

UNITIL ENERGY SYSTEMS, INC.

DEFAULT SERVICE AND
RENEWABLE ENERGY CREDITS

LEAD/LAG STUDY

FOR G1 AND NON-G1 CUSTOMERS

2015

Unitil Energy Systems, Inc.
Default Service Costs and Renewable Energy Credits Lead / Lag Study
For the Period January 1, 2015 Through December 31, 2015
Summary of Results

The results of the Unitil Energy Systems, Inc. Default Service ("DS") and Renewable Energy Credits ("RECs") Lead / Lag Study ("Study") indicate a net lead period for DS and REC costs of 39.53 days for G1 Customers and a net lag period of 11.68 days for Non-G1 Customers. The procedures used to develop the Study are as follows:

I. Determination of Revenue Lag Period

The revenue lag period includes four calculations in determining the total lag – receipt of electric service to meter reading, meter reading to recording of accounts receivable, billing to collection, and collection to receipt of available funds.

A. Receipt of Electric Service to Meter Reading

There are 365 days in the test year January through December 2015, including one 28 day month, four 30 day months, and seven 31 day months. The weighted average day delay is 15.21 days between the time a customer receives service until the meter is read. See page 5 of this Study.

B. Meter Reading to Recording of Accounts Receivable

The average delay time from meter reading to recording of accounts receivable is 1.07 days. See pages 6 - 10 of this Study.

C. Billing to Collection

Billing to Collection lag days are determined by dividing accounts receivable sales by daily electric revenues. The daily average revenues are obtained from the monthly electric sales revenues divided by the number of days in the month. This weighted average delay period from Billing to Collection is 25.19 days for G1 customers and 44.56 days for Non-G1 customers. See pages 11 and 12 of this Study.

D. Collection to Receipt of Available Funds

On average, 1.41 days are required for checks deposited at the Company's banks to be considered available funds for banking transaction purposes. See pages 13 - 19 of this Study.

The sum of all revenue lag periods is 42.88 days for G1 customers and 62.25 days for Non-G1 customers. See page 4 of this Study.

Unitil Energy Systems, Inc.
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II. Determination of the Expense Lead Period

The expense lead period consists of the lead in payment of DS supplier costs and RECs, and is calculated for the G1 and Non-G1 customer classes based upon the following calculations: lead period, average days lead, weighted cost, days lead and weighted days lead.

A. Lead Period

The lead period is generally based on a monthly cycle and consists of (1) the average days in the period that DS purchases were provided or RECs were required; and (2) the billing period from the end of the period up to and including the payment date. See pages 20 through 23 of the Study.

B. Average Days Lead

The bills for each G-1 and Non-G-1 DS supplier are analyzed to determine the days lead. The REC days lead are also analyzed. Average days lead is calculated by multiplying the lead period by the weighted percentage of aggregate costs. The weighted days are then totaled to obtain the average days lead period for DS suppliers and for the RECs. See pages 20 and 22 of this Study.

C. Weighted Cost

The cost of purchasing default service and RECs is divided by the total combined costs to determine a weighted cost. See pages 20 and 22 of this Study.

D. Weighted Days Lead

The weighted cost is multiplied by the average days lead to calculate the weighted days lead, resulting in 82.41 days for G1 customers and 50.57 days for Non-G1 customers. See pages 20 and 22 of this Study.

III. Summary

The results of the Study indicate a net Purchased Power lead period of 39.53 days for G1 customers and net lag period of 11.68 days for Non-G1 customers. See page 4 of this Study.

Unitil Energy Systems, Inc.
Number of Days Delay Between Receipt of Revenue and
Payment of Default Service Costs and Renewable Energy Credits
Based on 2015 Data

Line No.	Description	G1 Customers		Non-G1 Customers	
		Page Reference	Number of Days Delay	Page Reference	Number of Days Delay
1	Revenue Lag:				
2	Receipt of Electric Service to Meter Reading	5	15.21 days	5	15.21 days
3	Meter Reading to Recording of Accounts Receivable	6 - 10	1.07 days	6 - 10	1.07 days
4	Billing to Collection	11	25.19 days	12	44.56 days
5	Collection to Receipt of Available Funds	13 - 19	<u>1.41 days</u>	13 - 19	<u>1.41 days</u>
6	Subtotal Revenue Lag Days		42.88 days		62.25 days
Less: Lead in Payment of Default Service Costs and					
7	Renewable Energy Credits	20	<u>82.41 days</u>	22	<u>50.57 days</u>
Total Default Service and Renewable Energy Credit					
8	Lag (Line 6 Less Line 7)		<u><u>-39.53 days</u></u>		<u><u>11.68 days</u></u>

**Receipt of Electric Service to Meter Reading
Average Days Delay**

January 1, 2015 to December 31, 2015 Number of Days

December	
January	31
February	28
March	31
April	30
May	31
June	30
July	31
August	31
September	30
October	31
November	30
December	31

1 28 Day Month	1*28	28
4 30 Day Months	4*30	120
7 31 Day Months	7*31	217
	Total	<u>365 days</u>

$$365 \text{ Days} / 12 \text{ Months} / 2 = \underline{\underline{15.21 \text{ days}}}$$

Unitil Energy Systems, Inc
Meter Reading to Recording of
Accounts Receivable

Month	Average Days
January 2015	1.03
February 2015	1.09
March 2015	1.11
April 2015	1.02
May 2015	1.03
June 2015	1.04
July 2015	1.05
August 2015	1.04
September 2015	1.18
October 2015	1.14
November 2015	1.03
December 2015	1.04
Average	1.07

Unitil Energy Systems, Inc.
Meter Reading to Recording of
Accounts Receivable
Monthly Detail

January 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Weighted Days Lag
1	72,133	98.19%	1	0.98
2	851	1.16%	2	0.02
3	296	0.40%	3	0.01
4	41	0.06%	4	0.00
5	54	0.07%	5	0.00
6	15	0.02%	6	0.00
7	40	0.05%	7	0.00
8-14	16	0.02%	11	0.00
Over 14	14	0.02%	14	0.00
Total	73,460	100.00%		<u>1.03</u>

February 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Weighted Days Lag
1	67,801	92.26%	1	0.92
2	5,308	7.22%	2	0.14
3	259	0.35%	3	0.01
4	51	0.07%	4	0.00
5	37	0.05%	5	0.00
6	15	0.02%	6	0.00
7	6	0.01%	7	0.00
8 to 14	9	0.01%	11	0.00
Over 14	4	0.01%	14	0.00
Total	73,490	100.00%		<u>1.09</u>

March 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	66,940	91.24%	1	0.91
2	5,315	7.24%	2	0.14
3	838	1.14%	3	0.03
4	184	0.25%	4	0.01
5	46	0.06%	5	0.00
6	8	0.01%	6	0.00
7	5	0.01%	7	0.00
8 to 14	19	0.03%	11	0.00
Over 14	12	0.02%	14	0.00
Total	73,367	100.00%		<u>1.11</u>

Unitil Energy Systems, Inc.
Meter Reading to Recording of
Accounts Receivable
Monthly Detail

April 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	72,399	98.77%	1	0.99
2	645	0.88%	2	0.02
3	147	0.20%	3	0.01
4	62	0.08%	4	0.00
5	15	0.02%	5	0.00
6	9	0.01%	6	0.00
7	6	0.01%	7	0.00
8 to 14	15	0.02%	11	0.00
Over 14	-	0.00%	14	0.00
Total	73,298	100.00%		1.02

May 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	72,102	98.27%	1	0.98
2	876	1.19%	2	0.02
3	312	0.43%	3	0.01
4	31	0.04%	4	0.00
5	17	0.02%	5	0.00
6	18	0.02%	6	0.00
7	1	0.00%	7	0.00
8 to 14	14	0.02%	11	0.00
Over 14	4	0.01%	14	0.00
Total	73,375	100.00%		1.03

June 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	72,297	97.18%	1	0.97
2	1,307	1.76%	2	0.04
3	635	0.85%	3	0.03
4	63	0.08%	4	0.00
5	66	0.09%	5	0.00
6	8	0.01%	6	0.00
7	4	0.01%	7	0.00
8 to 14	16	0.02%	11	0.00
Over 14	2	0.00%	14	0.00
Total	74,398	100.00%		1.04

Unitil Energy Systems, Inc.
Meter Reading to Recording of
Accounts Receivable
Monthly Detail

July 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	71,933	96.48%	1	0.96
2	2,043	2.74%	2	0.05
3	332	0.45%	3	0.01
4	187	0.25%	4	0.01
5	19	0.03%	5	0.00
6	6	0.01%	6	0.00
7	15	0.02%	7	0.00
8 to 14	17	0.02%	11	0.00
Over 14	2	0.00%	14	0.00
Total	74,554	100.00%		1.05

August 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	72,895	97.63%	1	0.98
2	1,183	1.58%	2	0.03
3	422	0.57%	3	0.02
4	80	0.11%	4	0.00
5	42	0.06%	5	0.00
6	16	0.02%	6	0.00
7	7	0.01%	7	0.00
8 to 14	13	0.02%	11	0.00
Over 14	6	0.01%	14	0.00
Total	74,664	100.00%		1.04

September 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	66,558	89.14%	1	0.89
2	3,572	4.78%	2	0.10
3	4,287	5.74%	3	0.17
4	131	0.18%	4	0.01
5	60	0.08%	5	0.00
6	20	0.03%	6	0.00
7	9	0.01%	7	0.00
8 to 14	22	0.03%	11	0.00
Over 14	7	0.01%	14	0.00
Total	74,666	100.00%		1.18

Unitil Energy Systems, Inc.
Meter Reading to Recording of
Accounts Receivable
Monthly Detail

October 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	67,136	90.83%	1	0.91
2	4,844	6.55%	2	0.13
3	1,622	2.19%	3	0.07
4	67	0.09%	4	0.00
5	59	0.08%	5	0.00
6	48	0.06%	6	0.00
7	16	0.02%	7	0.00
8 to 14	18	0.02%	11	0.00
Over 14	100	0.14%	14	0.02
Total	73,910	100.00%		<u>1.14</u>

November 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	72,159	97.99%	1	0.98
2	990	1.34%	2	0.03
3	242	0.33%	3	0.01
4	177	0.24%	4	0.01
5	30	0.04%	5	0.00
6	8	0.01%	6	0.00
7	8	0.01%	7	0.00
8 to 14	20	0.03%	11	0.00
Over 14	8	0.01%	14	0.00
Total	73,642	100.00%		<u>1.03</u>

December 2015

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	71,994	97.72%	1	0.98
2	1,145	1.55%	2	0.03
3	183	0.25%	3	0.01
4	114	0.15%	4	0.01
5	133	0.18%	5	0.01
6	12	0.02%	6	0.00
7	64	0.09%	7	0.01
8 to 14	26	0.04%	11	0.00
Over 14	5	0.01%	14	0.00
Total	73,676	100.00%		<u>1.04</u>

Unitil Energy Systems, Inc. Number Of Days Lag In Billing To Collection Twelve Months Average 1/15 - 12/15 G1 Customers				
Month	Days in Month	Electric Sales Revenues	Daily Average (1/Days)	Accounts Receivable Electric Sales
		(1)	(2)	(3)
2015				
January	31	1,474,213	47,555	1,359,540
February	28	1,562,865	55,817	1,365,617
March	31	1,679,280	54,170	1,429,859
April	30	1,582,744	52,758	1,421,095
May	31	1,516,025	48,904	1,148,758
June	30	1,571,308	52,377	1,278,327
July	31	1,558,833	50,285	1,440,935
August	31	1,686,224	54,394	1,415,992
September	30	1,770,053	59,002	1,416,883
October	31	1,585,189	51,135	1,106,628
November	30	1,474,833	49,161	1,253,882
December	31	1,468,419	47,368	1,052,479
Total		\$ 18,929,985	\$ 622,927	\$ 15,689,997
Average		\$ 1,577,499	\$ 51,911	\$ 1,307,500
Payment Lag Days (3/2)				25.19

Unitil Energy Systems, Inc. Number Of Days Lag In Billing To Collection Twelve Months Average 1/15 - 12/15 Non-G1 Customers				
Month	Days in Month	Electric Sales Revenues	Daily Average (1/Days)	Accounts Receivable Electric Sales
		(1)	(2)	(3)
2015				
January	31	15,577,901	502,513	19,258,106
February	28	15,015,288	536,260	19,200,620
March	31	15,223,874	491,093	20,600,289
April	30	12,448,163	414,939	19,354,113
May	31	10,568,712	340,926	16,310,158
June	30	10,576,592	352,553	16,806,604
July	31	9,202,561	296,857	15,280,404
August	31	10,391,710	335,216	15,655,982
September	30	10,126,332	337,544	16,943,036
October	31	7,910,830	255,188	12,137,263
November	30	7,625,027	254,168	12,060,598
December	31	8,984,493	289,822	12,792,206
Total		\$ 133,651,483	\$ 4,407,080	\$ 196,399,380
Average		\$ 11,137,624	\$ 367,257	\$ 16,366,615
Payment Lag Days (3/2)				44.56

**Unitil Energy Systems, Inc.
Collection to Receipt of Available Funds**

Revenue Classification by Bank

Revenue is deposited into the remittance account on the day that the revenue is recorded as received.
The following day, the bank statement reflects the prior day's bank availability of funds.

Total Lag Days from Receipt of Funds to Notification of Availability of Funds 1.00 day

**Availability of Funds as reported on succeeding business day.
Source: Report on Previous Day Data, Citizens Bank**

2015	Percent of Funds				Weighted Lag Days		
	Available Same Day 0 Days Lag	1 Day Float 1 Day Lag	2 Day Float 2 Days Lag	Total	1 Day	2 Days	Total
January	77%	21%	2%	100%	0.21	0.03	0.24
February	76%	22%	2%	100%	0.22	0.04	0.26
March	77%	22%	1%	100%	0.22	0.02	0.24
April	77%	21%	2%	100%	0.21	0.04	0.26
May	77%	21%	2%	100%	0.21	0.04	0.25
June	76%	21%	3%	100%	0.21	0.06	0.27
July	77%	20%	3%	100%	0.20	0.05	0.26
August	76%	23%	2%	100%	0.23	0.04	0.26
September	35%	60%	5%	100%	0.60	0.10	0.70
October	30%	64%	6%	100%	0.64	0.13	0.77
November	38%	58%	4%	100%	0.58	0.07	0.66
December	32%	62%	6%	100%	0.62	0.11	0.73

Average Weighted Lag Days for Availability of Funds 0.41 days

Summary

Total Lag Days from Receipt of Funds to Notification of Availability of Funds	1.00 day
Average Weighted Lag Days for Availability of Funds	<u>0.41 days</u>
Total Lag Days from Collection to Availability of Funds:	<u><u>1.41 days</u></u>

Unitil Energy Systems, Inc.
Remittance Accounts

January, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
2	186,717	223,760	95,485	
5	999,021	571,861	29,542	
6	1,870,216	702,350	24,014	
7	1,929,191	128,668	20,231	
8	909,189	337,137	11,675	
9	882,339	206,204	10,886	
12	1,009,444	195,661	5,370	
13	1,437,026	645,649	8,514	
14	1,833,377	491,939	54,619	
15	1,354,649	170,668	42,011	
16	679,306	276,475	16,195	
20	1,022,832	217,743	13,730	
21	1,545,706	563,670	20,390	
22	1,668,672	98,688	8,171	
23	716,004	213,570	4,481	
26	895,963	232,272	8,543	
27	1,235,368	716,446	34,577	
28	1,517,206	28,077	18,849	
29	431,856	18,493	14,605	
30	504,641	118,367	22,594	
	22,628,724	6,157,698	464,482	29,250,904
% of Available Funds	77%	21%	2%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.21	0.03	0.24

February, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
2	386,097	367,508	26,957	
3	1,422,111	609,484	38,220	
4	1,734,307	759,859	19,403	
5	1,559,697	177,314	11,116	
6	826,106	290,792	9,703	
9	1,209,111	577,538	17,991	
10	2,305,670	650,557	176,116	
11	2,268,938	492,695	182,766	
12	1,166,781	370,147	21,021	
13	824,048	206,471	16,188	
17	1,691,246	205,353	15,666	
18	2,735,790	867,030	40,005	
19	2,617,405	280,908	19,758	
20	654,330	93,264	11,974	
23	523,731	254,097	7,684	
24	1,547,560	932,029	53,561	
25	2,061,563	152,952	44,141	
26	739,399	255,184	19,497	
27	889,532	257,315	24,797	
	27,163,422	7,800,497	756,564	35,720,483
% of Available Funds	76%	22%	2%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.22	0.04	0.26

Unitil Energy Systems, Inc.
Remittance Accounts

March, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
	2	488,108	199,142	8,585
	3	1,260,393	848,284	61,751
	4	2,112,671	307,625	34,515
	5	1,159,786	388,000	19,255
	6	1,109,310	325,508	15,382
	9	1,264,725	460,367	11,109
	10	2,285,635	1,089,758	35,373
	11	2,726,306	444,587	43,468
	12	1,144,154	201,753	28,100
	13	894,934	353,458	10,066
	16	1,379,013	253,446	10,289
	17	1,944,539	934,950	22,288
	18	2,435,883	111,242	15,934
	19	914,089	161,687	20,113
	20	888,629	235,620	4,273
	23	999,429	162,020	17,738
	24	1,414,731	481,338	15,942
	25	1,565,422	239,111	8,554
	26	938,443	213,773	5,438
	27	856,161	211,576	9,631
	30	744,077	312,909	6,457
	31	1,217,144	493,356	29,638
		29,743,583	8,429,510	433,899
				38,606,992
% of Available Funds	77%	22%	1%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.22	0.02	0.24

April, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
	1 415,262	206,954	51,485	
	2 1,098,715	339,412	28,299	
	3 1,125,495	400,285	7,303	
	6 1,078,072	273,973	8,347	
	7 1,500,171	948,060	24,015	
	8 2,296,984	224,607	25,704	
	9 1,088,482	290,156	189,966	
	10 1,039,518	329,719	173,944	
	13 1,084,851	408,629	19,950	
	14 1,933,570	836,532	28,824	
	15 2,272,294	575,000	10,089	
	16 1,302,951	203,467	4,946	
	17 903,858	329,027	44,858	
	20 641,796	128,720	2,903	
	21 2,109,256	416,203	14,432	
	22 1,846,693	234,093	17,401	
	23 889,541	217,580	13,748	
	24 957,258	244,800	9,313	
	27 1,162,991	214,308	24,949	
	28 1,379,877	489,270	33,041	
	29 1,366,259	179,346	32,650	
	30 737,946	264,843	61,658	
	28,231,837	7,754,984	827,825	36,814,646
% of Available Funds	77%	21%	2%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.21	0.04	0.26

Unitil Energy Systems, Inc.
Remittance Accounts

May, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	219,215	246,124	53,810	
4	585,225	280,349	10,962	
5	1,271,857	925,821	25,420	
6	2,047,216	353,545	26,511	
7	1,285,203	267,769	48,073	
8	1,046,847	319,522	34,341	
11	1,137,641	269,897	38,381	
12	1,795,704	865,438	34,193	
13	2,160,025	383,962	26,436	
14	964,165	466,022	38,994	
15	1,725,685	187,126	19,930	
18	928,410	216,624	8,665	
19	1,733,548	282,719	31,447	
20	1,652,610	198,651	13,878	
21	801,422	228,853	51,838	
22	763,757	186,604	37,602	
26	782,942	225,756	6,398	
27	1,344,629	415,292	22,723	
28	1,355,984	90,384	19,474	
29	663,342	284,096	21,183	
	24,265,426	6,694,554	570,259	31,530,239
% of Available Funds	77%	21%	2%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.21	0.04	0.25

June, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	403,860	173,166	9,935	
2	1,211,496	752,392	28,355	
3	1,714,675	89,046	11,631	
4	672,262	62,288	4,465	
5	662,280	243,471	9,973	
8	1,220,493	393,475	103,846	
9	2,007,617	1,072,497	60,593	
10	2,303,992	117,037	162,129	
11	691,226	337,469	35,440	
12	729,547	291,270	142,865	
15	1,025,578	283,516	34,494	
16	1,487,006	595,849	115,027	
17	1,753,543	151,678	64,745	
18	660,107	364,686	22,214	
19	773,387	150,052	16,426	
22	680,433	192,506	10,682	
23	1,239,124	343,822	26,243	
24	1,247,324	70,665	9,662	
25	1,580,788	150,747	14,463	
26	584,859	141,596	13,480	
29	662,398	243,211	12,677	
30	1,044,427	477,675	59,179	
	24,356,421	6,698,114	968,524	32,023,059
% of Available Funds	76%	21%	3%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.21	0.06	0.27

Unitil Energy Systems, Inc.
Remittance Accounts

July, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	177,962	183,399	90,226	
2	717,825	240,532	71,399	
3	834,861	263,257	53,488	
6	779,047	271,169	7,128	
7	1,165,362	586,614	15,953	
8	1,616,390	157,115	9,767	
9	846,620	269,221	11,059	
10	974,964	230,617	10,121	
13	1,113,280	328,632	10,378	
14	1,712,153	667,002	66,955	
15	1,823,897	230,519	10,887	
16	784,075	214,059	18,911	
17	731,286	191,336	38,422	
20	944,550	190,413	29,326	
21	1,500,932	517,628	8,783	
22	1,509,477	59,277	5,976	
23	621,552	104,841	3,941	
24	668,520	127,065	67,906	
27	690,616	144,094	80,238	
28	1,087,112	436,594	79,236	
29	1,192,493	119,250	25,492	
30	476,437	211,324	17,042	
31	682,690	243,787	31,439	
22,652,101		5,987,745	764,073	29,403,919
% of Available Funds	77%	20%	3%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.20	0.05	0.26

August, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
3	260,875	294,936	20,724	
4	1,048,955	564,484	13,560	
5	1,337,824	422,372	50,760	
6	1,029,898	304,537	31,573	
7	868,448	261,335	56,111	
10	985,822	252,486	13,769	
11	1,543,746	881,830	25,593	
12	2,076,251	194,495	16,306	
13	723,221	149,829	4,898	
14	564,107	189,289	6,917	
17	845,161	201,795	10,345	
18	1,485,281	467,958	19,135	
19	1,658,541	256,908	55,298	
20	874,929	278,910	56,418	
21	736,472	376,067	51,752	
24	928,271	188,018	19,312	
25	1,130,954	360,868	19,448	
26	1,183,961	92,469	13,156	
27	603,159	183,300	7,643	
28	699,864	148,669	5,953	
31	590,220	240,441	4,518	
21,175,960		6,310,996	503,189	27,990,145
% of Available Funds	76%	23%	2%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.23	0.04	0.26

Unitil Energy Systems, Inc.
Remittance Accounts

September, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	491,676	640,332	24,697	
2	82,998	91,735	29,798	
3	65,361	282,092	22,582	
4	102,192	256,570	15,561	
8	781,837	828,855	32,335	
9	38,159	169,489	32,909	
10	68,535	355,504	36,145	
11	158,581	289,770	33,257	
14	490,615	834,252	14,938	
15	153,985	84,609	27,905	
16	84,059	194,250	22,802	
17	39,949	172,636	21,665	
18	182,529	182,643	8,336	
21	437,689	804,709	21,989	
22	147,002	124,476	10,918	
23	62,814	216,625	3,367	
24	53,591	160,242	47,784	
25	80,237	152,896	65,559	
28	329,008	466,782	60,262	
29	(2,769)	215,791	11,292	
30	66,328	190,837	9,204	
	<u>3,914,376</u>	<u>6,715,095</u>	<u>553,305</u>	<u>11,182,776</u>
% of Available Funds	35%	60%	5%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.60</u>	<u>0.10</u>	<u>0.70</u>

October, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	87,042	291,970	9,730	
2	68,726	200,074	9,497	
5	317,507	945,637	16,713	
6	130,988	109,944	74,157	
7	8,484	231,297	116,430	
8	(33,793)	330,494	56,463	
9	133,967	327,858	8,477	
13	513,820	932,544	40,119	
14	34,539	281,608	14,028	
15	54,211	295,310	8,190	
16	152,612	303,612	7,805	
19	604,409	356,119	30,178	
20	87,238	252,226	19,627	
21	112,398	188,827	49,048	
22	14,652	263,565	5,407	
23	137,064	90,301	5,000	
26	456,612	445,192	26,576	
27	41,882	109,267	14,275	
28	41,933	190,657	12,539	
29	50,848	210,355	59,583	
30	15,753	179,523	62,238	
	<u>3,030,892</u>	<u>6,536,380</u>	<u>646,080</u>	<u>10,213,352</u>
% of Available Funds	30%	64%	6%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.64</u>	<u>0.13</u>	<u>0.77</u>

Unitil Energy Systems, Inc.
Remittance Accounts

November, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
2	174,056	649,898	26,100	
3	105,892	125,014	11,816	
4	68,233	265,005	11,230	
5	72,578	196,418	19,977	
6	136,281	194,925	7,637	
9	497,504	858,192	21,089	
10	587,242	148,658	14,464	
12	101,516	353,358	30,782	
13	210,311	240,206	28,479	
16	391,986	452,849	20,954	
17	144,220	71,721	7,577	
18	147,602	4,006	3,571	
19	49,028	258,523	3,849	
20	100,371	82,220	3,695	
23	338,175	442,457	13,190	
24	64,070	164,513	24,141	
25	33,912	147,337	30,620	
27	89,047	240,860	5,897	
30	99,588	320,660	41,214	
	<u>3,411,611</u>	<u>5,216,820</u>	<u>326,282</u>	<u>8,954,713</u>
% of Available Funds	38%	58%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.58</u>	<u>0.07</u>	<u>0.66</u>

December, 2015	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	(28,308)	159,681	15,440	
2	205,178	180,499	6,881	
3	229,183	251,476	7,145	
4	155,792	223,017	11,182	
7	392,503	561,445	23,142	
8	139,348	205,199	10,919	
9	51,576	293,015	13,107	
10	39,881	175,713	9,215	
11	108,786	187,704	13,608	
14	414,444	550,233	15,551	
15	202,801	136,248	10,952	
16	40,650	199,524	14,722	
17	47,471	201,131	25,581	
18	149,065	149,231	23,343	
21	152,369	380,197	26,886	
22	46,858	183,183	6,851	
23	93,340	359,811	17,279	
24	69	141,376	16,593	
28	513,668	502,075	114,023	
29	(48,210)	126,429	100,932	
30	(31,600)	300,754	7,559	
31	51,087	165,428	25,077	
	<u>2,925,950</u>	<u>5,633,369</u>	<u>515,988</u>	<u>9,075,307</u>
% of Available Funds	32%	62%	6%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.62</u>	<u>0.11</u>	<u>0.73</u>

UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF DEFAULT SERVICE COSTS AND RENEWABLE ENERGY CREDITS

	Reference Page	Cost	% of Total	Average Days Lead	Weighted Days Lead
G1 Default Service Supplier Costs	Schedule DN-2	\$ 2,774,271	87.34%	47.75 days	41.71 days
G1 Renewable Energy Credits	21	\$ 402,114	12.66%	321.52 days	40.70 days
Total		<u>\$ 3,176,386</u>	100.00%		<u>82.41 days</u>

UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF RENEWABLE ENERGY CREDITS

2015														
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
RECS*	1/1/2015	2/1/2015	3/1/2015	4/1/2015	5/1/2015	6/1/2015	7/1/2015	8/1/2015	9/1/2015	10/1/2015	11/1/2015	12/1/2015		
	1/31/2015	2/28/2015	3/31/2015	4/30/2015	5/31/2015	6/30/2015	7/31/2015	8/31/2015	9/30/2015	10/31/2015	11/30/2015	12/31/2015		
	\$ -	\$ -	\$ 10,420	\$ 42,619	\$ 46,241	\$ 28,384	\$ 28,309	\$ 31,036	\$ 29,354	\$ 22,972	\$ 26,051	\$ 12,684	\$ 278,069	
	0.00%	0.00%	2.59%	10.60%	11.50%	7.06%	7.04%	7.72%	7.30%	5.71%	6.48%	3.15%	69.15%	
	Payment Date**	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016		
	Lead Period	532.50	503.00	473.50	443.00	412.50	382.00	351.50	320.50	290.00	259.50	229.00	198.50	
	Weighted Days	-	-	12.27	46.95	47.44	26.96	24.75	24.74	21.17	14.82	14.84	6.26	240.20 days
REC Purchases***														
	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	2/1/2015	3/1/2015	3/1/2015	3/1/2015		
	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	2/28/2015	3/31/2015	3/31/2015	3/31/2015		
	\$ 1,780	\$ 14,460	\$ 998	\$ 2,841	\$ 1,302	\$ 1,429	\$ 41	\$ 20,649	\$ 46,523	\$ 31,522	\$ 193	\$ 1,263	\$ 124,045	
	0.44%	3.60%	0.25%	0.71%	0.32%	0.36%	0.01%	5.14%	11.57%	7.84%	0.05%	0.31%	30.85%	
	Payment Date	7/27/2015	8/7/2015	8/14/2015	10/15/2015	10/28/2015	10/29/2015	11/13/2015	11/16/2015	11/16/2015	11/16/2015	12/7/2016	2/19/2016	
	Lead Period	192.50	203.50	210.50	272.50	285.50	286.50	301.50	304.50	275.00	245.50	317.50	340.50	
	Weighted Days	0.85	7.32	0.52	1.92	0.92	1.02	0.03	15.64	31.82	19.25	0.15	1.00	81.32 days
Total \$ Amount	\$ 1,780	\$ 14,460	\$ 11,417	\$ 45,459	\$ 47,544	\$ 29,813	\$ 28,350	\$ 51,685	\$ 75,877	\$ 54,494	\$ 26,244	\$ 13,947	\$ 402,114	

Weighted Days

321.52 days

* Estimated cost of RECs included in rates in 2015

** The last day to acquire 2015 Renewable Energy Credits and/or make alternative compliance payments is July 1, 2016

*** Actual purchasing activity for 2015 RECs applied in chronological order to monthly budgeted amounts

UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF DEFAULT SERVICE COSTS AND RENEWABLE ENERGY CREDITS

	Reference Page	Cost	% of Total	Average Days Lead	Weighted Days Lead
Non-G1 Default Service Supplier Costs	Schedule DN-2	\$ 62,028,674	94.82%	35.84 days	33.98 days
Non-G1 Renewable Energy Credits	23	\$ 3,386,120	5.18%	320.43 days	16.59 days
Total		<u>\$ 65,414,795</u>	100.00%		<u>50.57 days</u>

UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF RENEWABLE ENERGY CREDITS

2015													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
NON-G1													
RECS*													
Period Begin	1/1/2015	2/1/2015	3/1/2015	4/1/2015	5/1/2015	6/1/2015	7/1/2015	8/1/2015	9/1/2015	10/1/2015	11/1/2015	12/1/2015	
Period End	1/31/2015	2/28/2015	3/31/2015	4/30/2015	5/31/2015	6/30/2015	7/31/2015	8/31/2015	9/30/2015	10/31/2015	11/30/2015	12/31/2015	
\$ Amount	\$ -	\$ -	\$ 153,715	\$ 340,705	\$ 321,175	\$ 207,928	\$ 251,597	\$ 254,326	\$ 202,629	\$ 185,752	\$ 194,120	\$ 200,062	\$ 2,312,010
% to Total	0.00%	0.00%	4.54%	10.06%	9.49%	6.14%	7.43%	7.51%	5.98%	5.49%	5.73%	5.91%	68.28%
Payment Date**	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	
Lead Period	532.50	503.00	473.50	443.00	412.50	382.00	351.50	320.50	290.00	259.50	229.00	198.50	
Weighted Days	-	-	21.49	44.57	39.13	23.46	26.12	24.07	17.35	14.24	13.13	11.73	235.29 days
REC Purchases***													
Period Begin	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	1/1/2015	2/1/2015	3/1/2015	3/1/2015	3/1/2015	
Period End	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	1/31/2015	2/28/2015	3/31/2015	3/31/2015	3/31/2015	
\$ Amount	\$ 15,270	\$ 124,050	\$ 8,557	\$ 24,368	\$ 11,173	\$ 12,255	\$ 351	\$ 260,687	\$ 382,995	\$ 202,968	\$ 2,432	\$ 15,897	\$ 1,074,111
% to Total	0.45%	3.66%	0.25%	0.72%	0.33%	0.36%	0.01%	7.70%	11.31%	5.99%	0.07%	0.47%	31.72%
Payment Date	7/27/2015	8/7/2015	8/14/2015	10/15/2015	10/28/2015	10/29/2015	11/13/2015	11/16/2015	11/16/2015	11/16/2015	12/7/2016	2/19/2016	
Lead Period	192.50	203.50	210.50	272.50	285.50	286.50	301.50	304.50	275.00	245.50	317.50	319.50	340.50
Weighted Days	0.87	7.46	0.53	1.96	0.94	1.04	0.03	23.44	31.10	14.72	0.23	1.50	85.14 days
Total \$ Amount	\$ 15,270	\$ 124,050	\$ 162,273	\$ 365,073	\$ 332,348	\$ 220,184	\$ 251,948	\$ 515,013	\$ 585,624	\$ 388,720	\$ 196,552	\$ 215,959	\$ 3,386,120

Weighted Days

320.43 days

* Estimated cost of RECs included in rates in 2015

** The last day to acquire 2015 Renewable Energy Credits and/or make alternative compliance payments is July 1, 2016

*** Actual purchasing activity for 2015 RECs applied in chronological order to monthly budgeted amounts

UNITIL ENERGY SYSTEMS, INC.

REDACTED WORKPAPERS

FOR THE

DEFAULT SERVICE AND
RENEWABLE ENERGY CREDITS

LEAD/LAG STUDY

FOR G1 AND NON-G1 CUSTOMERS

2015

REDACTED

UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF DEFAULT SERVICE COSTS AND RENEWABLE ENERGY CREDITS

	Reference Page	Cost	% of Total	Average Days Lead	Weighted Days Lead
Summary					
Total G1 Default Service Supplier Costs	Detail below	\$ 2,774,271	87.34%	47.75 days	41.71 days
G1 Renewable Energy Credits	Schedule DN-1 p 21	\$ 402,114	12.66%	321.52 days	40.70 days
Total		<u>\$ 3,176,386</u>	100.00%		<u>82.41 days</u>
<u>Detail for G1 Default Service Supplier Costs</u>					
Supplier A	3	\$ 2,653,630	95.65%		
Supplier B	4	\$ 120,642	4.35%		
Total G1 Default Service Supplier Costs		<u>\$ 2,774,271</u>	100.00%		<u>47.75 days</u>

Weighted Days

REDACTED

UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF DEFAULT SERVICE COSTS AND RENEWABLE ENERGY CREDITS

	Reference Page	Cost	% of Total	Average Days Lead	Weighted Days Lead
Summary					
Total Non-G1 Default Service Supplier Costs	see below	\$ 62,028,674	94.82%	35.84 days	33.98 days
Renewable Energy Credits	Schedule DN-1 p 23	\$ 3,386,120	5.18%	320.43 days	16.59 days
Total		<u>\$ 65,414,795</u>	100.00%		<u>50.57 days</u>
<u>Detail for Non-G1 Default Service Supplier Costs</u>					
Supplier C	6	\$ 6,371,392	10.27%		
Supplier D	7	\$ 25,499,848	41.11%		
Supplier E	8	\$ 1,318,489	2.13%		
Supplier F	9	\$ 25,759,294	41.53%		
Supplier G	10	\$ 3,079,650	4.96%		
Total Non-G1 Default Service Supplier Costs		<u>\$ 62,028,674</u>	100.00%		<u>35.84 days</u>

Weighted Days

Weighted Days