

UNITIL ENERGY SYSTEMS, INC.

EXTERNAL DELIVERY CHARGE:
TRANSMISSION
NON-TRANSMISSION

LEAD/LAG STUDY

2021

Unitil Energy Systems, Inc.
EDC - Transmission & Non-Transmission
Revenue Lag Summary
Based on 2021 Data

Line No.	Description	Electric Number of Days Delay
1	Revenue Lag:	
2	Receipt of Electric Service to Meter Reading	15.21 days
3	Meter Reading to Recording of Accounts Receivable	1.01 days
4	Billing to Collection	37.74 days
5	Collection to Receipt of Available Funds	<u>1.65 days</u>
6	Subtotal Revenue Lag Days	<u><u>55.61 days</u></u>

Unitil Energy Systems, Inc.
Receipt of Electric Service to Meter Reading
Average Days Delay

January 1, 2021 to December 31, 2021 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 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	1.01

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

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

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

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

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

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

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

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

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

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

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

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 Monthly Summary Electric				
Month	Days in Month	Electric Sales Revenues	Daily Average (1/Days)	Accounts Receivable Electric Sales
		(1)	(2)	(3)
2021				
January	31	16,609,058	535,776	20,395,104
February	28	16,709,677	596,774	21,872,623
March	31	17,084,929	551,127	20,897,176
April	30	13,980,682	466,023	18,131,556
May	31	13,851,587	446,825	18,292,985
June	30	16,008,205	533,607	19,820,990
July	31	17,219,400	555,465	21,312,323
August	31	17,005,029	548,549	20,798,384
September	30	16,400,210	546,674	19,838,242
October	31	13,158,718	424,475	16,925,152
Novemeber	30	12,825,985	427,533	15,599,655
December	31	17,710,671	571,312	20,278,061
Total		188,564,151	6,204,139	234,162,250
Average		15,713,679	517,012	19,513,521
Payment Lag Days (3/2)				37.74

**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**

	Percent of Funds				Weighted Lag Days		
	Available Same Day	1 Day Float	2-Day Float	Total			
2021	0 Days Lag	1 Day Lag	2 Days Lag		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 0.65 days

Total Lag Days from Collection to Availability of Funds: 1.65 days

Unit Energy Systems, Inc.
Remittance Accounts

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
January 2021				
1	201,078	565,040	31,167	
2	425,366	262,891	14,427	
3	287,242	300,417	13,747	
4	8,402	207,748	11,135	
5	104,304	233,413	13,032	
6	12,039	212,248	12,135	
7	17,476	216,748	13,135	
8	20,342	151,253	22,987	
9	20,065	138,941	23,454	
10	622,239	34,856	30,575	
11	(4,717)	365,309	10,753	
12	88,894	103,432	8,483	
13	322,037	494,739	16,690	
14	223,847	174,198	5,216	
15	74,020	359,839	20,439	
16	10,278	155,468	61,308	
17	322,037	584,790	16,690	
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31				
	3,060,905	8,043,038	460,884	9,571,405
% of Available Funds	32%	83%	5%	100%
Float Days	-	0	2	
Weighted Float Day	-	0.63	0.10	0.73

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
February 2021				
1	220,739	462,160	19,804	
2	25,720	91,050	10,905	
3	13,933	161,662	8,651	
4	441,738	425,750	9,719	
5	105,407	173,751	14,651	
6	308,070	673,675	73,897	
7	504,786	145,478	72,889	
8	154,714	465,977	13,860	
9	72,665	107,520	6,476	
10	100,139	154,604	5,879	
11	60,609	433,383	18,866	
12	603,411	128,623	3,866	
13	29,684	258,827	10,437	
14	105,362	121,066	4,185	
15	277,507	444,116	11,668	
16	384,632	195,718	8,434	
17	30,513	294,036	8,807	
18	18,813	126,068	38,156	
19	101,153	174,571	11,635	
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31				
	3,889,285	4,850,389	351,294	9,190,948
% of Available Funds	42%	54%	4%	100%
Float Days	-	0	2	
Weighted Float Day	-	0.54	0.06	0.62

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
March 2021				
1	83,109	723,658	20,763	
2	217,960	141,660	18,468	
3	35,984	349,146		
4	175,171	266,529	31,733	
5	13,403	196,427	12,313	
6	393,028	1,103,540	43,134	
7	586,596	120,296	30,344	
8	161,258	470,813	58,434	
9	(32,007)	127,017	42,386	
10	81,200	171,015	23,066	
11	321,510	460,485	15,546	
12	597,841	57,743	11,646	
13	209,345	146,572	7,157	
14	9,751	64,919	1,328	
15	84,659	60,121	1,741	
16	100,564	481,945	12,852	
17	652,676	18,288	2,598	
18	139,669	339,343	4,672	
19	49,107	107,820	7,933	
20	70,963	118,572	6,039	
21	144,424	437,863	45,455	
22	18,101	62,652	25,577	
23	5,678	265,236	29,375	
24				
25				
26				
27				
28				
29				
30				
31				
	4,217,213	8,345,973	475,234	11,038,420
% of Available Funds	38%	57%	4%	100%
Float Days	-	0	2	
Weighted Float Day	-	0.57	0.09	0.66

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
April 2021				
1	16,698	205,664	38,731	
2	109,202	223,732	8,944	
3	164,178	736,207	55,921	
4	62,474	120,749	44,034	
5	372,564	413,142	19,770	
6	17,256	221,916	10,346	
7	71,026	200,678	9,834	
8	586,596	266,456	32,344	
9	388,146	328,946	9,443	
10	238,338	321,286	26,855	
11	(13,342)	162,212	29,734	
12	56,696	416,781	2,465	
13	86,696	416,781	2,465	
14	84,324	145,075	5,298	
15	798,652	291,805	6,105	
16	18,668	68,663	10,373	
17	62,538	68,666	10,387	
18	337,282	299,598	15,003	
19	217,557	152,963	18,314	
20	20,939	420,460	16,657	
21	8,370	145,730	6,039	
22	85,921	169,992	15,428	
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29				
30				
31				
	3,089,000	6,020,456	384,650	10,492,526
% of Available Funds	38%	58%	4%	100%
Float Days	-	0	2	
Weighted Float Day	-	0.58	0.07	0.65

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
May 2021				
1	163,355	365,499	48,794	
2	94,477	454,555	17,346	
3	33,710	222,259	9,654	
4	40,438	311,990	13,974	
5	202,159	346,125	15,208	
6	86,662	152,092	10,290	
7	400,315	637,305	65,933	
8	424,777	159,549	52,795	
9	164,699	337,043	24,732	
10	(8,721)	136,037	4,693	
11	154,850	103,634	8,042	
12	156,168	399,390	11,747	
13	704,842	176,817	3,497	
14	198,789	297,223	9,812	
15	8,860	87,227	29,369	
16	53,112	94,603	7,163	
17	292,296	291,666	8,828	
18	358,180	23,494	6,437	
19	18,466	178,721	4,113	
20	15,982	115,138	22,894	
21	77,696	126,264	25,043	
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31				
	3,003,257	4,750,378	345,898	8,603,533
% of Available Funds	41%	59%	4%	100%
Float Days	-	0	2	
Weighted Float Day	-	0.55	0.08	0.63

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
June 2021				
1	163,355	365,499	48,794	
2	12,111	208,817	29,360	
3	(8,843)	166,486	2,030	
4	120,654	460,412	10,296	
5	198,734	791,295	17,429	
6	143,867	216,408	32,800	
7	5,491	198,242	6,896	
8	83,660	137,030	9,737	
9	249,377	800,887	15,791	
10	610,236	188,704	16,648	
11	200,018	141,606	20,110	
12	(6,699)	123,521	10,392	
13	105,981	74,824	3,194	
14	247,419	479,159	6,265	
15	419,717	69,291	8,471	
16	109,424	89,899	1,840	
17	11,434	76,163	2,662	
18	87,116	75,480	2,446	
19	156,944	363,118	10,798	
20	88,600	10,350	4,629	
21	28,741	192,860	3,575	
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30				
31				
	3,058,196	5,197,236	304,492	9,019,918
% of Available Funds	39%	57%	3%	100%
Float Days	-	0	2	
Weighted Float Day	-	0.57	0.07	0.64

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
July 2021				
1	121,267	361,370	16,662	
2	79,161	551,907	24,446	
3	511,728	110,739	13,112	
4	49,298	413,668	31,137	
5	88,658	316,897	22,351	
6	281,816	663,704	41,426	
7	557,014	96,932	73,884	
8	86,410	465,465	76,653	
9	(30,144)	223,660	5,451	
10	70,365	262,193	4,016	
11	310,366	516,722	18,655	
12	357,933	150,024	22,551	
13	174,447	150,314	2,728	
14	15,442	93,637	2,939	
15	84,909	90,093	2,959	
16	315,992	185,721	18,689	
17	188,864	42,021	17,448	
18	102,142	397,160	11,429	
19	9,356	165,173	4,306	
20	106,438	199,372	4,055	
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30				
31				
	3,781,425	5,450,228	435,609	9,667,182
% of Available Funds	39%	56%	5%	100%
Float Days	-	0	2	
Weighted Float Day	-	0.56	0.09	0.65

	Available	1 Day	2 Day	Total Available
	Balance	Float	Float	+ Float
August 2021				
1	99,978	508,919	25,556	
2	(10,869)	57,757	12,555	
3	262,569	282,009	10,654	
4	18,152	198,901	16,660	
5	248,351	401,839	13,955	
6	568,098	878,295	66,034	
7	591,337	49,002	54,001	
8	204,940	8,689	23,625	
9	144,175	204,199	1,309	
10	130,961	32,477	411,161	
11	781,620	78,605	18,269	
12	293,217	328,694	8,074	
13	19,820	76,829	19,289	
14	76,737	79,780	18,629	
15	20,786	141,243	7,686	
16	484,932	193,284	5,812	
17	133,968	300,833	2,672	
18	1,566	50,061	9,696	
19	52,625	69,026	2,431	
20	6,783	289,130	7,266	
21	8,501	245,082	6,825	
Total	4,488,771	5,859,066	378,224	10,726,061

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021
Summary of Transmission

Line No	Supplier	Transmission Expense	(Lead) Lag Days	Weighted Dollar Days
1				
2				
3	Eversource	\$ 3,024,020	42.47	\$ 128,429,184
4	Eversource_2	3,390,580	50.46	171,079,233
5	Independent System Operator	29,651,181	57.99	1,719,501,692
6	Independent System Operator _2	478,419	57.95	27,724,325
7	Independent System Operator _3	1,675	56.13	94,005
8	Independent System Operator _4	40,815	58.09	2,371,041
9	Utility Services, Inc.	4,225	67.54	285,350
10	Total	<u>\$36,590,915</u>	<u>56.01</u>	<u>\$2,049,484,830</u>
11				
12				
13				
14				
15				
16				
17		<u>Revenue (Lead) Lag Days</u>	<u>Expense (Lead) / Lag Days</u>	<u>Net (Lead) Lag Days</u>
18		55.61	56.01	(0.40)
19				
20				
21				
22				
23				
24				
25				

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Eversource
#10-29-13-32-565-00-01

Line No	Month	Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	February-21	\$ 225,407	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/19/21 12:00 AM	64.50	\$ 14,538,725
3	February-21	227,080	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	2/26/21 12:00 AM	40.50	9,196,759
4	March-21	225,615	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	3/19/21 12:00 AM	32.00	7,219,689
5	April-21	223,573	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	4/20/21 12:00 AM	34.50	7,713,264
6	June-21	222,741	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/15/21 12:00 AM	60.00	13,364,489
7	June-21	256,446	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	6/23/21 12:00 AM	37.50	9,616,707
8	July-21	332,545	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	7/21/21 12:00 AM	35.00	11,639,072
9	August-21	285,747	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	8/25/21 12:00 AM	39.50	11,287,018
10	October-21	321,690	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/12/21 12:00 AM	56.50	18,175,497
11	October-21	237,612	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	10/25/21 12:00 AM	39.00	9,266,874
12	November-21	232,781	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	11/19/21 12:00 AM	33.50	7,798,178
13	December-21	232,781	11/1/21 12:00 AM	12/1/21 12:00 AM	30	11/16/21 12:00 AM	12/23/21 12:00 AM	37.00	8,612,913
14									
15		\$ 3,024,020			365			42.47	\$ 128,429,184
16									
17									
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25									

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Eversource

#10-29-13-32-565-00-00

Line No	Month	Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	February-21	\$ 337,878	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/3/21 12:00 AM	48.50	\$ 16,387,083
3	March-21	337,388	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/8/21 12:00 AM	50.50	17,038,094
4	March-21	335,235	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	3/31/21 12:00 AM	44.00	14,750,340
5	May-21	337,094	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/3/21 12:00 AM	47.50	16,011,965
6	June-21	337,192	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/15/21 12:00 AM	60.00	20,231,520
7	July-21	332,592	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/21/21 12:00 AM	65.50	21,784,776
8	July-21	344,401	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	7/30/21 12:00 AM	44.00	15,153,644
9	August-21	343,227	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	8/31/21 12:00 AM	45.50	15,616,829
10	October-21	341,270	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/6/21 12:00 AM	50.50	17,234,135
11	November-21	344,303	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/4/21 12:00 AM	49.00	16,870,847
12									-
13									-
14									-
15									
16		\$ 3,390,580			304			50.46	\$ 171,079,233
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Independent System Operator (ISO)
#10-29-13-32-565-01-00

Line No	Month	Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 2,029,710	11/1/20 12:00 AM	12/1/20 12:00 AM	30	11/16/20 12:00 AM	1/11/21 12:00 AM	56.00	\$ 113,663,754
3	February-21	2,229,353	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/16/21 12:00 AM	61.50	137,105,232
4	March-21	2,167,502	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/15/21 12:00 AM	57.50	124,631,371
5	April-21	2,177,764	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	4/12/21 12:00 AM	56.00	121,954,792
6	May-21	2,142,082	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/10/21 12:00 AM	54.50	116,743,450
7	June-21	1,728,334	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/14/21 12:00 AM	59.00	101,971,701
8	July-21	2,595,151	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/12/21 12:00 AM	56.50	146,626,056
9	August-21	3,542,627	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/16/21 12:00 AM	61.00	216,100,267
10	September-21	3,109,398	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	9/13/21 12:00 AM	58.50	181,899,774
11	October-21	3,453,043	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/12/21 12:00 AM	56.50	195,096,944
12	November-21	2,530,373	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/15/21 12:00 AM	60.00	151,822,375
13	December-21	1,945,843	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	12/13/21 12:00 AM	57.50	111,885,977
14									
15		\$ 29,651,181			365			57.99	\$ 1,719,501,692
16									
17									
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25									

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Independent System Operator (ISO)

#10-29-13-32-561-04-00

Line No	Month	Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 31,581	11/1/20 12:00 AM	12/1/20 12:00 AM	30	11/16/20 12:00 AM	1/11/21 12:00 AM	56.00	\$ 1,768,534
3	February-21	34,859	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/16/21 12:00 AM	61.50	2,143,830
4	March-21	36,853	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/15/21 12:00 AM	57.50	2,119,030
5	April-21	37,072	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	4/12/21 12:00 AM	56.00	2,076,014
6	May-21	36,362	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/10/21 12:00 AM	54.50	1,981,751
7	June-21	28,950	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/14/21 12:00 AM	59.00	1,708,069
8	July-21	44,281	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/12/21 12:00 AM	56.50	2,501,885
9	August-21	55,878	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/16/21 12:00 AM	61.00	3,408,555
10	September-21	48,734	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	9/13/21 12:00 AM	58.50	2,850,926
11	October-21	54,146	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/12/21 12:00 AM	56.50	3,059,264
12	November-21	39,413	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/15/21 12:00 AM	60.00	2,364,768
13	December-21	30,290	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	12/13/21 12:00 AM	57.50	1,741,699
14									
15		\$ 478,419			365			57.95	\$ 27,724,325
16									
17									
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19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Independent System Operator (ISO)
#10-29-13-32-561-08-00

Line No	Month	Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 1,597	11/1/20 12:00 AM	12/1/20 12:00 AM	30	11/16/20 12:00 AM	1/11/21 12:00 AM	56.00	\$ 89,459
3	February-21	1	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/16/21 12:00 AM	61.50	32
4	March-21	0	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/15/21 12:00 AM	57.50	24
5	April-21	1	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	4/12/21 12:00 AM	56.00	30
6	May-21	1	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/10/21 12:00 AM	54.50	29
7	June-21	71	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/14/21 12:00 AM	59.00	4,217
8	July-21	1	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/12/21 12:00 AM	56.50	31
9	August-21	1	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/16/21 12:00 AM	61.00	33
10	September-21	1	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	9/13/21 12:00 AM	58.50	32
11	October-21	1	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/12/21 12:00 AM	56.50	31
12	November-21	1	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/15/21 12:00 AM	60.00	49
13	December-21	1	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	12/13/21 12:00 AM	57.50	39
14									
15		\$ 1,675			365			56.13	\$ 94,005
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Independent System Operator (ISO)
#10-29-13-32-575-07-00

Line No	Month	Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 2,845	11/1/20 12:00 AM	12/1/20 12:00 AM	30	11/16/20 12:00 AM	1/11/21 12:00 AM	56.00	\$ 159,332
3	February-21	2,672	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/16/21 12:00 AM	61.50	164,318
4	March-21	2,012	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/15/21 12:00 AM	57.50	115,708
5	April-21	1,165	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	4/12/21 12:00 AM	56.00	65,225
6	May-21	2,035	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/10/21 12:00 AM	54.50	110,909
7	June-21	3,266	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/14/21 12:00 AM	59.00	192,701
8	July-21	4,116	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/12/21 12:00 AM	56.50	232,544
9	August-21	4,139	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/16/21 12:00 AM	61.00	252,476
10	September-21	5,545	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	9/13/21 12:00 AM	58.50	324,411
11	October-21	4,951	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/12/21 12:00 AM	56.50	279,739
12	November-21	3,893	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/15/21 12:00 AM	60.00	233,591
13	December-21	4,175	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	12/13/21 12:00 AM	57.50	240,086
14									
15		<u>\$ 40,815</u>			<u>365</u>			58.09	<u>\$ 2,371,041</u>
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Utility Services Inc.
#10-29-12-32-561-05-00

Line No	Month	Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	May-21	325.00	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	5/6/21 12:00 AM	140.50	\$ 45,663
3	May-21	325.00	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	5/6/21 12:00 AM	109.50	35,588
4	May-21	325.00	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	5/6/21 12:00 AM	80.00	26,000
5	May-21	325.00	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/6/21 12:00 AM	50.50	16,413
6	May-21	325.00	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	5/6/21 12:00 AM	20.00	6,500
7	June-21	325.00	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/1/21 12:00 AM	45.50	14,788
8	August-21	325.00	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/5/21 12:00 AM	50.00	16,250
9	October-21	325.00	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	10/14/21 12:00 AM	89.50	29,088
10	November-21	325.00	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	11/4/21 12:00 AM	79.50	25,838
11	December-21	325.00	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	12/9/21 12:00 AM	84.00	27,300
12	December-21	325.00	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	12/29/21 12:00 AM	73.50	23,888
13	December-21	325.00	11/1/21 12:00 AM	12/1/21 12:00 AM	30	11/16/21 12:00 AM	12/29/21 12:00 AM	43.00	13,975
14	December-21	325.00	12/1/21 12:00 AM	1/1/22 12:00 AM	31	12/16/21 12:00 PM	12/29/21 12:00 AM	12.50	4,063
15									
16		\$ 4,225			365			67.54	\$ 285,350
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021
Summary of Non-Transmission

Line No	Supplier	Non-Transmission Expense	(Lead) Lag Days	Weighted Dollar Days
1				
2				
3	Independent System Operator	\$ 304	56.00	\$ 17,008
4	Independent System Operator _2	364	41.28	15,030
5	Independent System Operator _3	12,878	3.50	45,073
6	Energy Services Group LLC	134,232	42.17	5,660,490
7	CGI Technologies and Solutions, Inc.	175,406	42.71	7,492,341
8	Connecticut Municipal Electric	13,750	3.73	51,250
9	North American Energy	2,000	(252.50)	(505,000)
10	Systrends, Inc.	906	48.17	43,638
11	Black & Veatch Corp.	14,340	22.32	320,070
12	Dept of Energy - State of NH	4,300	58.85	253,026
13	Total	<u>\$358,479</u>	<u>37.36</u>	<u>\$13,392,927</u>
14				
15				
16				
17				
18				
19				
20		<u>Revenue (Lead) Lag Days</u>	<u>Expense (Lead) / Lag Days</u>	<u>Net (Lead) Lag Days</u>
21		55.61	37.36	18.25
22				
23				
24				
25				

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Independent System Operator (ISO)
#10-29-13-32-555-88-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	321.69	11/1/20 12:00 AM	12/1/20 12:00 AM	30	11/16/20 12:00 AM	1/11/21 12:00 AM	56.00	\$ 18,015
3	February-21	0.05	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/16/21 12:00 AM	61.50	3
4	March-21	0.10	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/15/21 12:00 AM	57.50	6
5	April-21	0.07	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	4/12/21 12:00 AM	56.00	4
6	May-21	(8.44)	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/10/21 12:00 AM	54.50	(460)
7	June-21	4.41	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/14/21 12:00 AM	59.00	260
8	July-21	(0.03)	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/12/21 12:00 AM	56.50	(2)
9	August-21	(0.76)	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/16/21 12:00 AM	61.00	(46)
10	September-21	(2.90)	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	9/13/21 12:00 AM	58.50	(170)
11	October-21	(0.16)	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/12/21 12:00 AM	56.50	(9)
12	November-21	(0.29)	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/15/21 12:00 AM	60.00	(17)
13	December-21	(10.00)	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	12/13/21 12:00 AM	57.50	(575)
14									
15		\$ 304			365			56.00	\$ 17,008
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Independent System Operator (ISO)
#10-29-13-32-555-89-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 3,942	11/1/20 12:00 AM	12/1/20 12:00 AM	30	11/16/20 12:00 AM	1/11/21 12:00 AM	56.00	\$ 220,776
3	February-21	2	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/16/21 12:00 AM	61.50	143
4	March-21	(40)	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/15/21 12:00 AM	57.50	(2,290)
5	April-21	(83)	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	4/12/21 12:00 AM	56.00	(4,630)
6	May-21	(217)	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/10/21 12:00 AM	54.50	(11,813)
7	June-21	298	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/14/21 12:00 AM	59.00	17,596
8	July-21	(70)	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/12/21 12:00 AM	56.50	(3,965)
9	August-21	(115)	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/16/21 12:00 AM	61.00	(7,031)
10	September-21	(205)	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	9/13/21 12:00 AM	58.50	(11,984)
11	October-21	(271)	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/12/21 12:00 AM	56.50	(15,330)
12	November-21	(382)	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/15/21 12:00 AM	60.00	(22,892)
13	December-21	(2,497)	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	12/13/21 12:00 AM	57.50	(143,551)
14									
15		\$ 364			365			41.28	\$ 15,030
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Independent System Operator (ISO)
#10-29-01-32-928-01-01

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ -			-			-	\$ -
3	February-21	-			-			-	-
4	March-21	-			-			-	-
5	April-21	-			-			-	-
6	May-21	-			-			-	-
7	June-21	-			-			-	-
8	July-21	12,878	1/1/21 12:00 AM	1/1/22 12:00 AM	365	7/2/21 12:00 PM	7/6/21 12:00 AM	3.50	45,073
9	August-21	-			-			-	-
10	September-21	-			-			-	-
11	October-21	-			-			-	-
12	November-21	-			-			-	-
13	December-21	-			-			-	-
14									
15		\$ 12,878			365			3.50	\$ 45,073
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Energy Services Group LLC
#10-29-13-32-923-12-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	February-21	\$ 10,370	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	2/4/21 12:00 AM	49.50	\$ 513,315
3	March-21	10,574	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/1/21 12:00 AM	43.50	459,969
4	March-21	10,574	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	3/15/21 12:00 AM	28.00	296,072
5	April-21	10,574	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	4/19/21 12:00 AM	33.50	354,229
6	April-21	1,020	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	4/29/21 12:00 AM	43.50	44,370
7	May-21	10,676	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	5/17/21 12:00 AM	31.00	330,956
8	June-21	10,880	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	6/21/21 12:00 AM	35.50	386,240
9	July-21	1,020	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/8/21 12:00 AM	52.50	53,550
10	July-21	2,040	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	7/8/21 12:00 AM	52.50	107,100
11	August-21	10,880	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/9/21 12:00 AM	54.00	587,520
12	September-21	10,880	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	9/8/21 12:00 AM	53.50	582,080
13	October-21	10,880	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/4/21 12:00 AM	48.50	527,680
14	November-21	10,880	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	11/1/21 12:00 AM	46.00	500,480
15	November-21	10,982	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	11/22/21 12:00 AM	36.50	400,843
16	December-21	1,020	11/1/21 12:00 AM	12/1/21 12:00 AM	30	11/16/21 12:00 AM	12/29/21 12:00 AM	43.00	43,860
17	December-21	10,982	11/1/21 12:00 AM	12/1/21 12:00 AM	30	11/16/21 12:00 AM	12/29/21 12:00 AM	43.00	472,226
18									
19									
20		\$ 134,232						42.17	\$ 5,660,490
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: CGI Technologies and Solutions, Inc.
#10-29-13-32-923-12-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 14,502	12/1/20 12:00 AM	1/1/21 12:00 AM	31	12/16/20 12:00 PM	1/14/21 12:00 AM	28.50	\$ 413,311
3	March-21	14,523	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	3/1/21 12:00 AM	43.50	631,761
4	March-21	14,602	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	3/29/21 12:00 AM	42.00	613,282
5	May-21	14,606	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	5/3/21 12:00 AM	47.50	693,807
6	June-21	14,612	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	6/10/21 12:00 AM	55.00	803,672
7	June-21	14,624	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	6/29/21 12:00 AM	43.50	636,141
8	August-21	14,634	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/9/21 12:00 AM	54.00	790,240
9	August-21	14,643	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	8/19/21 12:00 AM	33.50	490,526
10	October-21	14,651	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	10/4/21 12:00 AM	48.50	710,588
11	October-21	14,660	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	10/25/21 12:00 AM	39.00	571,736
12	November-21	14,665	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	11/22/21 12:00 AM	36.50	535,268
13	December-21	14,683	11/1/21 12:00 AM	12/1/21 12:00 AM	30	11/16/21 12:00 AM	12/27/21 12:00 AM	41.00	602,011
14									
15		\$ 175,406			365			42.71	\$ 7,492,341
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: CT Municipal Electric
#10-29-13-32-556-00-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	February-21	\$ 1,250	1/1/21 12:00 AM	2/1/21 12:00 AM	31	1/16/21 12:00 PM	2/22/21 12:00 AM	36.50	\$ 45,625
3	February-21	1,250	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	2/22/21 12:00 AM	7.00	8,750
4	March-21	1,250	3/1/21 12:00 AM	4/1/21 12:00 AM	31	3/16/21 12:00 PM	3/15/21 12:00 AM	(1.50)	(1,875)
5	April-21	1,250	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	4/5/21 12:00 AM	(11.00)	(13,750)
6	June-21	1,250	5/1/21 12:00 AM	6/1/21 12:00 AM	31	5/16/21 12:00 PM	6/3/21 12:00 AM	17.50	21,875
7	June-21	1,250	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	6/14/21 12:00 AM	(2.00)	(2,500)
8	July-21	1,250	7/1/21 12:00 AM	8/1/21 12:00 AM	31	7/16/21 12:00 PM	7/19/21 12:00 AM	2.50	3,125
9	August-21	1,250	8/1/21 12:00 AM	9/1/21 12:00 AM	31	8/16/21 12:00 PM	8/9/21 12:00 AM	(7.50)	(9,375)
10	September-21	1,250	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	9/20/21 12:00 AM	4.00	5,000
11	October-21	1,250	10/1/21 12:00 AM	11/1/21 12:00 AM	31	10/16/21 12:00 PM	10/13/21 12:00 AM	(3.50)	(4,375)
12	November-21	1,250	11/1/21 12:00 AM	12/1/21 12:00 AM	30	11/16/21 12:00 AM	11/15/21 12:00 AM	(1.00)	(1,250)
13									
14									
15		\$ 13,750			334			3.73	\$ 51,250
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: North American Energy
#10-29-01-32-928-03-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 2,000	4/1/21 12:00 AM	4/1/22 12:00 AM	365	9/30/21 12:00 PM	1/21/21 12:00 AM	(252.50)	\$ (505,000)
3	February-21	-			-			-	-
4	March-21	-			-			-	-
5	April-21	-			-			-	-
6	May-21	-			-			-	-
7	June-21	-			-			-	-
8	July-21	-			-			-	-
9	August-21	-			-			-	-
10	September-21	-			-			-	-
11	October-21	-			-			-	-
12	November-21	-			-			-	-
13	December-21	-			-			-	-
14									
15		<u>\$ 2,000</u>			<u>365</u>			(252.50)	<u>\$ (505,000)</u>
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: SYSTRENDS USA

#10-29-01-32-928-03-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ 450	12/29/20 12:00 AM	12/29/20 12:00 AM	-	12/29/20 12:00 AM	1/21/21 12:00 AM	23.00	\$ 10,350
3	February-21	-			-			-	-
4	March-21	-			-			-	-
5	April-21	-			-			-	-
6	May-21	-			-			-	-
7	June-21	-			-			-	-
8	July-21	-			-			-	-
9	August-21	-			-			-	-
10	September-21	-			-			-	-
11	October-21	-			-			-	-
12	November-21	456	8/20/21 12:00 AM	8/20/21 12:00 AM	-	8/20/21 12:00 AM	11/1/21 12:00 AM	73.00	33,288
13	December-21	-			-			-	-
14									
15		\$ 906			-			48.17	\$ 43,638
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: **Black & Veatch Corp.**
#10-29-13-32-923-11-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21	\$ -			-			-	\$ -
3	February-21	-			-			-	-
4	March-21	10,770	2/1/21 12:00 AM	3/1/21 12:00 AM	28	2/15/21 12:00 AM	3/4/21 12:00 AM	17.00	183,090
5	April-21	-			-			-	-
6	May-21	2,370	4/1/21 12:00 AM	5/1/21 12:00 AM	30	4/16/21 12:00 AM	5/20/21 12:00 AM	34.00	80,580
7	June-21	-			-			-	-
8	July-21	-			-			-	-
9	August-21	1,200	6/1/21 12:00 AM	7/1/21 12:00 AM	30	6/16/21 12:00 AM	8/2/21 12:00 AM	47.00	56,400
10	September-21	-			-			-	-
11	October-21	-			-			-	-
12	November-21	-			-			-	-
13	December-21	-			-			-	-
14									
15		\$ 14,340			88			22.32	\$ 320,070
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Unitil Energy Systems, Inc.
Non-Transmission - Calculation of (Lead) Lag
12 Months Ended Dec 31, 2021

Supplier: Department of Energy - State of NH
#10-29-13-32-923-11-00

Line No	Month	Non-Transmission Expense	Service From	Service To	Total Days	Mid-Point Calculation Date	Payment Date	(Lead) Lag Days	Weighted Dollar Days
1									
2	January-21				-			-	\$ -
3	February-21				-			-	-
4	March-21				-			-	-
5	April-21				-			-	-
6	May-21				-			-	-
7	June-21				-			-	-
8	July-21				-			-	-
9	August-21				-			-	-
10	September-21				-			-	-
11	October-21	2,883	7/1/21 12:00 AM	9/1/21 12:00 AM	62	8/1/21 12:00 AM	10/14/21 12:00 AM	74.00	213,367
12	October-21	1,416	9/1/21 12:00 AM	10/1/21 12:00 AM	30	9/16/21 12:00 AM	10/14/21 12:00 AM	28.00	39,659
13	November-21				-			-	-
14	December-21				-			-	-
15									
16		<u>\$ 4,300</u>						58.85	<u>\$ 253,026</u>
17									
18									
19									
20									
21									
22									
23									
24									
25									