



Oncor's 2019 Earned Energy Efficiency Performance Bonus Calculation

	Total Program Costs*	kW Saved	kWh Saved	Measure Life - Yrs	kW Avoided Costs**	kWh Avoided Costs**	Total Avoided Costs kW	Total Avoided Costs kWh	Total Avoided Costs	Net Benefits	Benefit Cost Ratio
Residential											
Solar PV SOP (Residential)	\$2,664,994	1,505.61	4,901,773.2	30.0	\$1,184.41	\$0.75270	\$1,783,259.54	\$3,689,564.69	\$5,472,824.23	\$2,807,830.23	2.05
Targeted LIP	\$5,556,249	4,249.16	8,031,889.7				\$3,481,588.58	\$4,151,260.41	\$7,632,848.99	\$2,076,599.99	1.37
Air Infiltration		76.97	91,635.4	11.0	\$653.03	\$0.41500	\$50,263.72	\$38,028.69	\$88,292.41		
Ceiling Insulation		103.27	118,154.1	25.0	\$1,090.79	\$0.69320	\$112,645.88	\$81,904.42	\$194,550.31		
Heat Pump		4,013.21	7,558,778.4	15.0	\$811.98	\$0.51601	\$3,258,646.26	\$3,900,405.24	\$7,159,051.50		
Energy Star Refrigerator		0.37	1,542.1	16.0	\$846.81	\$0.53815	\$313.32	\$829.88	\$1,143.20		
Showerheads		0.97	2,520.1	10.0	\$607.86	\$0.38630	\$589.62	\$973.51	\$1,563.14		
Water Heater Jacket		0.18	1,332.3	7.0	\$457.37	\$0.29066	\$82.33	\$387.25	\$469.57		
Water Heater Pipe Insulation		0.04	248.1	13.0	\$736.63	\$0.46813	\$29.47	\$116.14	\$145.61		
Wall Insulation		52.31	75,214.5	25.0	\$1,090.79	\$0.69320	\$57,059.22	\$52,138.69	\$109,197.92		
Energy Star Window		1.74	2,731.5	25.0	\$1,090.79	\$0.69320	\$1,897.97	\$1,893.48	\$3,791.45		
Energy Star Thermostat		0.00	179,518.0	11.0	\$653.03	\$0.41500	\$0.00	\$74,499.97	\$74,499.97		
Aerators		0.10	215.2	10.0	\$607.86	\$0.38630	\$60.79	\$83.13	\$143.92		
Hard-to-Reach SOP	\$7,812,446	13,173.43	19,638,108.7				\$10,095,343.39	\$9,843,870.91	\$19,939,214.30	\$12,126,768.30	2.55
Ceiling Insulation		1,631.42	2,743,529.7	25.0	\$1,090.79	\$0.69320	\$1,779,536.62	\$1,901,814.79	\$3,681,351.41		
Heat Pump		4,905.82	9,234,768.5	15.0	\$811.98	\$0.51601	\$3,983,427.72	\$4,765,232.89	\$8,748,660.62		
Showerheads		27.72	69,621.3	10.0	\$607.86	\$0.38630	\$16,849.88	\$26,894.71	\$43,744.59		
Air Infiltration		6,608.47	7,234,265.7	11.0	\$653.03	\$0.41500	\$4,315,529.16	\$3,002,220.27	\$7,317,749.43		
Energy Star Thermostat		0.00	355,923.5	11.0	\$653.03	\$0.41500	\$0.00	\$147,708.25	\$147,708.25		
Residential Load Management MTP	\$1,425,198	29,426.00	88,293.9	1.0	\$75.95	\$0.04827	\$2,234,904.70	\$4,261.95	\$2,239,166.65	\$813,968.65	1.57
Home Energy Efficiency SOP	\$10,912,886	18,859.57	35,959,167.4				\$15,619,666.79	\$19,018,441.80	\$34,638,108.59	\$23,725,222.59	3.17
Air Infiltration		1,614.04	1,768,742.7	11.0	\$653.03	\$0.41500	\$1,054,016.54	\$734,028.22	\$1,788,044.76		
Ceiling Insulation		106.58	153,783.6	25.0	\$1,090.79	\$0.69320	\$116,256.40	\$106,602.79	\$222,859.19		
Heat Pump		11,777.49	23,497,123.8	15.0	\$811.98	\$0.51601	\$9,563,086.33	\$12,124,750.85	\$21,687,837.18		
Central A/C		5,353.14	10,192,972.0	18.0	\$911.28	\$0.57912	\$4,878,209.42	\$5,902,953.94	\$10,781,163.36		
Energy Star Window		0.27	467.5	25.0	\$1,090.79	\$0.69320	\$294.51	\$324.07	\$618.58		
Ground Source Heat Pump		8.05	30,637.3	20.0	\$969.39	\$0.61605	\$7,803.59	\$18,874.11	\$26,677.70		
Energy Star Thermostat		0.00	315,440.5	11.0	\$653.03	\$0.41500	\$0.00	\$130,907.81	\$130,907.81		
Retail Platform MTP	\$3,699,559	11,887.21	40,012,585.6				\$10,643,400.75	\$22,626,302.53	\$33,269,703.27	\$29,570,144.27	8.99
Energy Star Thermostat		0.00	947,024.0	11.0	\$653.03	\$0.41500	\$0.00	\$393,014.96	\$393,014.96		
Lighting		7,178.51	23,530,830.0	16.0	\$846.81	\$0.53815	\$6,078,834.05	\$12,663,116.16	\$18,741,950.22		
Lighting		4,708.70	15,534,731.6	20.0	\$969.39	\$0.61605	\$4,564,566.69	\$9,570,171.40	\$14,134,738.10		
Residential Total	\$32,071,332	79,100.98	108,631,818.5				\$43,858,163.75	\$59,333,702.27	\$103,191,866.02	\$71,120,534.02	3.22



Oncor's 2019 Earned Energy Efficiency Performance Bonus Calculation

	Total Program Costs	kW Saved	kWh Saved	Measure Life - Yrs	kW Avoided Costs	kWh Avoided Costs	Total Avoided Costs kW	Total Avoided Costs kWh	Total Avoided Costs	Net Benefits	Benefit Cost Ratio
Commercial											
Commercial SOP (Custom)	\$511,602	572.12	2,765,155.4				\$468,589.73	\$1,415,219.89	\$1,883,809.62	\$1,372,207.62	3.68
Deemed Cooling		62.22	165,001.2	15.0	\$811.98	\$0.51601	\$50,521.40	\$85,142.27	\$135,663.66		
Lighting Controls		0.00	-110.4	10.0	\$607.86	\$0.38630	\$0.00	-\$42.65	-\$42.65		
Lighting		408.77	2,214,453.8	15.0	\$811.98	\$0.51601	\$331,913.06	\$1,142,680.31	\$1,474,593.37		
Motor/VFD		34.22	313,023.9	15.0	\$811.98	\$0.51601	\$27,785.96	\$161,523.46	\$189,309.42		
Lighting		15.87	72,786.9	9.0	\$560.28	\$0.35606	\$8,891.64	\$25,916.50	\$34,808.15		
Thermal Storage		51.04	0.0	20.0	\$969.39	\$0.61605	\$49,477.67	\$0.00	\$49,477.67		
Commercial Load Management SOP	\$2,895,262	60,000.00	180,000.0	1.0	\$75.95	\$0.04827	\$4,557,000.00	\$8,688.60	\$4,565,688.60	\$1,670,426.60	1.58
Commercial SOP (Basic)	\$13,828,848	18,668.53	93,296,462.5				\$15,117,181.04	\$49,359,117.13	\$64,476,298.17	\$50,647,450.17	4.66
Deemed Cooling		2,480.66	5,405,456.6	15.0	\$811.98	\$0.51601	\$2,014,246.31	\$2,789,269.66	\$4,803,515.97		
Deemed Cooling		234.83	1,074,776.9	20.0	\$969.39	\$0.61605	\$227,641.85	\$662,116.31	\$889,758.16		
Deemed Cooling		704.84	11,095,337.0	25.0	\$1,090.79	\$0.69320	\$768,832.42	\$7,691,287.61	\$8,460,120.03		
Lighting		3.45	-16,199.8	16.0	\$846.81	\$0.53815	\$2,921.49	-\$8,717.92	-\$5,796.43		
Lighting		12,898.66	67,258,669.1	15.0	\$811.98	\$0.51601	\$10,473,453.95	\$34,706,145.84	\$45,179,599.79		
Lighting		394.02	2,220,364.9	9.0	\$560.28	\$0.35606	\$220,761.53	\$790,583.13	\$1,011,344.65		
Lighting		-0.56	-4,194.3	15.5	\$829.62	\$0.52722	-\$464.59	-\$2,211.32	-\$2,675.91		
Lighting Controls		782.25	3,898,496.5	10.0	\$607.86	\$0.38630	\$475,498.49	\$1,505,989.20	\$1,981,487.68		
Master Metered Apartments Air Infiltration		723.43	792,244.2	11.0	\$653.03	\$0.41500	\$472,421.49	\$328,781.34	\$801,202.84		
Refrigerator Door Reach In		2.74	24,371.0	12.0	\$695.92	\$0.44225	\$1,906.82	\$10,778.07	\$12,684.90		
Refrigerator Zero Energy Doors		58.22	508,043.6	12.0	\$695.92	\$0.44225	\$40,516.46	\$224,682.28	\$265,198.74		
Air Handler Control		5.70	337,993.0	15.0	\$811.98	\$0.51601	\$4,628.29	\$174,407.77	\$179,036.05		
Master Metered Apts-Attic Insulation		380.29	701,103.8	25.0	\$1,090.79	\$0.69320	\$414,816.53	\$486,005.15	\$900,821.68		
Solar PV SOP (Commercial)	\$3,570,388	2,141.14	6,724,376.6	30.0	\$1,184.41	\$0.75270	\$2,535,987.63	\$5,061,438.27	\$7,597,425.89	\$4,027,037.89	2.13
Small Business Direct Install MTP	\$2,418,074	1,891.93	9,150,313.0				\$1,473,514.35	\$4,530,818.27	\$6,004,332.62	\$3,586,258.62	2.48
Lighting		28.78	135,663.1	16.0	\$846.81	\$0.53815	\$24,371.19	\$73,007.10	\$97,378.29		
Lighting		1,610.07	7,802,727.8	15.0	\$811.98	\$0.51601	\$1,307,344.64	\$4,026,285.57	\$5,333,630.21		
Lighting		253.02	1,211,637.0	9.0	\$560.28	\$0.35606	\$141,762.05	\$431,415.47	\$573,177.52		
Lighting Controls		0.06	285.1	10.0	\$607.86	\$0.38630	\$36.47	\$110.13	\$146.61		
Retail Platform MTP	\$243,802	5,075.18	20,616,327.7				\$2,843,521.85	\$7,340,649.64	\$10,184,171.49	\$9,940,369.49	41.77
Lighting		5,075.18	20,616,327.7	9.0	\$560.28	\$0.35606	\$2,843,521.85	\$7,340,649.64	\$10,184,171.49		
Retro-commissioning MTP	\$259,114	0	1,787,403.0	5.0	\$343.19	\$0.21810	\$0.00	\$389,832.59	\$389,832.59	\$130,718.59	1.50
Commercial Total	23,727,090	88,348.90	134,520,038.2				\$26,995,795	\$68,105,764	\$95,101,559	\$71,374,468.98	4.01
R&D	\$0										
EM&V	\$0										
Grand Total	\$55,798,422	167,449.88	243,151,856.7				\$ 70,853,958.34	\$ 127,439,466.67	\$ 198,293,425.00	\$142,495,003.00	3.55

* Program costs include incentive and administration expenses along with R&D, EM&V and the Performance Bonus collected in 2019 which are allocated among all programs as shown in workpaper WP/GDJ/7, column (i)



Oncor's 2019 Earned Energy Efficiency Performance Bonus Calculation

2019 Minimum Goal MW	69.400
2019 Achieved Goal MW	167.450
Percentage Over Goal	141.28%

Bonus Calculation % of Net Benefits (1% of every 2% the Demand Goal is exceeded)	0.7064
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Bonus Based on 70.64% of Net Benefits (\$142,495,003 x .7064)	\$100,658,470
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Bonus Capped at 10% of 2019 Total Net Benefits (\$142,495,003 x .1)	\$14,249,500
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Total Bonus	\$14,249,500
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Net Benefit Calculation	
\$198,293,425	Total Avoided Costs
-\$55,798,422	Sum of Total Program Costs
\$142,495,003	Net Benefits

**Avoided Costs are calculated using the present value of Commission-approved initial avoided capacity cost of \$80/kW and initial avoided energy cost of \$0.05084/kWh as stated in §25.181(d)(2) and (d)(3) and based on measure life, 2% escalation rate and 7.44% discount rate as stated in §25.182(e)(5), as shown in workpaper WP/GDJ/2.



Oncor's Total 2021 EECRF Request by Rate Code

Exhibit GDJ - 4
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a	b	c	d	e	f	g	h
	Residential	Secondary ≤ 10 kW	Secondary > 10 kW	Primary > 10 kW Distribution Line	Primary > 10 kW Substation	Transmission Service Non-Profit	
		Rate Code B0, B1, B4	Rate Code D0, D1, D4, D6, DC, DJ, DK, DQ, E0, E1, E4, EC, EJ, EQ	Rate Code J0, K4, K0	Rate Code L0	Rate Code N0, N4	Total
Home Energy Efficiency SOP	\$10,446,652	\$0	\$0	\$0	\$0	\$0	\$10,446,652
Solar PV SOP - Residential	\$1,541,704	\$0	\$0	\$0	\$0	\$0	\$1,541,704
Hard-to-Reach SOP	\$7,563,116	\$0	\$0	\$0	\$0	\$0	\$7,563,116
Targeted Weatherization Low-Income SOP (SB 712)	\$5,206,115	\$0	\$0	\$0	\$0	\$0	\$5,206,115
Residential Load Mangement SOP	\$1,187,889	\$0	\$0	\$0	\$0	\$0	\$1,187,889
Retail Platform - Residential	\$4,581,557	\$0	\$0	\$0	\$0	\$0	\$4,581,557
Residential New Home MTP	\$1,501,891	\$0	\$0	\$0	\$0	\$0	\$1,501,891
Commercial SOP	\$0	\$64,414	\$7,178,431	\$627,233	\$253,852	\$329,339	\$8,453,269
Commercial Load Management SOP	\$0	\$0	\$1,460,097	\$901,239	\$46,397	\$0	\$2,407,733
Solar PV SOP - Commercial	\$0	\$86,521	\$2,250,629	\$0	\$0	\$0	\$2,337,150
Small Business Direct Install MTP	\$0	\$0	\$3,474,161	\$0	\$0	\$0	\$3,474,161
Retail Platform - Commercial	\$0	\$0	\$242,277	\$0	\$0	\$0	\$242,277
Retro-Commissioning	\$0	\$0	\$1,171,601	\$0	\$0	\$0	\$1,171,601
Commercial HVAC Distributor MTP	\$0	\$0	\$1,505,406	\$0	\$0	\$0	\$1,505,406
Total Estimated Program Expenses by Rate Code	\$32,028,924	\$150,935	\$17,282,602	\$1,528,472	\$300,249	\$329,339	\$51,620,521
2021 Estimated EM&V Expenses for review of 2020 Program Year. Rate Class allocation based on actual 2019 EM&V expenses incurred as shown in Exhibit GDJ-2.	\$323,112	\$9,657	\$324,107	\$72,424	\$5,587	\$1,102	\$735,989
Total Program Expenses and Estimated EM&V Expenses	\$32,352,036	\$160,592	\$17,606,709	\$1,600,896	\$305,836	\$330,441	\$52,356,510
2019 EECRF Over Recovery							(\$1,756,778)
Municipal Rate Case Expenses for 2019 in Docket No. 49594							\$9,940
Requested Energy Efficiency Performance Bonus for 2019							\$14,249,500
Total 2021 EECRF Request							\$64,859,172

Program totals include incentives, administration costs, research and development costs WP/GDJ/4 (column f). EM&V expenses are estimated as shown in WP/GDJ/4 (see footnote for explanation). Commercial program rate class allocations are based on rate codes found in WP/GDJ/1. Commercial SOP is allocated based on the actual incentives by rate code in the 2019 Basic and Custom Commercial programs.



Consumer Price Index - All Urban Consumers
Original Data Value

Series Id: CUUR0300SA0,CUUS0300SA0
Not Seasonally Adjusted
Area: South urban
Item: All items
Base Period: 1982-84=100
Years: 2003 to 2019

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	% increase
2003	175.1	176.4	177.5	177.4	176.8	177.2	177.3	177.9	178.3	178.1	177.5	177.5	177.3	
2004	178.2	179.1	180.1	180.9	182.0	182.9	182.6	182.6	182.8	183.7	183.7	183.3	181.8	2.538100%
2005	183.6	184.7	185.9	187.3	187.3	187.8	188.5	189.4	192.0	192.5	190.7	190.1	188.3	3.575400%
2006	191.5	191.8	192.8	194.7	195.5	196.3	197.0	197.1	195.8	194.7	194.3	194.8	194.7	3.398800%
2007	195.021	195.950	197.904	199.618	200.804	201.675	201.571	201.041	201.697	202.155	203.437	203.457	200.361	2.907600%
2008	204.510	205.060	206.676	208.085	210.006	212.324	213.304	212.387	212.650	210.108	205.559	203.501	208.681	4.152500%
2009	204.288	205.343	206.001	206.657	207.265	209.343	208.819	209.000	208.912	209.292	209.738	209.476	207.845	-0.400600%
2010	210.056	210.020	211.216	211.528	211.423	211.232	210.988	211.308	211.775	212.026	211.996	212.488	211.338	1.680600%
2011	213.589	214.735	217.214	218.820	219.820	219.318	219.682	220.471	220.371	219.969	219.961	219.469	218.618	3.444700%
2012	220.497	221.802	223.314	224.275	223.356	223.004	222.667	223.919	225.052	224.504	223.404	223.109	223.242	2.115100%
2013	223.933	225.874	226.628	226.202	226.289	227.148	227.548	227.837	227.876	227.420	226.811	227.082	226.721	1.558400%
2014	227.673	228.664	230.095	231.346	231.762	232.269	232.013	231.611	231.762	231.131	229.845	228.451	230.552	1.689700%
2015	226.855	227.944	229.337	229.957	230.886	232.026	231.719	231.260	230.913	230.860	230.422	229.581	230.147	-0.175700%
2016	229.469	229.646	230.977	231.975	232.906	233.838	233.292	233.561	234.069	234.337	234.029	234.204	232.692	1.105800%
2017	235.492	236.052	236.154	236.728	236.774	237.346	236.942	237.892	239.649	239.067	238.861	238.512	237.456	2.047300%
2018	239.772	241.123	241.595	242.486	243.279	243.770	243.776	243.605	243.640	244.163	243.484	242.150	242.737	2.224000%
2019	242.547	243.856	245.554	246.847	246.667	246.515	247.250	246.953	246.891	247.423	247.385	247.289	246.265	1.453400%

Source: Bureau of Labor Statistics - http://data.bls.gov/pdq/SurveyOutputServlet?series_id=CUUR0300SA0,CUUS0300SA0



Oncor's 2019 Cost Effectiveness Calculation

Exhibit GDJ-6
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	Total Program Costs*	kW Saved	kWh Saved	Measure Life - Yrs	kW Avoided Costs**	kWh Avoided Costs**	Total Avoided Costs kW	Total Avoided Costs kWh	Total Avoided Costs	Net Benefits	Benefit Cost Ratio
Residential											
Solar PV SOP (Residential)	\$2,664,427	1,505.61	4,901,773.2	30.0	\$1,184.41	\$0.75270	\$1,783,259.54	\$3,689,564.69	\$5,472,824.23	\$2,808,397.23	2.05
Targeted LIP	\$5,555,068	4,249.16	8,031,889.7				\$3,481,588.58	\$4,151,260.41	\$7,632,848.99	\$2,077,780.99	1.37
Air Infiltration		76.97	91,635.4	11.0	\$653.03	\$0.41500	\$50,263.72	\$38,028.69	\$88,292.41		
Ceiling Insulation		103.27	118,154.1	25.0	\$1,090.79	\$0.69320	\$112,645.88	\$81,904.42	\$194,550.31		
Heat Pump		4,013.21	7,558,778.4	15.0	\$811.98	\$0.51601	\$3,258,646.26	\$3,900,405.24	\$7,159,051.50		
Energy Star Refrigerator		0.37	1,542.1	16.0	\$846.81	\$0.53815	\$313.32	\$829.88	\$1,143.20		
Showerheads		0.97	2,520.1	10.0	\$607.86	\$0.38630	\$589.62	\$973.51	\$1,563.14		
Water Heater Jacket		0.18	1,332.3	7.0	\$457.37	\$0.29066	\$82.33	\$387.25	\$469.57		
Water Heater Pipe Insulation		0.04	248.1	13.0	\$736.63	\$0.46813	\$29.47	\$116.14	\$145.61		
Wall Insulation		52.31	75,214.5	25.0	\$1,090.79	\$0.69320	\$57,059.22	\$52,138.69	\$109,197.92		
Energy Star Window		1.74	2,731.5	25.0	\$1,090.79	\$0.69320	\$1,897.97	\$1,893.48	\$3,791.45		
Energy Star Thermostat		0.00	179,518.0	11.0	\$653.03	\$0.41500	\$0.00	\$74,499.97	\$74,499.97		
Aerators		0.10	215.2	10.0	\$607.86	\$0.38630	\$60.79	\$83.13	\$143.92		
Hard-to-Reach SOP	\$7,810,785	13,173.43	19,638,108.7				\$10,095,343.39	\$9,843,870.91	\$19,939,214.30	\$12,128,429.30	2.55
Ceiling Insulation		1,631.42	2,743,529.7	25.0	\$1,090.79	\$0.69320	\$1,779,536.62	\$1,901,814.79	\$3,681,351.41		
Heat Pump		4,905.82	9,234,768.5	15.0	\$811.98	\$0.51601	\$3,983,427.72	\$4,765,232.89	\$8,748,660.62		
Showerheads		27.72	69,621.3	10.0	\$607.86	\$0.38630	\$16,849.88	\$26,894.71	\$43,744.59		
Air Infiltration		6,608.47	7,234,265.7	11.0	\$653.03	\$0.41500	\$4,315,529.16	\$3,002,220.27	\$7,317,749.43		
Energy Star Thermostat		0.00	355,923.5	11.0	\$653.03	\$0.41500	\$0.00	\$147,708.25	\$147,708.25		
Residential Load Management MTP	\$1,424,895	29,426.00	88,293.9	1.0	\$75.95	\$0.04827	\$2,234,904.70	\$4,261.95	\$2,239,166.65	\$814,271.65	1.57
Home Energy Efficiency SOP	\$10,910,565	18,859.57	35,959,167.4				\$15,619,666.79	\$19,018,441.80	\$34,638,108.59	\$23,727,543.59	3.17
Air Infiltration		1,614.04	1,768,742.7	11.0	\$653.03	\$0.41500	\$1,054,016.54	\$734,028.22	\$1,788,044.76		
Ceiling Insulation		106.58	153,783.6	25.0	\$1,090.79	\$0.69320	\$116,256.40	\$106,602.79	\$222,859.19		
Heat Pump		11,777.49	23,497,123.8	15.0	\$811.98	\$0.51601	\$9,563,086.33	\$12,124,750.85	\$21,687,837.18		
Central A/C		5,353.14	10,192,972.0	18.0	\$911.28	\$0.57912	\$4,878,209.42	\$5,902,953.94	\$10,781,163.36		
Energy Star Window		0.27	467.5	25.0	\$1,090.79	\$0.69320	\$294.51	\$324.07	\$618.58		
Ground Source Heat Pump		8.05	30,637.3	20.0	\$969.39	\$0.61605	\$7,803.59	\$18,874.11	\$26,677.70		
Energy Star Thermostat		0.00	315,440.5	11.0	\$653.03	\$0.41500	\$0.00	\$130,907.81	\$130,907.81		
Retail Platform MTP	\$3,698,772	11,887.21	40,012,585.6				\$10,643,400.75	\$22,626,302.53	\$33,269,703.27	\$29,570,931.27	8.99
Energy Star Thermostat		0.00	947,024.0	11.0	\$653.03	\$0.41500	\$0.00	\$393,014.96	\$393,014.96		
Lighting		7,178.51	23,530,830.0	16.0	\$846.81	\$0.53815	\$6,078,834.05	\$12,663,116.16	\$18,741,950.22		
Lighting		4,708.70	15,534,731.6	20.0	\$969.39	\$0.61605	\$4,564,566.69	\$9,570,171.40	\$14,134,738.10		
Residential Total	\$32,064,512	79,100.98	108,631,818.5				\$43,858,163.75	\$59,333,702.27	\$103,191,866.02	\$71,127,354.02	3.22



Oncor's 2019 Cost Effectiveness Calculation

Exhibit GDJ-6
Page 2 of 2

	Total Program Costs	kW Saved	kWh Saved	Measure Life - Yrs	kW Avoided Costs	kWh Avoided Costs	Total Avoided Costs kW	Total Avoided Costs kWh	Total Avoided Costs	Net Benefits	Benefit Cost Ratio
Commercial											
Commercial SOP (Custom)	\$511,493	572.12	2,765,155.4				\$468,589.73	\$1,415,219.89	\$1,883,809.62	\$1,372,316.62	3.68
Deemed Cooling		62.22	165,001.2	15.0	\$811.98	\$0.51601	\$50,521.40	\$85,142.27	\$135,663.66		
Lighting Controls		0.00	-110.4	10.0	\$607.86	\$0.38630	\$0.00	-\$42.65	-\$42.65		
Lighting		408.77	2,214,453.8	15.0	\$811.98	\$0.51601	\$331,913.06	\$1,142,680.31	\$1,474,593.37		
Motor/VFD		34.22	313,023.9	15.0	\$811.98	\$0.51601	\$27,785.96	\$161,523.46	\$189,309.42		
Lighting		15.87	72,786.9	9.0	\$560.28	\$0.35606	\$8,891.64	\$25,916.50	\$34,808.15		
Thermal Storage		51.04	0.0	20.0	\$969.39	\$0.61605	\$49,477.67	\$0.00	\$49,477.67		
Commercial Load Management SOP	\$2,894,646	60,000.00	180,000.0	1.0	\$75.95	\$0.04827	\$4,557,000.00	\$8,688.60	\$4,565,688.60	\$1,671,042.60	1.58
Commercial SOP (Basic)	\$13,825,908	18,668.53	93,296,462.5				\$15,117,181.04	\$49,359,117.13	\$64,476,298.17	\$50,650,390.17	4.66
Deemed Cooling		2,480.66	5,405,456.6	15.0	\$811.98	\$0.51601	\$2,014,246.31	\$2,789,269.66	\$4,803,515.97		
Deemed Cooling		234.83	1,074,776.9	20.0	\$969.39	\$0.61605	\$227,641.85	\$682,116.31	\$889,758.16		
Deemed Cooling		704.84	11,095,337.0	25.0	\$1,090.79	\$0.69320	\$768,832.42	\$7,691,287.61	\$8,460,120.03		
Lighting		3.45	-16,199.8	16.0	\$846.81	\$0.53815	\$2,921.49	-\$8,717.92	-\$5,796.43		
Lighting		12,898.66	67,258,669.1	15.0	\$811.98	\$0.51601	\$10,473,453.95	\$34,706,145.84	\$45,179,599.79		
Lighting		394.02	2,220,364.9	9.0	\$560.28	\$0.35606	\$220,761.53	\$790,583.13	\$1,011,344.65		
Lighting		-0.56	-4,194.3	15.5	\$829.62	\$0.52722	-\$464.59	-\$2,211.32	-\$2,675.91		
Lighting Controls		782.25	3,898,496.5	10.0	\$607.86	\$0.38630	\$475,498.49	\$1,505,989.20	\$1,981,487.68		
Master Metered Apartments Air Infiltration		723.43	792,244.2	11.0	\$653.03	\$0.41500	\$472,421.49	\$328,781.34	\$801,202.84		
Refrigerator Door Reach In		2.74	24,371.0	12.0	\$695.92	\$0.44225	\$1,906.82	\$10,778.07	\$12,684.90		
Refrigerator Zero Energy Doors		58.22	508,043.6	12.0	\$695.92	\$0.44225	\$40,516.46	\$224,682.28	\$265,198.74		
Air Handler Control		5.70	337,993.0	15.0	\$811.98	\$0.51601	\$4,628.29	\$174,407.77	\$179,036.05		
Master Metered Apts-Attic Insulation		380.29	701,103.8	25.0	\$1,090.79	\$0.69320	\$414,816.53	\$486,005.15	\$900,821.68		
Solar PV SOP (Commercial)	\$3,569,629	2,141.14	6,724,376.6	30.0	\$1,184.41	\$0.75270	\$2,535,987.63	\$5,061,438.27	\$7,597,425.89	\$4,027,796.89	2.13
Small Business Direct Install MTP	\$2,417,560	1,891.93	9,150,313.0				\$1,473,514.35	\$4,530,818.27	\$6,004,332.62	\$3,586,772.62	2.48
Lighting		28.78	135,663.1	16.0	\$846.81	\$0.53815	\$24,371.19	\$73,007.10	\$97,378.29		
Lighting		1,610.07	7,802,727.8	15.0	\$811.98	\$0.51601	\$1,307,344.64	\$4,026,285.57	\$5,333,630.21		
Lighting		253.02	1,211,637.0	9.0	\$560.28	\$0.35606	\$141,762.05	\$431,415.47	\$573,177.52		
Lighting Controls		0.06	285.1	10.0	\$607.86	\$0.38630	\$36.47	\$110.13	\$146.61		
Retail Platform MTP	\$243,750	5,075.18	20,616,327.7				\$2,843,521.85	\$7,340,649.64	\$10,184,171.49	\$9,940,421.49	41.78
Lighting		5,075.18	20,616,327.7	9.0	\$560.28	\$0.35606	\$2,843,521.85	\$7,340,649.64	\$10,184,171.49		
Retro-commissioning MTP	\$259,059	0	1,787,403.0	5.0	\$343.19	\$0.21810	\$0.00	\$389,832.59	\$389,832.59	\$130,773.59	1.50
Commercial Total	23,722,045	88,348.90	134,520,038.2				\$26,995,795	\$68,105,764	\$95,101,559	\$71,379,513.98	4.01
R&D	\$0										
EM&V	\$0										
Grand Total	\$55,786,557	167,449.88	243,151,856.7				\$ 70,853,958.34	\$127,439,466.67	\$ 198,293,425.00	\$142,506,868.00	3.55

* Program costs include incentive and administration expenses along with R&D, EM&V and the Performance Bonus collected in 2018, minus Municipal Rate Case expenses, which are allocated among all programs as shown in workpaper WP/GDJ/7, column (j).

**Avoided Costs are calculated using the present value of Commission-approved initial avoided capacity cost of \$80/kW and initial avoided energy cost of \$0.05084/kWh as stated in §25 181(d)(2) and (d)(3) and based on measure life, 2% escalation rate and 7.44% discount rate as stated in §25 182(e)(5), as shown in workpaper WP/GDJ/2



Contracts Regarding Administrator and/or Service Provider That Received More Than 5% of Overall Incentive Payments

This information is confidential and will be made available only after execution of a certification to be bound by the Protective Order set forth in Attachment B of this Application and delivery of same to Teri Smart, Oncor Electric Delivery Company LLC, 1616 Woodall Rodgers Frwy, Suite 6A-001, Dallas, TX 75202.



**INDEX TO THE DIRECT TESTIMONY
OF MATTHEW A. TROXLE, WITNESS FOR
ONCOR ELECTRIC DELIVERY COMPANY LLC**

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EXHIBITS:

- EXHIBIT MAT-1 List of Matthew A. Troxle's Prior Commission Testimony
- EXHIBIT MAT-2 Performance Bonus Allocation
- EXHIBIT MAT-3 EECRF Proceeding Expense Allocation
- EXHIBIT MAT-4 Calculation of 2021 Energy Efficiency Cost Recovery Factors
- EXHIBIT MAT-5 Rider EECRF – Energy Efficiency Cost Recovery Factor
- EXHIBIT MAT-6 Rider EECRF – Energy Efficiency Cost Recovery Factor
(Redline Version)

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DIRECT TESTIMONY OF MATTHEW A. TROXLE

I. POSITION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT EMPLOYMENT POSITION.

A. My name is Matthew A. Troxle. My business address is 1616 Woodall Rodgers Freeway, Dallas, Texas 75202-1234. I am the Director of Rates & Load Research for Oncor Electric Delivery Company LLC ("Oncor" or "Company").

Q. PLEASE DISCUSS YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL QUALIFICATIONS.

A. I graduated from Louisiana State University in 1995 with a Bachelor of Science degree in Business Administration Pre-Law. In 1997, I received the degree of Master of Science in Economics from Louisiana State University. I began my employment with the Louisiana Public Service Commission in 1997 as an Economist in the Economics and Rate Analysis Division. In 1999, I began employment with the Public Utility Commission of Texas ("Commission") as a Rate Analyst. In 2000, I was named Senior Rate Analyst, and in 2005, I was named the Director of Retail Market Oversight. In 2007, I was named the Director of the newly formed Tariff and Rate Analysis group. In 2008, I began employment with CenterPoint Energy Service Company as a Manager of Gas Rates in the Regulatory and Government Affairs organization. In 2012, I was named Director of Rates, and in 2015, I assumed the position of Director of Regulatory Affairs for Louisiana and Mississippi. In 2019, I joined Oncor in my current role as the Director of Rates & Load Research. In my current position, I am responsible for oversight of the rates and load research efforts of Oncor.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY BEFORE THE COMMISSION?

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1 A. Yes. Please see my Exhibit MAT-1 for a list of the proceedings in which I
2 have provided testimony before the Commission and other regulatory
3 authorities.

4 **II. PURPOSE OF DIRECT TESTIMONY**

5 Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

6 A. The purpose of my direct testimony is to: (1) provide background on
7 Oncor's recovery of energy efficiency program costs in calendar year 2019;
8 (2) describe and support the methodology used to develop the proposed
9 energy efficiency cost recovery factor ("EECRF") charges to recover the
10 proposed 2021 energy efficiency costs pursuant to 16 Tex. Admin. Code
11 ("TAC") § 25.181 ("Rule 25.181") and § 25.182 ("Rule 25.182"); (3) describe
12 and support the methodology used to allocate Oncor's 2019 earned energy
13 efficiency performance bonus to the energy efficiency rate classes; (4)
14 describe and support the methodology used to allocate the EECRF
15 proceeding expenses incurred in 2019 to the energy efficiency rate classes;
16 (5) describe and support the process Oncor used to exempt industrial
17 distribution voltage customers from EECRF charges; (6) describe and
18 support the calculation of the line loss factor used in determining Oncor's
19 energy efficiency goals; and, (7) support Oncor's proposed adjustments to
20 its Rider EECRF – Energy Efficiency Cost Recovery Factor. For more
21 information related to the Company's proposed 2021 EECRF, please refer
22 to the direct testimony of Oncor witness Mr. Garry D. Jones.

23 **III. RECOVERY OF ENERGY EFFICIENCY PROGRAM COSTS**

24 Q. HOW WERE COSTS ASSOCIATED WITH ENERGY EFFICIENCY
25 PROGRAMS RECOVERED IN 2019?

26 A. Oncor recovered energy efficiency costs in 2019 through EECRF factors
27 approved by the Commission in Docket Nos. 48421 and 47235¹. Please

¹ Docket No. 47235 effective March 1, 2018 through February 28, 2019.
Docket No. 48421 effective March 1, 2019 through February 29, 2020.

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1 refer to my WP/MAT/1 for the energy efficiency revenues recovered in 2019
2 through these EECRF factors.

3 Q WHY IS ONCOR REQUESTING AN EECRF FOR 2021?

4 A. Oncor is requesting an EECRF for 2021 in compliance with Rule
5 25.182(d)(8), which provides as follows: "Not later than June 1 of each year,
6 a utility in an area in which customer choice is offered shall apply to adjust
7 its EECRF effective March 1 of the following year."

8 **IV. CALCULATION OF THE AMOUNT TO BE RECOVERED BY ENERGY**
9 **EFFICIENCY RATE CLASSES THROUGH THE 2021 EECRF**

10 Q. HOW IS THE AMOUNT TO BE RECOVERED THROUGH ONCOR'S
11 PROPOSED 2021 EECRF DETERMINED?

12 A. The methodology used to determine the amount to be recovered through
13 the EECRF is specified in Rule 25.182(d) and is described in the direct
14 testimony of Oncor witness Mr. Garry D. Jones. Oncor's proposed 2021
15 EECRF is designed to include the forecasted costs of the 2021 program
16 year (including applicable evaluation, measurement, and verification costs),
17 the overall total over-recovery of actual 2019 energy efficiency costs for
18 Oncor including interest, Oncor's earned energy efficiency performance
19 bonus for 2019 program year achievements, and the EECRF proceeding
20 expenses incurred in 2019 for municipalities served by Oncor. The total
21 amount requested for recovery through the 2021 EECRF is \$64,782,106 as
22 shown on my Exhibit MAT-4.

23 Q. PLEASE DESCRIBE HOW THE 2021 ENERGY EFFICIENCY PROGRAM
24 COSTS, BY ENERGY EFFICIENCY RATE CLASS, WERE DERIVED.

25 A. Oncor witness Mr. Jones assigned the energy efficiency program costs for
26 2021 at the rate code level. Mr. Jones then aggregated these program
27 costs to the energy efficiency rate class level as shown in his Exhibit GDJ-
28 4. I verified that the energy efficiency rate class aggregation from rate code
29 was properly conducted.

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1 Q. WAS THERE AN OVERALL TOTAL OVER-RECOVERY OF 2019
2 ENERGY EFFICIENCY PROGRAM COSTS BY ONCOR?

3 A. Yes. The total overall over-recovery (with interest) of \$1,833,844 for Oncor
4 in the 2019 program year is shown on WP/MAT/2 page 1, column (j).

5 Q. PLEASE DESCRIBE HOW THE (OVER)/UNDER-RECOVERY OF 2019
6 ENERGY EFFICIENCY PROGRAM COSTS, BY ENERGY EFFICIENCY
7 RATE CLASS, WAS DERIVED.

8 A. The amount of (over)/under-recovery for 2019 by energy efficiency rate
9 class was calculated by subtracting the revenues collected through the
10 EECRF factors effective in 2019 adjusted to remove: (1) the 2017
11 performance bonus amount; (2) the 2017 (over)/under-collection amount;
12 and (3) the EECRF proceeding expense incurred in 2017 from the actual
13 2019 energy efficiency program expenses.

14 Q. PLEASE DESCRIBE THE DETAILS OF THE DETERMINATION OF
15 ONCOR'S (OVER)/UNDER RECOVERY OF 2019 ENERGY EFFICIENCY
16 PROGRAM COSTS.

17 A. The Oncor energy efficiency revenues for 2019 were aggregated to the
18 energy efficiency rate class level from Company's books and records as
19 reflected in WP/MAT/2 column (d).

20 Oncor witness Mr. Jones identified the actual Oncor energy
21 efficiency program expenses by rate code for 2019 as described in his direct
22 testimony. The actual 2019 energy efficiency program expenses were then
23 aggregated to the energy efficiency rate class level as shown in his Exhibit
24 GDJ-2 and my WP/MAT/2 column (c). The 2017 performance bonus and
25 2017 (over)/under-recovery were taken from Docket No. 48421 and are
26 shown on WP/MAT/2 page 1, columns (e) and (g), respectively. The
27 EECRF proceeding expense incurred in 2017 is for the prosecution of
28 Docket No. 47235, Oncor's 2018 EECRF filing.

29 Q. WHY IS ONCOR APPLYING INTEREST TO THE (OVER)/UNDER
30 RECOVERY AMOUNTS OF THE 2019 ENERGY EFFICIENCY COSTS?

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1 A. A recent change to the energy efficiency rules, in particular the adoption of
2 Rule 25.182(d)(1)(A) specifies that the EECRF shall be calculated based
3 on, among other things, "the preceding year's over- or under-recovery
4 including interest...."

5 Q. PLEASE DESCRIBE HOW ONCOR APPLIED INTEREST TO THE
6 (OVER)/UNDER RECOVERY OF 2019 ENERGY EFFICIENCY COSTS.

7 A. The methodology used to determine the application of interest to the
8 (over)/under recovery of 2019 energy efficiency costs is specified in Rule
9 25.182(d)(2), which states "For each rate class, the under- or over-recovery
10 of the energy efficiency costs shall be the difference between actual EECRF
11 revenues and actual costs for that class that comply with paragraph (12) of
12 this subsection, including interest applied on such over- or under-recovery
13 calculated by rate class and compounded on an annual basis for a two-year
14 period using the annual interest rates authorized by the commission for
15 over- and under-billing for the year in which the over- or under-recovery
16 occurred and the immediately subsequent year."

17 Oncor used the methodology specified in Rule 25.182(d)(2) to
18 calculate interest compounded over two years on the (over)/under recovery
19 of 2019 energy efficiency costs. First, the 2019 interest rate for overbillings
20 and underbillings approved by the commission (1.99%) is applied to the
21 (over)/under recovery of 2019 energy efficiency costs by rate class. Next,
22 the 2020 interest rate for overbilling and underbillings approved by the
23 commission (2.35%) is applied to the (over)/under recovery of 2019 energy
24 efficiency costs by rate class (including 2019 interest). These compounding
25 interest calculations are shown in my workpaper WP/MAT/2, columns (i)
26 and (j).



1 **V. ALLOCATION OF THE EARNED 2019 ENERGY EFFICIENCY**
2 **PERFORMANCE BONUS**

3 Q. DID ONCOR EARN AN ENERGY EFFICIENCY PERFORMANCE BONUS
4 BASED ON THE RESULTS OF ITS 2019 ENERGY EFFICIENCY
5 PROGRAMS?

6 A. Yes. Rule 25.182(e) states that a “utility that exceeds its demand and
7 energy reduction goals established in §25.181 of this title at a cost that does
8 not exceed the cost caps established in subsection (d)(7) of this section
9 shall be awarded a performance bonus....” Details of how Oncor exceeded
10 its demand and energy reduction goals without exceeding the applicable
11 cost caps, thus qualifying for a performance bonus, are described in Mr.
12 Jones’ direct testimony.

13 Q. WHAT IS THE AMOUNT OF THE 2019 ENERGY EFFICIENCY
14 PERFORMANCE BONUS EARNED BY ONCOR AND HOW WAS IT
15 DETERMINED?

16 A. Under Rule 25.182(e), Oncor earned a \$14,249,500 energy efficiency
17 performance bonus for its 2019 program year achievements as shown on
18 Exhibit GDJ-3, page 3. Oncor is requesting to recover this earned
19 performance bonus of \$14,249,500 through the 2021 EECRF. Mr. Jones’
20 direct testimony provides further explanation of the calculation of Oncor’s
21 earned performance bonus.

22 Q. PLEASE DESCRIBE THE METHODOLOGY USED BY ONCOR TO
23 ALLOCATE THE EARNED 2019 PERFORMANCE BONUS TO THE
24 ENERGY EFFICIENCY RATE CLASSES.

25 A. Oncor is proposing to use allocation factors based on the actual 2019
26 energy efficiency program costs by energy efficiency rate class. The 2019
27 performance bonus allocation for each energy efficiency rate class is
28 calculated by multiplying the earned performance bonus amount of
29 \$14,249,500 (column (a) of Exhibit MAT-2) by the allocation factor for each
30 energy efficiency rate class (column (c) of Exhibit MAT-2). The

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performance bonus allocation factors are the ratio of each energy efficiency rate class' actual 2019 energy efficiency program costs to the actual 2019 total energy efficiency program costs.

Q. WHY IS ONCOR USING THIS METHODOLOGY FOR ALLOCATING THE ENERGY EFFICIENCY PERFORMANCE BONUS?

A. Oncor is adhering to the Commission Rules regarding performance bonus allocation. Rule 25.182(e)(6) states: "The bonus shall be allocated in proportion to the program costs associated with meeting the demand and energy goals under §25.181 of this title and allocated to eligible customers on a rate class basis."

VI. ALLOCATION OF THE 2019 EECRF PROCEEDING EXPENSES

Q. WHY IS ONCOR INCLUDING THE MUNICIPALITIES' EECRF PROCEEDING EXPENSES INCURRED IN 2019 IN ITS 2021 TOTAL ENERGY EFFICIENCY COSTS?

A. Rule 25.182(d) specifies that the determination of EECRFs are ratemaking proceedings for the purposes of PURA § 33.023. As such, municipalities' EECRF proceeding expenses are reimbursable as rate case expenses. Oncor is including these expenses incurred in 2019 regarding Oncor's 2020 EECRF proceeding in Docket No. 49594 as directed by Rule 25.182(d)(3)(B) which states: "For municipalities' EECRF proceeding expenses, the utility may include only expenses paid or owed for the immediately previous EECRF proceeding conducted under this subsection for services reimbursable under PURA §33.023(b)."

Q. WHAT IS THE AMOUNT OF THE MUNICIPALITIES' EECRF PROCEEDING EXPENSE INCURRED IN 2019 FOR DOCKET NO. 49594 AND HOW WAS IT DETERMINED?

A. The amount of the municipalities' EECRF proceeding expenses for 2019 that was submitted to Oncor is \$9,940. These expenses were submitted to Oncor by the entity (i.e., Steering Committee of Cities Served by Oncor

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1 ["Cities"]) representing several municipalities in Oncor's previous EECRF
2 filing in Docket No. 49594.

3 Q. PLEASE DESCRIBE THE METHODOLOGY USED BY ONCOR TO
4 ALLOCATE THE MUNICIPALITIES' EECRF PROCEEDING EXPENSES
5 TO THE ENERGY EFFICIENCY RATE CLASSES.

6 A. Oncor is proposing to use allocation factors based on the actual 2019
7 energy efficiency program costs by energy efficiency rate class. The
8 municipalities' EECRF proceeding expense incurred in 2019 for each
9 energy efficiency rate class is calculated by multiplying the total
10 municipalities' EECRF proceeding expense of \$9,940 (column (a) of Exhibit
11 MAT-3) by the allocation factor for each energy efficiency rate class (column
12 (c) of Exhibit MAT-3).

13 Q. WHY IS ONCOR USING THIS METHODOLOGY FOR ALLOCATING THE
14 MUNICIPALITIES' EECRF PROCEEDING EXPENSE?

15 A. Since the rule does not give direction on how to allocate the municipalities'
16 EECRF proceeding expenses to the energy efficiency rate classes, and
17 because the Cities intervene and participate in the EECRF proceedings on
18 behalf of all of their constituents (*i.e.*, all energy efficiency rate classes),
19 Oncor believes its proposed allocation methodology for the municipalities'
20 EECRF proceeding expenses incurred in 2019 is most reasonably and fairly
21 accomplished by using the ratio of actual 2019 energy efficiency programs
22 costs for each energy efficiency rate class to the total 2019 actual energy
23 efficiency program costs. This is the same methodology used to allocate
24 the performance bonus.

25 Q. HAS ONCOR REVIEWED THE REASONABLENESS OF THE
26 MUNICIPALITIES' EECRF PROCEEDING EXPENSE?

27 A. No, Oncor has not reviewed those expenses for reasonableness. The
28 burden of proof for those expenses is the responsibility of the Cities. It is
29 my understanding that Cities will provide testimony or other evidence
30 proving the reasonableness of these expenses. If the Commission

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ultimately determines that some of these expenses were not reasonable, Oncor will modify the amount to equal the Commission approved amount.

VII. EXEMPTION OF INDUSTRIAL CUSTOMERS FROM EECRF CHARGES

Q. HOW DID ONCOR DETERMINE THE ESIDs THAT QUALIFIED TO OPT-OUT FROM EECRF CHARGES UNDER RULE 25.181(u)?

A. According to the rule, the following information was required to be presented to the utility in order for an industrial customer taking electric service at distribution voltage to qualify for the EECRF exemption: (1) the name of the industrial customer; (2) a copy of the customer's Texas Sales and Use Tax Exemption Certification (pursuant to Tax Code §151.317); (3) a description of the industrial process taking place at the consuming facilities; and, (4) the customer's applicable account number or ESID number. To facilitate an orderly process, Oncor posted on its website an application form, directions to complete the form and a description of the opt-out process. If an industrial customer provided the necessary information as stated in the rule, then Oncor accepted the request for the EECRF opt-out and notified the customer that the ESID(s) would not be charged the EECRF.

Q. WHEN DID ONCOR BEGIN THE INDUSTRIAL OPT-OUT PROCESS?

A. As stated in Rule 25.181(u), "...Notices shall be submitted not later than February 1 to be effective for the following program year." Oncor began the industrial opt-out process when notices were received through February 1, 2013 that became effective with the first billing cycle of January 2014. Notices are effective for three years after their acceptance.

Q. DOES THE INDUSTRIAL OPT-OUT PROCESS AFFECT THE NUMBER OF BILLING UNITS PER ENERGY EFFICIENCY RATE CLASS?

A. Yes. Oncor estimated the amount of energy (kWh) for 2021 for each qualified opt-out ESID and reduced the total estimated energy efficiency rate class energy amount shown on my workpaper WP/MAT/3 accordingly. The 2021 billing units used in the calculation of the 2021 EECRFs are

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1 shown on my Exhibit MAT-4 column (f) and reflect the amount of energy for
2 each energy efficiency rate class adjusted for industrial opt-out ESIDs.

3 Q. WHAT IS THE NUMBER OF MEGAWATTS THE DEMAND REDUCTION
4 GOAL SHOULD BE ADJUSTED UNDER 16 TAC § 25.181(u), i.e.,
5 REGARDING THE EXEMPT INDUSTRIAL CUSTOMERS SERVED AT
6 DISTRIBUTION VOLTAGE?

7 A. As shown in WP/MAT/3, the demand reduction goal is adjusted by 1.8 MW
8 (including line loss) for program year 2021 when factoring exempt industrial
9 customers under 16 TAC § 25.181(u) based on 0.4% of weather-adjusted
10 five year average system peak demand. Specifically, 16 TAC §
11 25.181(e)(3)(B) indicates that once a utility is required to acquire 0.4% of
12 weather-adjusted system peak demand under 16 TAC § 25.181(e)(1)(C)
13 (as Oncor is in program year 2021), the utility shall apply the percentage
14 goal to the weather-adjusted five year average system peak demand. 16
15 TAC § 25.181(e)(3)(B) also states that this annual peak demand goal at the
16 source is to be converted to an equivalent goal at the meter by applying
17 reasonable line loss factors.

18 As shown in WP/MAT/3, the weather-adjusted five year average
19 system peak demand for exempt industrial customers for program year
20 2021 is 478 MW: or (414 MW [2015] + 429 MW [2016] + 486 MW [2017] +
21 539 MW [2018] + 524 MW [2019]) ÷ 5 = 478. Because Oncor is required to
22 acquire 0.4% of weather-adjusted five year average system peak demand
23 in program year 2021, the number of megawatts the demand reduction goal
24 should be adjusted for exempt industrial customers under 16 TAC §
25 25.181(u) is 1.8 MW (including line loss required by the R rule): or (478 MW
26 x .004) x (1-.05655) = 1.8 MW.

27 **VIII. CALCULATION OF ONCOR'S LINE LOSS FACTOR USED IN**
28 **DETERMINING ENERGY EFFICIENCY GOALS**

29 Q. WHY IS ONCOR PROVIDING THE CALCULATION OF THE LINE LOSS
30 FACTOR IN THIS PROCEEDING?

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1 A. Line losses are used in the calculation of energy efficiency goals. See the
2 direct testimony of Oncor witness Mr. Jones for more information regarding
3 Oncor's demand reduction and energy savings goals. Line loss factors are
4 used to convert demand goals at the source to demand goals at the meter
5 and to convert demand savings from the meter to the source. Rule
6 25.181(e)(3)(B) now states, in part, "This annual peak demand goal at the
7 source is then converted to an equivalent goal at the meter by applying
8 reasonable line loss factors."

9 Q. HAS ONCOR CALCULATED THE LINE LOSS FACTOR USED IN
10 DETERMINING ENERGY EFFICIENCY GOALS?

11 A. Yes. Oncor has calculated the line loss factor used in determining energy
12 efficiency goals as shown in my workpaper WP/MAT/4. The calculation
13 uses the actual loss factors used in ERCOT Wholesale Settlement at the
14 time of Oncor annual peak applied to the actual Oncor annual system peak
15 demand by voltage level using load research data adjusted for industrial
16 customers who have claimed the exemption from energy efficiency program
17 participation. The ERCOT distribution loss factors are based on the utility's
18 approved loss factors in effect for the calendar year. Oncor's 2019, 2018
19 and 2017 loss factors are based on its most recent rate case (Docket No.
20 46957) and 2015-16 loss factors are based on the rate case in Docket No.
21 38929. The final calculation is a 5-year average of the annual voltage-
22 weighted loss factors adjusted for industrial opt-out. The resulting weighted
23 line loss factor used in calculating the demand reduction goal is 5.655%.
24 This line loss factor is also shown in Mr. Jones direct testimony in Exhibit
25 GDJ-1, page 5, footnote in Table 1.

26 **IX. CALCULATION OF THE PROPOSED 2021 ENERGY EFFICIENCY**
27 **COST RECOVERY FACTORS**

28 Q. HOW ARE THE PROPOSED ENERGY EFFICIENCY COST RECOVERY
29 FACTORS CALCULATED?

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1 A. The proposed EECRFs are calculated by dividing the Total 2021 Energy
2 Efficiency Costs (column (g) of my Exhibit MAT-4) by the 2021 forecasted
3 opt-out adjusted energy for each energy efficiency rate class (column (f) of
4 my Exhibit MAT-4). These EECRFs are also included in proposed Rider
5 EECRF - Energy Efficiency Cost Recovery Factor (my Exhibits MAT-5
6 (clean) and MAT-6 (annotated)).

7 Q. HOW WAS THE 2021 FORECASTED OPT-OUT ADJUSTED ENERGY
8 BILLING UNITS BY ENERGY EFFICIENCY RATE CLASS DETERMINED?

9 A. The forecasted number of energy billing units by energy efficiency rate class
10 for 2021, adjusted for industrial opt-outs, is based on the information
11 contained in Oncor's 2020 Energy and Demand Plan – 2021 Projections as
12 shown in WP/MAT/3.

13 **X. CONCLUSION**

14 Q. PLEASE SUMMARIZE YOUR DIRECT TESTIMONY.

15 A. Oncor has accurately calculated allocation factors based on the actual 2019
16 energy efficiency program costs by energy efficiency rate class. I have used
17 those factors to allocate the earned performance bonus discussed by Mr.
18 Jones, and I have accurately calculated the amounts by energy efficiency
19 rate class to be recovered through an EECRF. I have also used those same
20 factors to allocate the EECRF proceeding expense, and I have accurately
21 calculated the amounts by energy efficiency rate class to be recovered
22 through an EECRF. I have compared the actual 2019 energy efficiency
23 costs provided by Mr. Jones to the energy efficiency revenues recovered in
24 2019 adjusted for the 2017 performance bonus amount, the 2017
25 (over)/under-collection of energy efficiency costs, and the EECRF
26 proceeding expense incurred in 2017 to correctly calculate the 2019
27 (over)/under-recovery including interest by energy efficiency rate class. I
28 have also accurately calculated the proposed EECRFs on a per kWh basis
29 (reasonably adjusted for the exclusion of certain industrial customers) and
30 have included those factors in Rider EECRF - Energy Efficiency Cost

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1 Recovery Factor. The proposed 2021 EECRF will result in the recovery of
2 Oncor's: (1) forecasted 2021 energy efficiency program costs; (2) 2019
3 (over)/under-recovered energy efficiency costs including interest; (3)
4 collection of the EECRF proceeding expenses incurred in 2019; (4)
5 estimated expenses relating to the Commission's evaluation,
6 measurement, and verification; and, (5) recovery of the earned 2019 energy
7 efficiency performance bonus. In addition, I have accurately calculated the
8 line loss factor used in determining Oncor's energy efficiency goals. For all
9 of these reasons (including the evidence provided by Mr. Jones), the
10 proposed Rider EECRF is calculated correctly, is just and reasonable and
11 should be approved. The 2021 EECRF factors should be made effective
12 beginning with bills rendered on and after March 1, 2021.

13 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

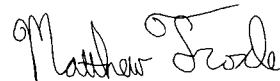
14 A. Yes, it does.



STATE OF TEXAS §
 §
COUNTY OF DALLAS §

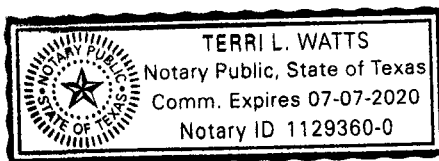
BEFORE ME, the undersigned authority, on this day personally appeared Matthew A. Troxle, who, having been placed under oath by me, did depose as follows:

My name is Matthew A. Troxle. I am of legal age and a resident of the State of Texas. The foregoing direct testimony and the attached exhibits offered by me are true and correct, and the opinions stated therein are, to the best of my knowledge and belief, accurate, true and correct.



Matthew A. Troxle

SUBSCRIBED AND SWORN TO BEFORE ME by the said Matthew A. Troxle this 28th day of May, 2020.



Notary Public, State of Texas

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Oncor Electric Delivery Company LLC

Application for 2021 Energy Efficiency Cost Recovery Factor

List of Matthew A. Troxle's Prior Commission Testimony

- **Arkansas Public Service Commission:**

Docket No. 10-010-U – *In The Matter Of A Notice Of Inquiry Into Energy Efficiency – March 2010, Rebuttal – April 2010.*

Docket No. 07-081-TF – *In The Matter Of The Application Of CenterPoint Energy Arkansas Gas For Approval Of Its "Quick Start" Energy Efficiency Program, Portfolio And Plan Including Its Cost Recovery Rider – July 2009, Rebuttal – September 2009, Sur-rebuttal – October 2009.*

- **Louisiana Public Service Commission:**

Docket No. U-33437 – *Report Of Earnings And Return On Equity For The Louisiana Division For The Twelve Months Ending June 30, 2014 For CenterPoint Energy Arkla – June 2016.*

Docket No. U-33438 – *Report of Earnings and Return On Equity For The Louisiana Division For The Twelve Months Ending June 30, 2014 For CenterPoint Energy Entex – June 2016.*

- **Mississippi Public Service Commission:**

Docket No. 2018-UN-71 – *Notice Of CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Mississippi Gas, Of The Filing Of Routine Changes In Its Rate Regulation Adjustment Rider – May 2018.*

Docket No. 2018-UN-72 – *Notice Of CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Mississippi Gas, Of The Filing Of Routine Changes In Its Supplemental Growth Rider – May 2018.*

- **Public Utilities Commission Of The State Of Minnesota:**

Docket No. G-008/GR-15-424 – *In The Matter Of The Application Of CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Minnesota Gas For Authority To Increase Rates For Natural Gas Utility Service In Minnesota – August 2015, Rebuttal – December 2015, Sur-rebuttal – January 2016.*

Docket No. G-008/GR-13-316 – *In The Matter Of The Application Of CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Minnesota Gas For Authority To Increase Rates For Natural Gas Utility Service In Minnesota – August 2013, Rebuttal – December 2013.*

Docket No. G-008/GR-08-1075 – *In The Matter Of The Application Of CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Minnesota Gas For Authority To Increase Rates For Natural Gas Utility Service In Minnesota – November 2008, Rebuttal – July 2009.*



Oncor Electric Delivery Company LLC

Application for 2021 Energy Efficiency Cost Recovery Factor

List of Matthew A. Troxle's Prior Commission Testimony

- **Public Utility Commission Of Texas:**

Docket No. 50734 – *Application Of Oncor Electric Delivery Company LLC For Approval to Amend its Distribution Cost Recovery Factor – April 2020.*

Docket No. 50490 – *Application Of Oncor Electric Delivery Company, LLC For Interim Update Of Wholesale Transmission Rates – January 2020.*

Docket No. 49421 – *Application Of CenterPoint Energy Houston Electric, LLC For Authority To Change Rates – April 2019, Rebuttal – June 2019.*

Docket No. 44572 – *Application Of CenterPoint Energy Houston Electric, LLC For Approval Of A Distribution Cost Recovery Factor Pursuant To P.U.C. Substantive Rule 25.243 – April 2015, Rebuttal – June 2015, Settlement – June 2015.*

Docket No. 42111 – *Complaint Of Nawaid Isa Against Ambit Energy And CenterPoint Energy Houston Electric, LLC – April 2015.*

Docket No. 41906 – *Compliance Filing Of CenterPoint Energy Houston Electric, LLC For Approval Of A Revised Tariff For Retail Delivery Service In Compliance With New Substantive Rule 25.133 And Revised Substantive Rule 25.214 – September 2013, Settlement – April 2014.*

Docket No. 41540 – *Application Of CenterPoint Energy Houston Electric, LLC, For Approval Of An Adjustment To Its Energy Efficiency Cost Recovery Factor – May 2013.*

Docket No. 40356 – *Application Of CenterPoint Energy Houston Electric, LLC, For Approval Of An Adjustment To Its Energy Efficiency Cost Recovery Factor – May 2012.*

Docket No. 39933 – *Application Of CenterPoint Energy Houston Electric, LLC, For Interim Update Of Wholesale Transmission Rate Pursuant To P.U.C. Substantive Rule §25.192(h)(1) – November 2011.*

Docket No. 39066 – *Claims For September – December 1999 Period Severed From Docket No. 38780 (Remand Of Docket No. 20381, Proceeding To Modify ERCOT Transmission Rates For 1999 Pursuant To Subst. R. 23.67 – August 2011.*

Docket No. 39633 – *Application Of CenterPoint Energy Houston Electric, LLC, For Interim Update Of Wholesale Transmission Rate Pursuant To P.U.C. Substantive Rule §25.192(h)(1) – August 2011.*

Docket No. 39363 – *Application Of CenterPoint Energy Houston Electric, LLC, For Approval Of An Adjustment To Its Energy Efficiency Cost Recovery Factor – April 2011, Rebuttal – August 2011.*



Oncor Electric Delivery Company LLC

Application for 2021 Energy Efficiency Cost Recovery Factor

List of Matthew A. Troxle's Prior Commission Testimony

Docket No. 38339 – *Application Of CenterPoint Electric Delivery Company, LLC, For Authority To Change Rates – June 2010, Rebuttal – October 2010.*

Docket No. 36701 – *Petition Of Texas Utility Solutions LLS For Declaratory Order Of Eligibility As A Transmission Service Customer – February 2010.*

Docket No. 32766 – *Application Of Southwestern Public Service Company For (1) Authority To Change Rates; (2) Reconciliation Of Its Fuel Costs For 2004 And 2005; (3) Authority To Revise The Semi-Annual Formulae Originally Approved In Docket No. 27751 Used To Adjust Its Fuel Factors; And (4) Related Relief – January 2007.*

Docket No. 32907 – *Application Of Entergy Gulf States, Inc. For Determination Of Hurricane Reconstruction Costs – October 2006.*

Docket No. 32093 – *Petition By Commission Staff For A Review Of The Rates Of CenterPoint Energy Houston Electric, LLC Pursuant To PURA §36.151 – August 2006.*

Docket No. 28466 – *Application Of Cap Rock Energy Corporation For Electric Service Tariff – August 2005.*

Docket No. 30216 – *Notice Of Violation By Cap Rock Energy Of PURA Section 36.004(a) Relating To Equality Of Service And Rates And P.U.C. Subst. R. 25.241(b) Relating To Form And Filing Of Tariff – April 2005, Rebuttal – June 2005.*

Docket No. 30215 – *Notice Of Violation By Cap Rock Energy Of P.U.C. Subst. R. 25.28(b) Relating To Bill Payments And Adjustments – April 2005, Rebuttal - June 2005.*

Docket No. 30706 – *Application Of CenterPoint Energy Houston Electric, LLC For A Competition Transition Charge (CTC) – March 2005.*

Docket No. 28813 – *Petition To Inquire Into The Reasonableness Of The Rates And Services Of Cap Rock Energy Corporation – September 2004.*

Docket No. 28840 – *Application Of AEP Texas Central Company For Authority To Change Rates – February 2004.*

Docket No. 28980 – *Petition Of CenterPoint Energy Houston Electric, LLC For Finding That The 40% Threshold Under PURA §39.202(e) Has Been Met For Small Commercial Customers – January 2004.*

Docket No. 28563 – *Compliance Filing Of Oncor Electric Delivery Company Pursuant To Subst. R. 25.311 Regarding Competitive Meter Ownership – November 2003.*



Oncor Electric Delivery Company LLC

Application for 2021 Energy Efficiency Cost Recovery Factor

List of Matthew A. Troxle's Prior Commission Testimony

Docket No. 28562 – *Compliance Filing And Petition Of CenterPoint Energy Houston Electric, LLC To Provide Competitive Metering Service Credit Pursuant To PUC Subst. R. 25.311 – November 2003.*

Docket No. 28560 – *Compliance Filing Of AEP Texas North Company To Provide Competitive Metering Credit – November 2003.*

Docket No. 28559 – *Compliance Filing Of AEP Texas Central Company To Provide Competitive Metering Credit – November 2003.*

Docket No. 28556 – *Texas-New Mexico Power Company's Compliance Filing To Provide Competitive Metering Credit Pursuant To Subst. R. 25.311 – November 2003.*

Docket No. 28585 – *Application Of TXU SESCO Energy Services Company To Increase Price To Beat Fuel Factors And Reduce Price To Beat Base Rates – October 2003 – Adopted Testimony of Brian H. Lloyd.*

Docket No. 25421 – *Application Of LCRA Transmission Services Corp. To Charge Rates For Transmission And Transformation Utility Cost Of Service – October 2002.*

Docket No. 25429 – *Appeal Of Oncor From An Ordinance Of The City Of Allen And Request For Interim Relief – August 2002.*

Docket No. 25960 – *Application Of Brazos Electric Power Cooperative, Inc. To Change Rates For Wholesale Transmission Service – Interim Rates Phase – August 2002.*

Docket No. 25874 – *Application Of Mutual Energy WTU, LP To Increase Price To Beat Fuel Factors – May 2002.*

Docket No. 24449 – *Application Of Southwestern Electric Power Company To Implement The Fuel Factor Component Of Price To Beat Rates – October 2001.*

Docket No. 24336 – *Application Of Entergy Gulf States, Inc. For Approval Of Price To Beat Fuel Factor – September 2001.*

Docket No. 24194 – *Application Of Texas-New Mexico Power Company To Establish Price To Beat Fuel Factor – August 2001.*

Docket No. 24040 – *Application Of TXU Electric Company To Implement Price To Beat Fuel Factors – August 2001.*

Docket No. 23950 – *Petition Of Reliant Energy, Inc. To Establish Price To Beat Fuel Factor and Request For Good Cause Exception To Subst. R. 25.41 – July 2001.*



Oncor Electric Delivery Company LLC

Application for 2021 Energy Efficiency Cost Recovery Factor

List of Matthew A. Troxle's Prior Commission Testimony

Docket No. 22351 – *Application Of Southwestern Public Service For Approval Of Unbundled Cost Of Service Rate Pursuant To PURA §39.201 And Public Utility Commission Substantive Rule §25.344 – February 2001.*

Docket No. 22350 – *Application Of TXU Electric Company For Approval Of Unbundled Cost Of Service Rate Pursuant To PURA §39.201 And Public Utility Commission Substantive Rule §25.344 – February 2001.*

Docket No. 22356 – *Application Of Entergy Gulf States Inc. For Approval Of Unbundled Cost Of Service Rate Pursuant To PURA §39.201 And Public Utility Commission Substantive Rule §25.344 – January 2001.*

Docket No. 22355 – *Application Of Reliant Energy Incorporated For Approval Of Unbundled Cost Of Service Rate Pursuant To PURA §39.201 And Public Utility Commission Substantive Rule §25.344 – December 2000.*

Docket No. 22350 – *Application Of TXU Electric Company For Approval Of Unbundled Cost Of Service Rate Pursuant To PURA §39.201 And Public Utility Commission Substantive Rule §25.344 – November 2000.*

Docket No. 22349 – *Application Of Texas-New Mexico Power Company For Approval Of Unbundled Cost Of Service Rate Pursuant To PURA §39.201 And Public Utility Commission Substantive Rule §25.344 – ECOM Phase – September 2000.*

- **Railroad Commission Of Texas:**

Docket No. 9902 – *Statement Of Intent Of CenterPoint Energy Resources Corp., D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas To Increase Rates On A Division Wide Basis In The Houston Division – July 2009, Rebuttal – October 2009.*



Oncor Electric Delivery Company LLC
Application for 2021 Energy Efficiency Cost Recovery Factor

Performance Bonus Allocation

	(a) Performance Bonus ¹		
Performance Bonus for 2019 Energy Efficiency Programs	\$14,249,500		
Energy Efficiency Rate Class	(b) 2019 Energy Efficiency Program Costs ²	(c) Performance Bonus Allocation Factors	(d) = (a) * (c) Allocated Performance Bonus
Residential Service	28,112,287	57.38482398%	\$8,177,050
Secondary Service ≤ 10 kW	219,344	0.44774076%	\$63,801
Secondary Service > 10 kW	17,816,505	36.36833259%	\$5,182,306
Primary Service ≤ 10 kW	0	0.00000000%	\$0
Primary Service > 10 kW			
Distribution Line	1,931,737	3.94320063%	\$561,886
Substation	425,820	0.86921444%	\$123,859
Transmission Service			
Non Profit	483,369	0.98668760%	\$140,598
For Profit	0	0.00000000%	\$0
Lighting Service	0	0.00000000%	\$0
Total	48,989,062	100.00000000%	\$14,249,500

¹Exhibit GDJ-4 column (h)

²Workpaper WP/MAT/2 column (c)



Oncor Electric Delivery Company LLC
Application for 2021 Energy Efficiency Cost Recovery Factor

EECRF Proceeding Expense Allocation

		(a) EECRF Proceeding Expense ¹		
EECRF Proceeding Expense for 2019		\$9,940		
Energy Efficiency Rate Class	(b) 2019 Energy Efficiency Program Costs ²	(c) EECRF Proceeding Expense Allocation Factors	(d) = (a) * (c)	Allocated EECRF Proceeding Expense
Residential Service	28,112,287	57.38482398%		\$5,704
Secondary Service ≤ 10 kW	219,344	0.44774076%		\$45
Secondary Service > 10 kW	17,816,505	36.36833259%		\$3,615
Primary Service ≤ 10 kW	0	0.00000000%		\$0
Primary Service > 10 kW				
Distribution Line	1,931,737	3.94320063%		\$392
Substation	425,820	0.86921444%		\$86
Transmission Service				
Non Profit	483,369	0.98668760%		\$98
For Profit	0	0.00000000%		\$0
Lighting Service	0	0.00000000%		\$0
Total	48,989,062	100.00000000%		\$9,940

¹Exhibit GDJ-4 column (h)

²Workpaper WP/MAT/2 column (c)



Oncor Electric Delivery Company LLC
Application for 2021 Energy Efficiency Cost Recovery Factor
Calculation of 2021 Energy Efficiency Cost Recovery Factors

Line	Energy Efficiency Rate Class	2019 (Over)/Under Recovery Including Interest ¹	2021 Program Costs ²	2019 Performance Bonus ³	2019 EECRF Proceeding Expense ⁴	2021 Billing Determinant (kWh) ⁵	2021 Total Energy Efficiency Costs	2021 Energy Efficiency Cost Recovery Factor (EECRF)
	(a)	(b)	(c)	(d)	(e)	(f)	(g) = (b)+(c)+(d)+(e)	(h) = (g) / (f)
1	Residential Service	\$ (710,994)	\$ 32,352,036	\$ 8,177,050	\$ 5,704	46,238,895,000	\$ 39,823,796	\$ 0.000861
2	Secondary Service ≤ 10 kW	\$ (376,188)	\$ 160,592	\$ 63,801	\$ 45	1,863,086,000	\$ (151,750)	\$ (0.000081)
3	Secondary Service >10 kW	\$ (194,677)	\$ 17,606,709	\$ 5,182,306	\$ 3,615	47,610,022,000	\$ 22,597,953	\$ 0.000475
4	Primary Service ≤ 10 kW	\$ (954)	\$ -	\$ -	\$ -	19,924,000	\$ (954)	\$ (0.000048)
5	Primary Service > 10 kW							
6	Distribution Line	\$ (1,240,380)	\$ 1,600,896	\$ 561,886	\$ 392	14,224,133,000	\$ 922,794	\$ 0.000065
7	Substation	\$ 404,122	\$ 305,836	\$ 123,859	\$ 86	3,437,865,000	\$ 833,903	\$ 0.000243
8	Transmission Service							
9	Non Profit	\$ 285,227	\$ 330,441	\$ 140,598	\$ 98	1,151,033,000	\$ 756,364	\$ 0.000657
10	For Profit	\$ -	\$ -	\$ -	\$ -	16,644,034,000	\$ -	\$ -
11	Lighting Service	\$ -	\$ -	\$ -	\$ -	403,082,000	\$ -	\$ -
12								
13	Total	\$ (1,833,844)	\$ 52,356,510	\$ 14,249,500	\$ 9,940		\$ 64,782,106	

¹WP/MAT/2 column (j)

²Exhibit GDJ-4

³Exhibit MAT-2 column (d)

⁴Exhibit MAT-3 column (d)

⁵Source: Oncor Electric Delivery Company LLC's 2020 Energy and Demand Plan as shown on WP/MAT/3



6.1.1 Delivery System Charges

Applicable: Entire Certified Service Area

Effective Date: March 1, 2021

Sheet: 6.3

Page 1 of 2

Revision: Fifteen

6.1.1.6.3 Rider EECRF - Energy Efficiency Cost Recovery Factor

APPLICATION

Applicable, pursuant to PURA § 39.905(b)(4) and Substantive Rule § 25.182(d), to all eligible customers in energy efficiency rate classes that receive services under the Company's energy efficiency programs.

METHOD OF CALCULATION

An Energy Efficiency Cost Recovery Factor (EECRF) shall be calculated annually and shall equal by energy efficiency rate class the sum of: forecasted energy efficiency costs, any adjustment for past over-recovery or under-recovery of EECRF costs including interest, any approved energy efficiency performance bonus for the previous year, any EECRF proceeding expenses from the previous year, and any applicable evaluation, measurement, and verification costs as determined by the commission; divided by the forecasted billing units for each class in demand or kWh.

MONTHLY RATE

Energy Efficiency Cost Recovery Factor (EECRF)

<u>Effective Date</u>	Residential Service	Secondary Service		Primary Service > 10 kW – Distribution Line* > 10 kW – Substation*			Transmission Service		Lighting Service
	(\$/kWh)	≤ 10 kW* (\$/kWh)	> 10 kW* (\$/kWh)	≤ 10 kW* (\$/kWh)	> 10 kW – Distribution Line* (\$/kWh)	> 10 kW – Substation* (\$/kWh)	Non-Profit (\$/kWh)	For Profit (\$/kWh)	(\$/kWh)
March 1, 2021	0.000861	(0.000081)	0.000475	(0.000048)	0.000065	0.000243	0.000657	0.000000	0.000000
March 1, 2020	0.000739	0.000282	0.000348	0.000243	0.000346	0.000229	0.000052	0.000000	0.000000
March 1, 2019	0.000755	0.000318	0.000414	(0.000062)	0.000235	0.000004	0.000016	0.000000	0.000000
March 1, 2018	0.000760	(0.000114)	0.000444	0.000142	0.000158	(0.000010)	0.000545	0.000000	0.000000
March 1, 2017	0.000780	0.000329	0.000444	(0.000021)	0.000057	(0.000159)	(0.000104)	0.000000	0.000000
March 1, 2016	0.000995	0.001505	0.000459	0.000461	(0.000005)	(0.000046)	0.001335	0.000000	0.000000
March 1, 2015	0.001025	0.000997	0.000353	(0.000065)	0.000756	0.000025	0.000173	0.000000	0.000001
March 1, 2014	0.001014	0.000437	0.000525	(0.000004)	0.000649	0.000680	0.000525	(0.000002)	0.000000
	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)
Dec. 31, 2012	1.23	0.23	11.59	(2.58)	95.76	130.77	132.02	(1.61)	0.00
Jan. 3, 2012	0.99	0.36	6.65	(0.05)	130.77	130.77	(224.74)	(224.74)	0.00
Dec. 30, 2010	0.91	0.01	8.14	4.79	75.91	185.59	(71.62)	(71.62)	0.00
Dec. 30, 2009	0.89	0.11	9.66	0.06	59.87	720.49	273.71	273.71	0.00
Sept. 17, 2009	0.92	0.22	8.68	0.00	76.27	76.27	443.77	443.77	0.00
Dec. 29, 2008	0.22	(0.79)	2.48	(2.17)	26.17	26.17	(227.52)	(227.52)	(0.17)

* Excludes those industrial customers taking electric service at distribution voltage qualifying for the exemption pursuant to Substantive Rule § 25.181(u).



**Tariff for Retail Delivery Service
Oncor Electric Delivery Company LLC**

6.1.1 Delivery System Charges

Applicable: Entire Certified Service Area

Effective Date: March 1, 2021

Sheet: 6.3

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Revision: Fifteen

NOTICE

This rate schedule is subject to the Company's Tariff and Applicable Legal Authorities.



**Tariff for Retail Delivery Service
Oncor Electric Delivery Company LLC**

Exhibit MAT-6

6.1.1 Delivery System Charges

Applicable: Entire Certified Service Area

Effective Date: March 1, 2021

Sheet: 6.3

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Revision: Fifteen

6.1.1.6.3 Rider EECRF - Energy Efficiency Cost Recovery Factor

APPLICATION

Applicable, pursuant to PURA § 39.905(b)(4) and Substantive Rule § 25.182(d), to all eligible customers in energy efficiency rate classes that receive services under the Company's energy efficiency programs.

METHOD OF CALCULATION

An Energy Efficiency Cost Recovery Factor (EECRF) shall be calculated annually and shall equal by energy efficiency rate class the sum of: forecasted energy efficiency costs, any adjustment for past over-recovery or under-recovery of EECRF costs including interest, any approved energy efficiency performance bonus for the previous year, any EECRF proceeding expenses from the previous year, and any applicable evaluation, measurement, and verification costs as determined by the commission; divided by the forecasted billing units for each class in demand or kWh.

MONTHLY RATE

Energy Efficiency Cost Recovery Factor (EECRF)

<u>Effective Date</u>	Residential Service	Secondary Service		Primary Service > 10 kW – Distribution > 10 kW – Line* Substation*			Transmission Service		Lighting Service
	(\$/kWh)	≤ 10 kW*	> 10 kW*	≤ 10 kW*	≤ 10 kW*	> 10 kW*	Non-Profit	For Profit	(\$/kWh)
March 1, 2021	0.000861	(0.000081)	0.000475	(0.000048)	0.000065	0.000243	0.000657	0.000000	0.000000
March 1, 2020	0.000739	0.000282	0.000348	0.000243	0.000346	0.000229	0.000052	0.000000	0.000000
March 1, 2019	0.000755	0.000318	0.000414	(0.000062)	0.000235	0.000004	0.000016	0.000000	0.000000
March 1, 2018	0.000760	(0.000114)	0.000444	0.000142	0.000158	(0.000010)	0.000545	0.000000	0.000000
March 1, 2017	0.000780	0.000329	0.000444	(0.000021)	0.000057	(0.000159)	(0.000104)	0.000000	0.000000
March 1, 2016	0.000995	0.001505	0.000459	0.000461	(0.000005)	(0.000046)	0.001335	0.000000	0.000000
March 1, 2015	0.001025	0.000997	0.000353	(0.000065)	0.000756	0.000025	0.000173	0.000000	0.000001
March 1, 2014	0.001014	0.000437	0.000525	(0.000004)	0.000649	0.000680	0.000525	(0.000002)	0.000000
	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)	(\$ / Retail Customer)
Dec. 31, 2012	1.23	0.23	11.59	(2.58)	95.76	130.77	132.02	(1.61)	0.00
Jan. 3, 2012	0.99	0.36	6.65	(0.05)	130.77	130.77	(224.74)	(224.74)	0.00
Dec. 30, 2010	0.91	0.01	8.14	4.79	75.91	185.59	(71.62)	(71.62)	0.00
Dec. 30, 2009	0.89	0.11	9.66	0.06	59.87	720.49	273.71	273.71	0.00
Sept. 17, 2009	0.92	0.22	8.68	0.00	76.27	76.27	443.77	443.77	0.00
Dec. 29, 2008	0.22	(0.79)	2.48	(2.17)	26.17	26.17	(227.52)	(227.52)	(0.17)

* Excludes those industrial customers taking electric service at distribution voltage qualifying for the exemption pursuant to Substantive Rule § 25.181(u).



**Tariff for Retail Delivery Service
Oncor Electric Delivery Company LLC**

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NOTICE

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Testimony
Workpapers
Of
Garry D. Jones



2019 Commercial Load Management By Rate Code

Rate Code	kW Savings	kWh Savings	Incentive
D0	1,643.01	4,929.30	62,434.95
D1	300.13	900.50	11,404.99
DC	291.87	875.70	11,091.29
DJ	51.91	155.70	1,972.56
DQ	201.93	605.80	7,673.54
E0	33,234.39	99,702.70	1,262,906.24
E6	84.51	253.50	3,211.40
EC	85.05	255.10	3,232.03
EJ	279.58	838.70	10,623.79
EQ	212.96	638.90	8,092.40
K0	22,458.33	67,375.10	853,416.15
L0	1,156.33	3,469.00	43,940.67
Grand Total	60,000.00	180,000.00	2,280,000.00

0.02738
0.00500
0.00486
0.00087
0.00337
0.55390
0.00141
0.00142
0.00466
0.00355
0.37431
0.01927
1.00000

Rate Code	kW Savings	kWh Savings	Incentive
D0	174.58	523.8	6634.21
D0	26.3	78.9	999.31
D0	37	111	1406.00
D0	66.33	199	2520.63
D0	12.06	36.2	458.39
D0	2.38	7.1	90.52
D0	0.12	0.4	4.68
D0	20.56	61.7	781.43
D0	94.31	282.9	3583.85
D0	17.29	51.9	656.83
D0	-7.29	-21.9	-277.00
D0	9.09	27.3	345.48
D0	2.37	7.1	90.02

Rate Code	kW Savings	kWh Savings	Incentive
D0	71.76	215.3	2726.99
D0	20.15	60.5	765.70
D0	27.33	82	1038.48
D0	15.42	46.3	586.01
D0	26.41	79.2	1,003.62
D0	28.87	86.6	1,097.03
D0	5.77	17.3	219.37
D0	7.12	21.4	270.46
D0	3.57	10.7	135.73
D0	20.68	62.1	786.00
D0	31.17	93.5	1,184.41
D0	7.79	23.4	296.02
D0	103.12	309.4	3,918.52



2019 Commercial Load Management By Rate Code

D0	17.39	52.2	660.84	D0	4.34	13	164.91
D0	17.81	53.4	676.64	D0	2.47	7.4	94.00

Rate Code	kW Savings	kWh Savings	Incentive
D0	22.73	68.2	863.72
D0	1.3	3.9	49.22
D0	-1.41	-4.2	(53.56)
D0	14.22	42.7	540.31
D0	28.12	84.4	1,068.67
D0	34.16	102.5	1,298.25
D0	22.18	66.5	842.80
D0	-1.09	-3.3	(41.61)
D0	187.27	561.8	7,116.41
D0	145.48	436.4	5,528.20
D0	42.05	126.2	1,597.97
D0	75.61	226.8	2,873.12
D0	15.78	47.3	599.61
D0	17.45	52.3	662.91
D0	64.14	192.4	2,437.22
D0	108.75	326.3	4,132.63
D1	86.32	259	3,280.21
D1	115.12	345.4	4,374.66
D1	30.12	90.4	1,144.56
D1	68.57	205.7	2,605.56
DC	9.05	27.2	344.01
DC	282.82	848.5	10,747.28
DJ	51.91	155.7	1,972.56
DQ	153.89	461.7	5,847.79
DQ	26.81	80.4	1,018.92
DQ	21.23	63.7	806.82
E0	608.25	1824.8	23,113.58
E0	373.24	1119.7	14,182.94

Rate Code	kW Savings	kWh Savings	Incentive
E0	296.29	888.9	11,258.84
E0	416.32	1248.9	15,820.00
E0	700.76	2102.3	26,628.85
E0	438.85	1316.6	16,676.32
E0	-15.3	-45.9	(581.59)
E0	182.89	548.7	6,949.71
E0	22.19	66.6	843.37
E0	311.99	936	11,855.66
E0	131.18	393.5	4,984.67
E0	124.82	374.5	4,743.18
E0	11.93	35.8	453.50
E0	12.65	38	480.82
E0	-7.37	-22.1	(280.05)
E0	253.5	760.5	9,633.13
E0	135.82	407.5	5,161.32
E0	843.96	2531.9	32,070.57
E0	39.7	119.1	1,508.54
E0	192.99	579	7,333.58
E0	180.55	541.6	6,860.86
E0	-4.25	-12.8	(161.59)
E0	2.64	7.9	100.18
E0	209.64	628.9	7,966.45
E0	1303.91	3911.7	49,548.54
E0	31.43	94.3	1,194.32
E0	564.05	1692.2	21,434.04
E0	227.46	682.4	8,643.51
E0	181.68	545	6,903.82
E0	78.35	235.1	2,977.35



2019 Commercial Load Management By Rate Code

E0	259.33	778	9,854.60
E0	1043.8	3131.4	39,664.33
E0	1170.27	3510.8	44,470.20
E0	203.68	611	7,739.90
E0	319.88	959.6	12,155.37
Rate Code	kW Savings	kWh Savings	Incentive
E0	85.15	255.5	3,235.75
E0	1423.12	4269.4	54,078.74
E0	736.01	2208	27,968.45
E0	319.35	958	12,135.19
E0	62.79	188.4	2,386.14
E0	17.18	51.5	652.79
E0	-15.77	-47.3	(599.40)
E0	171.28	513.9	6,508.82
E0	63.83	191.5	2,425.43
E0	55.81	167.4	2,120.73
E0	68.32	205	2,596.10
E0	22.83	68.5	867.58
E0	40.35	121	1,533.13
E0	408.79	1226.4	15,534.03
E0	83.23	249.7	3,162.65
E0	73.26	219.8	2,783.96
E0	50.29	150.9	1,911.18
E0	14.23	42.7	540.80
E0	21.66	65	822.95
E0	22.28	66.9	846.79
E0	113.29	339.9	4,305.15
E0	363.13	1089.4	13,798.98
E0	20.59	61.8	782.60
E0	1384.79	4154.4	52,621.96
E0	135.53	406.6	5,150.24
E0	4.31	12.9	163.85

E0	22.82	68.4	866.98
E0	61.94	185.8	2,353.73
E0	44.99	135	1,709.53
E0	290.88	872.7	11,053.62
E0	526.38	1579.1	20,002.25
Rate Code	kW Savings	kWh Savings	Incentive
E0	37.94	113.8	1,441.72
E0	-7.61	-22.8	(289.24)
E0	65.53	196.6	2,490.20
E0	91.75	275.2	3,486.45
E0	391.52	1174.6	14,877.90
E0	64.78	194.3	2,461.56
E0	53.41	160.2	2,029.48
E0	45.22	135.6	1,718.22
E0	69.32	208	2,634.28
E0	981.42	2944.3	37,293.97
E0	51.31	153.9	1,949.90
E0	58.78	176.3	2,233.76
E0	24.21	72.6	920.16
E0	57.59	172.8	2,188.42
E0	31.27	93.8	1,188.43
E0	-19.32	-58	(734.35)
E0	527.52	1582.6	20,045.89
E0	311.17	933.5	11,824.31
E0	68.98	206.9	2,621.16
E0	61.02	183.1	2,318.93
E0	53.43	160.3	2,030.24
E0	3.33	10	126.66
E0	80.3	240.9	3,051.35
E0	41.58	124.8	1,580.22
E0	68.25	204.8	2,593.64
E0	-3.62	-10.9	(137.49)



2019 Commercial Load Management By Rate Code

E0	711.75	2135.2	27,046.48
E0	21.33	64	810.40
E0	72.54	217.6	2,756.42
E0	63.08	189.2	2,397.07
E0	61.13	183.4	2,322.86
E0	26.66	80	1,013.25
E0	625.86	1877.6	23,782.66
Rate Code	kW Savings	kWh Savings	Incentive
E0	23.74	71.2	902.20
E0	47.7	143.1	1,812.63
E0	145.41	436.2	5,525.66
E0	37.11	111.3	1,410.17
E0	17.35	52.1	659.46
E0	144.38	433.1	5,486.34
E0	48.24	144.7	1,833.12
E0	36.37	109.1	1,382.20
E0	60.22	180.7	2,288.49
E0	26.96	80.9	1,024.40
E0	-0.57	-1.7	(21.73)
E0	21.91	65.7	832.43
E0	52.5	157.5	1,994.97
E0	14.11	42.3	536.18
E0	57.82	173.5	2,197.10
E0	658.28	1974.8	25,014.49
E0	26.69	80.1	1,014.30
E0	50.92	152.8	1,935.07
E0	11.8	35.4	448.51
E0	350.39	1051.2	13,314.95
E0	30.07	90.2	1,142.51
E0	43.14	129.4	1,639.15
E0	68.37	205.1	2,598.20
E0	40.76	122.3	1,548.86

E0	335.7	1007.1	12,756.73
E0	-80.77	-242.3	(3,069.30)
E0	287.46	862.4	10,923.37
E0	42.03	126.1	1,597.20
E0	14.31	42.9	543.68
E0	23.32	69.9	886.01
E0	20.49	61.5	778.80
Rate Code	kW Savings	kWh Savings	Incentive
E0	12.47	37.4	473.72
E0	39.72	119.2	1,509.46
E0	30.47	91.4	1,157.72
E0	25.9	77.7	984.25
E0	18.09	54.3	687.51
E0	3.38	10.1	128.51
E0	2.31	6.9	87.67
E0	-4.69	-14.1	(178.34)
E0	202.91	608.7	7,710.63
E0	51.79	155.4	1,967.88
E0	60.1	180.3	2,283.84
E0	883.75	2651.3	33,582.66
E0	62.22	186.7	2,364.38
E0	92.08	276.2	3,498.95
E0	34.02	102.1	1,292.68
E0	53.5	160.5	2,032.85
E0	32.97	98.9	1,252.96
E0	32.81	98.4	1,246.87
E0	68.09	204.3	2,587.41
E0	68.47	205.4	2,601.77
E0	4.53	13.6	172.11
E0	17.23	51.7	654.56
E0	45.43	136.3	1,726.35
E0	-9.86	-29.6	(374.82)



2019 Commercial Load Management By Rate Code

E0	18.45	55.4	701.13
E0	50.8	152.4	1,930.28
E0	1179.3	3537.9	44,813.42
E0	74.37	223.1	2,826.11
E0	48.87	146.6	1,856.99
E0	34.94	104.8	1,327.77
E0	377.24	1131.7	14,334.99
E0	30.66	92	1,164.89
E0	32.4	97.2	1,231.08
Rate Code	kW Savings	kWh Savings	Incentive
E0	103.27	309.8	3,924.09
E0	345.35	1036.1	13,123.35
E0	480.53	1441.6	18,260.12
E0	504.09	1512.3	19,155.26
E0	54.65	163.9	2,076.65
E0	63	189	2,393.90
E0	35.26	105.8	1,339.89
E0	819.54	2458.6	31,142.48
E0	168.7	506.1	6,410.71
E0	84.29	252.9	3,202.92
E0	29.76	89.3	1,130.74
E0	161.78	485.3	6,147.68
E0	30.61	91.8	1,163.34
E0	20.84	62.5	791.75
E0	-0.21	-0.6	(7.86)
E0	20.95	62.8	796.02
E0	45.21	135.6	1,718.09
E0	63.06	189.2	2,396.45
E0	13.41	40.2	509.60
E0	120.65	362	4,584.77
E0	79.24	237.7	3,011.31
E0	52.81	158.4	2,006.95

E0	36.22	108.7	1,376.35
E0	39.34	118	1,494.83
E0	-4.39	-13.2	(166.98)
E0	64.54	193.6	2,452.56
E0	69.78	209.3	2,651.63
E0	94.15	282.4	3,577.54
E0	48.94	146.8	1,859.84
E0	46.76	140.3	1,776.96
E0	29.63	88.9	1,125.77
Rate Code	kW Savings	kWh Savings	Incentive
EQ	115.49	346.5	4,388.60
K0	-4.63	-13.9	(176.10)
K0	-52.76	-158.3	(2,004.94)
K0	1079.59	3238.8	41,024.30
K0	422.93	1268.8	16,071.16
K0	933.5	2800.5	35,472.88
K0	148.92	446.8	5,659.06
K0	278.58	835.7	10,586.13
K0	2388.51	7165.5	90,763.24
K0	4903.53	14710.6	186,334.14
K0	2368.46	7105.4	90,001.46
K0	1390.13	4170.4	52,824.87
K0	1037.19	3111.6	39,413.05
K0	1699.25	5097.8	64,571.65
K0	390.61	1171.8	14,843.26
K0	190.74	572.2	7,248.20
K0	1205.16	3615.5	45,795.95
K0	594.45	1783.4	22,589.24
K0	283.95	851.8	10,790.01
K0	948.2	2844.6	36,031.75
K0	1027.77	3083.3	39,055.35
K0	1224.25	3672.8	46,521.51



2019 Commercial Load Management By Rate Code

E0	106.35	319.1	4,041.33
E0	744.2	2231.9	28,279.42
E6	-0.43	-1.3	(16.25)
E6	84.94	254.8	3,227.65
EC	10.55	31.6	400.89
EC	74.5	223.5	2,831.14
EJ	129.12	387.3	4,906.38
EJ	150.46	451.4	5,717.41
EQ	93.46	280.4	3,551.38
EQ	4.01	12	152.42

L0	1556.14	4668.4	59,133.46
L0	-399.81	-1199.4	(15,192.80)
Grand Total	60,000.00	180,000.00	\$2,280,000.00



2019 Commercial Solar By Rate Code

Rate Code	kW Savings	kWh Savings	Incentive
B0	78.09	248,547.60	101,880.58
D0	901.93	2,719,959.60	1,124,821.00
DC	96.42	308,383.80	126,164.68
DJ	272.02	856,543.20	352,628.65
DQ	366.59	1,217,691.50	490,745.46
E0	353.50	1,146,414.50	466,423.20
D1	47.45	136,428.20	58,324.32
D6	25.14	90,408.20	30,943.04
Grand Total	2,141.14	6,724,376.60	2,751,930.92

0.03702
0.40874
0.04585
0.12814
0.17833
0.16949
0.02119
0.01124
1.00000

Rate Code	kW Savings	kWh Savings	Incentive
B0	8.97	29,781.5	\$12,332.30
B0	0.95	4,903.5	\$1,748.10
B0	5.89	18,990.0	\$7,954.20
B0	6.46	20,647.4	\$8,678.80
B0	4.40	16,253.6	\$6,465.40
B0	45.80	141,093.7	\$57,425.68
B0	5.62	16,877.9	\$7,276.10
D0	91.26	231,697.3	\$76,182.30
D0	36.60	107,373.4	\$46,756.20
D0	63.03	190,977.5	\$82,050.80
D0	6.68	23,801.3	\$9,593.90
D0	2.73	10,572.7	\$4,133.30
D0	62.85	177,328.1	\$78,514.90
D0	47.99	156,402.2	\$65,239.80
D0	5.25	19,802.4	\$7,815.10
D0	38.56	109,033.5	\$48,229.00
D0	30.54	81,682.2	\$37,019.90
D0	27.38	97,747.9	\$39,365.50
D0	24.12	94,522.7	\$36,795.90

Rate Code	kW Savings	kWh Savings	Incentive
D0	89.71	268,069.1	\$115,837.30
D0	92.62	288,140.2	\$122,459.80
D0	31.29	95,563.5	\$40,921.60
D0	91.77	257,755.6	\$101,298.50
D0	21.61	74,267.9	\$30,000.00
D0	37.37	105,538.5	\$46,711.40
D0	48.02	164,559.0	\$66,000.00
D0	40.20	107,868.7	\$48,821.10
D0	12.35	57,255.9	\$21,074.70
D1	38.03	107,628.8	\$45,997.92
D1	9.42	28,799.4	\$12,326.40
D6	17.68	57,480.3	\$18,628.84
D6	7.46	32,927.9	\$12,314.20
DC	27.69	82,725.6	\$35,750.80
DC	21.40	78,416.8	\$31,274.40
DC	47.33	147,241.4	\$59,139.48
DJ	18.86	59,430.5	\$25,124.10
DJ	91.89	290,661.0	\$122,698.50
DJ	10.17	32,983.4	\$13,785.30



2019 Commercial Solar By Rate Code

Rate Code	kW Savings	kWh Savings	Incentive
DJ	29.39	99,095.1	\$40,786.70
DJ	90.80	274,588.2	\$108,452.25
DJ	16.19	52,268.3	\$21,885.70
DJ	14.72	47,516.7	\$19,896.10
DQ	91.94	299,763.9	\$125,000.00
DQ	13.26	43,124.2	\$18,005.60
DQ	80.73	252,381.5	\$107,047.70
DQ	2.94	9,824.9	\$4,060.20
DQ	69.97	226,422.8	\$94,712.20
DQ	76.86	280,367.1	\$98,633.56
DQ	15.80	57,102.5	\$22,892.70
DQ	15.09	48,704.6	\$20,393.50
E0	85.62	300,340.7	\$121,762.40
E0	91.99	276,841.1	\$119,273.10
E0	91.99	283,696.6	\$108,283.10
E0	83.90	285,536.1	\$117,104.60
Grand Total	1,972.89	6,194,060.30	\$2,531,183.54



2019 Custom CSOP By Rate Code

Rate Code	kW Savings	kWh Savings	Incentives
B0	0.29	887.40	128.09
D0	416.78	2,108,780.90	220,548.12
DJ	5.38	70,667.20	8,304.04
DQ	56.84	94,334.00	25,723.52
E0	92.83	490,485.90	50,147.96
Grand Total	572.12	2,765,155.40	304,851.72

0.00042
0.72346
0.02724
0.08438
0.1645
1.00000

Rate Code	kW Savings	kWh Savings	Incentive
B0	0.29	887.40	\$128.09
D0	(1.27)	(11,090.10)	(\$628.90)
D0	-	(56.70)	(\$3.34)
D0	0.02	28.70	\$5.78
D0	0.03	101.60	\$9.71
D0	0.03	114.30	\$13.15
D0	0.03	59.60	\$11.39
D0	0.03	113.10	\$14.40
D0	0.03	123.20	\$16.21
D0	0.04	159.60	\$21.06
D0	0.05	150.70	\$21.32
D0	0.06	221.60	\$17.82
D0	0.07	202.70	\$30.50
D0	0.08	228.10	\$20.58
D0	0.08	170.30	\$17.89
D0	0.08	324.20	\$25.39
D0	0.08	177.70	\$31.68
D0	0.08	227.80	\$33.14
D0	0.08	237.70	\$20.85

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.09	235.10	\$36.38
D0	0.09	291.70	\$40.94
D0	0.10	402.90	\$44.74
D0	0.10	356.00	\$40.98
D0	0.11	386.20	\$52.44
D0	0.11	417.40	\$54.91
D0	0.11	413.00	\$54.00
D0	0.12	507.50	\$54.65
D0	0.12	285.80	\$41.33
D0	0.12	412.70	\$56.80
D0	0.12	345.20	\$45.54
D0	0.12	499.10	\$54.05
D0	0.12	388.80	\$48.29
D0	0.12	428.40	\$57.03
D0	0.12	1,034.40	\$97.10
D0	0.12	475.40	\$52.96
D0	0.13	623.10	\$62.33
D0	0.13	483.50	\$54.24
D0	0.13	269.40	\$49.82



2019 Custom CSOP By Rate Code

D0	0.08	312.50	\$34.36
D0	0.09	296.00	\$41.95
D0	0.09	277.60	\$40.11

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.13	298.00	\$43.20
D0	0.13	244.00	\$41.70
D0	0.13	342.30	\$53.43
D0	0.13	432.20	\$51.59
D0	0.14	152.50	\$43.36
D0	0.14	425.80	\$53.94
D0	0.15	601.60	\$76.72
D0	0.15	493.20	\$68.78
D0	0.15	572.50	\$74.40
D0	0.16	568.00	\$76.64
D0	0.17	471.90	\$63.10
D0	0.17	789.90	\$80.82
D0	0.17	380.60	\$39.61
D0	0.17	658.90	\$73.66
D0	0.17	587.90	\$48.85
D0	0.17	655.80	\$83.70
D0	0.17	697.30	\$74.41
D0	0.17	618.50	\$81.77
D0	0.17	661.60	\$83.13
D0	0.17	645.60	\$82.59
D0	0.17	478.60	\$71.63
D0	0.18	538.60	\$78.53
D0	0.19	664.20	\$88.48
D0	0.19	517.40	\$80.24
D0	0.19	401.40	\$63.16
D0	0.20	534.50	\$73.22
D0	0.20	654.80	\$78.70

D0	0.13	414.90	\$50.33
D0	0.13	494.40	\$39.39
D0	0.13	393.80	\$49.39

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.21	865.40	\$106.16
D0	0.22	771.10	\$89.68
D0	0.22	760.30	\$62.03
D0	0.22	844.00	\$94.12
D0	0.23	804.10	\$94.83
D0	0.23	730.10	\$104.21
D0	0.23	746.00	\$90.44
D0	0.23	927.20	\$70.41
D0	0.23	660.10	\$97.61
D0	0.24	667.10	\$101.63
D0	0.25	962.80	\$107.95
D0	0.26	758.10	\$98.11
D0	0.26	804.90	\$100.78
D0	0.26	810.00	\$101.07
D0	0.26	908.30	\$105.43
D0	0.27	613.50	\$92.28
D0	0.27	1,207.10	\$124.40
D0	0.27	750.50	\$113.05
D0	0.28	979.80	\$130.91
D0	0.29	1,052.80	\$139.38
D0	0.29	953.70	\$80.43
D0	0.29	1,216.70	\$129.34
D0	0.29	1,061.40	\$120.94
D0	0.29	1,031.50	\$136.78
D0	0.30	981.20	\$118.21
D0	0.30	1,172.90	\$130.63
D0	0.30	983.30	\$82.90



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D0	0.20	659.20	\$91.95
D0	0.21	596.60	\$78.37
D0	0.21	1,052.20	\$104.72
D0	0.21	749.40	\$99.21
D0	0.21	1,832.20	\$171.85

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.31	1,134.10	\$129.52
D0	0.31	1,195.40	\$133.74
D0	0.31	975.30	\$138.97
D0	0.31	743.90	\$122.57
D0	0.31	1,180.90	\$152.43
D0	0.32	1,170.70	\$133.97
D0	0.32	1,156.80	\$152.98
D0	0.32	1,269.40	\$160.23
D0	0.32	1,225.40	\$157.88
D0	0.32	2,749.50	\$156.75
D0	0.33	1,118.30	\$132.34
D0	0.33	1,839.00	\$174.93
D0	0.33	1,096.00	\$131.89
D0	0.33	848.40	\$135.50
D0	0.33	1,264.90	\$162.61
D0	0.33	1,048.20	\$147.26
D0	0.34	1,194.30	\$139.14
D0	0.34	1,059.10	\$151.55
D0	0.34	834.20	\$136.87
D0	0.35	1,549.20	\$161.15
D0	0.35	2,334.10	\$236.35
D0	0.37	1,237.70	\$147.57
D0	0.38	1,229.90	\$150.43
D0	0.38	1,072.00	\$98.30
D0	0.42	1,259.50	\$160.23

D0	0.30	878.90	\$79.08
D0	0.30	873.80	\$129.32
D0	0.30	1,175.80	\$149.98
D0	0.30	1,170.80	\$147.82
D0	0.31	1,147.50	\$149.83

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.43	1,249.80	\$186.47
D0	0.43	2,485.40	\$266.01
D0	0.44	1,386.50	\$171.58
D0	0.44	1,465.90	\$201.63
D0	0.44	1,606.80	\$210.35
D0	0.45	1,236.00	\$164.80
D0	0.45	2,274.70	\$223.41
D0	0.46	1,567.50	\$185.71
D0	0.46	1,389.50	\$200.64
D0	0.46	1,412.80	\$203.18
D0	0.47	1,314.30	\$173.67
D0	0.47	1,531.00	\$130.09
D0	0.47	1,784.10	\$200.83
D0	0.47	1,819.20	\$232.84
D0	0.48	1,819.80	\$203.24
D0	0.48	3,259.30	\$328.39
D0	0.48	1,479.30	\$184.91
D0	0.48	1,771.20	\$230.98
D0	0.49	1,403.80	\$183.45
D0	0.49	1,493.40	\$132.11
D0	0.49	2,505.10	\$244.58
D0	0.49	1,182.30	\$194.43
D0	0.49	1,653.90	\$225.50
D0	0.49	1,877.20	\$209.82
D0	0.49	1,514.90	\$217.53



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D0	0.43	1,617.00	\$181.47
D0	0.43	1,613.00	\$182.60
D0	0.43	1,610.10	\$181.35
D0	0.43	1,573.50	\$179.53
D0	0.43	1,256.70	\$162.27
D0	0.43	1,268.70	\$114.17
D0	0.43	1,268.70	\$185.52

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.51	1,713.40	\$203.45
D0	0.51	2,502.80	\$286.86
D0	0.52	1,839.70	\$245.87
D0	0.53	1,342.30	\$131.03
D0	0.53	1,721.20	\$209.71
D0	0.53	1,793.90	\$213.57
D0	0.54	2,064.20	\$230.08
D0	0.54	2,050.90	\$229.07
D0	0.54	1,544.40	\$232.17
D0	0.54	1,771.00	\$214.44
D0	0.55	2,203.40	\$275.94
D0	0.55	1,975.00	\$262.10
D0	0.55	2,099.90	\$269.78
D0	0.56	1,468.90	\$200.49
D0	0.56	2,079.90	\$235.04
D0	0.56	2,082.40	\$236.26
D0	0.57	1,888.80	\$225.98
D0	0.57	2,037.70	\$269.64
D0	0.57	1,740.70	\$218.98
D0	0.57	1,661.30	\$247.05
D0	0.57	1,819.90	\$255.78
D0	0.57	1,786.40	\$255.26
D0	0.57	2,175.00	\$280.76

D0	0.50	1,928.50	\$150.64
D0	0.50	1,777.10	\$144.60
D0	0.50	1,739.80	\$235.51
D0	0.50	1,872.30	\$242.68
D0	0.50	3,636.40	\$360.08
D0	0.51	1,594.50	\$196.67
D0	0.51	1,980.00	\$220.12

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.59	1,641.30	\$218.09
D0	0.59	1,900.50	\$162.14
D0	0.59	1,784.80	\$259.73
D0	0.59	3,574.20	\$326.55
D0	0.59	1,986.60	\$236.32
D0	0.59	2,590.80	\$310.98
D0	0.59	2,010.40	\$275.01
D0	0.59	1,946.40	\$164.24
D0	0.59	2,131.20	\$244.20
D0	0.59	2,027.50	\$239.03
D0	0.59	2,275.20	\$252.78
D0	0.59	2,244.40	\$288.68
D0	0.60	2,303.80	\$256.26
D0	0.60	2,314.80	\$257.26
D0	0.60	2,276.60	\$293.34
D0	0.60	2,302.40	\$294.60
D0	0.60	1,825.20	\$263.74
D0	0.60	2,174.90	\$174.92
D0	0.60	2,495.00	\$308.88
D0	0.61	2,325.40	\$259.72
D0	0.61	2,118.30	\$173.42
D0	0.61	2,826.30	\$332.33
D0	0.61	2,202.00	\$291.44



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D0	0.57	2,185.60	\$281.46
D0	0.58	1,838.80	\$226.43
D0	0.58	2,237.60	\$249.56
D0	0.58	1,863.80	\$228.61
D0	0.58	2,156.80	\$244.95
D0	0.58	1,793.20	\$256.15
D0	0.58	1,814.80	\$224.68
D0	0.58	2,183.20	\$282.56
D0	0.58	1,631.80	\$213.53

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.62	2,364.40	\$303.78
D0	0.62	3,234.40	\$360.40
D0	0.63	2,436.40	\$310.62
D0	0.64	2,279.80	\$263.39
D0	0.64	2,158.90	\$179.70
D0	0.64	2,474.40	\$275.20
D0	0.65	2,492.40	\$278.44
D0	0.65	2,079.50	\$177.83
D0	0.65	2,294.20	\$307.64
D0	0.65	4,108.40	\$425.74
D0	0.65	1,960.50	\$284.07
D0	0.66	3,921.30	\$417.07
D0	0.66	2,561.40	\$327.30
D0	0.66	2,164.20	\$261.94
D0	0.67	2,599.20	\$332.32
D0	0.67	2,566.40	\$286.72
D0	0.67	2,412.50	\$319.64
D0	0.67	2,021.80	\$294.67
D0	0.67	2,597.60	\$288.88
D0	0.68	2,595.70	\$334.59
D0	0.69	2,246.20	\$272.52

D0	0.61	1,672.50	\$257.68
D0	0.61	2,219.50	\$253.29
D0	0.61	1,965.10	\$239.15
D0	0.62	2,211.90	\$294.59
D0	0.62	3,811.70	\$347.84
D0	0.62	2,397.60	\$306.78
D0	0.62	2,072.80	\$285.46
D0	0.62	2,370.00	\$304.14
D0	0.62	2,740.90	\$285.97

Rate Code	kW Savings	kWh Savings	Incentive
D0	0.71	4,050.80	\$436.76
D0	0.72	2,048.10	\$267.07
D0	0.72	2,481.00	\$292.14
D0	0.72	2,430.50	\$289.64
D0	0.73	3,270.80	\$339.68
D0	0.73	2,834.70	\$362.40
D0	0.74	3,132.50	\$334.02
D0	0.74	2,856.00	\$222.26
D0	0.75	2,015.80	\$272.59
D0	0.77	2,902.50	\$228.78
D0	0.77	2,485.10	\$303.80
D0	0.77	2,731.00	\$364.65
D0	0.77	2,484.40	\$347.24
D0	0.78	2,906.20	\$377.44
D0	0.78	4,300.00	\$470.84
D0	0.78	3,630.70	\$425.60
D0	0.79	2,357.50	\$298.74
D0	0.80	2,781.20	\$325.84
D0	0.80	2,620.80	\$363.39
D0	0.80	6,279.70	\$526.25
D0	0.83	2,912.20	\$391.79



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D0	0.69	3,214.60	\$376.24
D0	0.69	2,591.50	\$335.62
D0	0.70	2,582.90	\$293.57
D0	0.70	2,447.20	\$285.44
D0	0.70	2,642.50	\$296.22
D0	0.70	3,977.20	\$428.85
D0	0.70	2,370.80	\$324.95
D0	0.70	2,707.20	\$301.74
D0	0.71	2,401.40	\$285.76
D0	0.71	2,676.20	\$300.36
D0	0.71	2,563.80	\$338.29

D0	0.84	2,907.50	\$393.59
D0	0.87	4,017.30	\$412.07
D0	0.88	3,309.20	\$373.68
D0	0.89	3,163.80	\$420.56
D0	0.90	5,572.60	\$506.68
D0	0.90	3,466.00	\$443.38
D0	0.91	3,356.50	\$438.68
D0	0.92	3,085.20	\$368.04
D0	0.92	3,550.60	\$394.06
D0	0.92	3,142.70	\$426.83
D0	0.96	2,386.00	\$337.56

Rate Code	kW Savings	kWh Savings	Incentives
D0	0.96	5,948.80	\$539.40
D0	1.01	3,866.20	\$497.60
D0	1.02	3,654.70	\$421.72
D0	1.06	3,489.40	\$483.42
D0	1.07	3,775.70	\$439.29
D0	1.08	3,093.50	\$403.33
D0	1.08	4,101.00	\$528.64
D0	1.08	6,515.60	\$688.39
D0	1.15	3,865.70	\$322.49
D0	1.17	4,423.60	\$570.98
D0	1.18	3,767.20	\$462.40
D0	1.18	4,477.00	\$577.04
D0	1.20	4,581.80	\$589.00
D0	4.96	41,462.00	\$2,384.29
D0	5.48	48,120.10	\$5,016.42
D0	6.64	58,235.60	\$6,071.93
D0	9.90	86,665.00	\$9,039.74
D0	11.34	94,818.40	\$7,782.36
D0	20.09	161,876.50	\$13,438.59