

# Cooperative Light & Power

## Net Metering Cost Analysis and Rate Design

### Summary

Net Metering Monthly Charge per kW	<i>No Charge</i>	
First 3.5 kW (nameplate rating)	\$ 2.84	per kW (nameplate rating)
kW in Excess of 3.5 kW	\$ 26.00	per Month
Not-to-Exceed *		

\* Equivalent to 12.7 kW DG installation

(a) Line	(b) Description	(c) Amount	(d) Notes
1	<u>I. Cost Study: Distribution Fixed Costs Not Recovered by Rate</u>		
2	Annual Revenue - Residential	\$ 5,802,172	Form 7
3			
4	Annual Purchased Power Expense - System	\$ 7,159,130	Form 7
5	Annual Energy Sales (kWh) - System	<u>97,357,925</u>	Form 7
6	Purchased Power Expense per kWh Sold - System	<u>0.0735</u>	L4 ÷ L5
7			
8	Annual Energy Sales (kWh) - Residential	<u>46,033,165</u>	Form 7
9	Annual Purchased Power Expense - Residential	<u>3,385,009</u>	L6 x L8
10			
11	Annual Distribution Fixed Costs - Residential	\$ 2,417,163	L2 - L9
12	Annual Consumer Charge Revenue - Residential	- \$ 1,223,100	Form 7 + Present Rate
13	Distribution Fixed Costs Recovered in Residential Energy Rate	= \$ 1,194,063	L11 - L12
14	Annual Energy Sales (kWh) - Residential	÷ <u>46,033,165</u>	L8
15	Distribution Fixed Costs Recovered in Residential Energy Rate	= \$ <u>0.0259</u>	L13 ÷ L14
16			
17	<u>2. Conversion to per kW Rate</u>		
18	DG Capacity Factor	15%	Per NREEL PVWatts
19	Average Hours per Month	<u>730</u>	365 x 24 ÷ 12
20	<b>Monthly Rate per DC Nameplate Rating kW-mo.</b>	<u><b>2.84</b></u>	L15 x L18 x L19
21			
22	<u>3. DG Nameplate Rating kW Allowance (No Charge)</u>	<b>3.50</b>	See footnote 1
23			
24	<u>4. Monthly Charge Cap per DG Customer</u>		
25	Annual Distribution Fixed Costs - Residential	\$ 2,417,163	L11
26	Number of Residential Customers	3,775	Form 7
27	Distribution Fixed Costs per Customer per Month	\$ 53.36	L25 ÷ L26 ÷ 12
28	Current Monthly Customer Charge - Residential	\$ 27.00	Per Utility Rate Schedule
29	Monthly Charge Cap	\$ 26.36	L27 - L28
30	<b>Monthly Charge Cap - Rounded</b>	<b>\$ 26.00</b>	Round L29

<sup>1</sup> Allowance represents installed kW associated with one standard deviation from the average kWh usage per customer at a 15.0% Capacity Factor.

Utility: Cooperative Light & Power  
 Year: 2017  
 Source: Annual Form 7 - CY 2016

<i>Line #</i>	<i>Description</i>	<i>Amount</i>	<i>RUS Form 7 Reference</i>	<i>CFC Form 7 Reference</i>
1	Annual Purchased Power Expense	\$ 7,159,130	Part A, Line 3, Column (b)	Part A, Line 3, Column (b)
2				
3	Annual Energy kWh Sold	97,357,925	Part O, Line 11	Part R, Line 11
4				
5	Number of residential customers (Form 7)	3,775	Part O, Line 1.a., Column (b)	Part R, Line 1.a., Column (c)
6	Annual residential kWh sales (Form 7)	46,033,165	Part O, Line 1.b., Column (c)	Part R, Line 1.b., Column (d)
7	Annual residential revenue (Form 7)	\$ 5,802,172	Part O, Line 1.c., Column (c)	Part R, Line 1.c., Column (d)
8				
9	Residential Customer Charge \$/mo	\$ 27,000		Per Present Rate Schedule
10				
11	Solar Capacity Factor (DC nameplate rating)	15%	NREL PVWatts calculator average of various locations in MN	
12				
13				
14				
15				
16				
17	***FIXED ASSUMPTION*** DO NOT CHANGE***			
18	<u>DG Nameplate Rating kW Allowance (No Charge)</u>			
19	Mean Annual Consumption	10,185	kWh per year	
20	1st Standard Deviation	4,555	kWh per year	
21	DG Capacity Factor	15%	Per NREL PVWatts	
22	Annual Hours	8,760	per year	
23	DG kW Allowance	3.47	L24 ÷ L25 ÷ L26	
	<b>DG kW Allowance - Rounded</b>	<b>3.50</b>	<b>kW per DG consumer</b>	

**FINANCIAL AND STATISTICAL REPORT**

**Pre-Audit/Post Closing**

MN 004  
 Cooperative Light & Power Association of Lake County  
 P.O. Box 69  
 Two Harbors, MN 55616

Period Ended:

12/31/2016

**CERTIFICATION**

We hereby certify that the entries in this report are in accordance with the accounts and other records of the system and reflect the status of the system to the best of our knowledge and belief:

Signature of Office Manager or Accountant  
 Spring Deitersen, Office Manager

Date  
 2-20-17

Post Closing  
 Pre-Audit  
 NO CHANGES FROM  
 POST AUDIT SW

Signature of Manager  
 Steve Wathnem, General Manager

Date  
 2/16/17

**PART A. STATEMENT OF OPERATIONS**

ITEM	YEAR-TO-DATE		BUDGET	THIS MONTH
	LAST YEAR (a)	THIS YEAR (b)		
1. Operating Revenue and Patronage Capital	11,622,411	11,896,617	11,807,000	1,256,347
2. Power Production Expense				
3. Cost of Purchased Power	6,935,912	7,159,130	7,406,000	827,735
4. Transmission Expense				
5. Distribution Expense - Operation	711,400	676,682	659,800	39,454
6. Distribution Expense - Maintenance	807,731	902,636	681,500	65,743
7. Consumer Accounts Expense	252,786	253,345	248,023	51,438
8. Customer Service and Informational Expense	312,870	317,011	345,000	52,642
9. Sales Expense	14,297	8,477	20,000	442
10. Administrative and General Expense	986,483	1,096,561	1,040,000	92,286
11. Total Operation & Maintenance Expense (2 thru 10)	10,021,479	10,413,842	10,400,323	1,129,740
12. Depreciation & Amortization Expense	910,751	939,384	950,000	78,431
13. Tax Expense - Property & Gross Receipts				
14. Tax Expense - Other				
15. Interest on Long-Term Debt	426,075	344,238	346,927	30,777
16. Interest Charged to Construction (Credit)				
17. Interest Expense - Other	3,257	2,269	1,750	19
18. Other Deductions	(30,595)	(9,378)	(32,000)	0
19. Total Cost of Electric Service (11 thru 18)	11,330,967	11,690,355	11,667,000	1,238,967
20. Patronage Capital & Operating Margins (1 minus 19)	291,444	206,262	140,000	17,380
21. Non Operating Margins - Interest	96,617	107,359	88,000	7,780
22. Allowance for Funds Used During Construction				
23. Income (Loss) from Equity Investments				
24. Non Operating Margins - Other	(90,908)	(216,491)	(37,460)	(50,877)
25. Generation & Transmission Capital Credits	87,959	320,154	100,000	320,152
26. Other Capital Credits & Patronage Dividends	32,190	35,272	30,000	0
27. Extraordinary Items				
28. Patronage Capital or Margins (20 thru 27)	417,302	452,556	320,540	294,435

**PART B. DATA ON TRANSMISSION AND DISTRIBUTION PLANT**

ITEM	YEAR-TO-DATE		ITEM	YEAR-TO-DATE	
	LAST YEAR (a)	THIS YEAR (b)		LAST YEAR (a)	THIS YEAR (b)
1. New Services Connected	75	38	5. Miles Transmission Overhead	0.0	0.0
2. Services Retired	15	14	6. Miles Distribution	554.6	552.9
3. Total Services In Place	6,360	6,384	7. Miles Distribution Underground	412.0	426.3
4. Idle Services (Exclude Seasonal)	315	311	8. Total Miles Energized (5+6+7)	966.6	979.2
	0				

THE COOPERATIVE LIGHT & POWER ASSOCIATION OF LAKE COUNTY  
 YEAR TO DATE  
 CONSUMER SALES AND REVENUE DATA

AS OF DECEMBER 31, 2016

Class of Service	Year	Avg. No. Receiving Service	Avg. KWH Per Month per Consumer	Total KWH Sold	Amount	Average Consumer Cost/KWH
Residential	2016	3775	1,016	46,033,165	5,802,172	0.1260
Residential	2015	3755	1,032	46,494,009	5,713,691	0.1229
% Increase		0.53%	-1.52%	-0.99%	1.55%	2.57%
Seasonal	2016	1708	405	8,304,983	1,382,778	0.1665
Seasonal	2015	1689	398	8,073,151	1,325,904	0.1642
% Increase		1.12%	1.73%	2.87%	4.29%	1.38%
Sm. Cmmlcl	2016	554	1,624	10,796,937	1,513,456	0.1402
Sm. Cmmlcl	2015	548	1,668	10,967,656	1,488,803	0.1357
% Increase		1.09%	-2.62%	-1.56%	1.66%	3.26%
Industrial	2016	22	35,427	9,352,758	1,291,662	0.1381
Industrial	2015	21	36,543	9,208,775	1,233,104	0.1339
% Increase		4.76%	-3.05%	1.56%	4.75%	3.14%
Louisiana - Pacific	2016	1	1,905,840	22,870,082	1,727,659	0.0755
Louisiana - Pacific	2015	1	1,786,624	21,439,486	1,634,373	0.0762
% Increase		0.00%	6.67%	6.67%	5.71%	-0.90%
Total	2016	6060	1,339	97,357,925	11,717,727	0.1204
Total	2015	6014	1,333	96,183,077	11,395,875	0.1185
% Increase		0.76%	0.45%	1.22%	2.82%	1.58%