

UNITIL ENERGY SYSTEMS, INC.

DEFAULT SERVICE AND
RENEWABLE ENERGY CREDITS

LEAD/LAG STUDY

FOR G1 AND NON-G1 CUSTOMERS

2021

Unitil Energy Systems, Inc.
Default Service Costs and Renewable Energy Credits Lead / Lag Study
For the Period January 1, 2021 Through December 31, 2021
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 18.35 days for G1 Customers and a net lead period of 1.88 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 2021, 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 1.01 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 25.38 days for G1 customers and 40.41 days for Non-G1 customers. See pages 11 and 12 of this Study.

D. Collection to Receipt of Available Funds

On average, 1.65 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 43.25 days for G1 customers and 58.28 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 61.60 days for G1 customers and 60.16 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 18.35 days for G1 customers and net lead period of 1.88 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 2021 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	1.01 days	6 - 10	1.01 days
4	Billing to Collection	11	25.38 days	12	40.41 days
5	Collection to Receipt of Available Funds	13 - 19	<u>1.65 days</u>	13 - 19	<u>1.65 days</u>
6	Subtotal Revenue Lag Days		43.25 days		58.28 days
	Less: Lead in Payment of Default Service Costs and Renewable Energy Credits				
7	Renewable Energy Credits	20	<u>61.60 days</u>	22	<u>60.16 days</u>
	Total Default Service and Renewable Energy Credit Lag (Line 6 Less Line 7)				
8			<u><u>-18.35 days</u></u>		<u><u>-1.88 days</u></u>

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

January 1, 2021 to December 31, 2021 Number of Days

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*29	28
4 30 Day Months	4*30	120
7 31 Day Months	7*31	<u>217</u>
	Total	365 days

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

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

<u>Month</u>	<u>Average Days</u>
January 2021	1.01
February 2021	1.00
March 2021	1.01
April 2021	1.00
May 2021	1.01
June 2021	1.01
July 2021	1.01
August 2021	1.01
September 2021	1.01
October 2021	1.01
November 2021	1.01
December 2021	1.03
Average	<u><u>1.01</u></u>

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

January 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Weighted Days Lag
1	76,103	99.56%	1	1.00
2	292	0.38%	2	0.01
3	22	0.03%	3	0.00
4	4	0.01%	4	0.00
5	1	0.00%	5	0.00
6	1	0.00%	6	0.00
7	1	0.00%	7	0.00
8-14	12	0.02%	11	0.00
Over 14	-	0.00%	14	-
Total	76,436	100.00%		1.01

February 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Weighted Days Lag
1	76,218	99.64%	1	1.00
2	256	0.33%	2	0.01
3	13	0.02%	3	0.00
4	2	0.00%	4	0.00
5	1	0.00%	5	0.00
6	3	0.00%	6	0.00
7	-	0.00%	7	-
8 to 14	3	0.00%	11	0.00
Over 14	-	0.00%	14	-
Total	76,496	100.00%		1.00

March 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	75,844	99.13%	1	0.99
2	575	0.75%	2	0.02
3	67	0.09%	3	0.00
4	16	0.02%	4	0.00
5	-	0.00%	5	-
6	3	0.00%	6	0.00
7	1	0.00%	7	0.00
8 to 14	5	0.01%	11	0.00
Over 14	-	0.00%	14	-
Total	76,511	100.00%		1.01

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

April 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,438	99.62%	1	1.00
2	253	0.33%	2	0.01
3	25	0.03%	3	0.00
4	6	0.01%	4	0.00
5	1	0.00%	5	0.00
6	1	0.00%	6	0.00
7	1	0.00%	7	0.00
8 to 14	3	0.00%	11	0.00
Over 14	-	0.00%	14	-
Total	76,728	100.00%		1.00

May 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,284	99.58%	1	1.00
2	164	0.21%	2	0.00
3	104	0.14%	3	0.00
4	30	0.04%	4	0.00
5	11	0.01%	5	0.00
6	12	0.02%	6	0.00
7	1	0.00%	7	0.00
8 to 14	1	0.00%	11	0.00
Over 14	-	0.00%	14	-
Total	76,607	100.00%		1.01

June 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,091	99.49%	1	0.99
2	162	0.21%	2	0.00
3	104	0.14%	3	0.00
4	53	0.07%	4	0.00
5	28	0.04%	5	0.00
6	9	0.01%	6	0.00
7	5	0.01%	7	0.00
8 to 14	30	0.04%	11	0.00
Over 14	1	0.00%	14	0.00
Total	76,483	100.00%		1.01

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

July 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,233	99.33%	1	0.99
2	355	0.46%	2	0.01
3	78	0.10%	3	0.00
4	26	0.03%	4	0.00
5	24	0.03%	5	0.00
6	3	0.00%	6	0.00
7	6	0.01%	7	0.00
8 to 14	23	0.03%	11	0.00
Over 14	-	0.00%	14	-
Total	76,748	100.00%		1.01

August 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,132	99.37%	1	0.99
2	304	0.40%	2	0.01
3	56	0.07%	3	0.00
4	39	0.05%	4	0.00
5	32	0.04%	5	0.00
6	26	0.03%	6	0.00
7	3	0.00%	7	0.00
8 to 14	17	0.02%	11	0.00
Over 14	2	0.00%	14	0.00
Total	76,611	100.00%		1.01

September 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,496	99.55%	1	1.00
2	105	0.14%	2	0.00
3	69	0.09%	3	0.00
4	72	0.09%	4	0.00
5	59	0.08%	5	0.00
6	10	0.01%	6	0.00
7	15	0.02%	7	0.00
8 to 14	17	0.02%	11	0.00
Over 14	-	0.00%	14	-
Total	76,843	100.00%		1.01

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

October 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,233	99.38%	1	0.99
2	369	0.48%	2	0.01
3	28	0.04%	3	0.00
4	26	0.03%	4	0.00
5	6	0.01%	5	0.00
6	17	0.02%	6	0.00
7	6	0.01%	7	0.00
8 to 14	22	0.03%	11	0.00
Over 14	-	0.00%	14	-
Total	76,707	100.00%		1.01

November 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	76,229	99.54%	1	1.00
2	152	0.20%	2	0.00
3	116	0.15%	3	0.00
4	25	0.03%	4	0.00
5	28	0.04%	5	0.00
6	5	0.01%	6	0.00
7	7	0.01%	7	0.00
8 to 14	13	0.02%	11	0.00
Over 14	7	0.01%	14	0.00
Total	76,582	100.00%		1.01

December 2021

Days Lag	Number of Meters	Percent of Meters	Days Lag Multiplier	Wtd Days Lag
1	74,523	97.12%	1	0.97
2	2,054	2.68%	2	0.05
3	99	0.13%	3	0.00
4	29	0	4	0.00
5	10	0.01%	5	0.00
6	7	0.01%	6	0.00
7	1	0.00%	7	0.00
8 to 14	11	0.01%	11	0.00
Over 14	-	0.00%	14	0.00
Total	76,734	100.00%		1.03

Unitil Energy Systems, Inc. Number Of Days Lag In Billing To Collection Twelve Months Average 1/21 - 12/21 G1 Customers				
Month	Days in Month	Electric Sales Revenues	Daily Average (1/Days)	Accounts Receivable Electric Sales
		(1)	(2)	(3)
2021				
January	31	2,505,326	80,817	2,135,143
February	28	2,676,283	95,582	2,432,438
March	31	2,882,679	92,990	2,284,635
April	30	2,592,249	86,408	1,995,459
May	31	2,552,675	82,344	2,087,255
June	30	2,915,413	97,180	2,359,392
July	31	3,099,422	99,981	2,625,224
August	31	3,089,108	99,649	2,455,615
September	30	3,096,836	103,228	3,288,955
October	31	2,749,723	88,701	2,155,249
Novemeber	30	2,582,945	86,098	1,986,794
December	31	2,733,806	88,187	2,144,283
Total		33,476,466	1,101,165	27,950,442
Average		2,789,705	91,764	2,329,204
Payment Lag Days (3/2)				25.38

Unitil Energy Systems, Inc. Number Of Days Lag In Billing To Collection Twelve Months Average 1/21 - 12/21 Non-G1 Customers				
Month	Days in Month	Electric Sales Revenues	Daily Average (1/Days)	Accounts Receivable Electric Sales
		(1)	(2)	(3)
2021				
January	31	14,103,732	454,959	18,259,961
February	28	14,033,394	501,193	19,440,185
March	31	14,202,250	458,137	18,612,540
April	30	11,388,433	379,614	16,136,097
May	31	11,298,912	364,481	16,205,730
June	30	13,092,792	436,426	17,461,598
July	31	14,119,978	455,483	18,687,100
August	31	13,915,921	448,901	18,342,769
September	30	13,303,374	443,446	16,549,287
October	31	10,408,995	335,774	14,769,903
Novemeber	30	10,243,040	341,435	13,612,861
December	31	14,976,865	483,125	18,133,778
Total		\$ 155,087,686	\$ 5,102,974	\$ 206,211,808
Average		\$ 12,923,974	\$ 425,248	\$ 17,184,317
Payment Lag Days (3/2)				40.41

**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**

2021	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	32%	63%	5%	100%	0.63	0.10	0.73
February	42%	54%	4%	100%	0.54	0.08	0.62
March	38%	57%	4%	100%	0.57	0.09	0.66
April	38%	58%	4%	100%	0.58	0.07	0.65
May	41%	55%	4%	100%	0.55	0.08	0.63
June	39%	57%	3%	100%	0.57	0.07	0.64
July	39%	56%	5%	100%	0.56	0.09	0.65
August	42%	55%	4%	100%	0.55	0.07	0.62
September	40%	56%	4%	100%	0.56	0.07	0.63
October	43%	54%	4%	100%	0.54	0.07	0.61
November	35%	60%	5%	100%	0.60	0.09	0.69
December	38%	58%	4%	100%	0.58	0.07	0.65

Average Weighted Lag Days for Availability of Funds 0.65 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>0.65 days</u>
Total Lag Days from Collection to Availability of Funds:	<u><u>1.65 days</u></u>

Unitil Energy Systems, Inc.
Remittance Accounts

January, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
4	201,978	556,040	33,167	
5	425,366	262,691	14,407	
6	287,542	309,417	13,747	
7	8,402	207,748	11,135	
8	104,304	233,413	13,032	
11	232,324	648,251	80,996	
12	12,939	212,248	12,135	
13	17,476	216,748	13,135	
14	20,742	151,263	22,987	
15	72,558	138,641	23,454	
19	20,095	747,759	44,536	
20	622,239	34,856	30,575	
21	(4,171)	368,303	18,753	
22	86,894	103,432	8,483	
25	322,037	584,790	16,690	
26	223,847	174,198	5,216	
27	74,020	359,830	20,418	
28	10,278	155,468	61,308	
29	322,037	584,790	16,690	
	<u>3,060,905</u>	<u>6,049,886</u>	<u>460,864</u>	<u>9,571,655</u>
% of Available Funds	32%	63%	5%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.63</u>	<u>0.10</u>	<u>0.73</u>

February, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	229,739	462,100	19,804	
2	25,720	91,052	10,905	
3	13,933	161,662	8,851	
4	401,739	425,750	9,719	
5	105,407	178,751	14,851	
8	308,970	673,675	73,897	
9	504,786	149,478	72,889	
10	154,714	455,977	13,860	
11	72,565	107,920	6,476	
12	100,199	154,604	5,879	
16	59,069	433,383	18,856	
17	953,431	128,623	3,986	
18	29,684	258,827	10,437	
19	105,392	123,060	4,185	
22	277,507	444,116	11,658	
23	394,932	106,718	8,434	
24	30,513	294,036	6,807	
25	19,813	126,086	38,165	
26	101,153	174,571	11,635	
	<u>3,889,265</u>	<u>4,950,389</u>	<u>351,294</u>	<u>9,190,948</u>
% of Available Funds	42%	54%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.54</u>	<u>0.08</u>	<u>0.62</u>

Unitil Energy Systems, Inc.
Remittance Accounts

March, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	53,109	723,658	20,743	
2	217,950	145,660	18,468	
3	28,594	391,440	19,804	
4	175,171	266,529	31,733	
5	133,403	195,427	12,313	
8	393,928	1,103,549	43,124	
9	586,598	129,206	30,344	
10	161,258	470,813	58,434	
11	(32,097)	127,017	42,386	
12	81,200	171,015	23,066	
15	321,510	460,485	16,546	
16	597,841	57,743	11,646	
17	259,345	146,572	7,157	
18	9,751	64,919	3,128	
19	94,459	60,121	1,741	
22	190,554	481,945	12,932	
23	552,876	18,288	2,598	
24	139,969	339,343	4,672	
25	49,107	107,820	7,933	
26	70,993	118,572	6,059	
29	144,424	437,663	45,455	
30	(18,310)	62,952	25,577	
31	5,578	265,236	29,375	
	<u>4,217,213</u>	<u>6,345,973</u>	<u>475,234</u>	<u>11,038,420</u>
% of Available Funds	38%	57%	4%	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>

April, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	16,696	205,664	38,731	
2	109,202	225,732	8,064	
5	164,178	736,207	55,921	
6	342,474	120,749	44,034	
7	372,554	413,142	19,770	
8	17,256	221,919	16,046	
9	71,626	209,678	9,824	
12	336,640	556,456	12,074	
13	588,146	328,946	9,443	
14	238,338	321,286	26,855	
15	(13,942)	140,212	29,754	
16	56,696	416,781	2,465	
19	56,696	416,781	2,465	
20	84,434	149,078	5,298	
21	796,852	201,805	6,105	
22	18,568	68,663	10,373	
23	62,538	66,606	10,387	
26	337,282	299,586	15,003	
27	217,557	192,983	18,314	
28	20,939	420,460	18,657	
29	8,370	146,730	9,039	
30	85,921	169,992	15,428	
	<u>3,989,020</u>	<u>6,029,456</u>	<u>384,050</u>	<u>10,402,526</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>0.65</u>

Unitil Energy Systems, Inc.
Remittance Accounts

May, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
3	94,477	454,555	17,346	
4	33,710	222,269	9,064	
5	40,438	311,990	13,974	
6	292,159	346,125	15,208	
7	86,662	152,092	10,290	
10	409,315	637,305	65,923	
11	424,777	159,549	52,775	
12	164,699	337,043	24,752	
13	(8,721)	136,037	4,603	
14	124,830	103,634	8,042	
17	156,168	399,390	11,747	
18	704,642	175,631	3,497	
19	196,769	297,223	9,812	
20	9,660	87,327	28,269	
21	53,112	94,603	7,163	
24	250,296	391,988	8,926	
25	358,180	23,494	6,457	
26	18,406	178,721	4,113	
27	15,982	115,138	22,894	
28	77,696	126,264	25,043	
	<u>3,503,257</u>	<u>4,750,378</u>	<u>349,898</u>	<u>8,603,533</u>
% of Available Funds	41%	55%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.55</u>	<u>0.08</u>	<u>0.63</u>

June, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	163,355	350,499	48,794	
2	12,111	208,817	28,390	
3	(5,845)	156,486	2,030	
4	129,554	460,412	10,256	
7	198,734	701,290	17,629	
8	470,781	33,301	32,388	
9	143,897	216,408	32,800	
10	5,491	198,242	6,896	
11	83,660	137,033	8,797	
14	249,377	800,887	15,791	
15	610,236	188,704	15,648	
16	200,018	141,606	20,110	
17	(6,999)	123,521	10,292	
18	105,981	74,824	3,194	
21	247,819	479,159	16,355	
22	419,717	69,291	8,471	
23	159,424	89,859	1,839	
24	11,434	76,163	2,662	
25	87,716	75,400	2,948	
28	156,944	363,118	10,798	
29	88,050	19,350	4,829	
30	26,741	192,860	3,575	
	<u>3,558,196</u>	<u>5,157,230</u>	<u>304,492</u>	<u>9,019,918</u>
% of Available Funds	39%	57%	3%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.57</u>	<u>0.07</u>	<u>0.64</u>

Unitil Energy Systems, Inc.
Remittance Accounts

July, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	14,986	119,338	21,648	
2	121,367	361,570	16,692	
6	79,161	551,907	24,546	
7	511,728	110,739	13,112	
8	49,259	413,656	31,157	
9	66,658	316,897	22,351	
12	281,816	663,704	41,426	
13	557,014	96,932	73,894	
14	86,410	482,495	76,493	
15	(30,144)	223,660	5,451	
16	70,385	262,193	4,016	
19	310,396	516,722	18,655	
20	757,303	70,024	22,151	
21	174,447	150,314	2,728	
22	15,442	60,627	2,703	
23	84,909	50,003	2,559	
26	315,490	195,721	18,689	
27	188,864	42,021	17,448	
28	10,142	397,160	11,429	
29	9,356	165,173	4,306	
30	106,438	199,372	4,055	
Total	3,781,425	5,450,228	435,509	9,667,162
% of Available Funds	39%	56%	5%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.56	0.09	0.65

August, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
2	99,978	508,919	28,656	
3	(10,885)	57,757	12,555	
4	36,859	262,509	10,654	
5	18,152	198,901	16,690	
6	248,351	401,839	13,085	
9	568,096	878,295	66,034	
10	591,337	49,092	54,901	
11	204,940	404,089	23,625	
12	149	186,751	8,689	
13	139,375	240,199	11,309	
16	320,951	752,477	37,141	
17	781,920	78,500	18,269	
18	293,221	328,694	3,364	
19	56,620	76,625	9,079	
20	78,377	79,780	15,629	
23	209,176	341,243	7,966	
24	484,932	159,284	5,614	
25	133,968	200,833	9,472	
26	5,786	50,061	8,950	
27	52,625	69,006	2,431	
30	166,343	289,130	7,286	
31	8,501	245,082	6,825	
Total	4,488,771	5,859,066	378,224	10,726,061
% of Available Funds	42%	55%	4%	100%
Float Days	0	1	2	
Weighted Float Days	-	0.55	0.07	0.62

Unitil Energy Systems, Inc.
Remittance Accounts

September, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	51,117	268,088	10,773	
2	19,980	231,135	11,321	
3	138,663	245,381	21,839	
7	92,809	912,944	40,786	
8	800,459	206,946	30,595	
9	67,236	318,740	23,574	
10	78,630	285,808	22,926	
13	436,380	717,682	44,657	
14	250,049	396,310	50,049	
15	648,864	255,598	19,218	
16	(41,924)	114,888	39,447	
17	71,115	121,755	2,145	
20	441,317	420,952	8,490	
21	704,061	349,307	13,331	
22	211,081	85,865	4,084	
23	18,836	83,025	9,325	
24	78,884	121,448	4,433	
27	150,101	332,961	11,034	
28	118,090	253,358	6,824	
29	27,621	177,756	14,920	
30	4,676	149,602	6,633	
	<u>4,368,044</u>	<u>6,049,549</u>	<u>396,404</u>	<u>10,813,997</u>
% of Available Funds	40%	56%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.56</u>	<u>0.07</u>	<u>0.63</u>

October, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	127,267	176,895	34,161	
4	55,745	549,393	29,841	
5	249,102	217,815	12,954	
6	382,509	283,812	19,015	
7	17,805	202,708	18,261	
8	99,956	349,816	11,840	
12	46,169	303,550	27,345	
13	852,466	315,116	6,520	
14	105,168	528,579	28,970	
15	136,573	283,031	22,445	
18	138,088	441,196	6,610	
19	888,524	393,694	31,131	
20	116,863	254,380	36,020	
21	127,267	176,895	34,161	
22	83,626	81,889	8,683	
25	250,478	291,644	10,968	
26	446,088	112,369	3,845	
27	29,136	153,607	3,890	
28	13,196	93,475	4,165	
29	86,563	98,506	3,429	
	<u>4,252,588</u>	<u>5,308,370</u>	<u>354,254</u>	<u>9,915,212</u>
% of Available Funds	43%	54%	4%	100%
Float Days	<u>0</u>	<u>1</u>	<u>2</u>	
Weighted Float Days	<u>-</u>	<u>0.54</u>	<u>0.07</u>	<u>0.61</u>

Unitil Energy Systems, Inc.
Remittance Accounts

November, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	92,099	331,646	16,239	
2	5,365	95,065	13,032	
3	10,930	330,314	6,651	
4	197,819	363,459	31,193	
5	45,358	207,783	14,583	
8	320,412	653,017	26,592	
9	548,146	68,454	21,586	
10	182,417	346,051	9,720	
12	107,018	206,297	11,392	
15	248,005	411,556	25,079	
16	562,017	516,683	30,308	
17	320,545	162,049	37,587	
18	(27,926)	91,959	22,612	
19	180,398	317,942	15,543	
22	91,564	247,619	22,174	
23	92,099	331,646	16,239	
24	163,013	125,717	10,492	
26	91,570	234,925	25,962	
29	(596)	249,945	36,908	
30	(24,546)	141,370	16,633	
	<u>3,205,708</u>	<u>5,433,497</u>	<u>410,525</u>	<u>9,049,730</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>0.09</u>	<u>0.69</u>

December, 2021	Available Balance	1 Day Float	2 Day Float	Total Available + Float
1	158,416	272,814	7,854	
2	8,096	89,791	4,408	
3	98,486	179,089	3,582	
6	183,026	317,367	24,343	
7	309,666	270,839	20,300	
8	144,368	244,271	9,806	
9	18,996	217,618	8,401	
10	85,848	240,590	15,007	
13	185,570	596,079	5,652	
14	563,946	88,665	2,907	
15	235,146	168,582	19,204	
16	(19,809)	82,127	18,116	
17	65,513	153,251	22,597	
20	246,447	389,039	4,749	
21	340,174	72,363	3,703	
22	29,948	347,471	9,973	
23	14,798	117,781	85,439	
24	(47,071)	197,497	10,210	
27	123,722	137,365	8,043	
28	349,622	100,357	16,383	
29	72,259	212,695	5,647	
30	11,241	240,941	5,380	
31	65,737	168,233	4,793	
	<u>3,244,147</u>	<u>4,904,825</u>	<u>316,497</u>	<u>8,465,469</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>0.65</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	\$ 4,232,746	91.48%	39.05 days	35.72 days
G1 Renewable Energy Credits	21	\$ 394,076	8.52%	303.82 days	25.88 days
Total		<u>\$ 4,626,822</u>	100.00%		<u>61.60 days</u>

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

G1	2021													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
RECs*														
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021	6/1/2021	7/1/2021	8/1/2021	9/1/2021	10/1/2021	11/1/2021	12/1/2021		
Period End	1/31/2021	2/28/2021	3/31/2021	4/30/2021	5/31/2021	6/30/2021	7/31/2021	8/31/2021	9/30/2021	10/31/2021	11/30/2021	12/31/2021		
\$ Amount	\$32,837	\$33,607	\$32,515	\$32,760	\$35,270	\$30,917	\$34,411	\$35,745	\$33,237	\$29,823	\$29,507	\$33,446		
REC Purchase Applied	(\$32,837)	(\$33,607)	(\$32,515)	(\$32,760)	(\$797)	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
Net \$ Amount	\$0	\$0	\$0	\$0	\$34,473	\$30,917	\$34,411	\$35,745	\$33,237	\$29,823	\$29,507	\$33,446	\$261,559	
% to Total	0.00%	0.00%	0.00%	0.00%	8.75%	7.85%	8.73%	9.07%	8.43%	7.57%	7.49%	8.49%	66.37%	
Payment Date**	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022		
Lead Period	531.50	502.00	472.50	442.00	411.50	381.00	350.50	319.50	289.00	258.50	228.00	197.50		
Weighted Days	-	-	-	-	36.00	29.89	30.61	28.98	24.37	19.56	17.07	16.76	203.24 days	
REC Purchases***														
Period Begin	1/1/2021	1/1/2021	1/1/2021	1/1/2021	1/1/2021	2/1/2021	3/1/2021	3/1/2021	3/1/2021	4/1/2021	4/1/2021	4/1/2021		
Period End	1/31/2021	1/31/2021	1/31/2021	1/31/2021	1/31/2021	2/28/2021	3/31/2021	3/31/2021	3/31/2021	4/30/2021	4/30/2021	4/30/2021		
\$ Amount	\$17,935	\$2,788	\$8,101	\$3,118	\$895	\$33,607	\$3,186	\$929	\$28,400	\$15,788	\$6,931	\$7,947		
% to Total	4.55%	0.71%	2.06%	0.79%	0.23%	8.53%	0.81%	0.24%	7.21%	4.01%	1.76%	2.02%		
Payment Date	7/21/2021	8/20/2021	10/22/2021	11/19/2021	1/19/2022	1/19/2022	1/19/2022	2/3/2022	2/4/2022	2/4/2022	2/18/2022	2/25/2022		
Lead Period	186.50	216.50	279.50	307.50	368.50	339.00	309.50	324.50	325.50	295.00	309.00	316.00		
Weighted Days	8.49	1.53	5.75	2.43	0.84	28.91	2.50	0.77	23.46	11.82	5.43	6.37		
REC Purchases***														
Period Begin	4/1/2021	5/1/2021												
Period End	4/30/2021	5/31/2021												
\$ Amount	\$2,095	\$797											\$132,517	
% to Total	0.53%	0.20%											33.63%	
Payment Date	2/28/2022	2/28/2022												
Lead Period	319.00	288.50												
Weighted Days	1.70	0.58											100.58 days	
Total \$ Amount													\$394,076	

Weighted Days

303.82 days

* Estimated cost of RECs included in rates in 2021

** The last day to acquire 2021 Renewable Energy Credits and/or make alternative compliance payments is July 1, 2022

*** Actual purchasing activity for 2021 RECs applied in chronological order to estimated cost of RECs included in rates in 2021

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	\$ 51,049,870	91.05%	35.76 days	32.56 days
Non-G1 Renewable Energy Credits	23	\$ 5,019,262	8.95%	308.33 days	27.60 days
Total		<u>\$ 56,069,132</u>	100.00%		<u>60.16 days</u>

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

NON-G1	2021													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
RECs*														
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021	6/1/2021	7/1/2021	8/1/2021	9/1/2021	10/1/2021	11/1/2021	12/1/2021		
Period End	1/31/2021	2/28/2021	3/31/2021	4/30/2021	5/31/2021	6/30/2021	7/31/2021	8/31/2021	9/30/2021	10/31/2021	11/30/2021	12/31/2021		
\$ Amount	\$471,107	\$466,650	\$408,778	\$385,799	\$355,291	\$386,171	\$429,260	\$509,640	\$456,929	\$343,353	\$360,713	\$445,569		
REC Purchase Applied	(\$471,107)	(\$466,650)	(\$408,778)	(\$244,184)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
Net \$ Amount	\$0	\$0	\$0	\$141,615	\$355,291	\$386,171	\$429,260	\$509,640	\$456,929	\$343,353	\$360,713	\$445,569	\$3,428,542	
% to Total	0.00%	0.00%	0.00%	2.82%	7.08%	7.69%	8.55%	10.15%	9.10%	6.84%	7.19%	8.88%	68.31%	
Payment Date**	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022	7/1/2022		
Lead Period	531.50	502.00	472.50	442.00	411.50	381.00	350.50	319.50	289.00	258.50	228.00	197.50		
Weighted Days	-	-	-	12.47	29.13	29.31	29.98	32.44	26.31	17.68	16.39	17.53	211.24 days	
REC Purchases***														
Period Begin	1/1/2021	1/1/2021	1/1/2021	1/1/2021	1/1/2021	2/1/2021	2/1/2021	2/1/2021	3/1/2021	4/1/2021	4/1/2021	4/1/2021		
Period End	1/31/2021	1/31/2021	1/31/2021	1/31/2021	1/31/2021	2/28/2021	2/28/2021	2/28/2021	3/31/2021	4/30/2021	4/30/2021	4/30/2021		
\$ Amount	\$215,290	\$33,472	\$97,240	\$37,422	\$87,683	\$364,728	\$11,155	\$90,767	\$408,778	\$30,887	\$83,194	\$95,393		
% to Total	4.29%	0.67%	1.94%	0.75%	1.75%	7.27%	0.22%	1.81%	8.14%	0.62%	1.66%	1.90%		
Payment Date	7/21/2021	8/20/2021	10/22/2021	11/19/2021	1/19/2022	1/19/2022	2/3/2022	2/4/2022	2/4/2022	2/4/2022	2/18/2022	2/25/2022		
Lead Period	186.50	216.50	279.50	307.50	368.50	339.00	354.00	355.00	325.50	295.00	309.00	316.00		
Weighted Days	8.00	1.44	5.41	2.29	6.44	24.63	0.79	6.42	26.51	1.82	5.12	6.01		
REC Purchases***														
Period Begin	4/1/2021													
Period End	4/30/2021													
\$ Amount	\$34,709												\$1,590,720	
% to Total	0.69%												31.69%	
Payment Date	2/28/2022													
Lead Period	319.00													
Weighted Days	2.21												97.09 days	
Total \$ Amount													\$5,019,262	

Weighted Days

308.33 days

* Estimated cost of RECs included in rates in 2021

** The last day to acquire 2021 Renewable Energy Credits and/or make alternative compliance payments is July 1, 2022

*** Actual purchasing activity for 2021 RECs applied in chronological order to estimated cost of RECs included in rates in 2021

UNITIL ENERGY SYSTEMS, INC.

REDACTED WORKPAPERS

FOR THE

DEFAULT SERVICE AND
RENEWABLE ENERGY CREDITS

LEAD/LAG STUDY

FOR G1 AND NON-G1 CUSTOMERS

2021

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	\$ 4,232,746	91.48%	39.05 days	35.72 days
G1 Renewable Energy Credits	Schedule DTN-1 p 21	\$ 394,076	8.52%	303.82 days	25.88 days
Total		<u>\$ 4,626,822</u>	100.00%		<u>61.60 days</u>
Detail for G1 Default Service Supplier Costs					
Supplier A	3	\$ 407,050	9.62%		
Supplier B	4	\$ 3,825,696	90.38%		
Total G1 Default Service Supplier Costs		<u>\$ 4,232,746</u>	100.00%		<u>39.05 days</u>

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

DS SERVICE POWER SUPPLY CONTRACTS

G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2021												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier A													
Normal Service													
Period Begin												12/1/2021	
Period End												12/31/2021	
\$ Amount												\$ 407,050	\$ 407,050
% to Total												100.00%	100.00%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2021)													
Period Begin													
Period End													
\$ Amount													\$ -
% to Total													0.00%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 407,050	\$ 407,050
Weighted Days													

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

DS SERVICE POWER SUPPLY CONTRACTS

G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2021												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier B													
Normal Service													
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021	6/1/2021	7/1/2021	8/1/2021	9/1/2021	10/1/2021	11/1/2021		
Period End	1/31/2021	2/28/2021	3/30/2021	4/30/2021	5/31/2021	6/30/2021	7/31/2021	8/31/2021	9/30/2021	10/31/2021	11/30/2021		
\$ Amount	\$ 328,531	\$ 426,643	\$ 277,216	\$ 220,036	\$ 227,667	\$ 328,904	\$ 326,234	\$ 444,054	\$ 374,983	\$ 380,912	\$ 381,979		\$ 3,717,159
% to Total	8.59%	11.15%	7.25%	5.75%	5.95%	8.60%	8.53%	11.61%	9.80%	9.96%	9.98%		97.16%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2021)													
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021	6/1/2021	7/1/2021	8/1/2021	9/1/2021	10/1/2021			
Period End	1/31/2021	2/28/2021	3/30/2021	4/30/2021	5/31/2021	6/30/2021	7/31/2021	8/31/2021	9/30/2021	10/31/2021			
\$ Amount	\$ (6,295)	\$ (4,739)	\$ (1,129)	\$ 3,289	\$ 6,046	\$ 7,540	\$ 26,689	\$ 31,750	\$ 10,300	\$ 35,086			\$ 108,537
% to Total	-0.16%	-0.12%	-0.03%	0.09%	0.16%	0.20%	0.70%	0.83%	0.27%	0.92%			2.84%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ 322,236	\$ 421,904	\$ 276,087	\$ 223,326	\$ 233,712	\$ 336,444	\$ 352,923	\$ 475,803	\$ 385,283	\$ 415,998	\$ 381,979	\$ -	\$ 3,825,696
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	\$ 51,049,870	91.05%	35.76 days	32.56 days
Renewable Energy Credits	Schedule DTN-1 p 23	\$ 5,019,262	8.95%	308.33 days	27.60 days
Total		<u>\$ 56,069,132</u>	100.00%		<u>60.16 days</u>
Detail for Non-G1 Default Service Supplier Costs					
Supplier C	6	\$ 45,821,043	89.76%		
Supplier D	7	\$ 5,228,827	10.24%		
Total Non-G1 Default Service Supplier Costs		<u>\$ 51,049,870</u>	100.00%		35.76 days

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

DS SERVICE POWER SUPPLY CONTRACTS

NON-G1 SUPPLIERS	MONTH ENERGY PURCHASES DELIVERED												
	2021												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier C													
Normal Service													
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021	6/1/2021	7/1/2021	8/1/2021	9/1/2021	10/1/2021	11/1/2021	12/1/2021	
Period End	1/31/2021	2/28/2021	3/30/2021	4/30/2021	5/31/2021	6/30/2021	7/31/2021	8/31/2021	9/30/2021	10/31/2021	11/30/2021	12/31/2021	
\$ Amount	\$ 4,023,831	\$ 3,678,511	\$ 2,770,456	\$ 2,319,829	\$ 2,184,416	\$ 3,549,922	\$ 4,416,526	\$ 3,630,741	\$ 1,809,102	\$ 2,789,493	\$ 3,808,122	\$ 11,079,514	\$ 46,060,464
% to Total	8.78%	8.03%	6.05%	5.06%	4.77%	7.75%	9.64%	7.92%	3.95%	6.09%	8.31%	24.18%	100.52%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2021)													
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021	6/1/2021	7/1/2021	8/1/2021	9/1/2021	10/1/2021			
Period End	1/31/2021	2/28/2021	3/30/2021	4/30/2021	5/31/2021	6/30/2021	7/31/2021	8/31/2021	9/30/2021	10/31/2021			
\$ Amount	\$ 35,029	\$ 71,857	\$ (50,134)	\$ (232,992)	\$ (155,583)	\$ 39,074	\$ 55,944	\$ (4,111)	\$ (15,148)	\$ 16,646			\$ (239,420)
% to Total	0.08%	0.16%	-0.11%	-0.51%	-0.34%	0.09%	0.12%	-0.01%	-0.03%	0.04%			-0.52%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ 4,058,860	\$ 3,750,368	\$ 2,720,321	\$ 2,086,837	\$ 2,028,833	\$ 3,588,996	\$ 4,472,470	\$ 3,626,630	\$ 1,793,954	\$ 2,806,139	\$ 3,808,122	\$ 11,079,514	\$ 45,821,043
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												
	2021												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Supplier D													
Normal Service													
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021								
Period End	1/31/2021	2/28/2021	3/30/2021	4/30/2021	5/31/2021								
\$ Amount	\$ 1,357,024	\$ 1,271,056	\$ 1,013,829	\$ 710,666	\$ 680,769								\$ 5,033,345
% to Total	25.95%	24.31%	19.39%	13.59%	13.02%								96.26%
Payment Date													
Lead Period													
Weighted Days													
Prior Period Adjustments (shown in billing period in 2021)													
Period Begin	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021								
Period End	1/31/2021	2/28/2021	3/30/2021	4/30/2021	5/31/2021								
\$ Amount	\$ 71,821	\$ 27,604	\$ 20,042	\$ 40,052	\$ 35,962								\$ 195,481
% to Total	1.37%	0.53%	0.38%	0.77%	0.69%								3.74%
Payment Date													
Lead Period													
Weighted Days													
Total \$ Amount	\$ 1,428,845	\$ 1,298,661	\$ 1,033,871	\$ 750,719	\$ 716,731	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,228,827

Weighted Days