

UNITIL ENERGY SYSTEMS. INC.
CALCULATION OF THE EXTERNAL DELIVERY CHARGE

	<u>Calculation of the EDC</u>	<u>Calculation of the EDC/Transmission Only</u>	<u>Calculation of the EDC/Non-Transmission</u>	
1. (Over)/under Recovery - Beginning Balance August 1, 2017 (1)	\$2,302,779	\$1,585,294	\$717,485	
2. Estimated Total Costs (August 2017 - July 2018)	\$29,063,401	\$29,138,831	(\$75,430)	
3. Estimated Interest (August 2017 - July 2018)	<u>\$55,088</u>	<u>\$33,553</u>	<u>\$21,535</u>	
4. Costs to be Recovered (L.1 + L.2 + L.3)	\$31,421,268	\$30,757,678	\$663,589	L.1 + L.2 + L.3
5. Estimated Calendar Month Deliveries in kWh (August 2017 - July 2018) (2)	<u>1,191,465,060</u>	<u>1,191,465,060</u>	<u>1,191,465,060</u>	
6. External Delivery Charge (\$/kWh) (L. 4 / L. 5)	\$0.02637	\$0.02582	\$0.00055	

(1) Allocation of the Over)/under Recovery	Actual Costs*	Estimated Costs**	
	<u>June16-July17</u>	<u>June16-July17</u>	<u>difference</u>
Third Party Transmission Providers (NU Network Integration Transmission Service)	\$3,616,246	\$2,507,795	\$1,108,451
Regional Transmission and Operating Entities	\$27,722,352	\$27,338,869	\$383,483
Third Party Transmission Providers (NU Wholesale Distribution)	\$3,507,645	\$3,433,954	\$73,691
Working Capital associated with Other Flow-Through Operating Expenses	<u>\$500,249</u>	<u>\$480,580</u>	<u>\$19,670</u>
Total	\$35,346,493	\$33,761,198	\$1,585,294

* Per DE 17-102 ** Per DE 16-668

(Over)/under Recovery - Beginning Balance August 1, 2017 - Per DE 17-102	\$2,302,779
Amount estimated to be associated with Transmission costs	<u>\$1,585,294</u>
Remaining	\$717,485

(2) Schedule LSM-2, page 5 (DE 17-102).	
August 2017 - July 2018 Billed kWh	1,191,140,484
- July 2017 Unbilled kWh	(59,760,241)
+ July 2018 Unbilled kWh	<u>60,084,817</u>
Calendar Month Deliveries	1,191,465,060

		(a) Third Party Transmission Providers (Eversource Network Integration Transmission Service)	(b) Regional Transmission and Operating Entities	(c) Third Party Transmission Providers (Eversource Wholesale Distribution)	(d) Working Capital associated with Other Flow- Through Operating Expenses- Transmission Costs only (2)	(e) Sub-total: Transmission Costs included in the EDC (sum a thru d)	(f) Transmission- based Assessments and Fees	(g) Load Estimation and Reporting System Costs	(h) Data and Information Services	(i) Legal Charges	(j) Consulting Outside Service Charges	(k) Administrative Service Charges (1)	(l) EDC Portion of the annual PUC Assessment	(m) Working Capital associated with Other Flow- Through Operating Expenses - excluding transmission costs (3)	(n) RGGI Auction Proceeds	(o) Rate Case Expenses	(p) Other Regulatory Expenses	(q) Displaced Distribution Revenue	(r) Sub-total Non- Transmission Costs included in the EDC (sum f thru q)	(s) Total EDC Costs (e plus r)
	Vendor(s):	Eversource	ISO New England Inc., Regional Transmission Operator, Nepoch	Eversource			Federal Energy Regulatory Commission	LOGICA INC. & EC Infosystems	Connecticut Municipal Electric Energy Cooperative			Unitil Power Corp.								
Aug-17	Estimate	\$112,885	\$2,501,267	\$288,933	\$30,939	\$2,934,024	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	\$0	\$26,961	\$11,796	\$234,959 (4)	\$297,496	\$3,231,520
Sep-17	Estimate	\$112,885	\$2,178,156	\$251,130	\$30,939	\$2,573,110	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	\$0	\$26,961	\$11,796	\$0	\$62,537	\$2,635,647
Oct-17	Estimate	\$112,885	\$1,689,041	\$209,051	\$30,939	\$2,041,916	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	(\$269,821)	\$26,961	\$11,796	\$0	(\$207,284)	\$1,834,631
Nov-17	Estimate	\$112,885	\$1,817,933	\$210,276	\$30,939	\$2,172,033	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	\$0	\$26,961	\$11,796	\$0	\$62,537	\$2,234,569
Dec-17	Estimate	\$112,885	\$2,034,280	\$234,297	\$30,939	\$2,412,400	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	\$0	\$26,961	\$11,796	\$0	\$62,537	\$2,474,937
Jan-18	Estimate	\$112,885	\$2,039,121	\$234,864	\$30,939	\$2,417,808	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	(\$269,821)	\$26,961	\$11,796	\$0	(\$207,284)	\$2,210,523
Feb-18	Estimate	\$112,885	\$1,949,503	\$224,379	\$30,939	\$2,317,705	\$0	\$16,645	\$1,250	\$196	\$2,000	\$5,366	\$0	\$3,428	\$0	\$26,961	\$11,796	\$0	\$67,642	\$2,385,346
Mar-18	Estimate	\$112,885	\$1,832,979	\$211,292	\$30,939	\$2,188,094	\$0	\$16,645	\$1,250	\$2,546	\$2,000	\$261	\$0	\$3,428	(\$269,821)	\$26,961	\$11,796	\$0	(\$204,934)	\$1,983,160
Apr-18	Estimate	\$112,885	\$1,641,329	\$209,051	\$30,939	\$1,994,203	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	\$0	\$26,961	\$11,796	\$0	\$62,537	\$2,056,740
May-18	Estimate	\$112,885	\$1,919,664	\$222,227	\$30,939	\$2,285,715	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	\$0	\$26,961	\$11,796	\$0	\$62,537	\$2,348,252
Jun-18	Estimate	\$112,885	\$2,374,870	\$274,145	\$30,939	\$2,792,838	\$0	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	\$0	\$26,961	\$11,796	\$0	\$62,537	\$2,855,375
Jul-18	Estimate	\$112,885	\$2,568,377	\$296,785	\$30,939	\$3,008,986	\$11,000	\$16,645	\$1,250	\$196	\$2,000	\$261	\$0	\$3,428	(\$269,821)	\$26,961	\$11,796	\$0	(\$196,284)	\$2,812,701
Total Aug-17 to Jul-18		\$1,354,618	\$24,546,520	\$2,866,431	\$371,262	\$29,138,831	\$11,000	\$199,739	\$15,000	\$4,700	\$24,000	\$8,232	\$0	\$41,138	(\$1,079,285)	\$323,537	\$141,549	\$234,959	(\$75,430)	\$29,063,401

(1) Breakdown of costs included in the Administrative Service Charge are presented in Schedule LSG-3 (DE 17-102).

(2) Calculated by multiplying the product of monthly Other Flow-Through Operating Expenses-Transmission Costs Only and 45 days lag, divided by 365 days (i.e., the working capital requirement) by UES's tax adjusted cost of capital of 11.49% . The estimated expenses included in the estimated working capital calculation were based on actual expenses for August 2016 through April 2017.

(3) Calculated by multiplying the product of monthly Other Flow-Through Operating Expenses-Excluding Transmission Costs and 45 days lag, divided by 365 days (i.e., the working capital requirement) by UES's tax adjusted cost of capital of 11.49% . The estimated expenses included in the estimated working capital calculation were based on actual expenses for August 2016 through April 2017.

(3) In accordance with Order No. 25,991 in DE 15-147, UES is allowed to recover displaced distribution revenue through its EDC. August 2017 includes displaced distribution revenue for 2013 of \$15,261, for 2014 of \$26,367, for 2015 of \$58,365, and for 2016 of \$134,967.

NHPUC No. 3 - Electricity Delivery
Unitil Energy Systems, Inc.

Superseding Issued in Lieu of ~~Eighteenth~~ *Twentieth* ~~Nineteenth~~ Revised Page 67
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CALCULATION OF THE EXTERNAL DELIVERY CHARGE

	<i>Calculation of the EDC - Total</i>	<i>Calculation of the EDC - Transmission Only</i>	<i>Calculation of the EDC - Non-Transmission</i>
1. (Over)/under Recovery - Beginning Balance August 1, 2017	\$2,302,779	<i>\$1,585,294</i>	<i>\$717,485</i>
2. Estimated Total Costs (August 2017 - July 2018)	\$29,063,401	<i>\$29,138,831</i>	<i>(\$75,430)</i>
3. Estimated Interest (August 2017 - July 2018)	<u>\$55,088</u>	<i><u>\$33,553</u></i>	<i><u>\$21,535</u></i>
4. Costs to be Recovered (L.1 + L.2 + L.3)	\$31,421,268	<i>\$30,757,678</i>	<i>\$663,589</i>
5. Estimated Calendar Month Deliveries in kWh (August 2017 - July 2018)	<u>1,191,465,060</u>	<i><u>1,191,465,060</u></i>	<i><u>1,191,465,060</u></i>
6. External Delivery Charge (\$/kWh) (L. 4 / L. 5)	\$0.02637	<i>\$0.02582</i>	<i>\$0.00055</i>

Authorized by NHPUC Order No. 26,042 in Case No. DE 17-102, dated July 24, 2017 *and NHPUC Order No. in Case No. DE , dated*

Issued: *March 2, 2018* ~~July 25, 2017~~
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Issued By: Mark H. Collin
Sr. Vice President

NHPUC No. 3 - Electricity Delivery
Unitil Energy Systems, Inc.

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Superseding Thirty-First Revised Page 4

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)
								(1)			
D	Customer Charge	\$15.24							\$15.24		\$15.24
	All kWh	\$0.03682	\$0.00055	\$0.02582	\$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	\$0.00055	\$0.02582	\$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	\$0.00055	\$0.02582	\$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	\$0.00055	\$0.02582	\$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	\$0.00055	\$0.02582	\$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

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 Sr. Vice President

NHPUC No. 3 - Electricity Delivery
Unitil Energy Systems, Inc.

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

Class	Distribution Charge*	Non-Transmission External Delivery Charge**	Transmission External Delivery Charge**	External Delivery Charge**	Stranded Cost Charge**	Storm Recovery Adjustment Factor***	System Benefits Charge**** (1)	Total Delivery Charges	Electricity Consumption Tax	Effective Delivery Rates (Incl. Electricity Consumption Tax)
OL										
All kWh	\$0.00116	\$0.00055	\$0.02582	\$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

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NHPUC No. 3 - Electricity Delivery
Unitil Energy Systems, Inc.

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EXTERNAL DELIVERY CHARGE SCHEDULE EDC

The External Delivery Charge ("EDC"), as specified on Calculation of the External Delivery Charge, shall be billed by the Company to all customers taking Delivery Service from the Company. The purpose of the EDC is to recover, on a fully reconciling basis, the costs billed to the Company by Other Transmission Providers as well as third party costs billed to the Company for energy and transmission related services and other costs approved by the Commission as specified herein.

The EDC shall include the following charges, except that third party costs associated with Default Service shall be included in the Default Service Charge: 1) charges billed to the Company by Other Transmission Providers as well as any charges relating to the stability of the transmission system which the Company is authorized to recover by order of the regulatory agency having jurisdiction over such charges, 2) transmission-based assessments or fees billed by or through regulatory agencies, 3) costs billed by third parties for load estimation and reconciliation and data and information services necessary for allocation and reporting of supplier loads, and for reporting to, and receiving data from, ISO New England, 4) legal and consulting outside service charges related to the Company's transmission and energy obligations and responsibilities, including legal and regulatory activities associated with the independent system operator ("ISO"), New England Power Pool ("NEPOOL"), regional transmission organization ("RTO") and Federal Energy Regulatory Commission ("FERC"), 5) the costs of Administrative Service Charges billed to the Company by Unitil Power Corp. under the FERC-approved Amended Unitil System Agreement, 6) Effective July 1, 2014, in accordance with RSA 363-A:6, amounts above or below the total NHPUC Assessment, less amounts charged to base distribution and Default Service, and 7) cash working capital associated with Other Flow-Through Operating Expenses. In addition, the EDC shall include the calendar year over- or under-collection from the Company's Vegetation Management Program and Reliability Enhancement Program. The over- or under-collection shall be credited or charged to the EDC on May 1 of the following year, or, with approval of the Commission, the Company may credit unspent amounts to future Vegetation Management Program expenditures. ~~Lastly, the~~ The EDC shall include rate case expenses and other regulatory expenses allowed by the Commission in Docket DE 16-384. The EDC shall also include a charge for the recovery of displaced distribution revenue associated with net metering for 2013 and subsequent years. Lastly, the EDC shall include the prudently incurred costs, as approved by the Commission, associated with the alternative net metering tariff approved in Docket DE 16-576, including: net metering credits; meters installed and related data management; independent monitoring services, bi-directional and production meters installed and related data management systems and processes; pilot programs; studies; and data collection, maintenance and dissemination. For purposes of this Schedule, "Other Transmission Provider" shall be defined as any transmission provider and other regional transmission and/or operating entities, such as NEPOOL, a regional transmission group ("RTG"), an ISO, and their successors, or other such body with the oversight of regional transmission, in the event that any of these entities are authorized to bill the Company directly for their services.

The EDC shall be established annually based on a forecast of includable costs, and shall also include a full reconciliation with interest for any over- or under-recoveries occurring in prior year(s). Interest shall be calculated at the prime rate, with said prime rate to be fixed on a quarterly basis and to be established as reported in THE WALL STREET JOURNAL on the first business day of the month preceding the calendar quarter. If more than one interest rate is reported, the average of the reported rates shall be used. The Company may file to change the EDC at any time should significant over- or under-recoveries occur or be expected to occur. In addition, the Company's annual filing shall breakdown the EDC into two components (transmission and non-transmission) for purposes of billing under the alternative net metering tariff that became effective September 1, 2017.

Any adjustment to the EDC shall be in accordance with a notice filed with the Commission setting forth the amount of the proposed charge and the amount of the increase or decrease. The notice shall further specify the effective date of such charge, which shall not be earlier than forty-five days after the filing of the notice, or such other date as the Commission may authorize. The annual adjustment to the EDC shall be derived in the same manner as that provided by Calculation of the External Delivery Charge.

Authorized by NHPUC Order No. ~~26,007~~ in Case No DE ~~16-384~~ dated ~~April 20, 2017~~

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Sr. Vice President