

UNITIL ENERGY SYSTEMS, INC.

DEFAULT SERVICE AND
RENEWABLE ENERGY CREDITS

LEAD/LAG STUDY

FOR G1 AND NON-G1 CUSTOMERS

2020

Unitil Energy Systems, Inc.
Default Service Costs and Renewable Energy Credits Lead / Lag Study
For the Period January 1, 2020 Through December 31, 2020
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 23.33 days for G1 Customers and a net lead period of 0.50 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 2020, including one 29 day month, four 30 day months, and seven 31 day months. The weighted average day delay is 15.25 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 1.01 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 23.95 days for G1 customers and 42.03 days for Non-G1 customers. See pages 11 and 12 of this Study.

D. Collection to Receipt of Available Funds

On average, 1.68 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 41.89 days for G1 customers and 59.97 days for Non-G1 customers. See page 4 of this Study.

Unitil Energy Systems, Inc.
Default Service Costs and Renewable Energy Credits Lead / Lag Study
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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 65.22 days for G1 customers and 60.47 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 23.33 days for G1 customers and net lead period of 0.50 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 2020 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	15.25 days	5	15.25 days
3	Meter Reading to Recording of Accounts Receivable	6 - 10	1.01 days	6 - 10	1.01 days
4	Billing to Collection	11	23.95 days	12	42.03 days
5	Collection to Receipt of Available Funds	13 - 19	<u>1.68 days</u>	13 - 19	<u>1.68 days</u>
6	Subtotal Revenue Lag Days		41.89 days		59.97 days
	Less: Lead in Payment of Default Service Costs and				
7	Renewable Energy Credits	20	<u>65.22 days</u>	22	<u>60.47 days</u>
8	Total Default Service and Renewable Energy Credit Lag (Line 6 Less Line 7)		<u><u>-23.33 days</u></u>		<u><u>-0.50 days</u></u>

Receipt of Electric Service to Meter Reading Average Days Delay

January 1, 2020 to December 31, 2020 Number of Days

January	31
February	29
March	31
April	30
May	31
June	30
July	31
August	31
September	30
October	31
November	30
December	31

1 29 Day Month	1*29	29
4 30 Day Months	4*30	120
7 31 Day Months	7*31	<u>217</u>
	Total	<u>366 days</u>

$$366 \text{ Days} / 12 \text{ Months} / 2 = \underline{\underline{15.25 \text{ days}}}$$

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

<u>Month</u>	<u>Average Days</u>
January 2020	1.02
February 2020	1.01
March 2020	1.01
April 2020	1.01
May 2020	1.01
June 2020	1.01
July 2020	1.01
August 2020	1.01
September 2020	1.02
October 2020	1.01
November 2020	1.01
December 2020	1.01
Average	<u>1.01</u>

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

January 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Weighted Days Lag
1	75,161	99.19%	1	0.99
2	259	0.34%	2	0.01
3	273	0.36%	3	0.01
4	48	0.06%	4	0.00
5	10	0.01%	5	0.00
6	6	0.01%	6	0.00
7	1	0.00%	7	0.00
8-14	13	0.02%	11	0.00
Over 14	-	0.00%	14	-
Total	75,771	100.00%		1.02

February 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Weighted Days Lag
1	75,634	99.56%	1	1.00
2	193	0.25%	2	0.01
3	61	0.08%	3	0.00
4	54	0.07%	4	0.00
5	3	0.00%	5	0.00
6	1	0.00%	6	0.00
7	6	0.01%	7	0.00
8 to 14	13	0.02%	11	0.00
Over 14	-	0.00%	14	-
Total	75,965	100.00%		1.01

March 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,701	99.62%	1	1.00
2	212	0.28%	2	0.01
3	37	0.05%	3	0.00
4	17	0.02%	4	0.00
5	14	0.02%	5	0.00
6	3	0.00%	6	0.00
7	2	0.00%	7	0.00
8 to 14	1	0.00%	11	0.00
Over 14	-	0.00%	14	-
Total	75,987	100.00%		1.01

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

April 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,727	99.64%	1	1.00
2	190	0.25%	2	0.01
3	51	0.07%	3	0.00
4	23	0.03%	4	0.00
5	4	0.01%	5	0.00
6	-	0.00%	6	-
7	-	0.00%	7	-
8 to 14	4	0.01%	11	0.00
Over 14	-	0.00%	14	-
Total	75,999	100.00%		1.01

May 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,603	99.72%	1	1.00
2	60	0.08%	2	0.00
3	42	0.06%	3	0.00
4	10	0.01%	4	0.00
5	26	0.03%	5	0.00
6	4	0.01%	6	0.00
7	1	0.00%	7	0.00
8 to 14	70	0.09%	11	0.01
Over 14	-	0.00%	14	-
Total	75,816	100.00%		1.01

June 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,606	99.60%	1	1.00
2	141	0.19%	2	0.00
3	61	0.08%	3	0.00
4	34	0.04%	4	0.00
5	43	0.06%	5	0.00
6	21	0.03%	6	0.00
7	1	0.00%	7	0.00
8 to 14	2	0.00%	11	0.00
Over 14	-	0.00%	14	-
Total	75,909	100.00%		1.01

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

July 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,676	99.43%	1	0.99
2	178	0.23%	2	0.00
3	34	0.04%	3	0.00
4	134	0.18%	4	0.01
5	43	0.06%	5	0.00
6	21	0.03%	6	0.00
7	6	0.01%	7	0.00
8 to 14	14	0.02%	11	0.00
Over 14	-	0.00%	14	-
Total	76,106	100.00%		1.01

August 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,911	99.51%	1	1.00
2	281	0.37%	2	0.01
3	46	0.06%	3	0.00
4	12	0.02%	4	0.00
5	13	0.02%	5	0.00
6	8	0.01%	6	0.00
7	4	0.01%	7	0.00
8 to 14	10	0.01%	11	0.00
Over 14	-	0.00%	14	-
Total	76,285	100.00%		1.01

September 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,142	99.42%	1	0.99
2	225	0.29%	2	0.01
3	26	0.03%	3	0.00
4	57	0.07%	4	0.00
5	52	0.07%	5	0.00
6	23	0.03%	6	0.00
7	24	0.03%	7	0.00
8 to 14	36	0.05%	11	0.01
Over 14	1	0.00%	14	0.00
Total	76,586	100.00%		1.02

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

October 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,724	99.18%	1	0.99
2	497	0.65%	2	0.01
3	74	0.10%	3	0.00
4	38	0.05%	4	0.00
5	15	0.02%	5	0.00
6	2	0.00%	6	0.00
7	1	0.00%	7	0.00
8 to 14	2	0.00%	11	0.00
Over 14	-	0.00%	14	-
Total	76,353	100.00%		1.01

November 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,959	99.60%	1	1.00
2	221	0.29%	2	0.01
3	28	0.04%	3	0.00
4	21	0.03%	4	0.00
5	16	0.02%	5	0.00
6	3	0.00%	6	0.00
7	7	0.01%	7	0.00
8 to 14	7	0.01%	11	0.00
Over 14	-	0.00%	14	-
Total	76,262	100.00%		1.01

December 2020

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,066	99.50%	1	0.99
2	275	0.36%	2	0.01
3	67	0.09%	3	0.00
4	24	0	4	0.00
5	4	0.01%	5	0.00
6	5	0.01%	6	0.00
7	3	0.00%	7	0.00
8 to 14	6	0.01%	11	0.00
Over 14	-	0.00%	14	0.00
Total	76,450	100.00%		1.01

Unitil Energy Systems, Inc. Number Of Days Lag In Billing To Collection Twelve Months Average 1/20 - 12/20 G1 Customers				
Month	Days in Month	Electric Sales Revenues	Daily Average (1/Days)	Accounts Receivable Electric Sales
		(1)	(2)	(3)
2020				
January	31	2,465,550	79,534	1,586,461
February	29	2,466,969	85,068	1,741,681
March	31	2,405,512	77,597	1,723,008
April	30	2,072,387	69,080	1,561,058
May	31	2,072,416	66,852	1,679,346
June	30	2,360,799	78,693	1,747,494
July	31	2,514,784	81,122	2,008,702
August	31	2,758,209	88,974	2,274,835
September	30	2,881,134	96,038	2,574,522
October	31	2,483,141	80,101	1,973,323
Novemeber	30	2,451,529	81,718	2,080,795
December	31	2,572,141	82,972	2,223,825
Total		29,504,570	967,749	23,175,049
Average		2,458,714	80,646	1,931,254
Payment Lag Days (3/2)				23.95

Unitil Energy Systems, Inc. Number Of Days Lag In Billing To Collection Twelve Months Average 1/20 - 12/20 Non-G1 Customers				
Month	Days in Month	Electric Sales Revenues	Daily Average (1/Days)	Accounts Receivable Electric Sales
		(1)	(2)	(3)
2020				
January	31	14,208,241	458,330	16,498,235
February	29	13,440,247	463,457	17,150,801
March	31	13,012,338	419,753	17,332,855
April	30	11,072,933	369,098	15,837,737
May	31	10,592,590	341,696	15,689,278
June	30	11,880,875	396,029	17,411,870
July	31	13,092,949	422,353	17,560,174
August	31	14,411,068	464,873	19,314,747
September	30	12,634,383	421,146	18,466,431
October	31	9,901,050	319,389	15,530,629
Novemeber	30	10,319,520	343,984	15,190,474
December	31	12,841,532	414,243	17,225,217
Total		\$ 147,407,727	\$ 4,834,352	\$ 203,208,449
Average		\$ 12,283,977	\$ 402,863	\$ 16,934,037
Payment Lag Days (3/2)				42.03

**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**

2020	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	34%	61%	5%	100%	0.61	0.09	0.71
February	39%	57%	5%	100%	0.57	0.09	0.66
March	38%	58%	4%	100%	0.58	0.08	0.66
April	36%	59%	5%	100%	0.59	0.10	0.69
May	35%	61%	4%	100%	0.61	0.09	0.69
June	33%	62%	5%	100%	0.62	0.10	0.71
July	34%	61%	5%	100%	0.61	0.09	0.70
August	37%	58%	5%	100%	0.58	0.10	0.68
September	37%	59%	4%	100%	0.59	0.08	0.67
October	35%	60%	4%	100%	0.60	0.09	0.69
November	36%	59%	5%	100%	0.59	0.10	0.69
December	37%	59%	3%	100%	0.59	0.07	0.66

Average Weighted Lag Days for Availability of Funds 0.68 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>0.68 days</u>
Total Lag Days from Collection to Availability of Funds:	<u><u>1.68 days</u></u>

Unitil Energy Systems, Inc.
Remittance Accounts

January, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
2	253,340	296,459	10,754	
3	72,996	170,411	13,517	
6	204,244	688,934	43,812	
7	533,373	86,435	38,854	
8	121,679	400,179	28,409	
9	7,363	172,171	18,387	
10	82,713	423,975	6,836	
13	291,390	682,527	54,224	
14	453,204	289,357	41,738	
15	182,326	242,780	8,720	
16	(6,047)	139,016	10,461	
17	70,779	114,294	4,151	
21	72,195	412,062	38,604	
22	266,554	157,817	10,197	
23	96,360	237,284	5,971	
24	90,425	95,605	5,158	
27	226,462	358,025	46,750	
28	73,181	73,635	13,165	
29	37,145	452,376	16,956	
30	86,639	210,054	19,886	
31	102,733	280,432	19,279	
	<u>3,319,052</u>	<u>5,983,828</u>	<u>455,829</u>	<u>9,758,709</u>
% of Available Funds	34%	61%	5%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.61</u>	<u>0.09</u>	<u>0.71</u>

February, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
3	96,883	580,175	74,074	
4	(11,855)	66,288	61,466	
5	(8,146)	397,668	8,408	
6	485,089	599,975	16,624	
7	146,315	291,410	22,862	
10	376,356	532,348	18,499	
11	504,634	179,412	18,899	
12	188,840	249,334	44,881	
13	(22,280)	433,595	9,432	
14	246,683	127,112	6,411	
18	34,390	292,836	17,078	
19	852,315	63,977	2,977	
20	35,645	340,704	4,411	
21	76,071	48,061	10,368	
24	335,134	411,403	36,794	
25	141,326	35,459	10,286	
26	107,848	233,570	19,276	
27	23,630	150,422	42,814	
28	54,156	374,252	7,158	
	<u>3,663,034</u>	<u>5,408,001</u>	<u>432,718</u>	<u>9,503,753</u>
% of Available Funds	39%	57%	5%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.57</u>	<u>0.09</u>	<u>0.66</u>

Unitil Energy Systems, Inc.
Remittance Accounts

March, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
2	163,646	547,861	81,117	
3	(33,288)	99,455	49,202	
4	(659)	429,743	19,412	
5	156,415	275,586	12,332	
6	113,841	325,578	20,914	
9	249,084	883,102	23,814	
10	591,973	142,297	15,884	
11	167,234	242,430	13,350	
12	39,841	144,209	5,545	
13	105,588	156,022	3,627	
16	307,739	528,149	12,273	
17	598,236	229,231	10,032	
18	245,774	200,763	12,862	
19	9,244	87,347	10,834	
20	62,987	68,711	5,427	
23	201,195	219,905	13,844	
24	393,439	49,599	3,720	
25	117,315	199,709	5,700	
26	9,673	60,091	13,906	
27	43,356	74,025	10,831	
30	108,925	570,368	9,094	
31	3,359	42,901	9,289	
	<u>3,654,917</u>	<u>5,577,082</u>	<u>363,009</u>	<u>9,595,008</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>0.08</u>	<u>0.66</u>

April, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	33,772	326,384	12,229	
2	54,279	134,946	29,088	
3	43,403	167,927	22,831	
6	139,606	705,627	46,454	
7	211,775	59,867	11,991	
8	279,073	433,126	28,474	
9	25,971	180,635	14,632	
10	95,246	180,313	40,334	
13	311,882	526,964	73,936	
14	385,208	71,774	37,368	
15	95,345	389,026	17,420	
16	134,955	263,229	12,464	
17	89,590	265,676	4,633	
20	241,259	464,552	27,408	
21	(17,606)	190,893	4,994	
22	658,467	226,495	3,799	
23	13,705	149,830	7,218	
24	81,596	174,103	8,250	
27	221,117	341,084	13,866	
28	157,959	36,562	8,278	
29	172,758	224,116	13,362	
30	41,809	205,796	22,166	
	<u>3,471,168</u>	<u>5,718,925</u>	<u>461,195</u>	<u>9,651,288</u>
% of Available Funds	36%	59%	5%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.59</u>	<u>0.10</u>	<u>0.69</u>

Unitil Energy Systems, Inc.
Remittance Accounts

May, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	74,497	222,490	39,216	
4	62,136	644,922	36,186	
5	(26,669)	136,709	37,966	
6	228,575	368,906	38,287	
7	(14,600)	179,605	9,135	
8	105,047	170,129	9,287	
11	248,360	694,414	38,634	
12	356,645	67,189	28,180	
13	219,190	293,601	13,617	
14	4,734	135,527	5,919	
15	84,535	218,330	3,345	
18	149,202	248,906	7,038	
19	527,410	134,367	3,390	
20	186,777	405,495	7,625	
21	8,005	94,874	16,330	
22	55,631	110,401	2,992	
26	155,633	407,572	16,386	
27	263,924	22,572	8,169	
28	56,247	245,016	5,223	
29	72,889	118,729	21,601	
	<u>2,818,166</u>	<u>4,919,754</u>	<u>348,526</u>	<u>8,086,446</u>
% of Available Funds	35%	61%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.61</u>	<u>0.09</u>	<u>0.69</u>

June, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	83,354	614,728	53,832	
2	(44,068)	50,159	38,791	
3	20,121	324,932	15,162	
4	128,178	264,775	6,800	
5	78,723	198,818	6,802	
8	262,934	608,608	43,486	
9	384,798	74,739	30,109	
10	110,236	214,454	8,444	
11	73,613	100,485	9,357	
12	74,449	126,152	28,112	
15	189,708	589,955	21,430	
16	383,433	180,841	18,635	
17	251,539	149,907	13,002	
18	57,755	338,857	9,147	
19	48,879	91,651	7,312	
22	48,759	266,000	16,413	
23	318,082	51,797	4,054	
24	91,435	431,154	2,629	
25	43,203	72,778	4,550	
26	59,755	81,477	23,204	
29	210,634	406,687	31,706	
30	(19,228)	43,647	23,356	
	<u>2,856,291</u>	<u>5,282,601</u>	<u>416,333</u>	<u>8,555,225</u>
% of Available Funds	33%	62%	5%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.62</u>	<u>0.10</u>	<u>0.71</u>

Unitil Energy Systems, Inc.
Remittance Accounts

July, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	22,604	309,884	5,895	
2	28,521	199,500	8,444	
3	57,162	152,715	8,972	
6	112,634	510,198	18,501	
7	290,526	93,448	13,267	
8	210,262	311,467	14,438	
9	12,530	169,205	67,545	
10	57,906	254,111	78,957	
13	162,541	886,129	39,071	
14	421,533	190,020	11,685	
15	175,135	142,477	3,515	
16	19,047	189,438	13,946	
17	58,376	74,862	5,803	
20	208,263	356,400	20,110	
21	(7,600)	139,908	8,715	
22	722,154	182,291	10,812	
23	7,048	118,502	5,736	
24	67,761	107,775	6,003	
27	216,318	316,023	27,317	
28	138,258	103,274	12,683	
29	23,537	328,329	8,753	
30	13,151	181,011	6,914	
31	90,211	163,595	23,799	
Total	3,107,878	5,480,562	420,881	9,009,321
% of Available Funds	34%	61%	5%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.61	0.09	0.70

August, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
3	100,181	745,448	37,087	
4	(29,987)	54,489	15,848	
5	58,162	280,082	7,271	
6	22,561	210,858	10,902	
7	192,037	248,079	15,173	
10	339,741	723,551	79,897	
11	429,678	94,065	64,442	
12	125,167	363,502	9,109	
13	13,998	132,254	23,658	
14	83,641	173,746	10,008	
17	224,726	527,666	18,723	
18	527,618	52,247	12,632	
19	244,447	309,989	9,047	
20	57,081	194,732	18,160	
21	74,792	119,394	6,506	
24	235,823	342,981	12,266	
25	376,141	40,098	25,965	
26	210,034	262,089	25,318	
27	(4,383)	161,644	9,722	
28	65,262	151,988	9,118	
31	267,890	427,031	47,848	
Total	3,614,610	5,615,933	468,700	9,699,243
% of Available Funds	37%	58%	5%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.58	0.10	0.68

Unitil Energy Systems, Inc.
Remittance Accounts

September, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	(36,736)	24,176	37,004	
2	46,015	358,781	8,837	
3	26,623	326,862	16,597	
4	142,727	427,959	8,327	
8	283,243	813,025	84,185	
9	721,091	133,226	67,823	
10	(4,445)	799,184	16,999	
11	86,756	195,947	13,776	
14	216,399	709,986	40,667	
15	526,874	120,247	9,215	
16	286,411	230,099	1,998	
17	17,256	76,318	4,212	
18	82,967	68,866	3,163	
21	292,201	348,543	16,321	
22	425,617	36,897	8,518	
23	108,945	126,415	13,259	
24	56,299	132,461	6,801	
25	70,730	92,355	9,573	
28	137,481	355,680	26,265	
29	(4,793)	47,982	6,516	
30	116,563	247,694	3,267	
	<u>3,598,225</u>	<u>5,672,703</u>	<u>403,323</u>	<u>9,674,251</u>
% of Available Funds	37%	59%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.59</u>	<u>0.08</u>	<u>0.67</u>

October, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	22,696	126,407	15,742	
2	86,063	153,413	8,534	
5	232,368	727,222	23,501	
6	126,202	33,461	47,980	
7	198,901	303,095	46,462	
8	(17,689)	483,050	19,866	
9	94,693	230,147	11,758	
13	105,752	1,205,309	13,004	
14	659,314	26,228	3,226	
15	80,650	319,890	33,622	
16	78,758	170,029	23,806	
19	197,878	372,543	58,991	
20	609,865	135,742	33,183	
21	109,884	235,703	9,625	
22	49,248	125,626	5,886	
23	75,731	177,802	7,749	
26	148,692	337,950	21,066	
27	407,060	36,330	5,125	
28	22,394	364,907	25,638	
29	69,665	225,623	6,147	
30	97,587	130,551	19,252	
	<u>3,455,711</u>	<u>5,921,028</u>	<u>440,163</u>	<u>9,816,902</u>
% of Available Funds	35%	60%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.60</u>	<u>0.09</u>	<u>0.69</u>

Unitil Energy Systems, Inc.
Remittance Accounts

November, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
2	74,895	534,179	47,083	
3	10,959	158,028	26,455	
4	203,588	193,701	6,379	
5	24,494	260,123	22,400	
6	74,887	295,117	11,220	
9	407,384	681,241	22,085	
10	503,979	102,221	51,719	
12	134,524	259,448	55,009	
13	29,921	116,285	10,594	
16	165,063	715,599	13,357	
17	506,056	267,682	6,122	
18	133,334	285,947	9,708	
19	8,391	97,318	5,974	
20	95,258	117,121	9,393	
23	133,229	223,977	29,308	
24	258,770	18,018	21,655	
25	37,465	108,454	6,673	
27	165,701	216,286	41,338	
30	(339)	172,403	20,773	
	<u>2,967,560</u>	<u>4,823,148</u>	<u>417,245</u>	<u>8,207,953</u>
% of Available Funds	36%	59%	5%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.59</u>	<u>0.10</u>	<u>0.69</u>

December, 2020	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	92,147	166,309	18,715	
2	45,461	207,174	4,339	
3	23,133	222,847	8,529	
4	77,905	363,613	7,004	
7	469,364	615,172	53,545	
8	261,399	77,879	43,492	
9	90,049	349,572	8,727	
10	13,440	120,491	4,431	
11	72,178	233,939	8,746	
14	274,914	419,500	12,099	
15	522,780	147,362	11,077	
16	169,636	90,751	2,489	
17	10,575	89,372	12,100	
18	50,007	66,446	11,506	
21	146,115	272,950	19,864	
22	240,207	94,609	4,403	
23	25,709	127,237	4,417	
24	63,942	165,758	6,842	
28	72,178	233,939	8,746	
29	169,313	7,864	2,782	
30	87,629	524,031	7,325	
31	88,581	260,237	8,592	
	<u>3,066,664</u>	<u>4,857,052</u>	<u>269,770</u>	<u>8,193,486</u>
% of Available Funds	37%	59%	3%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.59</u>	<u>0.07</u>	<u>0.66</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 DTN-2	\$ 2,896,058	89.58%	41.00 days	36.73 days
G1 Renewable Energy Credits	21	\$ 336,782	10.42%	273.50 days	28.49 days
Total		<u>\$ 3,232,840</u>	100.00%		<u>65.22 days</u>

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

G1	2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
RECs*													
Period Begin	1/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020	6/1/2020	7/1/2020	8/1/2020	9/1/2020	10/1/2020	11/1/2020	12/1/2020	
Period End	1/31/2020	2/28/2020	3/31/2020	4/30/2020	5/31/2020	6/30/2020	7/31/2020	8/31/2020	9/30/2020	10/31/2020	11/30/2020	12/31/2020	
\$ Amount	\$23,090	\$23,122	\$23,202	\$21,543	\$21,638	\$32,437	\$35,542	\$33,283	\$33,625	\$28,979	\$26,254	\$34,067	
REC Purchase Applied	(\$23,090)	(\$23,122)	(\$23,202)	(\$21,543)	(\$21,638)	(\$8,526)	\$0	\$0	\$0	\$0	\$0	\$0	
Net \$ Amount	\$0	\$0	\$0	\$0	\$0	\$23,911	\$35,542	\$33,283	\$33,625	\$28,979	\$26,254	\$34,067	\$215,661
% to Total	0.00%	0.00%	0.00%	0.00%	0.00%	7.10%	10.55%	9.88%	9.98%	8.60%	7.80%	10.12%	64.04%
Payment Date**	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	
Lead Period	532.50	503.00	472.50	442.00	411.50	381.00	350.50	319.50	289.00	258.50	228.00	197.50	
Weighted Days	-	-	-	-	-	27.05	36.99	31.58	28.85	22.24	17.77	19.98	184.46 days
REC Purchases***													
Period Begin	1/1/2020	1/1/2020	1/1/2020	2/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020	5/1/2020	6/1/2020	6/1/2020		
Period End	1/31/2020	1/31/2020	1/31/2020	2/28/2020	2/28/2020	3/31/2020	4/30/2020	5/31/2020	5/31/2020	6/30/2020	6/30/2020		
\$ Amount	\$7,039	\$10,535	\$5,516	\$5,113	\$18,008	\$23,202	\$21,543	\$21,358	\$280	\$3,400	\$5,126		\$121,121
% to Total	2.09%	3.13%	1.64%	1.52%	5.35%	6.89%	6.40%	6.34%	0.08%	1.01%	1.52%		35.96%
Payment Date	7/22/2020	7/27/2020	11/4/2020	11/4/2020	12/15/2020	12/15/2020	12/15/2020	12/15/2020	1/20/2021	1/20/2021	1/27/2021		
Lead Period	188.50	193.50	293.50	264.00	305.00	274.50	244.00	213.50	249.50	219.00	226.00		
Weighted Days	3.94	6.05	4.81	4.01	16.31	18.91	15.61	13.54	0.21	2.21	3.44		89.04 days
Total \$ Amount													\$336,782

Weighted Days

273.50 days

* Estimated cost of RECs included in rates in 2020

** The last day to acquire 2020 Renewable Energy Credits and/or make alternative compliance payments is July 1, 2021

*** Actual purchasing activity for 2020 RECs applied in chronological order to estimated cost of RECs included in rates in 2020

**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 DTN-2	\$ 44,955,177	90.73%	37.17 days	33.72 days
Non-G1 Renewable Energy Credits	23	\$ 4,592,152	9.27%	288.62 days	26.75 days
Total		<u>\$ 49,547,329</u>	100.00%		<u>60.47 days</u>

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

NON-G1	2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
RECs*													
Period Begin	1/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020	6/1/2020	7/1/2020	8/1/2020	9/1/2020	10/1/2020	11/1/2020	12/1/2020	
Period End	1/31/2020	2/28/2020	3/31/2020	4/30/2020	5/31/2020	6/30/2020	7/31/2020	8/31/2020	9/30/2020	10/31/2020	11/30/2020	12/31/2020	
\$ Amount	\$425,027	\$399,864	\$356,854	\$329,239	\$301,975	\$370,423	\$457,696	\$430,702	\$397,563	\$337,636	\$338,508	\$446,666	
REC Purchase Applied	(\$425,027)	(\$399,864)	(\$356,854)	(\$329,239)	(\$71,432)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Net \$ Amount	\$0	\$0	\$0	\$0	\$230,543	\$370,423	\$457,696	\$430,702	\$397,563	\$337,636	\$338,508	\$446,666	\$3,009,737
% to Total	0.00%	0.00%	0.00%	0.00%	5.02%	8.07%	9.97%	9.38%	8.66%	7.35%	7.37%	9.73%	65.54%
Payment Date**	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	7/1/2021	
Lead Period	532.50	503.00	472.50	442.00	411.50	381.00	350.50	319.50	289.00	258.50	228.00	197.50	
Weighted Days	-	-	-	-	20.66	30.73	34.93	29.97	25.02	19.01	16.81	19.21	196.34 days
REC Purchases***													
Period Begin	1/1/2020	1/1/2020	1/1/2020	1/1/2020	2/1/2020	3/1/2020	4/1/2020	4/1/2020	5/1/2020	5/1/2020			
Period End	1/31/2020	1/31/2020	1/31/2020	1/31/2020	2/28/2020	3/31/2020	4/30/2020	4/30/2020	5/31/2020	5/31/2020			
\$ Amount	\$91,961	\$137,638	\$138,869	\$56,558	\$399,864	\$356,854	\$285,613	\$43,626	\$4,458	\$66,974			\$1,582,415
% to Total	2.00%	3.00%	3.02%	1.23%	8.71%	7.77%	6.22%	0.95%	0.10%	1.46%			34.46%
Payment Date	7/22/2020	7/27/2020	11/4/2020	12/15/2020	12/15/2020	12/15/2020	12/15/2020	1/20/2021	1/20/2021	1/27/2021			
Lead Period	188.50	193.50	293.50	334.50	305.00	274.50	244.00	280.00	249.50	256.50			
Weighted Days	3.77	5.80	8.88	4.12	26.56	21.33	15.18	2.66	0.24	3.74			92.28 days
Total \$ Amount													\$4,592,152

Weighted Days

288.62 days

* Estimated cost of RECs included in rates in 2020
 ** The last day to acquire 2020 Renewable Energy Credits and/or make alternative compliance payments is July 1, 2021
 *** Actual purchasing activity for 2020 RECs applied in chronological order to estimated cost of RECs included in rates in 2020

UNITIL ENERGY SYSTEMS, INC.

REDACTED WORKPAPERS

FOR THE

DEFAULT SERVICE AND
RENEWABLE ENERGY CREDITS

LEAD/LAG STUDY

FOR G1 AND NON-G1 CUSTOMERS

2020

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	\$ 2,896,058	89.58%	41.00 days	36.73 days
G1 Renewable Energy Credits	Schedule DTN-1 p 21	\$ 336,782	10.42%	273.50 days	28.49 days
Total		<u>\$ 3,232,840</u>	100.00%		<u>65.22 days</u>
Detail for G1 Default Service Supplier Costs					
Supplier A	3	\$ 1,400,766	48.37%		
Supplier B	4	\$ 1,178,117	40.68%		
Supplier C	5	\$ 317,175	10.95%		
Total G1 Default Service Supplier Costs		<u>\$ 2,896,058</u>	100.00%		41.00 days

REDACTED
 UNITIL ENERGY SYSTEMS, INC
 LEAD IN PAYMENT OF ELECTRIC COSTS

DS SERVICE POWER SUPPLY CONTRACTS

G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier A													
Normal Service													
Period Begin						6/1/2020	7/1/2020	8/1/2020	9/1/2020	10/1/2020	11/1/2020		
Period End						6/30/2020	7/31/2020	8/31/2020	9/30/2020	10/31/2020	11/30/2020		
\$ Amount						\$ 217,203	\$ 258,883	\$ 263,521	\$ 214,939	\$ 240,153	\$ 212,530		\$ 1,407,228
% to Total						15.51%	18.48%	18.81%	15.34%	17.14%	15.17%		100.46%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2020)													
Period Begin						6/1/2020	7/1/2020						
Period End						6/30/2020	7/31/2020						
\$ Amount						\$ (338)	\$ (6,125)						\$ (6,463)
% to Total						-0.02%	-0.44%						-0.46%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 216,865	\$ 252,758	\$ 263,521	\$ 214,939	\$ 240,153	\$ 212,530	\$ -	\$ 1,400,766

Weighted Days

REDACTED
 UNITIL ENERGY SYSTEMS, INC
 LEAD IN PAYMENT OF ELECTRIC COSTS

DS SERVICE POWER SUPPLY CONTRACTS													
G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier B													
Normal Service													
Period Begin	1/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020								
Period End	1/31/2020	2/28/2020	3/30/2020	4/30/2020	5/31/2020								
\$ Amount	\$ 263,027	\$ 227,494	\$ 215,030	\$ 224,149	\$ 235,578								\$ 1,165,277
% to Total	22.33%	19.31%	18.25%	19.03%	20.00%								98.91%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2020)													
Period Begin	1/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020								
Period End	1/31/2020	2/28/2020	3/30/2020	4/30/2020	5/31/2020								
\$ Amount	\$ 2,336	\$ 8,696	\$ 6,173	\$ (1,986)	\$ (2,379)								\$ 12,840
% to Total	0.20%	0.74%	0.52%	-0.17%	-0.20%								1.09%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ 265,363	\$ 236,190	\$ 221,203	\$ 222,163	\$ 233,199	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,178,117

Weighted Days

REDACTED
 UNITIL ENERGY SYSTEMS, INC
 LEAD IN PAYMENT OF ELECTRIC COSTS

DS SERVICE POWER SUPPLY CONTRACTS

G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier C													
Normal Service													
Period Begin												12/1/2020	
Period End												12/31/2020	
\$ Amount												\$ 317,175	\$ 317,175
% to Total												100.00%	100.00%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2020)													
Period Begin													
Period End													
\$ Amount													\$ -
% to Total													0.00%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 317,175	\$ 317,175
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	\$ 44,955,177	90.73%	37.17 days	33.72 days
Renewable Energy Credits	Schedule DTN-1 p 23	\$ 4,592,152	9.27%	288.62 days	26.75 days
Total		<u>\$ 49,547,329</u>	100.00%		<u>60.47 days</u>
Detail for Non-G1 Default Service Supplier Costs					
Supplier D	7	\$ 39,633,719	88.16%		
Supplier E	8	\$ 5,321,458	11.84%		
Total Non-G1 Default Service Supplier Costs		<u>\$ 44,955,177</u>	100.00%		37.17 days

REDACTED
UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF ELECTRIC COSTS

DS SERVICE POWER SUPPLY CONTRACTS

NON-G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier D													
Normal Service													
Period Begin	1/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020	6/1/2020	7/1/2020	8/1/2020	9/1/2020	10/1/2020	11/1/2020	12/1/2020	
Period End	1/31/2020	2/28/2020	3/30/2020	4/30/2020	5/31/2020	6/30/2020	7/31/2020	8/31/2020	9/30/2020	10/31/2020	11/30/2020	12/31/2020	
\$ Amount	\$ 6,119,440	\$ 5,612,420	\$ 4,241,066	\$ 2,439,702	\$ 3,165,415	\$ 2,378,141	\$ 3,030,637	\$ 2,560,206	\$ 1,935,720	\$ 1,943,826	\$ 2,424,435	\$ 3,402,456	\$ 39,253,464
% to Total	15.44%	14.16%	10.70%	6.16%	7.99%	6.00%	7.65%	6.46%	4.88%	4.90%	6.12%	8.58%	99.04%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2020)													
Period Begin	1/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020	6/1/2020	7/1/2020		9/1/2020	10/1/2020			
Period End	1/31/2020	2/28/2020	3/30/2020	4/30/2020	5/31/2020	6/30/2020	7/31/2020		9/30/2020	10/31/2020			
\$ Amount	\$ 49,025	\$ 32,460	\$ 183,849	\$ 191,550	\$ 117,739	\$ (62,634)	\$ (123,159)		\$ 14,000	\$ (22,575)			\$ 380,255
% to Total	0.12%	0.08%	0.46%	0.48%	0.30%	-0.16%	-0.31%		0.04%	-0.06%			0.96%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ 6,168,465	\$ 5,644,880	\$ 4,424,916	\$ 2,631,251	\$ 3,283,154	\$ 2,315,507	\$ 2,907,478	\$ 2,560,206	\$ 1,949,719	\$ 1,921,251	\$ 2,424,435	\$ 3,402,456	\$ 39,633,719
Weighted Days													

REDACTED
UNITIL ENERGY SYSTEMS, INC
LEAD IN PAYMENT OF ELECTRIC COSTS

DS SERVICE POWER SUPPLY CONTRACTS

NON-G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier E													
Normal Service													
Period Begin						6/1/2020	7/1/2020	8/1/2020	9/1/2020	10/1/2020	11/1/2020	12/1/2020	
Period End						6/30/2020	7/31/2020	8/31/2020	9/30/2020	10/31/2020	11/30/2020	12/31/2020	
\$ Amount						\$ 573,990	\$ 739,996	\$ 734,795	\$ 656,280	\$ 631,161	\$ 700,267	\$ 1,153,368	\$ 5,189,857
% to Total						10.79%	13.91%	13.81%	12.33%	11.86%	13.16%	21.67%	97.53%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2020)													
Period Begin						6/1/2020	7/1/2020		9/1/2020	10/1/2020			
Period End						6/30/2020	7/31/2020		9/30/2020	10/31/2020			
\$ Amount						\$ 52,394	\$ 106,070		\$ (23,775)	\$ (3,088)			\$ 131,601
% to Total						0.98%	1.99%		-0.45%	-0.06%			2.47%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 626,384	\$ 846,065	\$ 734,795	\$ 632,505	\$ 628,073	\$ 700,267	\$ 1,153,368	\$ 5,321,458
Weighted Days													