
3/27/2017	3/27/2017 MO	65668	14	11.67
1/23/2017	1/23/2017 MO	65653	14	11.62
3/29/2017	3/29/2017 MO	65617	14	11.6
4/12/2017	4/12/2017 MO	64870	14	11.31
4/6/2017	4/6/2017 MO	65613	14	11.2
1/9/2017	1/9/2017 MO	64834	14	11.1
4/4/2017	4/4/2017 MO	65781	14	10.95
2/3/2017	2/3/2017 MO	64850	14	10.93
1/26/2017	1/26/2017 MO	64862	14	10.6
4/4/2017	4/4/2017 MO	65613	14	10.57
2/13/2017	2/13/2017 MO	65663	14	10.5
2/14/2017	2/14/2017 MO	65721	14	10.47
4/17/2017	4/17/2017 MO	64801	14	10.36
2/2/2017	2/2/2017 MO	65613	14	10.35
3/2/2017	3/2/2017 MO	65616	14	10.1
1/9/2017	1/9/2017 MO	64804	14	9.94
4/25/2017	4/25/2017 MO	65734	14	9.84
2/1/2017	2/1/2017 MO	65781	14	9.82
2/2/2017	2/2/2017 MO	65674	14	9.79
4/24/2017	4/24/2017 MO	65712	14	9.67
4/13/2017	4/13/2017 MO	65674	14	9.56
2/1/2017	2/1/2017 MO	64804	14	9.14
1/19/2017	1/19/2017 MO	64834	14	9.01
1/6/2017	1/6/2017 MO	64850	14	9
3/15/2017	3/15/2017 MO	65738	14	8.97

1/16/2017	1/16/2017 MO	65610	14	8.86
1/4/2017	1/4/2017 MO	65738	14	8.49
2/17/2017	2/17/2017 MO	65738	14	8.45
4/20/2017	4/20/2017 MO	64834	14	8
2/13/2017	2/13/2017 MO	64804	14	7.8
1/23/2017	1/23/2017 MO	65616	14	7.61
3/15/2017	3/15/2017 MO	65738	14	7.54
3/31/2017	3/31/2017 MO	65738	14	7.44
1/25/2017	1/25/2017 MO	65672	14	7.32
3/9/2017	3/9/2017 MO	64801	14	7.15
3/23/2017	3/23/2017 MO	64804	14	7.14
1/27/2017	1/27/2017 MO	65721	14	7.12
3/17/2017	3/17/2017 MO	65661	14	6.82
1/18/2017	1/18/2017 MO	65721	14	6.7
1/18/2017	1/18/2017 MO	65721	14	6.39
4/17/2017	4/17/2017 MO	64801	14	6.16
1/30/2017	1/30/2017 MO	64870	14	6.03
1/23/2017	1/23/2017 MO	65738	14	5.85
2/17/2017	2/17/2017 MO	65721	14	5.48
2/15/2017	2/15/2017 MO	65656	14	4.7
2/1/2017	2/1/2017 MO	64841	14	3.97
4/7/2017	4/7/2017 MO	65721	14	3.2
4/11/2017	4/11/2017 MO	64870	14	2.6
3/9/2017	3/9/2017 MO	64801	14	1.89
5/5/2017	5/5/2017 MO	65723	15	35.42
8/3/2017	8/3/2017 MO	64804	15	33.83
6/28/2017	6/28/2017 MO	64801	15	23.33
6/15/2017	6/15/2017 MO	64804	15	22.31
8/1/2017	8/1/2017 MO	64850	15	21.7
5/16/2017	5/16/2017 MO	65633	15	21.65
5/2/2017	5/2/2017 MO	64836	15	20.68
6/6/2017	6/6/2017 MO	64801	15	20.04
5/11/2017	5/11/2017 MO	65721	15	19.72
4/27/2017	4/27/2017 MO	65616	15	19.65
7/12/2017	7/12/2017 MO	64831	15	19.6
4/26/2017	4/26/2017 MO	65774	15	19.47
5/16/2017	5/16/2017 MO	65738	15	18.16
5/2/2017	5/2/2017 MO	65708	15	17.71
7/10/2017	7/10/2017 MO	64804	15	17.6
5/2/2017	5/2/2017 MO	64854	15	17.31
7/13/2017	7/13/2017 MO	65613	15	15.24
5/23/2017	5/23/2017 MO	65781	15	14.75
6/6/2017	6/6/2017 MO	64870	15	14.74
5/12/2017	5/12/2017 MO	64836	15	14.51
8/9/2017	8/9/2017 MO	64857	15	14.5
6/30/2017	6/30/2017 MO	64865	15	14.4
7/20/2017	7/20/2017 MO	65707	15	14.3
6/6/2017	6/6/2017 MO	64836	15	14.26
6/1/2017	6/1/2017 MO	65604	15	14.22
8/11/2017	8/11/2017 MO	64855	15	14.18
8/14/2017	8/14/2017 MO	65613	15	13.73
6/27/2017	6/27/2017 MO	65613	15	13.33
5/2/2017	5/2/2017 MO	64865	15	13.32
7/17/2017	7/17/2017 MO	64850	15	13.3
6/6/2017	6/6/2017 MO	65757	15	13.1
7/6/2017	7/6/2017 MO	64804	15	12.88
6/6/2017	6/6/2017 MO	64870	15	12.71
7/5/2017	7/5/2017 MO	65781	15	12.65
5/23/2017	5/23/2017 MO	65781	15	12.63
5/19/2017	5/19/2017 MO	64801	15	12.43
7/13/2017	7/13/2017 MO	65668	15	12.4
5/2/2017	5/2/2017 MO	65757	15	12.1
5/15/2017	5/15/2017 MO	65781	15	12.01
7/25/2017	7/25/2017 MO	65613	15	11.9
7/28/2017	7/28/2017 MO	64840	15	11.76
7/18/2017	7/18/2017 MO	64804	15	11.69
7/17/2017	7/17/2017 MO	64831	15	11.64
7/18/2017	7/18/2017 MO	64801	15	11.5

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6/15/2017	6/15/2017 MO	65679	15	11.34
5/2/2017	5/2/2017 MO	64801	15	11.32
8/14/2017	8/14/2017 MO	65648	15	11.3
7/24/2017	7/24/2017 MO	64748	15	11.2
5/4/2017	5/4/2017 MO	64804	15	11.15
7/10/2017	7/10/2017 MO	65605	15	11.1
7/10/2017	7/10/2017 MO	65714	15	11.1
7/10/2017	7/10/2017 MO	65738	15	11.1
6/27/2017	6/27/2017 MO	65613	15	10.74
6/21/2017	6/21/2017 MO	64801	15	10.73
4/25/2017	4/25/2017 MO	64850	15	10.68
5/5/2017	5/5/2017 MO	65605	15	10.27
8/2/2017	8/2/2017 MO	65721	15	10.27
8/14/2017	8/14/2017 MO	64850	15	10.24
4/25/2017	4/25/2017 MO	65616	15	10
7/25/2017	7/25/2017 MO	65738	15	9.98
6/19/2017	6/19/2017 MO	65679	15	9.92
6/13/2017	6/13/2017 MO	65656	15	9.83
8/2/2017	8/2/2017 MO	65721	15	9.83
6/22/2017	6/22/2017 MO	65616	15	9.74
8/2/2017	8/2/2017 MO	65781	15	9.74
6/12/2017	6/12/2017 MO	65721	15	9.6
7/10/2017	7/10/2017 MO	65757	15	9.54
7/24/2017	7/24/2017 MO	65781	15	9.53
4/25/2017	4/25/2017 MO	65672	15	9.5
6/19/2017	6/19/2017 MO	64870	15	9.5
7/10/2017	7/10/2017 MO	65605	15	9.3
6/6/2017	6/6/2017 MO	65648	15	9.25
7/26/2017	7/26/2017 MO	65616	15	9.2
6/15/2017	6/15/2017 MO	64862	15	9.1
5/19/2017	5/19/2017 MO	65610	15	9.01
5/12/2017	5/12/2017 MO	65781	15	9
6/29/2017	6/29/2017 MO	65738	15	8.83
6/7/2017	6/7/2017 MO	64801	15	8.78
6/12/2017	6/12/2017 MO	65648	15	8.73
6/19/2017	6/19/2017 MO	64801	15	8.5
7/26/2017	7/26/2017 MO	64804	15	8.49
8/2/2017	8/2/2017 MO	64644	15	8.3
6/15/2017	6/15/2017 MO	65661	15	8.2
6/22/2017	6/22/2017 MO	65781	15	8.18
7/24/2017	7/24/2017 MO	65616	15	7.75
5/9/2017	5/9/2017 MO	65622	15	7.58
7/31/2017	7/31/2017 MO	65605	15	7.5
7/10/2017	7/10/2017 MO	65738	15	7.4
6/16/2017	6/16/2017 MO	65738	15	7.37
5/4/2017	5/4/2017 MO	64801	15	7
7/26/2017	7/26/2017 MO	64801	15	7
7/10/2017	7/10/2017 MO	64804	15	6.3
6/7/2017	6/7/2017 MO	65785	15	6.11
7/25/2017	7/25/2017 MO	64870	15	6.01
5/19/2017	5/19/2017 MO	64804	15	5.04
7/20/2017	7/20/2017 MO	64755	15	5
6/15/2017	6/15/2017 MO	65604	15	4.77
5/15/2017	5/15/2017 MO	65738	15	4.35
5/23/2017	5/23/2017 MO	65781	15	4
5/19/2017	5/19/2017 MO	64801	15	2.72
6/15/2017	6/15/2017 MO	64840	15	1.7
5/24/2017	5/24/2017 MO	64858	15	1.6
9/29/2017	9/29/2017 MO	64801	16	32.3
9/19/2017	9/19/2017 MO	65668	16	31.62
9/28/2017	9/28/2017 MO	65767	16	31.31
9/22/2017	9/22/2017 MO	65738	16	30.35
9/15/2017	9/15/2017 MO	64801	16	28.89
10/31/2017	10/31/2017 MO	65622	16	27.26
10/31/2017	10/31/2017 MO	65622	16	27.26
10/2/2017	10/2/2017 MO	65721	16	23.33
9/26/2017	9/26/2017 MO	64834	16	22.91
9/11/2017	9/11/2017 MO	65753	16	22.22

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10/2/2017	10/2/2017 MO	65721	16	20.02
10/10/2017	10/10/2017 MO	64834	16	19.86
9/29/2017	9/29/2017 MO	64801	16	19.52
8/24/2017	8/24/2017 MO	65774	16	19.2
10/19/2017	10/19/2017 MO	64801	16	18.89
9/7/2017	9/7/2017 MO	64801	16	18.79
8/21/2017	8/21/2017 MO	65610	16	18.02
9/29/2017	9/29/2017 MO	64835	16	17.31
9/18/2017	9/18/2017 MO	64804	16	16.54
9/8/2017	9/8/2017 MO	65613	16	16.36
10/6/2017	10/6/2017 MO	64870	16	16.25
10/30/2017	10/30/2017 MO	64836	16	16.09
10/30/2017	10/30/2017 MO	64804	16	15.51
10/31/2017	10/31/2017 MO	65613	16	15.4
9/8/2017	9/8/2017 MO	65781	16	15.15
8/24/2017	8/24/2017 MO	65617	16	14.5
9/25/2017	9/25/2017 MO	65610	16	14.39
10/12/2017	10/12/2017 MO	64831	16	14.38
9/1/2017	9/1/2017 MO	65613	16	14.29
10/3/2017	10/3/2017 MO	64801	16	14.29
10/20/2017	10/20/2017 MO	64804	16	14.25
9/7/2017	9/7/2017 MO	64850	16	13.89
9/15/2017	9/15/2017 MO	64801	16	13.83
10/23/2017	10/23/2017 MO	64748	16	13.63
8/25/2017	8/25/2017 MO	64748	16	13.58
8/28/2017	8/28/2017 MO	64834	16	13.44
8/29/2017	8/29/2017 MO	65616	16	13.23
9/1/2017	9/1/2017 MO	64850	16	13.22
10/24/2017	10/24/2017 MO	65714	16	13.22
10/9/2017	10/9/2017 MO	64804	16	12.87
10/24/2017	10/24/2017 MO	65757	16	12.57
8/24/2017	8/24/2017 MO	64870	16	12.4
9/26/2017	9/26/2017 MO	65708	16	12.29
9/26/2017	9/26/2017 MO	65721	16	12.21
10/5/2017	10/5/2017 MO	64801	16	12.17
8/18/2017	8/18/2017 MO	65622	16	11.92
8/24/2017	8/24/2017 MO	65738	16	11.87
9/22/2017	9/22/2017 MO	65738	16	11.68
9/29/2017	9/29/2017 MO	65781	16	11.53
9/19/2017	9/19/2017 MO	64865	16	11.4
9/12/2017	9/12/2017 MO	64836	16	11.33
8/28/2017	8/28/2017 MO	64850	16	10.91
10/23/2017	10/23/2017 MO	65738	16	10.8
10/27/2017	10/27/2017 MO	64834	16	10.5
9/14/2017	9/14/2017 MO	65738	16	9.83
10/6/2017	10/6/2017 MO	65605	16	9.75
9/25/2017	9/25/2017 MO	64804	16	9.73
8/30/2017	8/30/2017 MO	65613	16	9.64
10/16/2017	10/16/2017 MO	64801	16	9.61
9/21/2017	9/21/2017 MO	65738	16	9.6
9/28/2017	9/28/2017 MO	65622	16	9.5
9/25/2017	9/25/2017 MO	65707	16	9.32
10/31/2017	10/31/2017 MO	65622	16	9.29
8/30/2017	8/30/2017 MO	64804	16	9.1
9/21/2017	9/21/2017 MO	65718	16	8.67
9/11/2017	9/11/2017 MO	65721	16	8.65
9/26/2017	9/26/2017 MO	64748	16	8.62
10/6/2017	10/6/2017 MO	64834	16	8.57
8/30/2017	8/30/2017 MO	65661	16	8.39
10/3/2017	10/3/2017 MO	64801	16	7.99
10/24/2017	10/24/2017 MO	65721	16	7.87
10/17/2017	10/17/2017 MO	65616	16	7.67
10/13/2017	10/13/2017 MO	65616	16	7.4
9/25/2017	9/25/2017 MO	64804	16	7.3
10/24/2017	10/24/2017 MO	65721	16	6.51
9/26/2017	9/26/2017 MO	64834	16	6.44
10/23/2017	10/23/2017 MO	65605	16	6.43
9/29/2017	9/29/2017 MO	64824	16	6.39

10/11/2017	10/11/2027 MO	64804	16	5.98
9/18/2017	9/18/2027 MO	64804	16	5.97
9/25/2017	9/25/2027 MO	65752	16	5.95
9/25/2017	9/25/2027 MO	64804	16	5.06
9/29/2017	9/29/2027 MO	64804	16	4.37
10/23/2017	10/23/2027 MO	65738	16	3.6
10/13/2017	10/13/2027 MO	65616	16	3.5
10/16/2017	10/16/2027 MO	64850	16	3.05
12/5/2017	12/5/2027 MO	65734	17	35.03
12/28/2017	12/28/2027 MO	64844	17	33.38
12/28/2017	12/28/2027 MO	64844	17	33.37
12/28/2017	12/28/2027 MO	64844	17	33.37
12/28/2017	12/28/2027 MO	64844	17	33.37
12/28/2017	12/28/2027 MO	64844	17	31.96
11/27/2017	11/27/2027 MO	65616	17	31.21
11/30/2017	11/30/2027 MO	64873	17	29.95
12/5/2017	12/5/2027 MO	65721	17	28.83
12/5/2017	12/5/2027 MO	64801	17	23.98
12/5/2017	12/5/2027 MO	65613	17	21.23
12/13/2017	12/13/2027 MO	65721	17	20.85
12/15/2017	12/15/2027 MO	64804	17	20.47
12/12/2017	12/12/2027 MO	64804	17	19.72
11/29/2017	11/29/2027 MO	64834	17	18.38
11/28/2017	11/28/2027 MO	64870	17	18.24
12/28/2017	12/28/2027 MO	64844	17	18.02
12/20/2017	12/20/2027 MO	64850	17	17.9
11/21/2017	11/21/2027 MO	64804	17	17.55
12/6/2017	12/6/2027 MO	64801	17	14.01
12/28/2017	12/28/2027 MO	64844	17	13.87
12/20/2017	12/20/2027 MO	64836	17	13.65
12/11/2017	12/11/2027 MO	64804	17	13.63
12/5/2017	12/5/2027 MO	65769	17	12.3
12/18/2017	12/18/2027 MO	65672	17	12.23
12/6/2017	12/6/2027 MO	64801	17	12.2
11/21/2017	11/21/2027 MO	64840	17	12.12
12/15/2017	12/15/2027 MO	64801	17	12.1
12/14/2017	12/14/2027 MO	65767	17	12
12/28/2017	12/28/2027 MO	65604	17	12
11/29/2017	11/29/2027 MO	65613	17	11.97
12/5/2017	12/5/2027 MO	65721	17	11.8
12/18/2017	12/18/2027 MO	65721	17	11.68
12/20/2017	12/20/2027 MO	65613	17	11.45
12/6/2017	12/6/2027 MO	64801	17	11.28
12/12/2017	12/12/2027 MO	65605	17	11.1
12/12/2017	12/12/2027 MO	64855	17	11.07
12/12/2017	12/12/2027 MO	64834	17	11.01
11/16/2017	11/16/2027 MO	64850	17	10.63
12/6/2017	12/6/2027 MO	64836	17	10.6
11/29/2017	11/29/2027 MO	64804	17	10.58
12/14/2017	12/14/2027 MO	65738	17	10.57
12/6/2017	12/6/2027 MO	64804	17	10.25
12/14/2017	12/14/2027 MO	65622	17	10.17
11/6/2017	11/6/2027 MO	65738	17	10.1
11/20/2017	11/20/2027 MO	64801	17	9.6
12/15/2017	12/15/2027 MO	65738	17	9.35
12/15/2017	12/15/2027 MO	64801	17	8.22
11/27/2017	11/27/2027 MO	65721	17	8
12/5/2017	12/5/2027 MO	64850	17	7.97
12/19/2017	12/19/2027 MO	64831	17	7.42
12/13/2017	12/13/2027 MO	65616	17	7.2
12/5/2017	12/5/2027 MO	65738	17	6.75
11/30/2017	11/30/2027 MO	65672	17	6.65
11/3/2017	11/3/2027 MO	65604	17	6.09
11/17/2017	11/17/2027 MO	64801	17	5.96
12/14/2017	12/14/2027 MO	65781	17	5.83
12/5/2017	12/5/2027 MO	65757	17	3.86
1/3/2018	1/3/2028 MO	65738	18	32.61
1/31/2018	1/31/2028 MO	64801	18	33.38

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1/30/2018	1/30/2028 MO	64804	18	33.37
1/10/2018	1/10/2028 MO	65605	18	33.7
1/10/2018	1/10/2028 MO	65605	18	34.6
1/5/2018	1/5/2028 MO	64804	18	34.5
1/10/2018	1/10/2028 MO	65605	18	33.8
1/24/2018	1/24/2028 MO	65613	18	33.2
1/18/2018	1/18/2028 MO	64844	18	32.8
1/12/2018	1/12/2028 MO	65757	18	30.3
1/24/2018	1/24/2028 MO	65613	18	28.9
1/18/2018	1/18/2028 MO	65604	18	28.4
2/1/2018	2/1/2028 MO	65721	18	26.8
1/10/2018	1/10/2028 MO	64801	18	25.0
1/23/2018	1/23/2028 MO	65616	18	24.1
1/10/2018	1/10/2028 MO	65605	18	24.1
1/19/2018	1/19/2028 MO	64801	18	23.0
1/4/2018	1/4/2028 MO	64801	18	20.9
1/4/2018	1/4/2028 MO	64801	18	20.5
2/12/2018	2/12/2028 MO	65714	18	19.5
1/11/2018	1/11/2028 MO	65757	18	18.5
1/9/2018	1/9/2028 MO	64835	18	17.2
1/23/2018	1/23/2028 MO	65622	18	15.7
1/9/2018	1/9/2028 MO	64862	18	15.5
1/23/2018	1/23/2028 MO	64855	18	13.9
2/1/2018	2/1/2028 MO	64836	18	13.9
1/29/2018	1/29/2028 MO	65802	18	13.65
2/5/2018	2/5/2028 MO	64844	18	13.50
1/26/2018	1/26/2028 MO	64850	18	13.42
1/23/2018	1/23/2028 MO	65708	18	12.80
1/31/2018	1/31/2028 MO	65738	18	12.29
1/11/2018	1/11/2028 MO	65648	18	12.24
1/8/2018	1/8/2028 MO	65781	18	11.43
1/10/2018	1/10/2028 MO	64850	18	11.38
1/24/2018	1/24/2028 MO	64801	18	11.34
1/5/2018	1/5/2028 MO	65610	18	11.28
1/3/2018	1/3/2028 MO	65738	18	11.05
1/4/2018	1/4/2028 MO	65616	18	10.93
1/30/2018	1/30/2028 MO	65753	18	10.89
1/12/2018	1/12/2028 MO	65622	18	10.88
1/4/2018	1/4/2028 MO	65616	18	10.78
1/29/2018	1/29/2028 MO	65604	18	10.68
1/4/2018	1/4/2028 MO	65616	18	10.38
2/3/2018	2/3/2028 MO	65613	18	10.18
1/17/2018	1/17/2028 MO	65616	18	10.05
1/19/2018	1/19/2028 MO	65616	18	9.73
1/31/2018	1/31/2028 MO	65738	18	9.35
1/15/2018	1/15/2028 MO	65738	18	9.32
1/24/2018	1/24/2028 MO	65738	18	9.13
1/3/2018	1/3/2028 MO	65738	18	9.11
1/3/2018	1/3/2028 MO	64840	18	8.86
1/24/2018	1/24/2028 MO	65738	18	8.47
1/10/2018	1/10/2028 MO	64804	18	8.46
2/7/2018	2/7/2028 MO	65738	18	8.30
1/30/2018	1/30/2028 MO	65781	18	8.05
1/26/2018	1/26/2028 MO	65616	18	7.98
1/25/2018	1/25/2028 MO	64801	18	7.95
1/24/2018	1/24/2028 MO	65710	18	7.94
1/30/2018	1/30/2028 MO	65801	18	7.93
1/26/2018	1/26/2028 MO	64804	18	7.75
1/30/2018	1/30/2028 MO	64803	18	7.58
2/9/2018	2/9/2028 MO	64801	18	7.55
2/13/2018	2/13/2028 MO	64834	18	7.48
1/3/2018	1/3/2028 MO	64801	18	6.97
1/8/2018	1/8/2028 MO	64801	18	6.72
1/15/2018	1/15/2028 MO	65672	18	6.72
1/29/2018	1/29/2028 MO	65605	18	6.53
1/15/2018	1/15/2028 MO	65738	18	6.47
1/23/2018	1/23/2028 MO	65781	18	6.11
2/7/2018	2/7/2028 MO	65781	18	6.09

1/11/2018	1/11/2028 MO	65721	18	5.99
1/10/2018	1/10/2028 MO	64836	18	5.98
1/19/2018	1/19/2028 MO	64804	18	5.74
2/9/2018	2/9/2028 MO	64804	18	5.56
1/29/2018	1/29/2028 MO	64801	18	5.31
1/4/2018	1/4/2028 MO	65721	18	4.97
1/4/2018	1/4/2028 MO	65672	18	3.91
1/17/2018	1/17/2028 MO	65721	18	3.48
1/29/2018	1/29/2028 MO	65601	18	2.46
1/29/2018	1/29/2028 MO	65613	18	2.46
4/12/2018	4/12/2028 MO	64801	19	31.04
4/23/2018	4/23/2028 MO	65616	19	28.97
3/5/2018	3/5/2028 MO	64801	19	21.83
4/11/2018	4/11/2028 MO	64804	19	18.62
2/26/2018	2/26/2028 MO	65622	19	17.88
3/2/2018	3/2/2028 MO	65616	19	17.37
3/8/2018	3/8/2028 MO	65785	19	17.00
2/16/2018	2/16/2028 MO	65757	19	16.89
4/11/2018	4/11/2028 MO	65668	19	16.02
3/15/2018	3/15/2028 MO	65769	19	15.93
3/6/2018	3/6/2028 MO	65622	19	15.39
2/27/2018	2/27/2028 MO	64801	19	15.24
2/26/2018	2/26/2028 MO	65616	19	15.16
2/14/2018	2/14/2028 MO	65613	19	15.03
2/16/2018	2/16/2028 MO	64801	19	14.98
4/16/2018	4/16/2028 MO	64804	19	14.95
4/16/2018	4/16/2028 MO	64836	19	14.63
2/14/2018	2/14/2028 MO	65672	19	14.57
3/6/2018	3/6/2028 MO	65622	19	14.21
4/18/2018	4/18/2028 MO	64850	19	13.86
4/18/2018	4/18/2028 MO	65672	19	13.54
4/11/2018	4/11/2028 MO	64862	19	13.35
3/20/2018	3/20/2028 MO	64801	19	13.32
2/15/2018	2/15/2028 MO	64848	19	13.16
4/3/2018	4/3/2028 MO	65613	19	12.99
3/2/2018	3/2/2028 MO	65714	19	12.93
4/3/2018	4/3/2028 MO	65725	19	12.72
2/19/2018	2/19/2028 MO	65616	19	12.70
2/15/2018	2/15/2028 MO	64850	19	12.70
3/7/2018	3/7/2028 MO	65721	19	12.69
4/10/2018	4/10/2028 MO	65612	19	12.68
3/29/2018	3/29/2028 MO	64840	19	12.59
3/22/2018	3/22/2028 MO	64850	19	12.56
3/13/2018	3/13/2028 MO	65781	19	12.21
4/24/2018	4/24/2028 MO	65708	19	12.18
4/3/2018	4/3/2028 MO	65613	19	12.07
4/24/2018	4/24/2028 MO	64804	19	12.04
4/23/2018	4/23/2028 MO	64804	19	11.99
3/5/2018	3/5/2028 MO	64804	19	11.97
3/13/2018	3/13/2028 MO	64801	19	11.92
3/26/2018	3/26/2028 MO	65616	19	11.82
2/19/2018	2/19/2028 MO	64873	19	11.61
3/5/2018	3/5/2028 MO	64804	19	11.58
3/20/2018	3/20/2028 MO	65714	19	11.00
2/21/2018	2/21/2028 MO	64870	19	10.90
2/22/2018	2/22/2028 MO	65757	19	9.89
3/6/2018	3/6/2028 MO	64840	19	9.85
4/16/2018	4/16/2028 MO	65668	19	9.80
2/21/2018	2/21/2028 MO	65753	19	9.79
4/19/2018	4/19/2028 MO	65721	19	9.76
4/4/2018	4/4/2028 MO	64804	19	9.69
3/13/2018	3/13/2028 MO	65604	19	9.69
4/25/2018	4/25/2028 MO	64850	19	9.53
4/3/2018	4/3/2028 MO	65785	19	9.38
3/14/2018	3/14/2028 MO	64804	19	9.32
4/11/2018	4/11/2028 MO	64801	19	9.19
4/18/2018	4/18/2028 MO	65616	19	9.17
4/20/2018	4/20/2028 MO	65802	19	9.00

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3/14/2018	3/14/2028 MO	64863	19	8.84
4/2/2018	4/2/2028 MO	65721	19	8.55
4/3/2018	4/3/2028 MO	64843	19	8.36
4/5/2018	4/5/2028 MO	65779	19	8.36
4/3/2018	4/3/2028 MO	64843	19	8.34
4/26/2018	4/26/2028 MO	65672	19	8.15
2/19/2018	2/19/2028 MO	65616	19	8.09
4/24/2018	4/24/2028 MO	65613	19	8.06
4/18/2018	4/18/2028 MO	64832	19	8.02
4/17/2018	4/17/2028 MO	64870	19	7.80
3/15/2018	3/15/2028 MO	65738	19	7.63
3/13/2018	3/13/2028 MO	64850	19	7.59
4/12/2018	4/12/2028 MO	65721	19	7.52
3/6/2018	3/6/2028 MO	64831	19	7.51
4/9/2018	4/9/2028 MO	65781	19	7.49
3/15/2018	3/15/2028 MO	65612	19	7.39
3/7/2018	3/7/2028 MO	65714	19	7.33
3/8/2018	3/8/2028 MO	64804	19	7.03
3/13/2018	3/13/2028 MO	64801	19	6.90
3/13/2018	3/13/2028 MO	65738	19	6.85
3/9/2018	3/9/2028 MO	65738	19	6.44
4/18/2018	4/18/2028 MO	64804	19	6.39
2/27/2018	2/27/2028 MO	65707	19	6.36
2/22/2018	2/22/2028 MO	65770	19	6.11
2/15/2018	2/15/2028 MO	65653	19	6.02
4/20/2018	4/20/2028 MO	65781	19	5.92
4/12/2018	4/12/2028 MO	65653	19	5.79
2/20/2018	2/20/2028 MO	65738	19	5.79
3/13/2018	3/13/2028 MO	65721	19	5.60
3/8/2018	3/8/2028 MO	64804	19	5.53
3/13/2018	3/13/2028 MO	64801	19	5.42
3/22/2018	3/22/2028 MO	64804	19	5.32
4/24/2018	4/24/2028 MO	65612	19	5.20
4/4/2018	4/4/2028 MO	64804	19	4.92
2/26/2018	2/26/2028 MO	64804	19	4.86
4/17/2018	4/17/2028 MO	64801	19	4.35
4/16/2018	4/16/2028 MO	65613	19	3.85
4/12/2018	4/12/2028 MO	65672	19	3.84
2/27/2018	2/27/2028 MO	64801	19	2.19
3/13/2018	3/13/2028 MO	64801	19	2.11
3/20/2018	3/20/2028 MO	65613	19	1.70
5/17/2018	5/17/2028 MO	65613	20	31.41
6/25/2018	6/25/2028 MO	65616	20	28.51
5/18/2018	5/18/2028 MO	65613	20	33.57
5/9/2018	5/9/2028 MO	65616	20	24.55
4/26/2018	4/26/2028 MO	65721	20	21.68
6/5/2018	6/5/2028 MO	64804	20	16.95
6/25/2018	6/25/2028 MO	64870	20	16.74
5/18/2018	5/18/2028 MO	64804	20	16.63
5/24/2018	5/24/2028 MO	65708	20	15.71
6/5/2018	6/5/2028 MO	64834	20	15.64
5/15/2018	5/15/2028 MO	64836	20	13.68
6/4/2018	6/4/2028 MO	64804	20	12.27
6/1/2018	6/1/2028 MO	65613	20	12.11
6/14/2018	6/14/2028 MO	64801	20	11.66
6/6/2018	6/6/2028 MO	64850	20	11.65
6/15/2018	6/15/2028 MO	64836	20	11.53
5/30/2018	5/30/2028 MO	65672	20	11.24
6/4/2018	6/4/2028 MO	65612	20	11.19
6/18/2018	6/18/2028 MO	65604	20	10.57
5/31/2018	5/31/2028 MO	65672	20	10.08
5/7/2018	5/7/2028 MO	65613	20	10.03
5/4/2018	5/4/2028 MO	65672	20	9.96
5/31/2018	5/31/2028 MO	65672	20	9.79
6/22/2018	6/22/2028 MO	65613	20	9.61
5/30/2018	5/30/2028 MO	64865	20	9.60
5/11/2018	5/11/2028 MO	65601	20	9.55
5/15/2018	5/15/2028 MO	64836	20	9.54

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5/8/2018	5/8/2028 MO	65781	20	9.52
5/9/2018	5/9/2028 MO	65738	20	9.35
6/12/2018	6/12/2028 MO	64836	20	9.14
5/8/2018	5/8/2028 MO	65723	20	9.07
5/7/2018	5/7/2028 MO	65672	20	8.79
5/9/2018	5/9/2028 MO	65721	20	8.76
5/9/2018	5/9/2028 MO	65738	20	8.66
5/9/2018	5/9/2028 MO	65616	20	8.64
6/22/2018	6/22/2028 MO	64842	20	8.38
6/12/2018	6/12/2028 MO	64801	20	8.08
5/9/2018	5/9/2028 MO	64804	20	8.02
5/18/2018	5/18/2028 MO	65721	20	7.90
6/1/2018	6/1/2028 MO	64801	20	7.86
5/1/2018	5/1/2028 MO	64850	20	7.73
6/21/2018	6/21/2028 MO	65757	20	7.60
5/9/2018	5/9/2028 MO	65738	20	7.57
6/4/2018	6/4/2028 MO	64804	20	7.56
5/30/2018	5/30/2028 MO	65708	20	7.36
6/25/2018	6/25/2028 MO	64748	20	7.04
6/25/2018	6/25/2028 MO	64834	20	6.85
6/12/2018	6/12/2028 MO	65721	20	6.61
6/25/2018	6/25/2028 MO	65616	20	6.56
6/22/2018	6/22/2028 MO	65622	20	6.52
4/26/2018	4/26/2028 MO	65738	20	6.37
5/31/2018	5/31/2028 MO	65646	20	6.20
5/31/2018	5/31/2028 MO	65653	20	6.19
6/12/2018	6/12/2028 MO	64804	20	6.17
5/9/2018	5/9/2028 MO	65738	20	6.10
5/9/2018	5/9/2028 MO	65616	20	5.97
6/5/2018	6/5/2028 MO	65616	20	5.93
5/10/2018	5/10/2028 MO	65604	20	5.92
5/11/2018	5/11/2028 MO	65613	20	5.92
6/1/2018	6/1/2028 MO	65613	20	5.90
5/1/2018	5/1/2028 MO	64850	20	5.88
6/26/2018	6/26/2028 MO	64804	20	5.83
6/11/2018	6/11/2028 MO	65631	20	5.72
6/11/2018	6/11/2028 MO	64850	20	5.65
6/5/2018	6/5/2028 MO	65723	20	5.58
6/14/2018	6/14/2028 MO	65721	20	5.52
6/18/2018	6/18/2028 MO	65672	20	5.47
6/5/2018	6/5/2028 MO	65723	20	5.35
5/24/2018	5/24/2028 MO	64804	20	5.10
6/22/2018	6/22/2028 MO	65738	20	4.76
6/12/2018	6/12/2028 MO	64801	20	4.73
5/9/2018	5/9/2028 MO	64870	20	4.69
5/16/2018	5/16/2028 MO	64870	20	4.64
6/22/2018	6/22/2028 MO	65738	20	4.47
5/31/2018	5/31/2028 MO	65721	20	4.07
6/4/2018	6/4/2028 MO	65738	20	3.85
6/18/2018	6/18/2028 MO	65653	20	2.17
6/25/2018	6/25/2028 MO	65785	20	1.78
6/6/2018	6/6/2028 MO	65672	20	1.41
6/8/2018	6/8/2028 MO	65707	20	1.30
6/8/2018	6/8/2028 MO	65738	20	1.04
6/14/2018	6/14/2028 MO	64840	20	0.98
7/24/2018	7/24/2028 MO	64801	21	18.98
8/2/2018	8/2/2028 MO	64870	21	15.16
7/19/2018	7/19/2028 MO	64801	21	12.97
7/9/2018	7/9/2028 MO	64850	21	12.56
7/5/2018	7/5/2028 MO	65613	21	11.89
7/20/2018	7/20/2028 MO	65767	21	10.72
7/2/2018	7/2/2028 MO	64804	21	10.66
6/27/2018	6/27/2028 MO	65605	21	10.55
8/21/2018	8/21/2028 MO	64804	21	10.27
7/10/2018	7/10/2028 MO	64840	21	9.39
8/10/2018	8/10/2028 MO	64834	21	8.96
7/2/2018	7/2/2028 MO	64850	21	8.53
7/25/2018	7/25/2028 MO	65714	21	8.28

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6/26/2018	6/26/2028 MO	64850	21	8.23
6/26/2018	6/26/2028 MO	65721	21	8.09
8/13/2018	8/13/2028 MO	65605	21	7.74
7/25/2018	7/25/2028 MO	64854	21	7.63
7/6/2018	7/6/2028 MO	65781	21	7.53
7/12/2018	7/12/2028 MO	64870	21	7.42
7/23/2018	7/23/2028 MO	64836	21	7.41
6/27/2018	6/27/2028 MO	64804	21	7.16
7/6/2018	7/6/2028 MO	65604	21	7.14
7/11/2018	7/11/2028 MO	64801	21	7.03
8/17/2018	8/17/2028 MO	64850	21	6.83
7/6/2018	7/6/2028 MO	65734	21	6.64
7/19/2018	7/19/2028 MO	64804	21	6.62
7/17/2018	7/17/2028 MO	64804	21	6.60
7/11/2018	7/11/2028 MO	64804	21	6.60
8/16/2018	8/16/2028 MO	64848	21	6.56
7/20/2018	7/20/2028 MO	64840	21	6.56
8/21/2018	8/21/2028 MO	64850	21	6.50
7/5/2018	7/5/2028 MO	64870	21	6.50
6/29/2018	6/29/2028 MO	65653	21	6.10
7/23/2018	7/23/2028 MO	64842	21	6.03
7/5/2018	7/5/2028 MO	64870	21	5.99
7/30/2018	7/30/2028 MO	65710	21	5.98
7/19/2018	7/19/2028 MO	65616	21	5.98
6/26/2018	6/26/2028 MO	65721	21	5.60
8/9/2018	8/9/2028 MO	64862	21	5.58
7/30/2018	7/30/2028 MO	65767	21	5.54
8/6/2018	8/6/2028 MO	64801	21	5.40
8/8/2018	8/8/2028 MO	64801	21	5.39
8/2/2018	8/2/2028 MO	64841	21	5.37
8/16/2018	8/16/2028 MO	65672	21	5.34
7/18/2018	7/18/2028 MO	64885	21	5.32
7/12/2018	7/12/2028 MO	64801	21	5.29
7/20/2018	7/20/2028 MO	64850	21	5.17
7/2/2018	7/2/2028 MO	64836	21	5.16
7/11/2018	7/11/2028 MO	65721	21	4.99
8/20/2018	8/20/2028 MO	64804	21	4.86
7/25/2018	7/25/2028 MO	65734	21	4.85
7/24/2018	7/24/2028 MO	64804	21	4.82
7/12/2018	7/12/2028 MO	64830	21	4.81
8/15/2018	8/15/2028 MO	65648	21	4.72
8/9/2018	8/9/2028 MO	65721	21	4.70
7/12/2018	7/12/2028 MO	64850	21	4.66
8/2/2018	8/2/2028 MO	64831	21	4.65
7/16/2018	7/16/2028 MO	64801	21	4.51
8/16/2018	8/16/2028 MO	65616	21	4.50
7/12/2018	7/12/2028 MO	64870	21	4.44
7/11/2018	7/11/2028 MO	64801	21	4.37
7/5/2018	7/5/2028 MO	65613	21	4.28
8/17/2018	8/17/2028 MO	65721	21	3.96
7/27/2018	7/27/2028 MO	65721	21	3.94
7/14/2018	7/14/2028 MO	65672	21	3.90
8/16/2018	8/16/2028 MO	64850	21	3.79
6/26/2018	6/26/2028 MO	65738	21	3.77
8/23/2018	8/23/2028 MO	65648	21	3.72
8/22/2018	8/22/2028 MO	65646	21	3.69
8/8/2018	8/8/2028 MO	65738	21	3.68
8/16/2018	8/16/2028 MO	65616	21	3.68
7/20/2018	7/20/2028 MO	65774	21	3.65
8/10/2018	8/10/2028 MO	64804	21	3.57
7/31/2018	7/31/2028 MO	64859	21	3.47
8/10/2018	8/10/2028 MO	64804	21	3.47
8/20/2018	8/20/2028 MO	64870	21	3.38
8/10/2018	8/10/2028 MO	64870	21	3.28
8/15/2018	8/15/2028 MO	64801	21	3.05
8/21/2018	8/21/2028 MO	64840	21	2.88
7/6/2018	7/6/2028 MO	65708	21	2.82
8/22/2018	8/22/2028 MO	64834	21	2.75

8/8/2018	8/8/2028 MO	64801	21	2.74
8/21/2018	8/21/2028 MO	65738	21	2.67
7/16/2018	7/16/2028 MO	64834	21	2.60
7/20/2018	7/20/2028 MO	65721	21	2.41
7/25/2018	7/25/2028 MO	65674	21	2.22
8/9/2018	8/9/2028 MO	65738	21	2.12
8/21/2018	8/21/2028 MO	64801	21	2.08
7/26/2018	7/26/2028 MO	65781	21	1.83
8/8/2018	8/8/2028 MO	64804	21	1.48
8/21/2018	8/21/2028 MO	64804	21	1.28
7/16/2018	7/16/2028 MO	64834	21	1.14
8/15/2018	8/15/2028 MO	64801	21	0.81
8/25/2018	8/25/2028 MO	65721	22	11.72
10/1/2018	10/1/2028 MO	65708	22	11.18
8/31/2018	8/31/2028 MO	65610	22	10.49
8/27/2018	8/27/2028 MO	64801	22	9.54
9/10/2018	9/10/2028 MO	64804	22	7.03
9/6/2018	9/6/2028 MO	64804	22	6.88
8/23/2018	8/23/2028 MO	65708	22	6.72
9/24/2018	9/24/2028 MO	64836	22	5.36
9/28/2018	9/28/2028 MO	65622	22	5.13
9/4/2018	9/4/2028 MO	64834	22	4.96
9/19/2018	9/19/2028 MO	64850	22	4.90
8/24/2018	8/24/2028 MO	64870	22	4.88
8/24/2018	8/24/2028 MO	64804	22	4.49
9/20/2018	9/20/2028 MO	64804	22	4.18
9/24/2018	9/24/2028 MO	64748	22	4.03
9/24/2018	9/24/2028 MO	65714	22	3.94
8/28/2018	8/28/2028 MO	64870	22	3.80
10/1/2018	10/1/2028 MO	65708	22	3.73
8/24/2018	8/24/2028 MO	64855	22	3.72
9/17/2018	9/17/2028 MO	64804	22	3.68
9/13/2018	9/13/2028 MO	64804	22	3.68
10/9/2018	10/9/2028 MO	65610	22	3.61
10/9/2018	10/9/2028 MO	64801	22	3.60
8/29/2018	8/29/2028 MO	65757	22	3.58
8/31/2018	8/31/2028 MO	65646	22	3.54
10/17/2018	10/17/2028 MO	64870	22	3.52
9/27/2018	9/27/2028 MO	64836	22	3.47
9/10/2018	9/10/2028 MO	65738	22	3.44
9/6/2018	9/6/2028 MO	64804	22	3.43
8/29/2018	8/29/2028 MO	65631	22	3.32
10/16/2018	10/16/2028 MO	64836	22	3.31
10/3/2018	10/3/2028 MO	64804	22	3.30
8/24/2018	8/24/2028 MO	64804	22	3.29
10/3/2018	10/3/2028 MO	65610	22	3.28
9/27/2018	9/27/2028 MO	65714	22	3.26
9/24/2018	9/24/2028 MO	65721	22	3.24
8/31/2018	8/31/2028 MO	65714	22	3.22
8/27/2018	8/27/2028 MO	64801	22	3.20
10/19/2018	10/19/2028 MO	64854	22	3.17
9/10/2018	9/10/2028 MO	64804	22	3.16
10/8/2018	10/8/2028 MO	65721	22	3.06
9/18/2018	9/18/2028 MO	64843	22	2.95
9/10/2018	9/10/2028 MO	64830	22	2.90
8/27/2018	8/27/2028 MO	64804	22	2.84
10/5/2018	10/5/2028 MO	64836	22	2.78
10/12/2018	10/12/2028 MO	64844	22	2.77
10/11/2018	10/11/2028 MO	65738	22	2.74
9/21/2018	9/21/2028 MO	65738	22	2.73
9/24/2018	9/24/2028 MO	65661	22	2.70
9/11/2018	9/11/2028 MO	65738	22	2.64
9/20/2018	9/20/2028 MO	64801	22	2.61
8/24/2018	8/24/2028 MO	64804	22	2.52
10/3/2018	10/3/2028 MO	64644	22	2.49
10/1/2018	10/1/2028 MO	64804	22	2.48
9/18/2018	9/18/2028 MO	64804	22	2.42
9/26/2018	9/26/2028 MO	65723	22	2.40

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8/28/2018	8/28/2028 MO	64804	22	2.37
8/24/2018	8/24/2028 MO	64804	22	2.34
9/13/2018	9/13/2028 MO	65721	22	2.34
9/4/2018	9/4/2028 MO	65653	22	2.33
10/9/2018	10/9/2028 MO	64865	22	2.20
10/3/2018	10/3/2028 MO	64801	22	2.20
9/27/2018	9/27/2028 MO	65721	22	2.19
9/4/2018	9/4/2028 MO	64755	22	2.16
8/27/2018	8/27/2028 MO	64801	22	2.14
9/24/2018	9/24/2028 MO	65721	22	2.14
9/20/2018	9/20/2028 MO	64870	22	2.12
10/15/2018	10/15/2028 MO	64843	22	2.10
10/15/2018	10/15/2028 MO	64870	22	2.09
9/20/2018	9/20/2028 MO	64804	22	2.00
10/10/2018	10/10/2028 MO	64866	22	1.99
8/24/2018	8/24/2028 MO	64804	22	1.98
9/20/2018	9/20/2028 MO	65738	22	1.96
10/17/2018	10/17/2028 MO	64801	22	1.92
10/15/2018	10/15/2028 MO	64870	22	1.88
10/16/2018	10/16/2028 MO	65721	22	1.86
9/12/2018	9/12/2028 MO	65803	22	1.79
10/15/2018	10/15/2028 MO	64831	22	1.76
10/8/2018	10/8/2028 MO	64836	22	1.72
9/21/2018	9/21/2028 MO	65721	22	1.71
9/21/2018	9/21/2028 MO	65738	22	1.71
10/16/2018	10/16/2028 MO	65712	22	1.62
9/27/2018	9/27/2028 MO	64801	22	1.57
9/21/2018	9/21/2028 MO	65721	22	1.56
9/17/2018	9/17/2028 MO	64804	22	1.51
10/5/2018	10/5/2028 MO	64801	22	1.46
10/11/2018	10/11/2028 MO	65738	22	1.28
10/16/2018	10/16/2028 MO	64850	22	1.24
10/17/2018	10/17/2028 MO	64801	22	1.24
10/15/2018	10/15/2028 MO	64866	22	1.24
10/16/2018	10/16/2028 MO	65738	22	1.22
10/5/2018	10/5/2028 MO	65610	22	0.95
10/10/2018	10/10/2028 MO	65721	22	0.91
10/9/2018	10/9/2028 MO	64850	22	0.91
9/28/2018	9/28/2028 MO	65738	22	0.84
10/12/2018	10/12/2028 MO	65707	22	0.82
10/10/2018	10/10/2028 MO	65616	22	0.80
9/27/2018	9/27/2028 MO	64836	22	0.63
9/14/2018	9/14/2028 MO	65622	22	0.62
11/9/2018	11/9/2028 MO	64844	23	28.30
11/14/2018	11/14/2028 MO	65668	23	32.52
10/22/2018	10/22/2028 MO	65738	23	5.54
11/3/2018	11/3/2028 MO	65613	23	4.37
11/3/2018	11/3/2028 MO	65613	23	3.50
10/30/2018	10/30/2028 MO	65721	23	2.86
10/26/2018	10/26/2028 MO	64850	23	2.77
10/24/2018	10/24/2028 MO	64834	23	2.62
11/8/2018	11/8/2028 MO	64870	23	2.55
10/19/2018	10/19/2028 MO	65661	23	2.54
10/30/2018	10/30/2028 MO	64855	23	2.53
11/13/2018	11/13/2028 MO	65605	23	2.52
11/15/2018	11/15/2028 MO	65656	23	2.47
11/7/2018	11/7/2028 MO	64804	23	2.35
10/30/2018	10/30/2028 MO	65721	23	2.27
10/24/2018	10/24/2028 MO	65604	23	2.01
11/1/2018	11/1/2028 MO	65708	23	1.90
11/2/2018	11/2/2028 MO	64870	23	1.89
11/3/2018	11/3/2028 MO	65613	23	1.82
11/5/2018	11/5/2028 MO	65781	23	1.81
11/7/2018	11/7/2028 MO	64836	23	1.76
11/5/2018	11/5/2028 MO	64870	23	1.73
10/22/2018	10/22/2028 MO	64884	23	1.73
11/14/2018	11/14/2028 MO	64801	23	1.72
10/24/2018	10/24/2028 MO	65770	23	1.68

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10/29/2018	10/29/2028 MO	65685	23	1.68
11/5/2018	11/5/2028 MO	65712	23	1.67
11/9/2018	11/9/2028 MO	64855	23	1.66
10/26/2018	10/26/2028 MO	64850	23	1.63
11/3/2018	11/3/2028 MO	65613	23	1.61
10/25/2018	10/25/2028 MO	64836	23	1.59
10/22/2018	10/22/2028 MO	65648	23	1.57
11/3/2018	11/3/2028 MO	65622	23	1.56
11/20/2018	11/20/2028 MO	64870	23	1.51
10/26/2018	10/26/2028 MO	65721	23	1.49
10/24/2018	10/24/2028 MO	65803	23	1.48
10/25/2018	10/25/2028 MO	64804	23	1.46
10/31/2018	10/31/2028 MO	65604	23	1.45
10/22/2018	10/22/2028 MO	64836	23	1.45
10/25/2018	10/25/2028 MO	64836	23	1.41
10/24/2018	10/24/2028 MO	65781	23	1.38
11/6/2018	11/6/2028 MO	64804	23	1.31
11/20/2018	11/20/2028 MO	64804	23	1.30
11/19/2018	11/19/2028 MO	64850	23	1.29
11/14/2018	11/14/2028 MO	65708	23	1.26
11/9/2018	11/9/2028 MO	64801	23	1.23
11/7/2018	11/7/2028 MO	65613	23	1.20
11/14/2018	11/14/2028 MO	64801	23	1.17
11/19/2018	11/19/2028 MO	65721	23	1.16
11/19/2018	11/19/2028 MO	64850	23	1.11
11/9/2018	11/9/2028 MO	64865	23	1.10
11/19/2018	11/19/2028 MO	64850	23	1.09
11/16/2018	11/16/2028 MO	65616	23	1.06
11/20/2018	11/20/2028 MO	64870	23	1.01
11/9/2018	11/9/2028 MO	64850	23	0.99
11/15/2018	11/15/2028 MO	64844	23	0.98
10/29/2018	10/29/2028 MO	64801	23	0.98
11/21/2018	11/21/2028 MO	65610	23	0.94
10/24/2018	10/24/2028 MO	64755	23	0.92
11/6/2018	11/6/2028 MO	64804	23	0.90
10/29/2018	10/29/2028 MO	64804	23	0.90
11/14/2018	11/14/2028 MO	65648	23	0.89
11/5/2018	11/5/2028 MO	65721	23	0.87
11/9/2018	11/9/2028 MO	65781	23	0.85
11/9/2018	11/9/2028 MO	64834	23	0.85
11/20/2018	11/20/2028 MO	64801	23	0.75
11/19/2018	11/19/2028 MO	64850	23	0.68
11/20/2018	11/20/2028 MO	64804	23	0.67
11/14/2018	11/14/2028 MO	65617	23	0.62
11/14/2018	11/14/2028 MO	65757	23	0.62
11/21/2018	11/21/2028 MO	64854	23	0.55
11/16/2018	11/16/2028 MO	65616	23	0.50
11/7/2018	11/7/2028 MO	65616	23	0.50
10/31/2018	10/31/2028 MO	64748	23	0.41
11/16/2018	11/16/2028 MO	65738	23	0.27
11/19/2018	11/19/2028 MO	64850	23	0.06
10/26/2018	10/26/2028 MO	64870	23	0.00
11/30/2018	11/30/2028 MO	64801	24	3.60
11/29/2018	11/29/2028 MO	64850	24	2.50
11/27/2018	11/27/2028 MO	64836	24	2.07
12/5/2018	12/5/2028 MO	64870	24	2.03
11/27/2018	11/27/2028 MO	64804	24	1.64
11/29/2018	11/29/2028 MO	64850	24	1.14
11/27/2018	11/27/2028 MO	64804	24	1.12
11/26/2018	11/26/2028 MO	64836	24	1.08
11/26/2018	11/26/2028 MO	64804	24	0.91
11/26/2018	11/26/2028 MO	64801	24	0.90
12/3/2018	12/3/2028 MO	65610	24	0.89
12/3/2018	12/3/2028 MO	64862	24	0.89
11/28/2018	11/28/2028 MO	65738	24	0.77
12/10/2018	12/10/2028 MO	65610	24	0.76
11/26/2018	11/26/2028 MO	64801	24	0.68
11/28/2018	11/28/2028 MO	65622	24	0.68

30.4 AGG2850

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 7th Revised Sheet No. 12

Canceling P.S.C. Mo. No. 5 Sec. 4 6th Revised Sheet No. 12

For ALL TERRITORY

NET METERING RIDER
RIDER NM

AVAILABILITY:

Electric service is available under this schedule at points on the Company's existing distribution facilities located within its service area for customers operating renewable fuel source generators.

Applicable to Customer-Generators with a Company approved interconnection agreement. This schedule is not applicable where the Customer's electrical generating system exceeds 100 kW.

The net metering service shall be available to Customer-Generators on a first-come, first-serve basis until the total rated generating capacity of net metering systems equals 5% of the Company's single-hour peak load during the previous year. Resale electric service will not be supplied under this schedule.

DEFINITIONS:

Customer-Generator:

The owner or operator of a qualified electric energy generation unit that meets all of the following criteria:

- a. Is powered by a renewable energy resource;
- b. Has an electrical generating system with a capacity of not more than one hundred fifty kilowatts;
- c. Is located on a premises owned, operated, leased, or otherwise controlled by the Customer-Generator;
- d. Is interconnected and operated in parallel phase and synchronization with the Company;
- e. Is intended primarily to offset part or all of the Customer-Generator's own electrical energy requirements;
- f. Meets all applicable safety, performance, interconnection, and reliability standards established by the National Electrical Code, the National Electrical Safety Code, the Institute of Electrical and Electronic Engineers and any local governing authorities; and
- g. Contains a mechanism that automatically disables the unit and interrupts the flow of electricity back onto the Company's electricity lines in the event that the service to the Customer-Generator is interrupted.

Renewable Energy Resources:

Electrical energy produced from wind, solar thermal sources, hydroelectric sources, photovoltaic cells and panels, fuel cells using hydrogen produced by ones of the above-named electrical energy sources, and other sources of energy that become available, and are certified as renewable by the Missouri Department of Natural Resources or the Missouri Department of Economic Development's Division of Energy.

CHARACTER OF SERVICE:

Alternating current, 60 cycles, at the voltage and phase of the Company's established secondary distribution system serving the Customer-Generator's premise.

BILLING AND PAYMENT:

The Company shall render a bill for net consumption at approximately 30-day intervals based on the Company's regular tariff schedules as on file with the Missouri Public Service Commission. Net consumption is defined as the kWh supplied by the Company to the Customer-Generator minus kWh supplied by the Customer-Generator and returned to the Company's grid during the billing month. Any net consumption shall be valued monthly as follows

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 12th Revised Sheet No. 13

Canceling P.S.C. Mo. No. 5 Sec. 4 11th Revised Sheet No. 13

For ALL TERRITORY

NET METERING RIDER
RIDER NM

BILLING AND PAYMENT (continued):

To the extent the net consumption is positive (i.e. Customer-Generator took more kWh from the Company during the month than Customer-Generator produced), the eligible Customer-Generator will be billed in accordance with the Customer-Generator's otherwise applicable standard rate for Customer Charges, Demand Charges, and Energy Charges (for the net consumption).

To the extent the net consumption is negative (i.e. Customer-Generator produced more kWh during the month than the Company supplied), the Customer-Generator will be credited in accordance with the Company's bi-annually calculated avoided fuel cost of the net energy (kWh) delivered to the Company. With the exception of the Energy Charge, all other applicable standard rate charges shall apply.

PURCHASED RATE:

Summer Season, per kWh.....	\$	0.0349
Winter Season, per kWh.....	\$	0.0312

The Summer Season will be the four months of June through September, and the Winter Season will be the eight months of October through May.

To the extent the net consumption is zero (i.e. Customer-Generator produced the same kWh during the month as supplied by the Company), the Customer-Generator will be Minimum billed in accordance with the eligible Customer-Generator's otherwise applicable standard rate.

TERMS AND CONDITIONS:

1. The Company will supply, own and maintain all necessary meters and associated equipment utilized for billing. If the Company's metering equipment at the Customer Generator's premise does not have the capability of measuring both the net energy produced and the net energy consumed, the Customer shall reimburse the Company for the cost to purchase and install sufficient metering. In addition, and for purposes of monitoring Customer generation and load, the Company may install at its expense, load research metering. The Customer shall supply, at no expense to the Company, a suitable location for meters and associated equipment used for billing and for load research. Such equipment shall be accessible at all times to Company personnel.
2. The Company shall have the right to require the Customer, at certain times and as electric operating conditions warrant, to limit the production of electrical energy from the generating facility to an amount no greater than the load at the Customer's facility of which the generating facility is a part.
3. The Customer shall furnish, install, operate and maintain in good order and repair without cost to the Company such relays, locks and seals, breakers, automatic synchronizers, disconnecting devices, and other control and protective devices as required by the NEC, NESC, IEEE or UL as being required as suitable for the operation of the generator in parallel with the Company's system.
4. The disconnect switch shall be under the exclusive control of the Company. The manual switch must have the capability to be locked out by Company personnel to isolate the Company's facilities in the event of an electrical outage on the Company's transmission and distribution facilities serving the Customer. This isolating device shall also serve as a means of isolation for the Customer's equipment during any customer maintenance activities, routine outages or emergencies. The Company shall give notice to the Customer before a manual switch is locked or an isolating device is used, if possible; and otherwise shall give notice as soon as practicable after locking or isolating the Customer's facilities.
5. The Customer may be required to reimburse the Company for any equipment or facilities required solely as a result of the installation by the Customer of generation in parallel with the Company's Service. This requirement is limited to equipment or facilities installed by the Company in excess of those required of the Company by the NEC, NESC, IEEE or UL.
6. The Customer shall notify the Company prior to the initial energizing and start-up testing of the Customer-owned generator, and the Company shall have the right to have a representative present at said test.

DATE OF ISSUE January 15, 2019 DATE EFFECTIVE February 14, 2019
ISSUED BY Sheri Richard, Director Rates and Regulatory Affairs

FILED
Missouri Public
Service Commission
JE-2019-0145

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 4th Revised Sheet No. 14

Canceling P.S.C. Mo. No. 5 Sec. 4 3rd Revised Sheet No. 14

For ALL TERRITORY

NET METERING RIDER RIDER NM

TERMS AND CONDITIONS (continued):

7. If harmonics, voltage fluctuations, or other disruptive problems on the utility's system are directly attributable to the operation of the Customer's system, such program(s) shall be corrected at the Customer's expense.
8. No Customer's generating system shall damage the Company's system or equipment or present an undue hazard to Company personnel.
9. The Company requires an Interconnection Application/Agreement for net metering (see copy below) for conditions related to technical and safety aspects of parallel generation.
10. Service under this schedule is subject to the Company's Rules and Regulations on file with the Missouri Public Service Commission and any subsequently approved and in effect during the term of this service.

DATE OF ISSUE January 3, 2008
ISSUED BY Kelly S. Walters, Vice President, Joplin, MO

DATE EFFECTIVE February 2, 2008

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 8th Revised Sheet No. 15

Canceling P.S.C. Mo. No. 5 Sec. 4 7th Revised Sheet No. 15

For ALL TERRITORY

NET METERING RIDER
RIDER NM

**INTERCONNECTION APPLICATION /AGREEMENT FOR NET METERING SYSTEMS
WITH CAPACITY OF ONE HUNDRED
KILOWATTS (150 kW) OR LESS**

The Empire District Electric Company
602 South Joplin Avenue
Joplin, Missouri, 64802

For Customers Applying for Interconnection:

If you are interested in applying for interconnection to The Empire District Electric Company's (Empire) electrical system, you should first contact Empire and ask for information related to interconnection of parallel generation equipment to Empire's system and you should understand this information before proceeding with this Application.

If you wish to apply for interconnection to Empire's electrical system, please complete sections A, B, C and D, and attach the plans and specifications, including, but not limited to, describing the net metering, parallel generation, and interconnection facilities (hereinafter collectively referred to as the "Customer-Generator's System") and submit them to Empire at the address above. Empire will provide notice of approval or denial within thirty (30) days of receipt by Empire for Customer-Generators of ten kilowatts (10 kW) or less and within ninety (90) days of receipt by Empire for Customer-Generators of greater than ten kilowatts (10 kW). If this Application is denied, you will be provided with the reason(s) for the denial. If this Application is approved and signed by both you and Empire, it shall become a binding contract and shall govern your relationship with Empire.

**For Customers Who Have Received Approval of
Customer-Generator System Plans and Specifications:**

After receiving approval of your Application, it will be necessary to construct the Customer-Generator System in compliance with the plans and specifications described in the Application, complete sections E and F of this Application, and forward this Application to Empire for review and completion of section G at the address above. Prior to the interconnection of the qualified generation unit to Empire's system, the Customer-Generator will furnish Empire a certification from a qualified professional electrician or engineer that the installation meets the plans and specification described in the application. If a local Authority Having Jurisdiction (AHJ) requires permits or certifications for construction or operation of the qualified generation unit, a customer generator must show the permit number and approval certification to Empire prior to interconnection. If the application for interconnection is approved by Empire and the Customer-Generator does not complete the interconnection within one (1) year after receipt of notice of the approval, the approval shall expire and the Customer-Generator shall be responsible for filing a new application.

Within 21 days of when the customer-generator completes submission of all required post construction documentation, including sections E & F, other supporting documentation and local AHJ inspection approval (if applicable) to the electric utility, the electric utility will make any inspection of the customer-generators interconnection equipment or system it deems necessary and notify the customer generator:

1. That the net meter has been set and parallel operation by customer-generator is permitted; or
2. That the inspection identified no deficiencies and the net meter installation is pending; or
3. That the inspection identified no deficiencies and the timeframe anticipated for the electric utility to complete all required system or service upgrades and install the meter; or
4. Of all deficiencies identified during the inspection that need to be corrected by the customer-generator before parallel operation will be permitted; or
5. Of any other issue(s), requirement(s), or condition(s), impacting the installation of the net meter or the parallel operation of the system.

DATE OF ISSUE July 27, 2018 DATE EFFECTIVE August 26, 2018
ISSUED BY Christopher D. Krygier, Director, Rates & Regulatory Affairs, Joplin, MO

FILED
Missouri Public
Service Commission
JE-2019-0010

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 1st Revised Sheet No. 15a

Canceling P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 15a

For ALL TERRITORY

NET METERING RIDER
RIDER NM

For Customers Who Are Installing Solar Systems:

Customer-Generators who are Missouri electric utility retail account holders will receive a solar rebate, if available, based on the capacity stated in the application, or the installed capacity of the Customer-Generator System if it is lower, if the following requirements are met:

- a. Empire must have confirmed the Customer-Generator's System is operational; and
- b. Sections H and I of this Application must be completed.

The amount of the rebate will be based on the system capacity measured in direct current. The rebate will be based on the schedule below up to a maximum of 25,000 watts (25kW) for residential customers, and up to a maximum of 100,000 watts (100 kW) for non-residential customers.

- \$2.00 per watt for systems operational on or before June 30, 2014;
- \$1.50 per watt for systems operational between July 1, 2014 and June 30, 2015;
- \$1.00 per watt for systems operational between July 1, 2015 and June 30, 2016;
- \$0.50 per watt for systems operational between July 1, 2016 and June 30, 2019;
- \$0.25 per watt for systems operational between July 1, 2019 and December 31, 2023;
- \$0.00 per watt for systems operational between December 31, 2023;

For Customers Who Are Assuming Ownership or Operational Control of an Existing Customer-Generator System:

If no changes are being made to the existing Customer-Generator System, complete sections A, D and F of this Application/Agreement and forward to Empire at the address above. Empire will review the new Application/Agreement and shall approve such, within fifteen (15) days of receipt by Empire if the new Customer-Generator has satisfactorily completed Application/Agreement, and no changes are being proposed to the existing Customer-Generator System. There are no fees or charges for the Customer-Generator who is assuming ownership or operational control of an existing Customer-Generator System if no modifications are being proposed to that System.

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 9th Revised Sheet No. 16

Canceling P.S.C. Mo. No. 5 Sec. 4 8th Revised Sheet No. 16

For ALL TERRITORY

NET METERING RIDER
RIDER NM

A. Customer-Generator's Information

Name on Empire's Electric Account: _____
Service/Street Address: _____
City: _____ State: _____ Zip Code: _____
Mailing Address (if different from above): _____
City: _____ State: _____ Zip Code: _____
Email address (if available): _____
Electric Account Holder Contact Person: _____
Daytime Phone: _____ Fax: _____ E-Mail: _____
Emergency Contact Phone: _____
Empire Account No. (from Utility Bill): _____
If account has multiple meters, provide the meter number to which generation will be connected: _____
Empire's Account No. (from Utility Bill): Shall be inserted at the top of each page.

B. Customer-Generator's System Information

Manufacturer Name Plate Power Rating: _____ kW AC DC (check box)
Voltage: _____ Volts
System Type: Wind Fuel Cell Solar Thermal Photovoltaic Hydroelectric Other (If other describe on line below)

Inverter/Interconnection Equipment Manufacturer: _____
Inverter/Interconnection Equipment Model No.: _____
Outdoor Manual/Utility Accessible & Lockable Disconnect Switch Distance from Meter: _____
Certify that the disconnect switch will be located adjacent to the Customer-Generator's electric service meter or explain where and why an alternative location of disconnect switch is being requested: _____

Existing Electrical Service Capacity: _____ Amperes Voltage: _____ Volts
Service Character: Single Phase _____ Three Phase _____
Total capacity of existing Customer-Generator System (if applicable): _____ kW

System Plans, Specifications, and Wiring Diagram must be attached for a valid application.

C. Installation Information / Hardware and Installation Compliance

Company Installing System: _____
Contact Person of Company Installing System: _____ Phone Number: _____
Contractor's License No. (if applicable): _____
Approximate Installation Date: _____
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Daytime Phone: _____ Fax: _____ E-Mail: _____
Person or Agency Who Will Inspect/Certify Installation: _____

The Customer-Generator's proposed System hardware complies with all applicable National Electric Safety Code (NESC), National Electric Code (NEC), Institute of Electrical and Electronics Engineers (IEEE), Underwriters Laboratories (UL), requirements for electrical equipment and their installation. As applicable to System type, these requirements include, but are not limited to, UL 1703, UL 1741, and IEEE 1547. The proposed installation complies with all applicable local electrical codes and all reasonable safety requirements of Empire. The proposed System has a lockable, visible AC disconnect device, accessible at all times to Empire personnel and switch is located adjacent to the Customer-Generator's electric service meter (except in cases where the Company has approved an alternate location). The System is only required to include one lockable, visible disconnect device, accessible to Empire. If the interconnection equipment is equipped with a visible, lockable, and accessible disconnect, no redundant device is needed to meet this requirement. The Customer-Generator's proposed System has functioning controls to prevent voltage flicker, DC injection, overvoltage, undervoltage, overfrequency, underfrequency, and overcurrent, and to provide for System synchronization to Empire's electrical system. The proposed System does have an anti-islanding function that prevents the generator from continuing to supply power when Empire's electrical system is not energized or operating normally.

THE EMPIRE DISTRICT ELECTRIC COMPANY

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For ALL TERRITORY

NET METERING RIDER
RIDER NM

If the proposed System is designed to provide uninterruptible power to critical loads, either through energy storage or back-up generation, the proposed System includes a parallel blocking scheme for this backup source that prevents any backflow of power to Empire's electrical system when the electrical system is not energized or not operating normally.

Signed (Installer): _____ Date: _____
Name (Print): _____

D. Additional Terms and Conditions

In addition to abiding by Empire's other applicable rules and regulations, the Customer-Generator understands and agrees to the following specific terms and conditions:

1) Operation / Disconnection

If it appears to Empire, at any time, in the reasonable exercise of its judgment, that operation of the Customer-Generator's System is adversely affecting safety, power quality or reliability of Empire's electrical system, Empire may immediately disconnect and lock-out the Customer-Generator's System from Empire's electrical system. The Customer-Generator shall permit Empire's employees and inspector's reasonable access to inspect, test, and examine the Customer-Generator's System.

2) Liability

Liability insurance is not required for Customer-Generators of ten kilowatts (10 kW) or less. For generators greater than ten kilowatts (10 kW), the Customer Generator agrees to carry no less than one hundred thousand dollars (\$100,000) of liability insurance that provides for coverage of all risk of liability for personal injuries (including death) and damage to property arising out of or caused by the operation of the Customer-Generator's System. Insurance may be in the form of an existing policy or an endorsement on an existing policy. Customer-Generators, including those whose systems are ten kilowatts (10 kW) or less, may have legal liabilities not covered under their existing insurance policy in the event the Customer-Generator's negligence or other wrongful conduct causes personal injury (including death), damage to property, or other actions and claims.

3) Metering and Distribution Costs

A Customer-Generator's facility shall be equipped with sufficient metering equipment that can measure the net amount of electrical energy produced or consumed by the Customer-Generator. If the Customer-Generator's existing meter equipment does not meet these requirements or if it is necessary for Empire to install additional distribution equipment to accommodate the Customer-Generator's facility, the Customer-Generator shall reimburse Empire for the costs to purchase and install the necessary additional equipment. At the request of the Customer-Generator, such costs may be initially paid for by Empire, and any amount up to the total costs and a reasonable interest charge may be recovered from the Customer-Generator over the course of up to twelve (12) billing cycles. Any subsequent meter testing, maintenance, or meter equipment change necessitated by the Customer-Generator shall be paid for by the Customer-Generator.

4) Ownership of Renewable Energy Credits or Renewable Energy Certificates (RECs)

RECs created through the generation of electricity by the Customer-Owner are owned by the Customer-Generator; however, if the Customer-Generator receives a solar rebate, the Customer-Generator transfers to Empire all right, title, and interest in and to the RECs associated with the new or expanded solar electric system that qualified the Customer-Generator for the solar rebate for a period of ten (10) years from the date the electric utility confirms the solar electric system is installed and operational.

5) Energy Pricing and Billing

The net electric energy delivered to the Customer-Generator shall be billed in accordance with Empire's Applicable Rate Schedules (Tariff Schedule NM). The value of the net electric energy delivered by the Customer-Generator to Empire shall be credited in accordance with the net metering rate schedule(s) (Tariff Schedule NM). The Customer-Generator shall be responsible for all other bill components charged to similarly situated customers.

Net electrical energy measurement shall be calculated in the following manner:

- (a) For a Customer Generator, a retail electric supplier shall measure the net electrical energy produced or consumed during the billing period in accordance with normal metering practices for customers in the same rate class, either by employing a single, bidirectional meter that measures the amount of electrical energy produced and consumed, or by employing multiple meters that separately measure the Customer-Generator's consumption and production of electricity;

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P.S.C. Mo. No. 5 Sec. 4 2nd Revised Sheet No. 16b

Canceling P.S.C. Mo. No. 5 Sec. 4 1st Original Sheet No. 16b

For ALL TERRITORY

NET METERING RIDER
RIDER NM

- (b) If the electricity supplied by the supplier exceeds the electricity generated by the Customer-Generator during a billing period, the Customer-Generator shall be billed for the net electricity supplied by the supplier in accordance with normal practices for customers in the same rate class;
- (c) If the electricity generated by the Customer-Generator exceeds the electricity supplied by the supplier during a billing period, the Customer-Generator shall be billed for the appropriate customer charges as specified by the applicable Customer-Generator rate schedule for that billing period and shall be credited an amount for the excess kilowatt-hours generated during the billing period at the net metering rate identified in Empire's tariff filed at the Public Service Commission, with this credit applied to the following billing period; and
- (d) Any credits granted by this subsection shall expire without any compensation at the earlier of either twelve (12) months after their issuance, or when the Customer-Generator disconnects service or terminates the net metering relationship with the supplier.

6) Terms and Termination Rights

This Agreement becomes effective when signed by both the Customer-Generator and Empire, and shall continue in effect until terminated. After fulfillment of any applicable initial tariff or rate schedule term, the Customer-Generator may terminate this Agreement at any time by giving Empire at least thirty (30) days prior written notice. In such event, the Customer-Generator shall, no later than the date of termination of Agreement, completely disconnect the Customer-Generator's System from parallel operation with Empire's system. Either party may terminate this Agreement by giving the other party at least thirty (30) days prior written notice that the other party is in default of any of the terms and conditions of this Agreement, so long as the notice specifies the basis for termination, and there is an opportunity to cure the default. This Agreement may also be terminated at any time by mutual agreement of the Customer-Generator and Empire. This agreement may also be terminated by approval of the Commission, if there is a change in statute that is determined to be applicable to this contract and necessitates its termination.

7) Transfer of Ownership

If operational control of the Customer-Generator's System transfers to any other party than the Customer-Generator, a new Application/Agreement must be completed by the person or persons taking over operational control of the existing Customer-Generator System. Empire shall be notified no less than thirty (30) days before the Customer-Generator anticipates transfer of operational control of the Customer-Generator's System. The person or persons taking over the operational control of Customer-Generator's System must file a new Application/Agreement, and must receive authorization from Empire before the existing Customer-Generator System can remain interconnected with Empire's electrical system. The new Application/Agreement will only need to be completed to the extent necessary to affirm that the new person or persons having operational control of the existing Consumer-Generator System completely understand the provisions of this Application/Agreement and agrees to them. If no changes are being made to the Customer-Generator's System, completing sections A, D and F of this Application/Agreement will satisfy this requirement. If no changes are being proposed to the Customer-Generator System, Empire will assess no charges or fees for this transfer. Empire will review the new Application/Agreement and shall approve such, within fifteen (15) days if the new Customer-Generator has satisfactorily completed the Application/Agreement, and no changes are being proposed to the existing Customer-Generator System. Empire will then complete section G and forward a copy of the completed Application/Agreement back to the new Customer-Generator, thereby notifying the new Customer-Generator that the new Customer-Generator is authorized to operate the existing Customer-Generator System in parallel with Empire's electrical system. If any changes are planned to be made in the existing Customer-Generator System that in any way may degrade or significantly alter that System's output characteristics, then the Customer-Generator shall submit to Empire a new Application/Agreement for the entire Customer-Generator System and all portions of the Application/Agreement must be completed.

8) Dispute Resolution

If any disagreements between the Customer-Generator and Empire arise that cannot be resolved through normal negotiations between them, the disagreements may be brought to the Missouri Public Service Commission by either party, through an informal or formal complaint. Procedures for filing and processing these complaints are described in 4 CSR 240-2.070. The complaint procedures described in 4 CSR 240-2.070 apply only to retail electric power suppliers to the extent that they are regulated by the Missouri Public Service Commission.

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 3rd Revised Sheet No. 16c

Canceling P.S.C. Mo. No. 5 Sec. 4 2nd Revised Sheet No. 16c

For ALL TERRITORY

NET METERING RIDER
RIDER NM

9) Testing Requirement

IEEE 1547 requires periodic testing of all interconnection related protective functions. The Customer-Generator must, at least once every year, conduct a test to confirm that the Customer-Generator's net metering unit automatically ceases to energize the output (interconnection equipment output voltage goes to zero) within two (2) seconds of being disconnected from Empire's electrical system. Disconnecting the net metering unit from Empire's electrical system at the visible disconnect switch and measuring the time required for the unit to cease to energize the output shall satisfy this test. The Customer-Generator shall maintain a record of the results of these tests and, upon request by Empire, shall provide a copy of the test results to Empire. If the Customer-Generator is unable to provide a copy of the test results upon request, Empire shall notify the Customer-Generator by mail that Customer-Generator has thirty (30) days from the date the Customer-Generator receives the request to provide to Empire, the results of a test. If the Customer-Generator's equipment ever fails this test, the Customer-Generator shall immediately disconnect the Customer-Generator's System from Empire's system. If the Customer-Generator does not provide results of a test to Empire within thirty (30) days of receiving a request from Empire or the results of the test provided to Empire show that the Customer-Generator's net metering unit is not functioning correctly, Empire may immediately disconnect the Customer-Generator's System from Empire's system. The Customer-Generator's System shall not be reconnected to Empire's electrical system by the Customer-Generator until the Customer-Generator's System is repaired and operating in a normal and safe manner.

I have read, understand, and accept the provisions of Section D, subsections 1 through 9 of this Application/Agreement.

Printed Name (Customer-Generator): _____

Signed (Customer-Generator): _____ Date: _____

Note: Must be name and signature of Empire Account Holder

E. Electrical Inspection

If a local Authority Having Jurisdiction (AHJ) governs permitting/inspection of project:

Authority Having Jurisdiction (AHJ): _____

Permit Number: _____

Applicable to all installations:

The Customer-Generator System referenced above satisfies all requirements noted in Section C.

Inspector Name (Print): _____

Inspector Certification: Licensed Engineer in Missouri _____ Licensed Electrician in Missouri _____

License No. _____ Issuing Authority _____

Signed (Inspector): _____ Date: _____

F. Customer-Generator Acknowledgement

I am aware if the Customer-Generator System installed on my premises and I have been given warranty information and/or an operational manual for that system. Also, I have been provided with a copy of Empire's parallel generation tariff or rate schedule (as applicable) and interconnection requirements. I am familiar with the operation of the Customer-Generator System.

I agree to abide by the terms of this Application/Agreement and I agree to operate and maintain the Customer-Generator System in accordance with the manufacturer's recommended practices as well as Empire's interconnection standards. If, at any time and for any reason, I believe that the Customer-Generator System is operating in an unusual manner that may result in any disturbances on Empire's electrical system, I shall disconnect the Customer-Generator System and not reconnect it to Empire's electrical system until the Customer-Generator System is operating normally after repair or inspection. Further, I agree to notify Empire no less than thirty (30) days prior to modification of the components or design of the Customer-Generator System that in any way may degrade or significantly alter that System's output characteristics. I acknowledge that any such modifications will require submission of a new Application/Agreement to Empire.

I agree not to operate the Customer-Generator System in parallel with Empire's electrical system until this Application/Agreement has been approved by Empire.

System Installation Date: _____

Printed Name (Customer-Generator): _____

Signed (Customer-Generator): _____ Date: _____

G. Utility Application Approval (completed by The Empire District Electric Company)

Empire does not, by approval of this Application/Agreement, assume any responsibility or liability for damage to property or physical injury due to malfunction of the Customer-Generator's System or the Customer-Generator's negligence.

This Application is approved by Empire on this _____ day of _____ (month). _____ (year).

Empire Representative Name (Print): _____

Signed Empire Representative: _____

DATE OF ISSUE February 23, 2017
ISSUED BY Chris Krygier, Director Planning & Regulatory

DATE EFFECTIVE March 25, 2017

FILED
Missouri Public
Service Commission
JE-2017-0166

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 1st Revised Sheet No. 16d

Canceling P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 16d

For ALL TERRITORY

NET METERING RIDER
RIDER NM

MISSOURI SOLAR ELECTRIC REBATE APPLICATION

H. Solar Rebate (For Solar Installations only)

Solar Module Manufacturer: _____ Inverter Rating: _____ kW

Solar Module Model No: _____ Number of Modules/Panels: _____

Module Rating: _____ DC Watts System rating (sum of solar panels): _____ kW

Module Warranty: _____ years (circle on spec. sheet) Inverter Warranty: _____ years (circle on spec. sheet)

Location of modules: _____ Roof _____ Ground

Installation type: _____ Fixed _____ Ballast

Solar electric system must be permanently installed on the applicant's premises for a valid application.

Required documents to receive solar rebate required to be attached OR provided before Empire authorizes the rebate payment:

- Copies of detail receipts/invoices with purchase date circled
- Copies of detail spec. sheets on each component
- Copies of proof of warranty sheet (minimum of 10 year warranty)
- Photo(s) of completed system
- Completed Taxpayer Information Form

MUST BE MAILED TO EMPIRE VIA U.S. POSTAL SERVICE, FEDEX OR UPS

DATE OF ISSUE February 23, 2017
ISSUED BY Chris Krygier, Director Planning & Regulatory

DATE EFFECTIVE March 25, 2017 **FILED**

**Missouri Public
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JE-2017-0166**

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 2nd Revised Sheet No. 16e

Canceling P.S.C. Mo. No. 5 Sec. 4 1st Revised Sheet No. 16e

For ALL TERRITORY

NET METERING RIDER RIDER NM

I. Solar Rebate Declaration (For Solar Installations only)

I understand that the complete terms and conditions of the solar rebate program are included in the Company's Rider SR – Solar Rebate tariff.

I understand that this program has limited budget, and that application will be accepted on a first-come, first-served basis, while funds are available. It is possible that I may be notified that I have been placed on a waiting list for the next year's rebate program if funds run out for the current year. This program may be modified or discontinued at any time without notice from the Company.

I understand that the solar electric system must be permanently installed and remain in place on premises for a minimum of (10) years, and the system shall be situated in a location where a minimum of eighty-five percent (85%) of the solar resource is available to the system.

I understand the equipment must be new when installed, commercially available, and carry a minimum ten (10) year warranty.

I understand a rebate may be available from Empire in the amount of:

- \$2.00 per watt for systems operational on or before June 30, 2014;
- \$1.50 per watt for systems operational between July 1, 2014, and June 30, 2015;
- \$1.00 per watt for systems operational between July 1, 2015, and June 30, 2016;
- \$0.50 per watt for systems operational between July 1, 2016, and June 30, 2019;
- \$0.25 per watt for systems operational between July 1, 2019, and December 31, 2023;
- \$0.00 per watt for systems operational after December 31, 2023.

I understand an electric utility may, through its tariff, require applications for solar rebates to be submitted up to one hundred eighty-two (182) days prior to the applicable June 30 operational date for the solar rebate.

I understand that a maximum of 25 kilowatts of new or expanded system capacity will be eligible for a rebate for residential customers, and a maximum 100 kilowatts of new or expanded system capacity will be eligible for a rebate for non-residential customers.

I understand the DC wattage rating provided by the original manufacturer and as noted in Section H will be used to determine the rebate amount.

I understand I may receive an IRS Form related to my rebate amount. (Please consult your tax advisor with any questions.)

I understand that as a condition of receiving a solar rebate, I am transferring to Company all right, title and interest in and to the solar renewable energy credits (SRECs) associated with the new or expanded System **for a period of ten (10) years** from the date Empire confirmed that that System was installed and operational, and during this period, I may not claim credit for the SRECs under any environmental program or transfer or sell the SRECs to any other party.

MUST BE MAILED TO EMPIRE VIA U.S. POSTAL SERVICE, FEDEX OR UPS

DATE OF ISSUE July 27, 2018 DATE EFFECTIVE August 28, 2018
ISSUED BY Christopher D. Krygier, Director, Rates & Regulatory Affairs, Joplin, MO

FILED
Missouri Public
Service Commission
JE-2019-0010

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 1st Revised Sheet No. 16f

Canceling P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 16f

For ALL TERRITORY

NET METERING RIDER RIDER NM

Disclaimer: Possible Future Rules and/or Rate Changes
Affecting Your Photovoltaic ("PV") System

1. Your PV system is subject to the Commission's current rates, rules, and regulations. The Missouri Public Service Commission ("Commission") may alter its rules and regulations and/or change rates in the future. If this occurs, your PV system is subject to those changes, and you will be responsible for paying any future increases to electricity rates, charges, or service fees from the Company.
2. The Company's electricity rates, charges, and service fees are determined by the Commission and are subject to change based upon the decisions of the Commission. These future adjustments may positively or negatively impact any potential savings or the value of your PV system.
3. Any future electricity rate projections which may be presented to you are not produced, analyzed, or approved by the Company or the Commission. They are based on projections formulated by external third parties not affiliated with the Company or the Commission.

The undersigned warrants, certifies, and represents that the information provided in this form is true and correct to the best of my knowledge; and the installation meets all Missouri Net Metering and Solar Electric Rebate program requirements.

Print Name of Applicant

Print Installer's Name

Applicant's Signature

Installer's Signature

If Applicant is a Business, Print Title/Authority of
Person Signing on behalf of Applicant

Date

Date

MUST BE MAILED TO EMPIRE VIA U.S. POSTAL SERVICE, FEDEX OR UPS

FILED
Missouri Public
Service Commission
ER-2016-0023; YE-2017-0031

DATE OF ISSUE August 15, 2016
ISSUED BY Kelly S. Walters, Vice President, Joplin, MO

DATE EFFECTIVE September 14, 2016

CONFIDENTIAL
ATTACHMENT 8:

AFFIDAVIT OF COMPLIANCE WITH 2018 COMPLIANCE PLAN

On April 15, 2018, The Empire District Electric Company filed a Compliance Plan outlining our plan to comply with the Renewable Energy Standard for the years of 2018-2020.

In accordance with that document, EDE stated that the company would utilize the non-solar generation from a contract with Elk River Windfarm and generation from the Ozark Beach Hydroelectric facility owned by EDE. EDE retired 399,075 vintage 2017 and 2018 RECs from the Ozark Beach facility and the Elk River Windfarm in order to meet the 2018 non-solar compliance requirements.

EDE retired 16,587 customer-generated SRECs for compliance with the solar requirement.

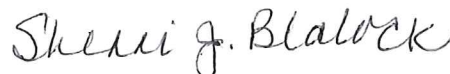
The 2019 RES Compliance Plan states that EDE will continue to utilize non-solar RECs generated by the Ozark Beach facility and the Elk River Wind Farm. RECs generated by the Cloud County Windfarm are not anticipated for compliance purposes. EDE will utilize solar SRECs from customer-generated sources for compliance.

The total costs for meeting the 2018 annual Missouri RES are as follows:

Resource	Cost
Ozark Beach Generation	-0-
Solar Customer Generation Rebates	\$3,086,744
NAR Administration	\$23,842
RRI Calculations, Modeling	\$16,960
Elk River PPA, Compliance Portion	CONFIDENTIAL

On this date, Mar. 28, 2019, before me appeared Blake A. Mertens, to me personally known, who, being by me first duly sworn, states that he is Vice President, Operations-Electric, of the Empire District Electric Company and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.


Blake A. Mertens



SHERRI J. BLALOCK
Notary Public - Notary Seal
Newton County - State of Missouri
Commission Number 14969626
My Commission Expires Nov 16, 2022