

Program Cost-Effectiveness - 2018 ACTUAL

	Total Resource Benefit / Cost Ratio	Benefits (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
Home Energy Assistance	1.23	\$ 811.6	\$ 662.392	\$ -	149.0	2,348.6	50.8	9.6	49	1,596.0	32,479.6
ENERGY STAR Homes	1.49	\$ 385.4	\$ 169.803	\$ 88.0	107.3	1,791.6	12.9	1.7	77	893.5	18,980.9
Home Performance with Energy Star	1.61	\$ 718.1	\$ 302.726	\$ 142.3	73.4	1,333.509	6.8	11.1	68	1,486.5	31,772.5
ENERGY STAR Products	2.10	\$ 1,531.0	\$ 528.287	\$ 201.5	2,172.6	13,961.9	596.1	267.6	26,140	317.9	4,562.4
	0.00	\$ -									
Home Energy Reports	0.15	\$ 33.5	\$ 223.785	\$ -	385.6	385.6	82.4	60.1	24,336	-	-
ISO-NE Forward Capacity Market Expenses		\$ -	\$ 3.942	\$ -	-	-	-	-	-	-	-
Sub-Total Residential	1.50	\$ 3,479.6	\$ 1,890.934	\$ 431.8	2,887.9	19,821.2	748.9	350.1	50,669	4,293.8	87,795.4
Commercial, Industrial & Municipal											
Large Business Energy Solutions	4.58	\$ 5,361.9	\$ 711.154	\$ 459.768	4,152.7	56,129.4	402.6	532.3	18	-	-
Small Business Energy Solutions	1.68	\$ 2,812.3	\$ 799.497	\$ 879.342	2,469.4	32,486.3	305.5	238.8	91	-	-
Municipal Energy Solutions	1.33	\$ 431.6	\$ 224.879	\$ 98.660	285.9	3,741.5	35.8	62.0	7	-	-
Education		\$ -	\$ 27.106	\$ -	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses		\$ -	\$ 7.729	\$ -	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	2.68	\$ 8,605.9	\$ 1,770.365	\$ 1,437.8	6,908.0	92,357.2	744.0	833.1	116	-	-
Total	2.19	\$ 12,085.5	\$ 3,661.299	\$ 1,869.5	9,796.0	112,178.4	1,492.9	1,183.2	50,785	4,293.8	87,795.4

Annual kWh Savings	9,795,987	88.6%	kWh > 55%	Lifetime kWh Savings	112,178,420	81.3%	kWh > 55%
Annual MMBTU Savings (in kWh)	<u>1,258,392</u>	<u>11.4%</u>		Lifetime MMBTU Savings (in kWh)	<u>25,730,284</u>	<u>18.7%</u>	
	11,054,379	100.0%			137,908,704	100.0%	

Program Cost-Effectiveness - 2018 PLAN

	Total Resource Benefit / Cost Ratio	Benefits (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
Home Energy Assistance	1.44	\$ 1,015.6	\$ 706.636	\$ -	76.4	1,147.1	8.9	12.8	83	2,293.6	46,205.8
ENERGY STAR Homes	1.95	\$ 393.3	\$ 164.704	\$ 37.3	48.7	873.0	5.6	11.1	25	632.4	15,783.9
Home Performance with Energy Star	1.46	\$ 984.0	\$ 430.000	\$ 243.4	66.1	1,062.4	9.4	11.9	76	2,270.4	45,510.0
ENERGY STAR Products	2.03	\$ 1,191.7	\$ 484.188	\$ 102.7	1,662.7	10,584.0	459.1	207.3	20,890	373.9	5,465.3
Home Energy Reports	0.75	\$ 215.9	\$ 286.984	\$ -	1,237.0	3,231.6	70.6	51.5	30,000	-	-
ISO-NE Forward Capacity Market Expenses	0.00	\$ -	\$ 14.000	\$ -	-	-	-	-	-	-	-
Sub-Total Residential	1.54	\$ 3,800.6	\$ 2,086.512	\$ 383.3	3,090.8	16,898.2	553.6	294.6	51,074	5,570.3	112,965.1
Commercial, Industrial & Municipal											
Large Business Energy Solutions	2.19	\$ 4,291.0	\$ 1,018.000	\$ 942.3	3,251.3	44,359.4	406.5	432.4	21	-	-
Small Business Energy Solutions	1.65	\$ 2,286.7	\$ 779.756	\$ 603.4	1,941.5	25,871.4	139.9	187.9	48	-	-
Municipal Energy Solutions	1.89	\$ 540.1	\$ 218.878	\$ 67.5	422.2	6,293.3	31.2	26.7	26	90.0	1,800.0
Education	0.00	\$ -	\$ 37.369	\$ -	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses	0.00	\$ -	\$ 16.165	\$ -	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	1.93	\$ 7,117.8	\$ 2,070.168	\$ 1,613.3	5,614.9	76,524.2	577.6	647.0	95	90.0	1,800.0
Total	1.77	\$ 10,918.4	\$ 4,156.680	\$ 1,996.6	8,705.8	93,422.3	1,131.2	941.7	51,169	5,660.3	114,765.1

Annual kWh Savings	8,705,776	84.0%	kWh > 55%	Lifetime kWh Savings	93,422,310	73.5%	kWh > 55%
Annual MMBTU Savings (in kWh)	<u>1,658,871</u>	<u>16.0%</u>		Lifetime MMBTU Savings (in kWh)	<u>33,634,319</u>	<u>26.5%</u>	
	10,364,647	100.0%			127,056,629	100.0%	

Present Value Benefits - 2018 ACTUAL

	Total Benefits (\$000)	CAPACITY				ENERGY				Electric DRIPE	Gas Benefits	Gas DRIPE	Other Fuels Benefits	Water Benefits	Other Non- Resource Benefits
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak						
Residential Programs															
Home Energy Assistance	\$ 811.6	\$ 16.7	\$ -	\$ 2.4	\$ 9.8	\$ 67.1	\$ 62.3	\$ 8.5	\$ 8.7	\$ 1.1	\$ 4.4	\$ 0.0	\$ 556.8	\$ -	\$ 73.8
ENERGY STAR Homes	\$ 385.4	\$ 2.4	\$ -	\$ 0.4	\$ 1.5	\$ 58.0	\$ 50.8	\$ 2.7	\$ 2.2	\$ 0.8	\$ 69.2	\$ 0.5	\$ 161.7	\$ -	\$ 35.0
Home Performance with Energy Star	\$ 718.1	\$ 25.7	\$ -	\$ 3.4	\$ 13.9	\$ 24.6	\$ 30.1	\$ 12.9	\$ 13.0	\$ 0.5	\$ 13.4	\$ 0.1	\$ 515.2	\$ -	\$ 65.3
ENERGY STAR Products	\$ 1,531.0	\$ 173.0	\$ -	\$ 34.2	\$ 138.6	\$ 350.8	\$ 216.0	\$ 155.5	\$ 91.5	\$ 11.7	\$ 10.7	\$ 0.1	\$ 55.9	\$ 171.4	\$ 121.7
Home Energy Reports	\$ 33.5	\$ 4.6	\$ -	\$ 1.2	\$ 4.8	\$ 8.1	\$ 6.4	\$ 2.5	\$ 2.0	\$ 0.8	\$ -	\$ -	\$ -	\$ -	\$ 3.0
Sub-Total Residential	\$ 3,479.6	\$ 222.3	\$ -	\$ 41.6	\$ 168.7	\$ 508.5	\$ 365.6	\$ 182.3	\$ 117.5	\$ 15.0	\$ 97.6	\$ 0.8	\$ 1,289.5	\$ 171.4	\$ 298.8
Commercial/Industrial Programs															
Large Business Energy Solutions	\$ 5,361.9	\$ 813.3	\$ -	\$ 126.4	\$ 512.4	\$ 1,214.8	\$ 1,016.6	\$ 660.4	\$ 503.4	\$ 27.2	\$ -	\$ -	\$ -	\$ -	\$ 487.4
Small Business Energy Solutions	\$ 2,812.3	\$ 337.2	\$ -	\$ 54.0	\$ 218.9	\$ 751.2	\$ 603.2	\$ 327.5	\$ 248.8	\$ 15.9	\$ -	\$ -	\$ -	\$ -	\$ 255.7
Municipal Energy Solutions	\$ 431.6	\$ 86.0	\$ -	\$ 13.9	\$ 56.3	\$ 119.1	\$ 48.7	\$ 47.8	\$ 18.7	\$ 1.9	\$ -	\$ -	\$ -	\$ -	\$ 39.2
Education	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Commercial & Industrial	\$ 8,605.9	\$ 1,236.5	\$ -	\$ 194.3	\$ 787.5	\$ 2,085.0	\$ 1,668.6	\$ 1,035.8	\$ 770.9	\$ 45.0	\$ -	\$ -	\$ -	\$ -	\$ 782.4
Total	\$ 12,085.5	\$ 1,458.8	\$ -	\$ 236.0	\$ 956.2	\$ 2,593.4	\$ 2,034.2	\$ 1,218.0	\$ 888.4	\$ 60.0	\$ 97.6	\$ 0.8	\$ 1,289.5	\$ 171.4	\$ 1,081.2

Present Value Benefits - 2018 PLAN

	Total Benefits (\$000)	CAPACITY				ENERGY				Electric DRIPE	Gas Benefits	Gas DRIPE	Other Fuels Benefits	Water Benefits	Other Non- Resource Benefits
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak						
Residential Programs															
Home Energy Assistance	\$ 1,015.6	\$ 27.6	\$ -	\$ 3.8	\$ 15.3	\$ 22.9	\$ 26.3	\$ 9.6	\$ 10.3	\$ 0.5	\$ -	\$ -	\$ 806.9	\$ -	\$ 92.3
ENERGY STAR Homes	\$ 393.3	\$ 24.1	\$ -	\$ 3.3	\$ 13.4	\$ 16.2	\$ 20.6	\$ 7.4	\$ 8.5	\$ 0.4	\$ 0.1	\$ 0.0	\$ 261.8	\$ 2.0	\$ 35.6
Home Performance with Energy Star	\$ 984.0	\$ 25.5	\$ -	\$ 3.5	\$ 14.2	\$ 20.9	\$ 23.3	\$ 10.3	\$ 9.7	\$ 0.5	\$ -	\$ -	\$ 786.6	\$ -	\$ 89.5
ENERGY STAR Products	\$ 1,191.7	\$ 135.1	\$ -	\$ 26.5	\$ 107.6	\$ 267.0	\$ 160.7	\$ 120.5	\$ 68.5	\$ 9.0	\$ 12.0	\$ 0.1	\$ 69.3	\$ 117.8	\$ 97.6
Home Energy Reports	\$ 215.9	\$ 8.1	\$ -	\$ 2.6	\$ 10.6	\$ 70.6	\$ 56.1	\$ 23.8	\$ 19.2	\$ 5.3	\$ -	\$ -	\$ -	\$ -	\$ 19.6
Sub-Total Residential	\$ 3,800.6	\$ 220.5	\$ -	\$ 39.8	\$ 161.1	\$ 397.6	\$ 287.0	\$ 171.6	\$ 116.2	\$ 15.6	\$ 12.1	\$ 0.1	\$ 1,924.6	\$ 119.8	\$ 334.6
Commercial/Industrial Programs															
Large Business Energy Solutions	\$ 4,291.0	\$ 649.3	\$ -	\$ 101.7	\$ 412.0	\$ 1,086.7	\$ 832.1	\$ 471.8	\$ 325.8	\$ 21.6	\$ -	\$ -	\$ -	\$ -	\$ 390.1
Small Business Energy Solutions	\$ 2,286.7	\$ 274.3	\$ -	\$ 43.4	\$ 175.9	\$ 596.8	\$ 481.6	\$ 278.6	\$ 215.4	\$ 12.8	\$ -	\$ -	\$ -	\$ -	\$ 207.9
Municipal Energy Solutions	\$ 540.1	\$ 41.1	\$ -	\$ 6.4	\$ 25.8	\$ 144.9	\$ 145.1	\$ 48.0	\$ 46.6	\$ 2.9	\$ -	\$ -	\$ 30.2	\$ -	\$ 49.1
Education	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Commercial & Industrial	\$ 7,117.8	\$ 964.7	\$ -	\$ 151.4	\$ 613.7	\$ 1,828.4	\$ 1,458.7	\$ 798.4	\$ 587.8	\$ 37.3	\$ -	\$ -	\$ 30.2	\$ -	\$ 647.1
Total	\$ 10,918.4	\$ 1,185.2	\$ -	\$ 191.2	\$ 774.8	\$ 2,226.0	\$ 1,745.7	\$ 970.1	\$ 704.0	\$ 52.9	\$ 12.1	\$ 0.1	\$ 1,954.8	\$ 119.8	\$ 981.7

**Performance Incentive Calculation
 2018**

	<u>Actual</u>	<u>Planned</u>
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	2.59	1.87
2. Threshold Benefit / Cost Ratio ¹	1.00	
3. Lifetime kWh Savings	92,357,204	76,524,154
4. Threshold Lifetime kWh Savings (65%) ²		49,740,700
5. Implementation Expenses	\$1,770,365	\$2,070,168
6. Benefit / Cost Percentage of Implementaton Expenses	3.44%	2.75%
7. Lifetime kWh Percentage of Implementation Expenses	3.32%	2.75%
8. Commercial & Industrial Performance Incentive	\$119,615	\$113,859
9. Maximum Commercial & Industrial Performance Incentive (6.875%)	\$121,713	\$142,324
Residential Incentive		
10. Benefit / Cost Ratio	1.43	1.47
11. Threshold Benefit / Cost Ratio ¹	1.00	
12. Lifetime kWh Savings	19,821,216	16,898,156
13. Threshold Lifetime kWh Savings (65%)		10,983,801
14. Implementation Expenses	\$1,890,934	\$2,086,512
15. Benefit / Cost Percentage of Implementation Expenses	2.67%	2.75%
16. Lifetime kWh Percentage of Implementation Expenses	3.23%	2.75%
17. Residential Performance Incentive	\$111,565	\$114,758
18. Maximum Residential Performance Incentive (6.875%)	\$130,002	\$143,448
19. TOTAL PLANNED / EARNED INCENTIVE	\$231,180	\$228,617

Notes

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

**Planned Versus Actual Benefit / Cost Ratio by Sector
 2018**

	<u>Actual</u>	<u>Planned</u>
Commercial & Industrial		
1. Benefits (Value) From Eligible Programs	\$ 8,605,879	\$ 7,117,804
2. Implementation Expenses	\$ 1,770,365	\$ 2,070,168
3. Customer Contribution	\$ 1,437,770	\$ 1,613,256
4. Performance Incentive	\$ 119,615	\$ 113,859
5. Total Costs	\$ 3,327,749	\$ 3,797,283
6. Benefit/Cost Ratio - Commercial & Industrial Sector	2.59	1.87
Residential		
7. Benefits (Value) From Eligible Programs	\$ 3,479,601	\$ 3,800,564
8. Implementation Expenses	\$ 1,890,934	\$ 2,086,512
9. Customer Contribution	\$ 431,761	\$ 383,340
10. Performance Incentive	\$ 111,565	\$ 114,758
11. Total Costs	\$ 2,434,260	\$ 2,584,610
12. Benefit/Cost Ratio - Residential Sector	1.43	1.47

**Lifetime Energy Savings by Sector and Program
 2018**

	Lifetime kWh Savings	
	<u>Actual</u>	<u>Goal</u>
Commercial & Industrial		
Large Business Energy Solutions	56,129,415	44,359,389
Small Business Energy Solutions	32,486,280	25,871,431
Municipal Energy Solutions	3,741,509	6,293,333
Total Commercial & Industrial	92,357,204	76,524,200
Residential		
Home Energy Assistance	2,348,635	1,147,059
ENERGY STAR Homes	1,791,562	873,014
Home Performance with Energy Star	1,333,509	1,062,424
ENERGY STAR Products	13,961,949	10,584,024
Home Energy Reports	385,562	3,231,634
Total Residential	19,821,216	16,898,200
	112,178,420	93,422,400

2018 Annual Report Reconciliation

Unitil Electric Energy Efficiency
 January 1, 2018 - December 31, 2018

Unitil Electric Annual Report 2018 2018 Electric Revenue and Expense Reconciliation

		Total 2018
1.	Beginning Balance: 1/1/2018	(Over)/Under \$ (902,211)
Revenues		
2.	System Benefits Charge Revenue	\$ 3,322,556
3.	FCM Revenue	\$ 840,087
4.	RGGI Proceeds	\$ 278,901
5.	Interest	\$ 72,666
6.	Total Funding	Σ Lines 2 - 5 \$ 4,514,210
Expenses		
7.	Program Expenses	\$ 3,661,299
8.	2018 Planned PI	\$ 228,617
9.	PI - Prior Year(s) True Up	\$ 23,848
10.	Total Expenses	Σ Lines 7 - 9 \$ 3,913,764
11.	Ending Balance: 12/31/2018	Lines 1 - 6 + 10 \$ <u>(1,502,657)</u>

Notes:

Line 8: 2018 Planned PI reflects what was budgeted and booked in 2018

Line 9: PI Prior Year(s) True-Up reflects adjustments for 2017 PI as booked in 2018

2018 Annual Report Reconciliation
Unitil RGGI Retail and Large Business Grant Program
January 1, 2018 - December 31, 2018

Annual Report 2018
Revenue and Expense Reconciliation

	<u>C&I Programs</u>
Beginning Balance: 1/1/2018¹	(\$99,376)
Revenues	
RGGI Grant Proceeds	\$ 24,300
Total Funding	\$ 24,300
Expenses	
C&I Retail Partners Program	\$ 12,724
C&I Large Business Partners Program	\$ 246
Total Expenses	\$ 12,970
Ending Balance: 12/31/2018¹	\$ (110,705)
 Ending Balance Adjusted for Current Year Actual PI	
Actual PI - 2018 ²	\$ 973
Ending Balance w/ Actual PI ¹	\$ (109,733)

Notes:

¹ Does not include PI from prior years.

² The "Actual PI - 2018" is equal to 7.5% of the actual expenditures.

2018 Annual Report Reconciliation

Unitil - RGGI On-Bill Financing January 1, 2018 - December 31, 2018

Annual Report 2018 Revenue and Expense Reconciliation

	<u>Resi</u> ¹	<u>C&I</u>	<u>Total</u>
Beginning Balance: 1/1/2018	(\$256,803)	(\$105,862)	(\$362,665)
2018 Revenues			
Customer Loan Repayments	\$42,937	\$139,186	\$182,123
New Grant Funding			
Total Revenues	\$42,937	\$139,186	\$182,123
2018 Expenses			
Customer On-Bill Loans	\$5,893	\$68,412	\$74,306
Administrative Expense			
Defaults and Write Offs			
Total Expenses	\$5,893	\$68,412	\$74,306
Ending Balance: 12/31/2018	(\$293,847)	(\$176,635)	(\$470,482)

Notes

¹ Residential and Low Income activity was consolidated into the Residential model in 2018, which adjusted the beginning balance by \$4,487.83.

Unitil Energy Systems, Inc.
NHPUC Docket No. DE 17-136
2018 Annual Report – Lost Base Revenue

In accordance with the requirements of the Settlement Agreement approved by the New Hampshire Public Utilities Commission in Order No. 25,976, dated December 23, 2016 in DE 14-216, Unitil Energy Systems, Inc. (“UES”) herein provides its calculation of lost base revenue (“LBR”) for 2018. A description of how the Average Distribution Rate (“ADR”) for lost revenue was calculated, including information on the inclusion or exclusion of relevant inputs such as customer charges, meter charges, or outdoor lighting services is included herein. As required, the billing determinants in such calculation are based on 2018 data and rates in effect throughout 2018. The reconciliation of LBR with revenue collected through the lost revenue component of the System Benefits Charge is also provided as part of this report. The contents of the report are provided below.

Page 1 provides the total LBR for January through December 2018. The calculation is based on the kWh savings provided on page 3 and the ADRs provided on pages 4 and 5.

Page 2 provides a reconciliation of the 2018 LBR from page 1 with revenues collected through the lost revenue component of the System Benefits Charge.

Page 3 provides program year 2018 savings for the LBR calculations.

Page 4 provides the calculation of the ADR for the January 1 to April 30, 2018 period. As shown, the ADR does not include customer, meter or luminaire charges.

Page 5 provides the calculation of the ADR for the May 1 to December 31, 2018 period. As shown, the ADR does not include customer, meter or luminaire charges. On May 1, 2018, UES implemented new distribution rates as approved in Order No. 26,123, dated April 30, 2018 in DE 18-036.

Pages 6 and 7 provide supporting detail for the ADR calculated on page 4.

Pages 8 and 9 provide supporting detail for the ADR calculated on page 5.

Pages 10 and 11 provide supporting documentation of the distribution rates in effect January 1 to April 30, 2018, which are used in the calculations on pages 6 and 7.

Pages 12 and 13 provide supporting documentation of the distribution rates in effect May 1 to December 31, 2018, which are used in the calculations on pages 8 and 9.

Page 14 provides supporting documentation for billing determinants used in the ADR calculations. This data was extracted from the company’s billing system. Note that for customer counts, these figures were derived for each rate class by dividing customer charge revenue by the customer charge in effect. This method was used since customer counts change throughout the month. Dividing customer charge revenue by the customer charge in effect results in a customer count that reflects the billing determinant for the month. As indicated above, the ADR does not include customer charges so this method has no impact on LBR.

With respect to the calculation of ADR, as shown on pages 4 and 5, UES calculated an ADR for each sector by dividing the total demand and energy distribution revenue by the kWh for the applicable time period. Details by class are shown on pages 6-7 and pages 8-9. As shown, the demand and energy distribution revenue is calculated by multiplying the distribution rates that were billed for the period by the billing determinants for the same period. As indicated above, UES calculated ADR for two periods (January to April and May to December), since it had a distribution rate change effective May 1, 2018.

Unitil Energy System, Inc.
Actual Monthly and Cumulative Savings (kWh) and Lost Base Revenue
January 1, 2018 to December 31, 2018

Unitil Energy Systems, Inc.
 NHPUC Docket No. DE 17-136
 2018 Annual Report
 Page 1 of 14

Line	Description	12/31/2017	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	2018
		Col. B	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Annual Savings
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Residential Annualized Savings	1,344,218	-	376,772	157,695	125,085	90,702	4,664	95,633	135,961	292,621	112,406	621,896	854,778	2,868,213
2	C&I Annualized Savings	6,004,880	8,544	-	180,175	187,986	354,033	217,302	101,168	1,076,307	451,391	294,268	1,281,534	2,555,433	6,708,141
3	Total		8,544	376,772	337,870	313,072	444,734	221,967	196,801	1,212,267	744,012	406,674	1,903,430	3,410,210	9,576,354
			Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Cumulative LBR Savings
4	Monthly Residential Savings		-	31,398	13,141	10,424	7,558	389	7,969	11,330	24,385	9,367	51,825	71,231	239,018
5	Cumulative Residential Savings	112,018	112,018	143,416	156,557	166,981	174,539	174,928	182,898	194,228	218,613	227,980	279,804	351,036	2,382,998
6	Average Residential Distribution Rate		0.03682	0.03682	0.03682	0.03682	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	
7	Lost Residential Revenue		\$ 4,125	\$ 5,281	\$ 5,764	\$ 6,148	\$ 6,173	\$ 6,187	\$ 6,469	\$ 6,870	\$ 7,732	\$ 8,064	\$ 9,897	\$ 12,416	\$ 85,126
8	Monthly C&I Savings		712	-	15,015	15,666	29,503	18,109	8,431	89,692	37,616	24,522	106,795	212,953	
9	Cumulative C&I Savings	500,407	501,119	501,119	516,133	531,799	561,302	579,410	587,841	677,533	715,149	739,671	846,466	1,059,418	7,816,959
10	Average C&I Distribution Rate		0.03079	0.03079	0.03079	0.03079	0.03141	0.03141	0.03141	0.03141	0.03141	0.03141	0.03141	0.03141	
11	Lost C&I Revenue		\$ 15,429	\$ 15,429	\$ 15,891	\$ 16,374	\$ 17,633	\$ 18,202	\$ 18,466	\$ 21,284	\$ 22,466	\$ 23,236	\$ 26,591	\$ 33,281	\$ 244,282
12	Total Lost Revenue		\$ 19,554	\$ 20,710	\$ 21,656	\$ 22,522	\$ 23,806	\$ 24,389	\$ 24,936	\$ 28,154	\$ 30,198	\$ 31,300	\$ 36,488	\$ 45,697	\$ 329,408

- Line 1: Actual kWh Savings - See page 3
- Line 2: Actual kWh Savings - See page 3
- Line 3: Line 1 + Line 2
- Line 4: Line 1/12
- Line 5: Prior month line 5 + current month line 4
- Line 6: Page 4, Line 1, Col. 5; Page 5, Line 1, Col. 5
- Line 7: Line 5 x Line 6
- Line 8: Line 2/12
- Line 9: Prior month line 9 + current month line 8
- Line 10: Page 4, Line 5, Col. 5; Page 5, Line 5, Col. 5
- Line 11: Line 9 x Line 10
- Line 12: Line 7 + Line 11

Unitil Energy System, Inc.
Lost Base Revenue Reconciliation
January 1, 2018 to December 31, 2018

Unitil Energy Systems, Inc.
 HPUC Docket No. DE 17-136
 2018 Annual Report
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Line	Description	Actual Jan 2018	Actual Feb 2018	Actual Mar 2018	Actual Apr 2018	Actual May 2018	Actual June 2018	Actual Jul 2018	Actual Aug 2018	Actual Sep 2018	Actual Oct 2018	Actual Nov 2018	Actual Dec 2018	2018 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N
1	Beginning Balance	\$ 8,892	\$ 4,679	\$ (6,060)	\$ (14,376)	\$ (20,120)	\$ (24,231)	\$ (30,746)	\$ (40,125)	\$ (50,569)	\$ (54,656)	\$ (52,252)	\$ (43,467)	
2	Lost Revenues	\$ 19,554	\$ 20,710	\$ 21,656	\$ 22,522	\$ 23,806	\$ 24,389	\$ 24,936	\$ 28,154	\$ 30,198	\$ 31,300	\$ 36,488	\$ 45,697	329,408
3	Revenue (\$)	\$ 23,791	\$ 31,447	\$ 29,934	\$ 28,203	\$ 27,833	\$ 30,802	\$ 34,172	\$ 38,415	\$ 34,080	\$ 28,669	\$ 27,506	\$ 31,941	\$ 366,793
4	Cumulative Over/(Under) Recovery	\$ 4,655	\$ (6,058)	\$ (14,339)	\$ (20,057)	\$ (24,147)	\$ (30,645)	\$ (39,983)	\$ (50,386)	\$ (54,451)	\$ (52,025)	\$ (43,271)	\$ (29,711)	
INTEREST														
5	Average Monthly Balance	\$ 6,773	\$ (690)	\$ (10,200)	\$ (17,216)	\$ (22,134)	\$ (27,438)	\$ (35,364)	\$ (45,256)	\$ (52,510)	\$ (53,341)	\$ (47,761)	\$ (36,589)	
6	Interest Rate	4.25%	4.25%	4.25%	4.50%	4.50%	4.50%	4.75%	4.75%	4.75%	5.00%	5.00%	5.00%	
7	Days per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
8	Computed Interest	\$ 24	\$ (2)	\$ (37)	\$ (64)	\$ (85)	\$ (101)	\$ (143)	\$ (183)	\$ (205)	\$ (227)	\$ (196)	\$ (155)	\$ (1,373)
9	Ending Balance	\$ 4,679	\$ (6,060)	\$ (14,376)	\$ (20,120)	\$ (24,231)	\$ (30,746)	\$ (40,125)	\$ (50,569)	\$ (54,656)	\$ (52,252)	\$ (43,467)	\$ (29,866)	

Line 1: Prior period ending balance. 2017 Annual Report, page 2, line 9, col. M.
 Line 2: Page 1, Line 12
 Line 3: Actual Revenues
 Line 4: Line 1 + Line 2 - Line 3
 Line 5: (Line 1 + Line 4)/2
 Line 6: Prime Rate
 Line 8: Line 7 * ((Line 5/# days per year) * Line 9)
 Line 9: Line 4 + Line 8

**Unitil Energy System, Inc.
Electric Savings for LBR Calculation**

PROGRAM YEAR 2018

	PLAN	ACTUAL	SAVINGS CAP	VARIANCE	
	Annual kWh	Annual kWh	Plan @ 110% kWh	Cap - Actual kWh	Variance from Plan
Residential Programs					
1. EnergyStar Homes	48,724	107,316			
2. Home Performance w/EnergyStar	66,052	73,425			
3. EnergyStar Products	1,662,668	2,172,621			
4. Home Energy Reports	1,237,013	385,562			
5. Home Energy Assistance	76,371	149,021			
6. Residential	3,090,828	2,887,945			
7.					
Commercial & Industrial Programs					
9. Large Business Energy Solutions	3,251,318	4,152,747			
10. Small Business Energy Solutions	1,941,463	2,469,441			
11. Municipal Energy Solutions	422,167	285,854			
12. Commercial & Industrial	5,614,948	6,908,043			
13. Reduction for backup/auxiliary service customer		22,319			
14. Total 2018 Savings Portfolio	8,705,776	9,773,668	9,576,354	(197,315)	12.3% (Note 1)

LBR Savings Allocation		Prior Year	Actual Jan-18	Actual Feb-18	Actual Mar-18	Actual Apr-18	Actual May-18	Actual Jun-18	Actual Jul-18	Actual Aug-18	Actual Sep-18	Actual Oct-18	Actual Nov-18	Actual Dec-18	Total
15. Residential Programs															
16. Annualized kWh by Month	L. 18 * 12 Mo.		0	376,772	157,695	125,085	90,702	4,664	95,633	135,961	292,621	112,406	621,896	854,778	2,865,981
17.															
18. Monthly Incremental	Installed kWh / Mo.		0	31,398	13,141	10,424	7,558	389	7,969	11,330	24,385	9,367	51,825	71,231	239,018
19. Monthly Cumulative	Sum of L. 18	(Note 2)	0	31,398	44,539	54,963	62,521	62,910	70,879	82,209	106,595	115,962	167,786	239,018	1,038,780
20. Monthly Cumulative including Prior	Sum of L. 18 + Prior		112,018	112,018	143,416	166,981	174,539	174,928	182,898	194,228	218,613	227,980	279,804	351,036	2,382,998
21.															
22. Commercial & Industrial Programs															
23. Annualized kWh by Month	L. 25 * 12 Mo.		8,544	0	180,175	187,986	354,033	217,302	101,168	1,076,307	451,391	294,268	1,281,534	2,555,433	6,708,141
24.															
25. Monthly Incremental	Installed kWh / Mo.		712	0	15,015	15,666	29,503	18,109	8,431	89,692	37,616	24,522	106,795	212,953	559,012
26. Monthly Cumulative	Sum of L. 25	(Note 2)	712	712	15,727	31,392	60,895	79,003	87,434	177,126	214,742	239,264	346,059	559,012	1,812,078
27. Monthly Cumulative including Prior	Sum of L. 25 + Prior		500,407	501,119	516,133	531,799	561,302	579,410	587,841	677,533	715,149	739,671	846,466	1,059,418	7,816,959
28.															
29.															
30. Cumulative Annualized kWh by Mo.	L. 16 + L. 23		8,544	385,316	723,186	1,036,258	1,480,993	1,702,959	1,899,760	3,112,028	3,856,040	4,262,713	6,166,143	9,576,354	
31. Percent of Plan Savings	L. 41 ÷ L. 18 Plan		0%	4%	8%	12%	17%	20%	22%	36%	44%	49%	71%	110%	

NOTES:
1. Equals [(Actual ÷ Plan) - 1]. See Settlement, Page 5 in DE 15-137. "In each calendar year, for each utility, the savings for which lost revenue may be recovered will be capped at 110% of planned annual savings."
2. Adjustments made in December to comply with cap on savings per Settlement in DE 15-137. See Note 1.

Unitil Energy Systems, Inc.
Calculation of Average Distribution Rate for Lost Revenue
Based on Actual Billing Determinants for January - April 2018 and Effective Distribution Rates*

<u>Rate Class</u>	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)
	Revenue			Delivery kWh	Average Distribution Rate \$/kWh
	<u>Demand Charges</u>	kWh <u>Charges</u>	Total Demand and kWh <u>Charges</u>		
1 Residential D	\$ -	\$ 6,489,047	\$ 6,489,047	176,237,028	\$ 0.03682
2 Regular General G2	\$ 4,301,064	\$ 221,613	\$ 4,522,677	117,038,232	\$ 0.03864
4 Large General Service Rate G1	\$ 2,439,206	\$ 66,926	\$ 2,506,132	111,249,384	\$ 0.02253
5 Commercial and Industrial	\$ 6,740,269	\$ 288,540	\$ 7,028,809	228,287,616	\$ 0.03079

* Revenues include demand charges and kWh charges only.
Customer, meter and per luminaire charges are excluded.

Unitil Energy Systems, Inc.
Calculation of Average Distribution Rate for Lost Revenue
Based on Actual Billing Determinants for May - December 2018 and May 1, 2018 Distribution Rates*

Rate Class	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)
	Revenue			Delivery kWh	Average Distribution Rate \$/kWh
	Demand Charges	kWh Charges	Total Demand and kWh Charges		
1 Residential D	\$ -	\$ 11,826,182	\$ 11,826,182	334,356,278	\$ 0.03537
2 Regular General G2	\$ 9,747,905	\$ 78,926	\$ 9,826,831	239,314,421	\$ 0.04106
4 Large General Service Rate G1	\$ 5,297,125	\$ (129,698)	\$ 5,167,427	237,995,199	\$ 0.02171
5 Commercial and Industrial	\$ 15,045,030	\$ (50,772)	\$ 14,994,258	477,309,620	\$ 0.03141

* Rates reflect Unitil Energy Systems, Inc. most recent distribution rate level. Revenues include demand charges and kWh charges only. Customer, meter and per luminaire charges are excluded.

Unitil Energy Systems, Inc.
Calculation of Distribution Revenue at the Rate Level Effective January 1, 2018
Based on Billing Determinants for the Four Months Ending April 30, 2018

Unitil Energy Systems, Inc.
NHPUC Docket No. DE 17-136
2018 Annual Report
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Rate Class	Customer Group		(a)	(b)	(c)			Total
			1/1/2018 Monthly Distribution Charge (1)	Jan - Apr Billing Determinants (2)	Customer/Meter/Luminaire	Demand	kWh	
Residential Rate R	Standard Rate	Customer Charge	\$ 15.24	264,594	\$ 4,032,417			
		All kWh	\$ 0.03682	176,237,028		\$ 6,489,047	\$ 10,521,464	
Total Rate R		Customers		264,594				
		Meters		n/a				
		KWH		176,237,028				
		Revenue			\$ 4,032,417	\$ -	\$ 6,489,047	\$ 10,521,464
General Rate G2	Standard Rate	Customer Charge	\$ 27.43	41,397	\$ 1,135,506			
		Demand charge (All KW)	\$ 10.35	415,562		\$ 4,301,064		
		All KWH	\$ 0.00116	114,013,218			\$ 132,255	
		Transformer Ownership Credit, G2	\$ (0.50000)	12,230			\$ (6,115)	\$ 5,562,710
	G2 - kWh Meter	Customer Charge	\$ 17.27	1,688	\$ 29,152			
		All KWH	\$ 0.01556	192,711			\$ 2,999	\$ 32,150
	QR Water Heating and/or Space Heat	Customer Charge	\$ 9.14	1,068	\$ 9,762			
		All KWH	\$ 0.03265	2,832,303			\$ 92,475	\$ 102,236
	Total Rate G2		Customers		44,153			
			Meters		n/a			
		Billing demand		415,562				
		KWH		117,038,232				
		Revenue			\$ 1,174,419	\$ 4,301,064	\$ 221,613	\$ 5,697,097
Large General Rate G1	Standard Rate	Customer Charge Secondary Voltage	\$ 152.40	508	\$ 77,419			
		Customer Charge Primary Voltage	\$ 81.28	128	\$ 10,404			
		All kVA	\$ 7.42	328,734		\$ 2,439,206		
		All KWH	\$ 0.00116	111,249,384			\$ 129,049	
		Transformer Ownership Credit, G1	\$ (0.50000)	124,246			\$ (62,123)	\$ 2,593,955
		Total Rate G1		Customers Secondary Voltage		508		
		Customers Primary Voltage		128				
		Meters		n/a				
		Billing demand		328,734				
		KWH		111,249,384				
		Revenue			\$ 87,823	\$ 2,439,206	\$ 66,926	\$ 2,593,955

Outdoor Lighting Rate OL	100W Mercury Vapor Street	\$12.96	5,443	\$	70,543				
	175W Mercury Vapor Street	\$15.37	276	\$	4,242				
	250W Mercury Vapor Street	\$17.42	292	\$	5,087				
	400W Mercury Vapor Street	\$20.75	542	\$	11,250				
	1000W Mercury Vapor Street	\$41.19	8	\$	330				
	250W Mercury Vapor Flood	\$18.56	244	\$	4,528				
	400W Mercury Vapor Flood	\$22.21	374	\$	8,306				
	1000W Mercury Vapor Flood	\$36.80	58	\$	2,134				
	100W Mercury Vapor Power Bracket	\$13.09	1,457	\$	19,068				
	175W Mercury Vapor Power Bracket	\$14.52	206	\$	2,986				
	50W Sodium Vapor Street	\$13.20	14,189	\$	187,295				
	100W Sodium Vapor Street	\$14.85	420	\$	6,237				
	150W Sodium Vapor Street	\$14.92	1,438	\$	21,461				
	250W Sodium Vapor Street	\$18.68	4,573	\$	85,431				
	400W Sodium Vapor Street	\$23.55	976	\$	22,985				
	1000W Sodium Vapor Street	\$40.67	552	\$	22,450				
	150W Sodium Vapor Flood	\$17.19	961	\$	16,520				
	250W Sodium Vapor Flood	\$20.27	1,290	\$	26,156				
	400W Sodium Vapor Flood	\$23.02	1,618	\$	37,242				
	1000W Sodium Vapor Flood	\$41.03	881	\$	36,150				
	50W Sodium Vapor Power Bracket	\$12.21	467	\$	5,703				
	100W Sodium Vapor Power Bracket	\$13.71	293	\$	4,013				
	175W Metal Halide Street	\$19.44	8	\$	156				
	250W Metal Halide Street	\$21.13	-	\$	-				
	400W Metal Halide Street	\$21.92	-	\$	-				
	175W Metal Halide Flood	\$22.45	-	\$	-				
	250W Metal Halide Flood	\$24.24	-	\$	-				
	400W Metal Halide Flood	\$24.28	-	\$	-				
	175W Metal Halide Power Bracket	\$31.46	-	\$	-				
	250W Metal Halide Power Bracket	\$18.19	-	\$	-				
	400W Metal Halide Power Bracket	\$19.34	-	\$	-				
	1000W Metal Halide Flood (Contracts)	\$20.67	150	\$	3,093				
	42W 3780 K LED Area Light Fixture	\$12.85	-	\$	-				
	57W 5130K LED Area Light Fixture	\$12.89	-	\$	-				
	25W 2500K LED Cobra Head Fixture	\$12.80	-	\$	-				
	88W 8800K LED Cobra Head Fixture	\$12.98	-	\$	-				
	108W 10800K LED Cobra Head Fixture	\$13.04	-	\$	-				
	193W 19300K LED Cobra Head Fixture	\$13.29	-	\$	-				
	123W 11070K LED Flood Light Fixture	\$13.09	-	\$	-				
	227W 20340K LED Flood Light Fixture	\$13.30	-	\$	-				
	365W 32850K LED Flood Light Fixture	\$13.60	-	\$	-				
Total Rate OL	Luminaires		36,716						
	Customers		n/a						
	Meters		-						
	KWH	\$ 0.00116	2,688,845						
	Revenue			\$	603,364	\$	-	\$	3,119
									606,483
Total Retail	Customers		309,255						
	Meters		n/a						
	Luminaires		36,716						
	Billing Demand		744,296						
	KWH		407,213,489						
	Revenue			\$	5,898,024	\$	6,740,269	\$	6,780,706
									19,418,999

(1) See page 14 for support of customer counts and kWh data.

Unitil Energy Systems, Inc.
Calculation of Distribution Revenue at the Rate Level Effective May 1, 2018
Based on Billing Determinants for the Eight Months Ending December 2018

Unitil Energy Systems, Inc.
NHPUC Docket No. DE 17-136
2018 Annual Report
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Rate Class	Customer Group		(a)	(b)	(c)			Total
			5/1/2018 Monthly Distribution Charge	May - Dec Billing Determinants	Customer/Meter/Luminaire	Demand	kWh	
Residential Rate R	Standard Rate	Customer Charge All KWH	\$ 16.12 \$ 0.03537	537,739 334,356,278	\$ 8,668,356		\$ 11,826,182	\$ 20,494,538
Total Rate R		Customers Meters KWH Revenue		537,739 n/a 334,356,278	\$ 8,668,356	\$ -	\$ 11,826,182	\$ 20,494,538
General Rate G2	Standard Rate	Customer Charge Demand charge (All KW) All KWH	\$ 29.02 \$ 10.45 \$ -	83,480 932,814 236,213,823	\$ 2,422,580	\$ 9,747,905	\$ -	\$ 12,158,037
		Transformer Ownership Credit, G2	\$ (0.50000)	24,896			\$ (12,448)	\$ -
	G2 - kWh Meter	Customer Charge All KWH	\$ 18.27 \$ 0.00878	3,364 319,904	\$ 61,455		\$ 2,809	\$ 64,263
	QR Water Heating and/or Space Heat	Customer Charge All KWH	\$ 9.67 \$ 0.03185	2,111 2,780,694	\$ 20,415		\$ 88,565	\$ 108,981
Total Rate G2		Customers Meters Billing demand KWH Revenue		88,955 n/a 932,814 239,314,421	\$ 2,504,450	\$ 9,747,905	\$ 78,926	\$ 12,331,281
Large General Rate G1	Standard Rate	Customer Charge Secondary Voltage Customer Charge Primary Voltage All kVA All KWH Transformer Ownership Credit, G1	\$ 161.23 \$ 85.99 \$ 7.55 \$ - \$ (0.50000)	1,026 255 701,606 237,995,199 259,396	\$ 165,406 \$ 21,948	\$ 5,297,125	\$ - \$ (129,698)	\$ 5,354,781
Total Rate G1		Customers Secondary Voltage Customers Primary Voltage Meters Billing demand KWH Revenue		1,026 255 n/a 701,606 237,995,199	\$ 187,354	\$ 5,297,125	\$ (129,698)	\$ 5,354,781

Outdoor Lighting Rate OL	100W Mercury Vapor Street	\$13.20	10,729	\$	141,626
	175W Mercury Vapor Street	\$15.66	545	\$	8,537
	250W Mercury Vapor Street	\$17.75	576	\$	10,227
	400W Mercury Vapor Street	\$21.13	1,061	\$	22,423
	1000W Mercury Vapor Street	\$41.95	16	\$	671
	250W Mercury Vapor Flood	\$18.90	488	\$	9,222
	400W Mercury Vapor Flood	\$22.62	736	\$	16,657
	1000W Mercury Vapor Flood	\$37.48	112	\$	4,203
	100W Mercury Vapor Power Bracket	\$13.33	2,848	\$	37,967
	175W Mercury Vapor Power Bracket	\$14.79	401	\$	5,936
	50W Sodium Vapor Street	\$13.44	28,508	\$	383,143
	100W Sodium Vapor Street	\$15.13	850	\$	12,868
	150W Sodium Vapor Street	\$15.19	2,885	\$	43,816
	250W Sodium Vapor Street	\$19.03	9,178	\$	174,649
	400W Sodium Vapor Street	\$23.98	1,920	\$	46,040
	1000W Sodium Vapor Street	\$41.42	1,089	\$	45,106
	150W Sodium Vapor Flood	\$17.51	1,881	\$	32,939
	250W Sodium Vapor Flood	\$20.64	2,576	\$	53,176
	400W Sodium Vapor Flood	\$23.45	3,246	\$	76,114
	1000W Sodium Vapor Flood	\$41.78	1,747	\$	73,007
	50W Sodium Vapor Power Bracket	\$12.44	942	\$	11,713
	100W Sodium Vapor Power Bracket	\$13.96	589	\$	8,216
	175W Metal Halide Street	\$19.79	9	\$	168
	250W Metal Halide Street	\$21.52	-	\$	-
	400W Metal Halide Street	\$22.32	-	\$	-
	175W Metal Halide Flood	\$22.87	-	\$	-
	250W Metal Halide Flood	\$24.69	-	\$	-
	400W Metal Halide Flood	\$24.73	-	\$	-
	175W Metal Halide Power Bracket	\$32.03	-	\$	-
	250W Metal Halide Power Bracket	\$18.52	-	\$	-
	400W Metal Halide Power Bracket	\$19.69	-	\$	-
	1000W Metal Halide Flood (Contracts)	\$21.05	296	\$	6,234
	42W 3780 K LED Area Light Fixture	\$13.08	-	\$	-
	57W 5130K LED Area Light Fixture	\$13.13	-	\$	-
	25W 2500K LED Cobra Head Fixture	\$13.03	-	\$	-
	88W 8800K LED Cobra Head Fixture	\$13.22	-	\$	-
	108W 10800K LED Cobra Head Fixture	\$13.28	-	\$	-
	193W 19300K LED Cobra Head Fixture	\$13.54	-	\$	-
	123W 11070K LED Flood Light Fixture	\$13.33	-	\$	-
	227W 20340K LED Flood Light Fixture	\$13.54	-	\$	-
	365W 32850K LED Flood Light Fixture	\$13.85	-	\$	-

Total Rate OL	Luminaires		73,228		
	Customers		n/a		
	Meters		-		
	KWH	\$0.00000	5,371,916		
	Revenue			\$	1,224,658
				\$	-
				\$	-
				\$	1,224,658

Total Retail	Customers		627,720		
	Meters		n/a		
	Luminaires		73,228		
	Billing Demand		1,634,420		
	KWH		817,037,814		
	Revenue			\$	12,584,818
				\$	15,045,030
				\$	11,775,410
				\$	39,405,258

SUMMARY OF DELIVERY SERVICE RATES (Includes Electricity Consumption Tax)

The effective rates listed below include an Electricity Consumption Tax, assessed in accordance with NH Statute RSA Chapter 83-E. This tax, collected on behalf of the State of NH by each electric utility, is based on kWh consumed. Each bill rendered for electric delivery service shall be calculated through the application of the effective rates as listed below.

<u>Class</u>		<u>Distribution Charge*</u>	<u>External Delivery Charge**</u>	<u>Stranded Cost Charge**</u>	<u>Storm Recovery Adjustment Factor***</u>	<u>System Benefits Charge****</u>	<u>Total Delivery Charges</u>	<u>Electricity Consumption Tax</u>	<u>Effective Delivery Rates (Incl. Electricity Consumption Tax)</u>
D	Customer Charge	\$15.24				(1)	\$15.24		\$15.24
	All kWh	\$0.03682	\$0.02637	(\$0.00057)	\$0.00139	\$0.00456	\$0.06857	\$0.00055	\$0.06912
G2	Customer Charge	\$27.43					\$27.43		\$27.43
	All kW	\$10.35		(\$0.11)			\$10.24		\$10.24
	All kWh	\$0.00116	\$0.02637	(\$0.00011)	\$0.00139	\$0.00456	\$0.03337	\$0.00055	\$0.03392
G2 - kWh meter	Customer Charge	\$17.27					\$17.27		\$17.27
	All kWh	\$0.01556	\$0.02637	(\$0.00057)	\$0.00139	\$0.00456	\$0.04731	\$0.00055	\$0.04786
G2 - Quick Recovery Water Heat and/or Space Heat	Customer Charge	\$9.14					\$9.14		\$9.14
	All kWh	\$0.03265	\$0.02637	(\$0.00057)	\$0.00139	\$0.00456	\$0.06440	\$0.00055	\$0.06495
G1	Customer Charge	\$152.40	Secondary Voltage				\$152.40		\$152.40
	Customer Charge	\$81.28	Primary Voltage				\$81.28		\$81.28
	All kVA	\$7.42		(\$0.14)			\$7.28		\$7.28
	All kWh	\$0.00116	\$0.02637	(\$0.00014)	\$0.00139	\$0.00456	\$0.03334	\$0.00055	\$0.03389
ALL GENERAL	Transformer Ownership Credit (kW/kVa)								(\$0.50)
	Voltage Discount at 4,160 Volts or Over (all kW/kVA and kWh)								2.00%
	Voltage Discount at 34,500 Volts or Over (all kW/kVA and kWh)								3.50%

(1) Includes low-income portion of \$0.00150 per kWh, energy efficiency portion of \$0.00275 per kWh and lost base revenue portion of \$0.00031 per kWh.

* Authorized by NHPUC Order No. 26,007 in Case No. DE 16-384, dated April 20, 2017
 ** Authorized by NHPUC Order No. 26,042 in Case No. DE 17-102, dated July 24, 2017
 *** Authorized by NHPUC Order No. 25,351 in Case No. DE 11-277, dated April 24, 2012
 **** Authorized by NHPUC Order No. 26,095 in Case No. DE 17-136, dated January 2, 2018

SUMMARY OF DELIVERY SERVICE RATES (Includes Electricity Consumption Tax) (continued)

Class	Distribution Charge*	External Delivery Charge**	Stranded Cost Charge**	Storm Recovery Adjustment Factor***	System Benefits Charge****	Total Delivery Charges	Electricity Consumption Tax	Effective Delivery Rates (Incl. Electricity Consumption Tax)
OL					(1)			
All kWh	\$0.00116	\$0.02637	(\$0.00057)	\$0.00139	\$0.00456	\$0.03291	\$0.00055	\$0.03346

Luminaire Charges

Nominal Watts	Lamp Size Lumens (Approx.)	All-Night Service Monthly kWh	Midnight Service Monthly kWh	Description	Price Per Luminaire	
					Per Mo.	Per Year
100	3,500	43	20	Mercury Vapor Street	\$12.96	\$155.52
175	7,000	71	33	Mercury Vapor Street	\$15.37	\$184.44
250	11,000	100	46	Mercury Vapor Street	\$17.42	\$209.04
400	20,000	157	73	Mercury Vapor Street	\$20.75	\$249.00
1,000	60,000	372	173	Mercury Vapor Street	\$41.19	\$494.28
250	11,000	100	46	Mercury Vapor Flood	\$18.56	\$222.72
400	20,000	157	73	Mercury Vapor Flood	\$22.21	\$266.52
1,000	60,000	380	176	Mercury Vapor Flood	\$36.80	\$441.60
100	3,500	48	22	Mercury Vapor Power Bracket	\$13.09	\$157.08
175	7,000	71	33	Mercury Vapor Power Bracket	\$14.52	\$174.24
50	4,000	23	11	Sodium Vapor Street	\$13.20	\$158.40
100	9,500	48	22	Sodium Vapor Street	\$14.85	\$178.20
150	16,000	65	30	Sodium Vapor Street	\$14.92	\$179.04
250	30,000	102	47	Sodium Vapor Street	\$18.68	\$224.16
400	50,000	161	75	Sodium Vapor Street	\$23.55	\$282.60
1,000	140,000	380	176	Sodium Vapor Street	\$40.67	\$488.04
150	16,000	65	30	Sodium Vapor Flood	\$17.19	\$206.28
250	30,000	102	47	Sodium Vapor Flood	\$20.27	\$243.24
400	50,000	161	75	Sodium Vapor Flood	\$23.02	\$276.24
1,000	140,000	380	176	Sodium Vapor Flood	\$41.03	\$492.36
50	4,000	23	11	Sodium Vapor Power Bracket	\$12.21	\$146.52
100	9,500	48	22	Sodium Vapor Power Bracket	\$13.71	\$164.52
175	8,800	74	34	Metal Halide Street	\$19.44	\$233.28
250	13,500	102	47	Metal Halide Street	\$21.13	\$253.56
400	23,500	158	73	Metal Halide Street	\$21.92	\$263.04
175	8,800	74	34	Metal Halide Flood	\$22.45	\$269.40
250	13,500	102	47	Metal Halide Flood	\$24.24	\$290.88
400	23,500	158	73	Metal Halide Flood	\$24.28	\$291.36
1,000	86,000	374	174	Metal Halide Flood	\$31.46	\$377.52
175	8,800	74	34	Metal Halide Power Bracket	\$18.19	\$218.28
250	13,500	102	47	Metal Halide Power Bracket	\$19.34	\$232.08
400	23,500	158	73	Metal Halide Power Bracket	\$20.67	\$248.04
42	3,600	15	7	LED Area Light Fixture	\$12.85	\$154.20
57	5,200	20	9	LED Area Light Fixture	\$12.89	\$154.68
25	3,000	9	4	LED Cobra Head Fixture	\$12.80	\$153.60
88	8,300	30	14	LED Cobra Head Fixture	\$12.98	\$155.76
108	11,500	37	17	LED Cobra Head Fixture	\$13.04	\$156.48
193	21,000	67	31	LED Cobra Head Fixture	\$13.29	\$159.48
123	12,180	43	20	LED Flood Light Fixture	\$13.09	\$157.08
194	25,700	67	31	LED Flood Light Fixture	\$13.30	\$159.60
297	38,100	103	48	LED Flood Light Fixture	\$13.60	\$163.20

(1) Includes low-income portion of \$0.00150 per kWh, energy efficiency portion of \$0.00275 per kWh and lost base revenue portion of \$0.00031 per kWh.

* Authorized by NHPUC Order No. 26,007 in Case No. DE 16-384, dated April 20, 2017
 ** Authorized by NHPUC Order No. 26,042 in Case No. DE 17-102, dated July 24, 2017
 *** Authorized by NHPUC Order No. 25,351 in Case No. DE 11-277, dated April 24, 2012
 **** Authorized by NHPUC Order No. 26,095 in Case No. DE 17-136, dated January 2, 2018

SUMMARY OF DELIVERY SERVICE RATES (Includes Electricity Consumption Tax)

The effective rates listed below include an Electricity Consumption Tax, assessed in accordance with NH Statute RSA Chapter 83-E. This tax, collected on behalf of the State of NH by each electric utility, is based on kWh consumed. Each bill rendered for electric delivery service shall be calculated through the application of the effective rates as listed below.

Class		Distribution Charge*	Non-Transmission External Delivery Charge**	Transmission External Delivery Charge**	Total External Delivery Charge**	Stranded Cost Charge**	Storm Recovery Adjustment Factor***	System Benefits Charge****	Total Delivery Charges	Electricity Consumption Tax	Effective Delivery Rates (Incl. Electricity Consumption Tax)
D	Customer Charge	\$16.12						(1)	\$16.12		\$16.12
	All kWh	\$0.03537	\$0.00055	\$0.02582	\$0.02637	(\$0.00057)	\$0.00133	\$0.00456	\$0.06706	\$0.00055	\$0.06761
G2	Customer Charge	\$29.02							\$29.02		\$29.02
	All kW	\$10.45				(\$0.11)			\$10.34		\$10.34
	All kWh	\$0.00000	\$0.00055	\$0.02582	\$0.02637	(\$0.00011)	\$0.00133	\$0.00456	\$0.03215	\$0.00055	\$0.03270
G2 - kWh meter	Customer Charge	\$18.27							\$18.27		\$18.27
	All kWh	\$0.00878	\$0.00055	\$0.02582	\$0.02637	(\$0.00057)	\$0.00133	\$0.00456	\$0.04047	\$0.00055	\$0.04102
G2 - Quick Recovery Water Heat and/or Space Heat	Customer Charge	\$9.67							\$9.67		\$9.67
	All kWh	\$0.03185	\$0.00055	\$0.02582	\$0.02637	(\$0.00057)	\$0.00133	\$0.00456	\$0.06354	\$0.00055	\$0.06409
G1	Customer Charge	\$161.23	Secondary Voltage						\$161.23		\$161.23
	Customer Charge	\$85.99	Primary Voltage						\$85.99		\$85.99
	All kVA	\$7.55				(\$0.14)			\$7.41		\$7.41
	All kWh	\$0.00000	\$0.00055	\$0.02582	\$0.02637	(\$0.00014)	\$0.00133	\$0.00456	\$0.03212	\$0.00055	\$0.03267
ALL GENERAL	Transformer Ownership Credit (kW/kVa)										(\$0.50)
	Voltage Discount at 4,160 Volts or Over (all kW/kVA and kWh)										2.00%
	Voltage Discount at 34,500 Volts or Over (all kW/kVA and kWh)										3.50%

(1) Includes low-income portion of \$0.00150 per kWh, energy efficiency portion of \$0.00275 per kWh and lost base revenue portion of \$0.00031 per kWh.

* Authorized by NHPUC Order No. 26,123 in Case No. DE 18-036, dated April 30, 2018
 ** Authorized by NHPUC Order No. 26,042 in Case No. DE 17-102, dated July 24, 2017
 *** Authorized by NHPUC Order No. 26,123 in Case No. DE 18-036, dated April 30, 2018
 **** Authorized by NHPUC Order No. 26,095 in Case No. DE 17-136, dated January 2, 2018

SUMMARY OF DELIVERY SERVICE RATES (Includes Electricity Consumption Tax) (continued)

Class	Non-Transmission		Transmission		Stranded Cost Charge**	Storm Recovery Adjustment Factor***	System Benefits Charge**** (1)	Total Delivery Charges	Electricity Consumption Tax	Effective Delivery Rates (Incl. Electricity Consumption Tax)
	Distribution Charge*	External Delivery Charge**	External Delivery Charge**	External Delivery Charge**						
OL										
All kWh	\$0.00000	\$0.00055	\$0.02582	\$0.02637	(\$0.00057)	\$0.00133	\$0.00456	\$0.03169	\$0.00055	\$0.03224

Luminaire Charges

Lamp Size Nominal Watts	Lumens (Approx.)	All-Night Service Monthly kWh	Midnight Service Monthly kWh	Description	Price Per Luminaire	
					Per Mo.	Per Year
100	3,500	43	20	Mercury Vapor Street	\$13.20	\$158.40
175	7,000	71	33	Mercury Vapor Street	\$15.66	\$187.92
250	11,000	100	46	Mercury Vapor Street	\$17.75	\$213.00
400	20,000	157	73	Mercury Vapor Street	\$21.13	\$253.56
1,000	60,000	372	173	Mercury Vapor Street	\$41.95	\$503.40
250	11,000	100	46	Mercury Vapor Flood	\$18.90	\$226.80
400	20,000	157	73	Mercury Vapor Flood	\$22.62	\$271.44
1,000	60,000	380	176	Mercury Vapor Flood	\$37.48	\$449.76
100	3,500	48	22	Mercury Vapor Power Bracket	\$13.33	\$159.96
175	7,000	71	33	Mercury Vapor Power Bracket	\$14.79	\$177.48
50	4,000	23	11	Sodium Vapor Street	\$13.44	\$161.28
100	9,500	48	22	Sodium Vapor Street	\$15.13	\$181.56
150	16,000	65	30	Sodium Vapor Street	\$15.19	\$182.28
250	30,000	102	47	Sodium Vapor Street	\$19.03	\$228.36
400	50,000	161	75	Sodium Vapor Street	\$23.98	\$287.76
1,000	140,000	380	176	Sodium Vapor Street	\$41.42	\$497.04
150	16,000	65	30	Sodium Vapor Flood	\$17.51	\$210.12
250	30,000	102	47	Sodium Vapor Flood	\$20.64	\$247.68
400	50,000	161	75	Sodium Vapor Flood	\$23.45	\$281.40
1,000	140,000	380	176	Sodium Vapor Flood	\$41.78	\$501.36
50	4,000	23	11	Sodium Vapor Power Bracket	\$12.44	\$149.28
100	9,500	48	22	Sodium Vapor Power Bracket	\$13.96	\$167.52
175	8,800	74	34	Metal Halide Street	\$19.79	\$237.48
250	13,500	102	47	Metal Halide Street	\$21.52	\$258.24
400	23,500	158	73	Metal Halide Street	\$22.32	\$267.84
175	8,800	74	34	Metal Halide Flood	\$22.87	\$274.44
250	13,500	102	47	Metal Halide Flood	\$24.69	\$296.28
400	23,500	158	73	Metal Halide Flood	\$24.73	\$296.76
1,000	86,000	374	174	Metal Halide Flood	\$32.03	\$384.36
175	8,800	74	34	Metal Halide Power Bracket	\$18.52	\$222.24
250	13,500	102	47	Metal Halide Power Bracket	\$19.69	\$236.28
400	23,500	158	73	Metal Halide Power Bracket	\$21.05	\$252.60
42	3,600	15	7	LED Area Light Fixture	\$13.08	\$156.96
57	5,200	20	9	LED Area Light Fixture	\$13.13	\$157.56
25	3,000	9	4	LED Cobra Head Fixture	\$13.03	\$156.36
88	8,300	30	14	LED Cobra Head Fixture	\$13.22	\$158.64
108	11,500	37	17	LED Cobra Head Fixture	\$13.28	\$159.36
193	21,000	67	31	LED Cobra Head Fixture	\$13.54	\$162.48
123	12,180	43	20	LED Flood Light Fixture	\$13.33	\$159.96
194	25,700	67	31	LED Flood Light Fixture	\$13.54	\$162.48
297	38,100	103	48	LED Flood Light Fixture	\$13.85	\$166.20

(1) Includes low-income portion of \$0.00150 per kWh, energy efficiency portion of \$0.00275 per kWh and lost base revenue portion of \$0.00031 per kWh.

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 **** Authorized by NHPUC Order No. 26,095 in Case No. DE 17-136, dated January 2, 2018

Issued: May 9, 2018
 Effective: May 1, 2018

Issued By: Mark H. Collin
 Sr. Vice President

Unitil Energy Systems, Inc.
Average Distribution Rate Support

January - April 2018

No. of Customers	(a)	(b)	(c)	(d)	(e)	(f)
		Customer Charge Revenue		Total Jan-Apr	Customer Charge in Effect	Customers (d)/(e)
Rate Class		Jan - Mar 2018	Apr-18			
Residential		\$3,023,894	\$1,008,523	\$4,032,417	\$15.24	264,594
G2 kWh Meter		\$21,847	\$7,305	\$29,152	\$17.27	1,688
G2 QR Water Heating and/or Space Heat		\$7,321	\$2,440	\$9,762	\$9.14	1,068
G2		\$851,486	\$284,021	\$1,135,506	\$27.43	41,397
G1 Primary Voltage		\$7,803	\$2,601	\$10,404	\$81.28	128
G1 Secondary Voltage		\$57,912	\$19,507	\$77,419	\$152.40	508
OL		\$0	\$0	\$0	n/a	n/a
G2 Transformer Ownership Credits		(\$4,569)	(\$1,546)	(\$6,115)	(\$0.50)	12,230
G1 Transformer Ownership Credits		(\$46,588)	(\$15,535)	(\$62,123)	(\$0.50)	124,246
kWh Usage						
Residential		139,356,666	36,880,362	176,237,028		
G2 kWh Meter		152,416	40,295	192,711		
G2 QR Water Heating and/or Space Heat		2,310,110	522,193	2,832,303		
G2		87,909,233	26,103,985	114,013,218		
G1 Primary Voltage		38,295,810	8,437,670	46,733,480		
G1 Secondary Voltage		46,224,988	18,290,916	64,515,904		
OL		2,018,401	670,444	2,688,845		
Distribution Revenues					Calculated Dist rates	
Residential		\$5,131,109	\$1,357,969	\$6,489,078	\$0.03682	
G2 kWh Meter		\$2,372	\$627	\$2,999	\$0.01556	
G2 QR Water Heating and/or Space Heat		\$75,928	\$17,050	\$92,978	\$0.03283	
G2		\$101,473	\$30,281	\$131,754	\$0.00116	
G1 Primary Voltage		\$44,423	\$9,788	\$54,211	\$0.00116	
G1 Secondary Voltage		\$53,615	\$21,202	\$74,817	\$0.00116	
OI		\$458,424	\$152,703	\$611,127	\$0.22728	
Demand Usage (kW, kVA)						
G2 Demand		314,253	101,309	415,562		
G1 Demand		246,329	82,405	328,734		
Demand Revenue						
G2 Distribution Demand		\$3,252,573	\$1,048,567	\$4,301,140	\$10.35	
G1 Distribution Demand		\$1,827,758	\$611,447	\$2,439,206	\$7.42	

May - December 2018

No. of Customers - May 2018 - December 2018

Rate Class	Customer Charge Revenue			in Effect	Customers (d)/(e)
	Jan - Dec 2018	Jan - April 2018 Less	Total May-Dec		
Residential	\$12,700,773	(\$4,032,417)	\$8,668,356	\$16.12	537,739
G2 kWh Meter	\$90,606	(\$29,152)	\$61,455	\$18.27	3,364
G2 QR Water Heating and/or Space Heat	\$30,177	(\$9,762)	\$20,415	\$9.67	2,111
G2	\$3,558,086	(\$1,135,506)	\$2,422,580	\$29.02	83,480
G1 Primary Voltage	\$32,352	(\$10,404)	\$21,948	\$85.99	255
G1 Secondary Voltage	\$242,825	(\$77,419)	\$165,406	\$161.23	1,026
OL	\$0	\$0	\$0	n/a	n/a
G2 Transformer Ownership Credits	(\$18,563)	\$6,115	(\$12,448)	(\$0.50)	24,896
G1 Transformer Ownership Credits	(\$191,821)	\$62,123	(\$129,698)	(\$0.50)	259,396
kWh Usage					
Residential	510,593,306	(176,237,028)	334,356,278		
G2 kWh Meter	512,615	(192,711)	319,904		
G2 QR Water Heating and/or Space Heat	5,612,997	(2,832,303)	2,780,694		
G2	350,227,041	(114,013,218)	236,213,823		
G1 Primary Voltage	143,971,361	(46,733,480)	97,237,881		
G1 Secondary Voltage	205,273,222	(64,515,904)	140,757,318		
OL	8,060,761	(2,688,845)	5,371,916		
Distribution Revenues				Calculated Dist rates	
D	\$18,337,230	(\$6,489,078)	\$11,848,152	\$0.03544	
G2 kWh	\$5,936	(\$2,999)	\$2,937	\$0.00918	
G2 QRSH	\$181,686	(\$92,978)	\$88,709	\$0.03190	
G2	\$145,829	(\$131,754)	\$14,074	\$0.00006	
G1 Primary	\$60,446	(\$54,211)	\$6,235	\$0.00006	
G1 Secondary	\$83,521	(\$74,817)	\$8,704	\$0.00006	
OI	\$1,844,077	(\$611,127)	\$1,232,950	\$0.22952	
Demand Usage (kW, kVA)					
G2 Demand	1,348,375.62	(415,562)	932,814		
G1 Demand	1,030,339.80	(328,734)	701,606		
Demand Revenue					
G2 Distribution Demand	\$14,043,871.88	(\$4,301,140)	\$9,742,732	\$10.44	
G1 Distribution Demand	\$7,731,549	(\$2,439,206)	\$5,292,343	\$7.54	

Note: G1 excludes backup/auxiliary service customer.

Unitil Energy Systems, Inc.
Large General Service (G1) Customers
Ratchet Demand minus Metered Demand - 2018

Ratchet minus Metered kVa	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Participating EE Customers
Jan	173	-	50	-	143	166	78	-	8	98	49	117	128	87	45	332	-	164	1,637
Feb	168	-	49	-	164	193	80	-	-	99	49	120	150	50	96	392	-	194	1,805
Mar	84	-	45	-	159	135	92	-	-	83	54	129	154	1	74	446	-	59	1,515
Apr	163	-	55	177	174	167	96	-	-	104	71	132	-	1	76	686	-	146	2,049
May	16	-	-	-	133	22	19	-	-	11	32	155	-	-	37	38	22	-	484
Jun	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	32	37	-	175
Jul	-	21	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	31
Aug	2	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	139	23	-	-	-	-	-	37	-	-	4	-	-	-	204
Nov	134	-	74	-	-	98	61	34	-	11	64	131	170	-	133	294	-	99	1,304
Dec	159	-	77	-	-	147	41	21	22	126	66	116	163	38	156	282	3	204	1,619
Total Variance	899	60	351	177	913	951	467	56	30	531	385	1,051	764	178	621	2,501	62	867	10,864

(Ratchet - Metered Demand) / Metered Demand

9%

Notes:

1) Data shows the effect of the ratchet on kVA billed to G1 customers who participated in energy efficiency in 2018. As shown, ratcheted kVa for these customers is 9% higher than the metered kVa. However, this does not necessarily mean that installed energy efficiency demand savings were 9% lower due to the ratchet.

For instance, a customer could be billed on a ratchet in the early part of the year and then complete an EE project in the middle of the year. The impact of the ratchet is still included in the (9%) percentage calculation although the ratchet and EE project have no relation to each other. In a second example, suppose a customer completes an EE project early in the year, but then later in the year, is billed on a ratchet due to a high summer peak caused by weather. The summer peak was still lower by the amount of the installed EE project thus the Company still lost revenue even though the ratchet was implicated. Even in instances where a ratchet may be billed for an entire year, an energy efficiency project would have had an impact on what that ratcheted demand was -- if not during the current year, then in the following year, since the ratchet only looks back 11 months.

As previously agreed, it is not feasible to identify the impacts with precision and not feasible to track demand charge impacts on a customer by customer basis. During 2018, the ratchet came into play for 6 months on average, and was small in percentage terms.

2) A manufacturing customer, categorized as G1, was omitted from this analysis because it is primarily self-generating and is billed under a backup/auxiliary service provision of the Company's tariff.

Source

All Data: Large General Service (G1) customer billing data from 2018
 Number of G1 customers as of Dec. 2018 = 162
 G1 customers completing energy efficiency projects during 2018 = 18
 G1 "EE" customers' average months on ratchet durin 2018 = 6 Months