

Keeping the Lights On Maximizing PCE

Tips for Non-Regulated Utilities in Rural Alaska



POWER COST EQUALIZATION

Utility responsibilities:

- Identify customers by the correct rate class
- Read all meters, accurately, the same day each month (weather permitting)
- Bill all customers monthly (except pre-paid) and expect to collect regularly from everybody
- Document monthly: kWh Sales by Rate Class, Collections by Rate Class, Generation, Power Purchases, Station Service, Fuel Usage, and Peak Demand
- Calculate monthly: Fuel Efficiency (Generated) and Line Loss
- Document Fuel and Non-Fuel Expenses
- Complete reports to AEA and RCA - thoroughly and on time
- Set rates to cover expenses, maximize PCE for customers, and save for the future
 - Explain rates to customers at an annual meeting
- Encourage/incentivize operator(s) to be pro-active with maintenance and repairs
- Post fuel efficiency and line loss data in public locations each month

Rate Classes

Identify customers by their correct Rate Class

Rate Classes

DON'T LEAVE
MONEY ON THE
TABLE!!!

RATE CLASS	DESCRIPTION	EXAMPLES
Residential (R)	a home or apartment where people live and do not do a major business (Alaska PCE rules state that no more than 25% of a residence may be used for Commercial activities.)	
Commercial (C)	a building, or space within a building, where goods are sold or business is done	Store, church, processing plant, corporation office, community school
Community Facility (CF) <u>MAKE SURE ALL ARE APPROVED FOR PCE</u> <u>IF USAGE EXCEEDS COMMUNITY QUOTA FOR PCE, THE UTILITY DECIDES HOW MANY KWHS GO TO EACH CF CUSTOMER</u>	a building or space within a building that benefits everybody in the community	Pump house, fire hall, tribal office, city office, clinic, VPSO office, sewer system infrastructure, tank farm, community center
Federal/State (F/S)	a building or space that is paid for by either the State of Alaska or Federal Government	Automated Weather Observation Station (AWOS), Federal Aviation Administration (FAA), Department of Transportation (DOT), Post Office
Unbilled (UB)	a customer the utility chooses not to charge for power	Church, clergy's home, elders, streetlights

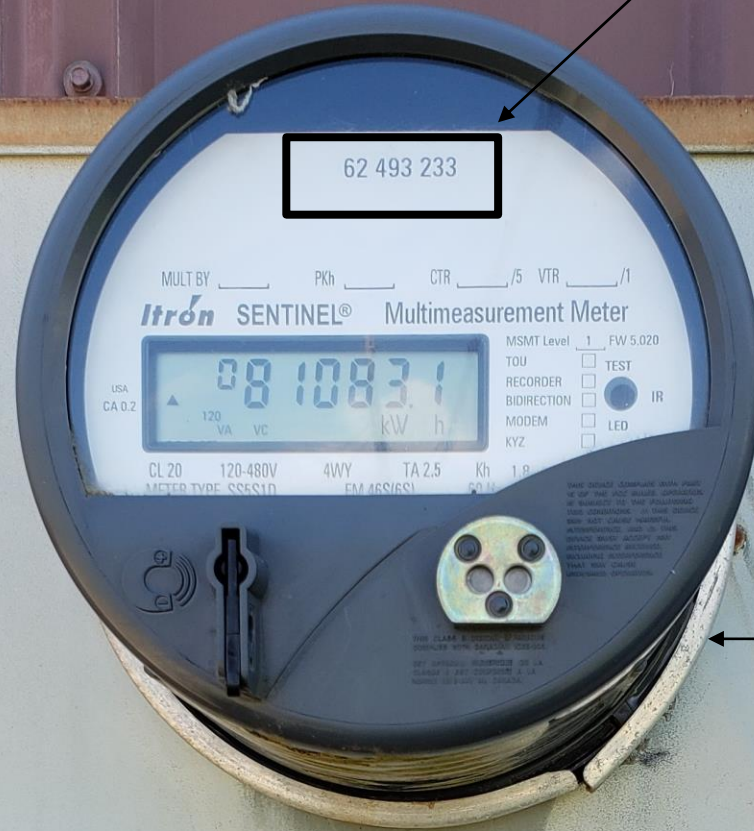
Meter Reading

Record all customer and generation plant meters the same day each month.
(ok, weather permitting...)

Put the serial number of every customer's meter on the meter reading sheet. This prevents any confusion on whether the meter was changed out if meter readings don't make sense.

Meter Serial Number

62 493 233

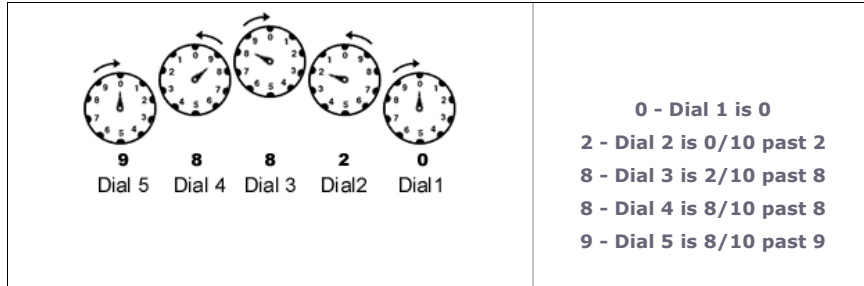


Make sure every meter has a ring around it and a meter seal. This prevents tampering with meters. (unlike this meter – it has no seal)

If your utility hasn't replaced all these old-style meters, ask meter readers to take a picture each month. It's easy to make a mistake...

HOW TO READ A DIAL METER

Read your dial meter from right to left. If a hand is between 2 numbers, use the lower number. If a hand is directly on a number, view the dial to its right. And if the hand hasn't moved past 0, write the number 1 lower than the number at which the dial's pointing.



Dial 1: The hand points at 0. Read the first number as 0.

Dial 2: The next dial must be 0/10 past a number, because the dial to its right is 0. It's hard to tell if the second dial has reached 2. Consult the last dial to decide if you should read this dial as 1 or 2. Because the last dial was 0, read this dial as 2.

Dial 3: The 3rd dial is between 8 and 9. The dial to its right is 2 so it must be 2/10 past a number. Read the third dial as 8.

Dial 4: The 4th dial is between 8 and 9, but closer to 9. The dial to its right reads 8 so this dial is 8/10 past 8.

Dial 5: The last dial appears to point at 0, but the dial to its right hasn't passed 0 so read this dial as 9.

It helps to think of a dial on this meter as a clock. When a clock reads 1:59, the hour hand appears to point at 2, but because the minute hand hasn't passed 12, we read the hour as 1:00.



Look for multipliers on meters!

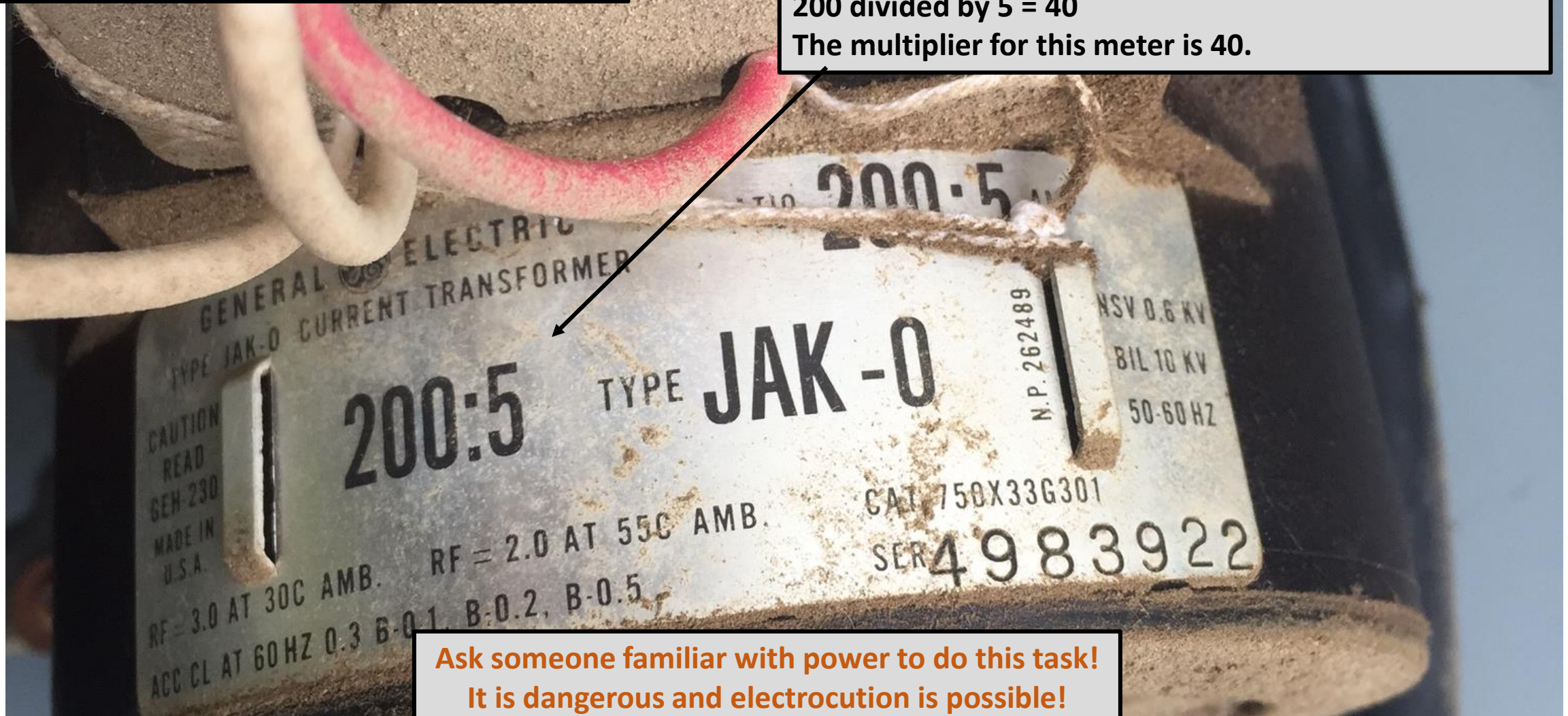
Multiply the difference between previous and current meter readings by this number when calculating the customer's usage on the customer ledger.

Missing a multiplier throws off line loss/fuel efficiency calculations wrong - and definitely reduces income.



What to do if the meter face doesn't show a multiplier... but the straight meter reading is way too low.

Open the meter base and look for Current Transformers (CTs/Donuts) around large wires coming up or down from the meter. Look for the ration. 200 divided by 5 = 40
The multiplier for this meter is 40.



Ask someone familiar with power to do this task!
It is dangerous and electrocution is possible!

POWER PLANT LOG METER READINGS – RECORD SAME DAY AS CUSTOMER METER READINGS

	Date	Generator #	Time	Inside Temp.	Outside Temp.	Exhaust Visible Y/N?	Exhaust Color**	Total Engine Hours	Coolant Temp.	Oil Pressure (PSI)	Engine Oil Level	Battery Voltage	kW Meter (Max kW)	Frequency Cycles	Voltage	Amp Line 1	Amp Line 2	Amp Line 3	Total kWh	Station Service kWh	Fuel Meter	Gallons Pumped	Operator Initials & Comments
MON	5/28/18	2	1030am	58.0	42	n	c	27272	182	55	f	25.9	33	60	##	17	27	48	2964211	143070	268224	38	cg
	5/28/18	2	907pm	58.0	40	n	c	27282	180	56	f	25.9	48	60	##	19	27	68	2964528	143101	268263	39	gk
TUE	5/29/18	2	1025am	59.0	40	n	c	27296	185	52	f	25.9	44	60	##	15	29	51	2964900	143148	268302	39	cg
	5/29/18	2	752pm	59.0	38	n	c	28305	175	55	f	25.9	40	60	##	18	28	47	2965161	143166	268302	0	gk
WED	5/30/18	2	945am	59.0	40	n	c	27319	185	54	f	25.9	42	60	##	17	27	48	2965516	143210	268340	38	cg
	5/30/18	2	805pm	58.0	40	n	c	28329	180	52	f	25.9	39	60	##	21	49	61	2965798	143244	268378	38	gk
THU	5/31/18	2	120pm	59.0	36	n	c	27347	185	55	f	25.9	42	60	##	22	28	48	2966277	143298	268416	38	cg
	5/31/18																						
FRI	6/1/18	2	0:00	57.0	40	n	c	27366	180	57	f	25.9	39	60	##	14	25	49	2966717	143350	268454	38	cg
	6/1/18	2	1005pm	58.0	38	n	c	27380	182	52	f	25.9	40	60	##	18	30	45	2967051	143386	268491	37	gk
SAT	6/2/18	2	1225pm	58.0	40	n	c	27394	182	55	f	25.9	32	60	##	18	30	50	2967412	143424	268530	39	cg
	6/2/18	2	738pm	58.0	40	n	c	28401	175	55	f	25.9	35	60	##	18	47	45	2967611	143444	268530	0	gk
SUN	6/3/18	2	0:00	59.0	40	n	c	27416	195	54	f	25.9	44	60	##	23	32	79	2968047	143497	268568	38	cg
	6/3/18	2	851pm	56.0	40	n	c	27426	175	56	f	25.9	44	60	##	17	29	49	2968293	143520	268605	37	gk
																			2964211	143070	268224		

Unless re-set monthly, use the highest number for Max kW during the month.

Use readings for these meters from the same day customer meters are read.

Meter Reading Sheet

Make in Excel and print big enough for legible hand writing.

Give your meter reader a printed sheet with customers in the order in which the meters are read.

If your community is very small, the list can just be alphabetical.

Put meter serial numbers on the sheet so there is no confusion over meter identification.

	A	B	C	D	E	F	G	H	I	J
1	NAME	SEQUENCE #	METER ID	PREV. READ	CURRENT READ	MULT.	DEMAND	CLASS		
2	UNC/14-Plex Utilities	10000	16838	96310		1		C		
3	BSSD-Trailer	10006	2112	15884		1		R		
4	BSSD-Vinks	10007	7538	9093		1		R		
5	Johnson, William	10008	8789	12280		1		R		
6	BSSD-Baseament Utilities	10009	9062	13098		1		R		
7	City of Unk/Library	10010	68 298 201	3050		1		CF		
8	BSSD-Apt/ #2B	10010	7237	3508		1		R		
9	BSSD-Apt. #3/C	10011	8951	5450		1		R		
10	BSSD-Apt. #4/D	10012	7578	9402		1		R		
11	BSSD-Apt. #5/E	10013	7487	9351		1		R		
12	BSSD-Apt. #6/F	10014	7724	8576		1		R		
13	City of Unk/Lift #4	10015	2072	21556		1		CF		
14	BSSD-FAA House	10015	39164	32910		1		R		
15	Alaska Dept. of Fish & Game	10016	2068	16955		1		R		
16	Dent of Military/Vet Affairs	10020	5828	7930		1		ES		

Type in the handwritten current meter reads in sequence order for ease of entry.

AutoSave Off Copy of October 2016 Ledger - Excel Constance Fredenberg

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Clipboard Font Alignment Number Styles Cells Editing

M7

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	NAME	SEQUENCE #	METER ID	PREVIOUS READ	CURRENT READ	MULT.	DEMAND	CLASS								
2	UNC/14-Plex Utilities	10000	16838	75580	77040	1		C								
3	BSSD-Trailer	10006	2112	7661	8244	1		R								
4	BSSD-Vinks	10007	7538	3336	4206	1		R								
5	Johnson, William	10008	8789	1950	3120	1		R								
6	BSSD-Basement Utilities	10009	9062	3513	4242	1		R								
7	BSSD-Apt/ #2B	10010	7237	995	1221	1		R								
8	City of Unk/Library	10010	68 298 201	1666	1770	1		CF								
9	BSSD-Apt. #3/C	10011	8951	8670	9170	1		R								
10	BSSD-Apt. #4/D	10012	7578	6506	6704	1		R								
11	BSSD-Apt. #5/E	10013	7487	7141	7224	1		R								
12	BSSD-Apt. #6/F	10014	7724	3253	3632	1		R								
13	BSSD-FAA House	10015	39164	23870	24340	1		R								
14	City of Unk/Lift #4	10015	2072	7707	8742	1		CF								
15	Alaska Dept. of Fish & Game	10016	2068	7724	9917	1		R								
16	Dept. of Military/Vet Affairs	10020	5828	7953	8244	1		ES								

October Ledger 2016 PCE 15th production January 2015 reads Loc. January 2015 reads Alpha January Ledger 2 ...

Ready 10:36 AM 12/12/2018

Now sort the spreadsheet on two levels – Alphabetically by Customer Name and by Class. This makes for easy copy/pasting of Current Readings onto the customer ledger.

The screenshot shows an Excel spreadsheet titled "Copy of December 2016 Ledger - Excel". The spreadsheet contains a table with the following data:

1	NAME	SEQUENCE #	METER ID	PREV. READ	CURRENT READ	MULT.	DEMAND	CLASS
2	Alaska Commercial Co./Store	11300	3Y178	6833	6967	120	0.39	C
3	AT&T Alascom	10170	71 918 296	2033	2306	60	0.515	C
4	BSSD/Administration Building	12205	3Y531	37955	38040	120	0.3	C
5	BSSD/Unalakleet Schools	12210	68 035 029	11555	11964	80	1.31	C
6	BSSD-Airport Hangar	10068	3Y469	56995	57297	18	1	C
7	BSSD-New shop	12300	18400	76810	77410	1		C
8	BSSD-Tank Farm	12356	18457	5690	5940	1		C
9	East Wind Cuts	11850	2074	33047	35473	1		C
10	GCI-New Connection	10162	E16-0122	46079	47937	1	4.85	C
11	Hageland Aviation Services	10048	70 746 235	7740	9233	1		C
12	Harry's Auto	12080J	35944	28020	28040	1		C
13	Haugen, Norman/garage	12203	6076	10361	10545	1		C

The spreadsheet interface includes the ribbon (File, Home, Insert, Page Layout, Formulas, Data, Review, View, Help), the formula bar (G328), and the taskbar at the bottom showing the Windows taskbar with various application icons and the system clock (9:47 AM, 9/10/2018).

Monthly Customer Ledger

The Excel ledger is the heart of the utility's business. Meter readings, usage, rates, PCE credit, payment information, and billing totals are all tracked here.

Adding power generation statistics at the bottom of the ledger, that page kept only for the utility's internal information, helps keep staff aware of potential problems with collections or maintenance.

WHAT TO DO WHEN A CUSTOMER'S METER ROLLS OVER

The current meter reading was 1735. What the hey?! Just add 10 before the 1735 to get the proper usage. Next month, drop the 10 for the previous reading. Readings will now track.

TOTAL: Residential														
Meter Readings														
Customer Name	Meter Number	Customer Class	Current	Previous	Total Kwh Used	Rate Per KWH	Gross Amount Due	Eligible KWH	Rate Per KWH	Total Credit	Current Month	Previous Balance	Payment Received	Total
	3050	CF	4043	3946	97	0.4456	\$43.23	0	0.1160	\$0.00	\$43.23	\$159.98		\$203.21
	3000	CF	9748	9710	8	0.4456	\$3.57	0	0.1160	\$0.00	\$3.57	\$2.67		\$6.24
	3005	CF	101735	99158	2577	0.4456	\$1,148.38	2046	0.1160	\$237.34	\$911.04	\$2,333.51		\$3,244.55
	3010	CF	10307	10294	13	0.4456	\$5.79	13	0.1160	\$1.51	\$4.29	\$5.93		\$10.22
	3015	CF	57091	56401	690	0.4456	\$307.48	690	0.1160	\$80.04	\$227.44	\$777.92		\$1,005.36
	3045	CF	470	470	0	0.4456	\$0.00	0	0.1160	\$0.00	\$0.00	\$0.00		\$0.00
		CF	28638	28435	203	0.4456	\$90.46	203	0.1160	\$23.55	\$66.91	\$379.73		\$446.64
	3035	CF	62403	62010	393	0.4456	\$175.13	393	0.1160	\$45.59	\$129.54	\$699.79		\$829.34
	3020	CF	83819	83235	584	0.4456	\$260.25	584	0.1160	\$67.74	\$192.50	\$513.89		\$706.39
	3025	CF	92845	92415	215	0.4456	\$95.81	215	0.1160	\$24.94	\$70.87	\$180.36		\$251.23
	3030	CF	47668	46917	751	0.4456	\$334.66	751	0.1160	\$87.12	\$247.55	\$786.49		\$1,034.03
	3040	CF	66255	66040	215	0.4456	\$95.81	215	0.1160	\$24.94	\$70.87	\$245.90		\$316.77
TOTAL:					5746		\$2,560.56	5110		\$592.76	\$1,967.80	\$6,086.17	\$0.00	\$8,053.97
										\$1,366.25				
Meter Readings														
Customer Name	Meter Number	Customer Class	Current	Previous	Total Kwh Used	Rate Per KWH	Gross Amount Due	Eligible KWH	Rate Per KWH	Total Credit	Current Month	Previous Balance	Payment Received	Total
					0		\$0.00	0		\$0.00	\$0.00	\$0.00		\$0.00

Average: \$671.16 Count: 12 Sum: \$8,053.97

**MID-MONTH METER CHANGES REQUIRE TWO LINES FOR JUST THAT MONTH
BE SURE METER READER DOCUMENTS:**

- ENDING READING FOR REMOVED METER
- START READING FOR NEW METER INSTALLED.

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
14	1120	R	36028	35701	327	0.4456	\$145.72	327	0.1160	\$37.93	\$107.79		\$150.00		
15	1125	R	76803	76557	246	0.4456	\$109.62	0	0.1160	\$0.00	\$109.62				
16		R	30204	29137	1067	0.4456	\$475.49	0	0.1160	\$0.00	\$475.49	\$838.68		\$1,314.16	
17		R	64703	62578	2125	0.4456	\$946.96	0	0.1160	\$0.00	\$946.96	\$1,855.60		\$2,802.57	
18		R	4140	4140	0	0.4456	\$0.00	0	0.1160	\$0.00	\$0.00				
19	1005	R	10824	10824	0	0.4456	\$0.00	0	0.1160	\$0.00	\$0.00				
20	1115	R	65986	65629	357	0.4456	\$159.09	357	0.1160	\$41.41	\$117.68		\$277.05		
21	1070B	R	81258	81200	58	0.4456	\$25.85	58	0.1160	\$6.73	\$19.12	\$0.00		\$19.12	
22	1070B	R	31365	31051	314	0.4456	\$139.93	314	0.1160	\$36.42	\$103.50				
23		R	7556	7496	60	0.4456	\$26.74	60	0.1160	\$6.96	\$19.78				
24	1025	R	50696	50601	95	0.4456	\$42.33	95	0.1160	\$11.02	\$31.31				
25	1030	R	23960	23345	615	0.4456	\$274.06	500	0.1160	\$58.00	\$216.06		\$326.88		
26	1035	R	56544	56159	385	0.4456	\$171.57	385	0.1160	\$44.66	\$126.91		\$300.00		
27	1040	R	62830	62347	483	0.4456	\$215.24	483	0.1160	\$56.03	\$159.21		\$300.00		
28											\$140.42				
29											\$285.20		\$400.00		
30											\$148.39				
31	1065	R	301	301	0	0.4456	\$0.00	0	0.1160	\$0.00	\$0.00				
32	1095	R	1068	1068	0	0.4456	\$0.00	0	0.1160	\$0.00	\$0.00				
33	Larsen, Lolly	R	6604	6380	224	0.4456	\$99.82	224	0.1160	\$25.98	\$73.84				

Note that pre-pay metered customers have no previous nor total balance due. Tracking payments is still advised.

Data summary table Year-To-Date Spreadsheets

WHY?

**Add a Summary Table to the bottom of the Monthly Ledger
Makes for easy transfer to the Utility Monthly Report for AEA and to a YTD Spreadsheet**

	A	B	C	D	E	F	G	H	I	J	K	L	M
100			Current	Previous									
101			Read	Read									
102	Total kWh's Generated		4194643	4161939	32,704	No. of Customers				Fuel Efficiency	11.62	← kWh/gallon	=32,704/2,814
103	Station Service		315427	310049	5,378	Residential		35		Line Loss	11.59%		
104	Peak Demand		77	74		Commercial		15					
105	Fuel Use Record		356257	353443	2,814	Com Fac		8		RCA Standards	10.5 kWh/Gallon		
106						Federal/State		9		Line Loss	12%		
107						Unbilled		6					
108						Total		73					
109		kWh Gen	SS	Fuel Used	Peak								
110		32,704	5,378	2,814	77								=((32,704-5,378)-23,537)/32,704
111		Res	Comm	CF	F/S	School	Unbilled	Totals					
112	Total kWh Sold:	7,755	9,595	4,622	427	-	1,138	23,537					
113	Gross Billed Rev:	6,610.05	10,554.50	4,622.00	469.70	0.00	0.00	22,256.25					
114	Payments:	0.00	0.00	0.00	0.00	0.00	0	0.00					
115	PCE kWh:	7,425		4,437			0	0					
116	PCE Rate:	0.3817		0.3817									
117	PCE Dollars:	2,834.12		1,693.60									
118	PCE Rec'd:												
119													
120													

The RCA has set standards for both fuel efficiency and line loss. Operating outside the standards indicates a problem.

Track Fuel Efficiency and Line Loss throughout the year on a YTD Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K
3											
4		POWER PLANT				EFFICIENCY					
5		KWh	Station	Fuel	Peak						
6	Month	Generated	Service	Used	Demand	Gener	Sold	L Loss			
7	January	42,474	1,741	3,443		12.3	11.6	17.5%			
8	February	37,845	1,741	2,197		17.2	18.0	11.8%			
9	March	40,775	3,274	4,446	100	9.2	9.6	13.4%			
10	April	41,338	2,686	3,559	77	11.6	7.9	20.7%			
11	May	31,954	3,426	2,801	77	11.4	11.6	6.1%			
12	June	25,799	2,988	2,195	74	11.8	10.4	9.3%			
13	July	32,704	5,378	2,814	77	11.6	9.4	11.6%			
14	August					#DIV/0!	#DIV/0!	#DIV/0!			
15	September					#DIV/0!	#DIV/0!	#DIV/0!			
16	October					#DIV/0!	#DIV/0!	#DIV/0!			
17	November					#DIV/0!	#DIV/0!	#DIV/0!			
18	December					#DIV/0!	#DIV/0!	#DIV/0!			
19	Total	252,889	21,234	21,455		12.4	11.7	13.9%			
20											
21											

Monthly efficiencies may vary due to the timing of meter readings. It is the annual average that the RCA uses when calculating your utility's PCE rate.

Track kWh Sold,
Billed, and
Income
Collected by rate
class throughout
the year on your
YTD Spreadsheet

Info used on pages 4 and 5 of the
Annual Report to the RCA and
when doing a rate analysis.

#REF!
#REF!

Month	KWH SOLD						PCE ELIGIBLE KWH			
	Residential	Commercial	Community Facilities	Fed/State	School	Unbilled	Total	Residential	Facilities	Total
January	12,521	9,380	4,008	1,079	5,173	1,138	33,299	10,359	3,857	14,216
February	10,787	10,795	3,375	1,028	4,520	1,138	31,841	9,078	3,256	12,334
March	10,863	10,551	3,532	1,136	4,813	1,138	32,033	9,910	3,414	12,724
April	10,020	9,537	3,210	870	5,307	1,138	30,082	9,053	3,004	12,057
May	9,873	9,571	3,837	655	1,717	1,138	26,591	8,837	3,592	12,429
June	7,295	8,165	3,135	510	177	1,138	20,420	6,939	2,926	9,865
July	7,755	9,595	4,622	427	0	1,138	23,537	7,425	4,437	11,862
August							-			-
September							-			-
October							-			-
November							-			-
December							-			-
Total	69,114	67,594	25,519	5,703	21,706	7,966	197,602	61,001	24,486	85,487

Month	GROSS CHARGES					CUSTOMER PAYMENTS					Total Charges	Total Payments
	Residential	Commercial	Community Facilities	Fed/State	School	Residential	Commercial	Community Facilities	Fed/State	School		
January	10,642.85	10,318.00	4,008.00	1,188.90	5,690.08	0.00	77.00	0.00	0.00	0.00	31,845.83	77.00
February	9,103.50	11,874.50	3,375.00	1,128.60	4,972.22	0.00	0.00	0.00	0.00	0.00	30,453.82	0.00
March	9,236.55	11,806.10	3,532.00	1,249.60	5,293.88	0.00	0.00	0.00	0.00	0.00	30,918.11	0.00
April	8,530.20	10,490.70	3,210.00	957.00	5,837.70	31,634.50	73,519.00	0.00	0.00	22,928.34	29,025.60	128,081.84
May	8,404.40	10,528.10	3,637.00	720.50	1,888.70	0.00	3,284.10	0.00	0.00	0.00	25,178.70	3,264.10
June	6,216.50	8,981.50	3,135.00	561.00	194.48	0.00	1,332.20	0.00	385.00	0.00	19,088.48	1,717.20
July	6,610.05	10,554.50	4,622.00	469.70	0.00	0.00	0.00	0.00	0.00	0.00	22,256.25	0.00
August											0.00	0.00
September											0.00	0.00
October											0.00	0.00
November											0.00	0.00
December											0.00	0.00
Total	58,744.05	74,353.40	25,519.00	6,273.30	23,877.04	31,634.50	78,192.30	0.00	385.00	22,928.34	188,766.79	133,140.14

Month	STATE PCE SUBSIDY	
	Billed	Paid
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Total	0.00	0.00

Month	Non-Fuel Expenses
	Amount
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	
Total	0.00

20XX BILLINGS VS PAYMENTS		
Utility Name	Billed	Payments
	188,766.79	133,140.14
PCE PAYMENTS		0.00
Unpaid Bills		55,626.65
ACCOUNTS RECEIVABLE		
	CUSTOMER A/R	55,626.65

CUSTOMER BILLING

(except for pre-paid metering customers
– no billing required - hallelujah!)

An Excel spreadsheet set up like the customer ledger is a simple method for making bills.

COUNCIL

P. O. BOX 110
 KOKHANOK, ALASKA 99606
 Phone: (907) 282-2342 Fax: (907) 282-2259

#####

2016

01/09/17

Date	Current Meter Reading	Previous Meter Reading	Total KWh Used	Rate	Charges		PCE Credit	Current Month	Previous Balance	Payments Received	Amount Due
					Energy	Credit from June					
Jan	32854	32418	436	436	392.40		163.72	228.68	-600.00	1,000.00	-1,371.32
Feb	33233	32854	379	379	341.10		222.40	118.70	-1,371.32	1,000.00	-2,252.62
Mar	33625	33233	392	392	352.80		230.03	122.77	-2,252.62	\$ (1,667.85)	-461.99
Apr	34026	33625	401	401	360.90		235.31	125.59	-461.99	0.00	-336.40
May	34416	34026	390	390	351.00		228.85	122.15	-336.40	0.00	-214.25
June	34774	34416	358	358	322.20		210.07	112.13	-214.25	0.00	-102.12
July	35110	34774	336	336	302.40		194.44	107.96	-102.12	1,000.00	-994.17
Aug	35445	35110	335	335	301.50		193.86	107.64	-994.17	0.00	-886.53
Sept	35775	35445	330	330	297.00		190.97	106.03	-886.53	0.00	-780.50
Oct	36180	35775	405	405	364.50		234.37	130.13	-780.50	0.00	-650.38
Nov	36620	36180	440	440	396.00		254.63	141.37	-650.38	0.00	-509.00
Dec	37000	36620	380	380	342.00		224.73	117.27	-509.00	0.00	-391.74
										Amount Due	\$ (391.74)

CE TO CUSTC Please see Peducia for explanation of double entered payment.

*For the most recent monthly reporting period under the State of Alaska's Power Cost Equalization program, this utility's actual fuel efficiency for your community was 11.98 kilowatt-hours a gallon. The applicable fuel efficiency standard set out in regulations for the power cost equalization program is 10.5 kilowatt-hours a gallon. For the current billing period, the utility will be paid under the State of Alaska's power cost equalization program (AS 42.45.100) to assist the utility and its customers in reducing the high cost of generation of electric energy.
 Your total electrical service cost \$ 342
 Less state equalization \$ 224.73
 Your charge \$ 117.27*



A customer's line in the ledger can be copied each month and added to a spreadsheet creating a year's record of usage, charges, and payments. Many customers have commented they appreciate seeing this information each month and especially at the end of the year.

This section on PCE is to appear on every Residential and Community Facility's bill – no matter what billing format is used.

A template can be made in Word and connected to the Excel ledger through Mail Merge.

While complicated to set up, this billing system is easy to maintain.



Unalakleet Valley Electric Co-op

P.O Box 186
186 Main Street
Unalakleet, AK 99684-0186
Phone (907) 624-3474

INVOICE

Invoice Date
11/30/16

BILL TO:
«NAME»
«Address»
«city»

Invoice #	Previous Balance	Payments	Current Activity	Total Amount Due	Due Date
«location»112016	«old_balance»	«payment»	«current_activity_»	«Balance_Due_»	30 DAYS



Cut above and return with payment



Monthly Activity



CURRENT READ	PREVIOUS READ	CONSUMPTION	LOCATION	Customer #	Meter #
«curr_»	«prev_»	«kWh_consum_»	«location_»	«Customer_»	«Meter_»

DESCRIPTION:	Rate	Consumption	Amount
Electric Use Charge	«Rate_»	«kWh_Consum_»	«kWh_Charge_»
Fuel Surcharge	\$0.1558	«kWh_consum_»	«surcharge_»
Demand Charge	\$8.01	«Demand_»	«Charge_»
Administrative Fee			«Admin_»
City Sales Tax	5%		«city_tax_»
PCE Credit	\$0.1729	«PCE_kWh_»	\$(«PCE_Amount_»)
Adjustment			«Adjust_»
Meter Read: 10/15/2016 – 11/15/2016			
TOTAL			«CURRENT_ACTIVITY_»

For the current billing period, the utility will be paid under the State of Alaska's PCE Program (AS 42.45.100) to assist the utility and its customers in reducing the high cost of generation of electric energy. The credit for this payment is shown above, if your account is eligible for PCE. The amount credited per kilowatt usage varies as directed by the State of Alaska Energy Authority (AEA). PCE credit is given to qualifying residential accounts for up to 500 kWh/month.

FUEL EFFICIENCY NOTICE TO CUSTOMER:
For the current billing period, under the State of Alaska's Power Cost Equalization Program, this utility's actual fuel efficiency for Unalakleet was 15.54 kilowatt-hours per gallon. The acceptable fuel efficiency standard set out in regulations for the PCE program is 11.00 kilowatt-hours per gallon.

Billing can be done in QuickBooks. If you do all your other bookkeeping in QB, it will make your life easier if you learn to do your billing correctly in QB.

Invoice

Date	Invoice #
7/23/2018	9531

Bill To
[Redacted]

Terms	Project
Net 60	Electricity

Item	Description	Qty	Rate	Amount
Electric Base Com...	July 1 Reading 57091-57697 (Clinic)	606	0.36	218.16
Fuel Surcharge	Fuel Surcharge	606	0.01327	8.04
R&R Surcharge	R&R Surcharge	606	0.01236	7.49
Electric Base Com...	July 1 Reading 28638-28890 (Apartment)	252	0.36	90.72
Fuel Surcharge	Fuel Surcharge	252	0.01327	3.34
R&R Surcharge	R&R Surcharge	252	0.01236	3.11
	Subtotal			330.86
<p>NOTICE TO CUSTOMER for the most recent monthly reporting period under the State of Alaska power cost equalization program, this utility's actual fuel efficiency for your community was 11.75 kilowatt-hours a gallon. The applicable fuel efficiency standard set out in regulations for the power cost equalization program is 12.87 kilowatt-hours a gallon.</p> <p>For the current billing period, the utility will be paid under the State of Alaska power cost equalization program (AS 42.45.100) to assist the utility and its customers in reducing the high cost of generation of electric energy.</p>				
Total				\$330.86
Payments/Credits				\$0.00
Balance Due				\$330.86

Phone #	Fax #	E-mail
(907) [Redacted]	[Redacted] 14	[Redacted]

Utility Monthly Report

A.K.A. the UMR.

Due by the 10th of each month to AEA.



813 West Northern Lights Blvd.
Anchorage, AK 99503
Phone: (907) 771-3000
Fax: (907) 771-3044
1-800-300-8534 (toll free in Alaska)

FY2019 UTILITY MONTHLY REPORT - PLEASE COMPLETE ALL SECTIONS Page 1 of 2

Billing Period	7 / 1 / 18 to 8 / 1 / 18	No. of Days	31
Meters Read	8 / 1 / 18	Bills Mailed	8 / 1 / 18
Utility Name	LEVELOCK ELECTRICAL COOP.	Regulated:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
St. Address	P.O. Box 50	Phone No.	907-287-3068
City, State	Levelock, AK	Fax No.	907-268-3016
Contact Name	Raymond Apokedak	Email:	levelockelectrical@gmail.com

Section A

1. DCEED Certified Community Population	88
2. No. of Customers:	
Residential	35
Commercial	16
Community Facilities	8
Federal/State Facilities	9
Unbilled Customers	8
Total	73

Section B (2)

1. kWh Generated and Purchased:				
Diesel:	32,704	Hydro:		Wind:
Natural Gas:				
Total kWh Purchased:		Purchased From / Vendor:		
Other:		Total kWh Available For Sale =	32,704	
2. Price of fuel used by RCA to determine PCE rate: \$/gal.	\$ 2.7943	Date Aprv.	1 / 18 / 2018	

3. Fuel Used (Gallons) (2)	2,814	Total Fuel Cost	\$ 7,883.18
4. Total Non-Fuel Exp:	\$		

Section C

1. Station Service (Powerhouse Consumption): (kWh)(2)	5,378
2. Peak Demand from Power Plant Log: (2)	77
3. Total kWh Sold To:	
Residential	7,756
Commercial	10,185
Community Facilities	4,127
Federal/State	427
Unbilled	1,188
Total Sold	23,842

4. "Total kWh Available for Sale" minus "Total kWh Sold" minus "Station Service"	3,884	LINE LOSS	11.28%
----------------------------------------------------------------------------------	-------	-----------	--------

(NOTE: This Number Should Be Greater Than Zero) (Line Loss should be < or = 12%)

Section D

1. Current Residential price per kWh prior to PCE Credit (i.e., 4823 per kWh)	0.8600
2. PCE Eligible kWh:	
Residential kWh: (3,4)	7,426
Comm. Facility Max kWh = 8,230	
Community Facilities kWh (5,8)	3,842
Total Eligible kWh:	11,387
Present PCE Rate: (\$ per kWh)	0.3880
3. Total PCE credit (\$)	\$ 4,183.08

** This amount should reconcile to the amount the utility expects to be reimbursed, as shown on your back up documents. (Total eligible kWh x present PCE rate (\$/kWh) = PCE credit)

Section E: Certification

I hereby certify that the information submitted to the Alaska Energy Authority in support of (name of utility)

LEVELOCK ELECTRICAL COOP.

In participation with the Power Cost Equalization Program I is true and correct to the best of my knowledge.

Vendor No:	LEVEEC	Community Code:	332180
Payment Method (Circle One):	CHECK	ACH	
Accounting:			
Approval for Payment:			
Calculated Payment:			
Adjustment:			
Disbursed Amount:			

STAGE CODE _____ BATCH NO. _____

Complete the UMR with information from the Summary Table at the bottom of your ledger.

Get Non-fuel expenses from your QB or your bookkeeper.

Mail a copy of your ledger, a signed and dated copy of this completed UMR, a copy of one Residential and one Community Facility Customer bill to AEA at the address on this form.

Be sure to start using the new Fiscal Year form (sent by e-mail to every utility in June by AEA) for use with your July ledger each year.

Fuel Report to the RCA

If you are in doubt, check with the RCA for your reporting dates. Call 263-2131.

Non-Regulated PCE Fuel and Purchased Power Cost Report Form

Utility Name: KOKHANOK VILLAGE COUNCIL / KOKHANOK ELECTRIC

Reporting Period beginning 10/1/2016 through 3/31/2017

Enter Fuel Storage Capacity in Gallons here ----> 105,000

	Invoice Number	Delivery Date	Gallons	Cost per Gallon	Delivery/Mark-Up per Gallon	Total Cost
Beginning Fuel Inventory			58,168			
Last Approved Fuel Cost/Gal.				\$ 4.1759		
Beginning Fuel Inventory in Gallons X Last Approved Fuel Cost/Gal. = Beginning Fuel Inventory Cost ---->						\$ 242,904
Reporting Period Purchases						
	1101	10/04/16	3,200	3.6219	0.9723	14,701
	1105	10/04/16	3,200	3.6419	0.9723	14,765
	1107	10/05/16	3,200	3.6419	0.9723	14,765
	1109	10/05/16	3,200	3.6419	0.9723	14,765
	1111	10/05/16	3,200	3.6419	0.9723	14,765
	1113	10/05/16	3,200	3.6419	0.9723	14,765
	1115	10/05/16	3,200	3.6419	0.9723	14,765
	1117	10/05/16	3,200	3.6419	0.9723	14,765
	72766	03/21/17	2,000	3.3815	0.9723	8,708
	72757	03/17/17	2,000	3.3815	0.9723	8,708
						-
						-
						-
						-
Totals for Reporting Period Purchases on this sheet:			29,600			135,475
Totals from Continuation Sheet			-			-
Grand Totals (beginning inventory plus purchases) A			87,768			B \$ 378,378

Grand Total Cost (B) divided by Grand Total Gallons (A) = 4.3111 Weighted Avg. Cost per gallon

Did the utility purchase any power during this period? YES NO

Total kWh purchased: _____ Total cost of purchased power: \$ _____

Have Customer Rates Changed? YES NO

(If yes, attach a copy or summary of the effective rate schedule for each customer class)

Date: 4/5/2017 Signed: _____

Telephone: 907-282-2342 Print Name: Connie Fredenberg

Title: Consultant

Important:

1. All requested information, including beginning fuel inventory, must be provided.
2. Copies of invoices for fuel purchases showing the delivery price, before local markup to the utility, must be attached.
3. If a delivery and/or markup is included, attach invoice and/or calculations.
4. Copies of invoices for any power purchases during this reporting period must be attached.
5. You may fax the report and invoice(s) to: (907) 276-0160, Attn: Finance Section.

Please call the RCA Finance Section at (907) 276-6222 or (800) 390-2782 if you have any questions.

**Motor Fuel Tax
Fuel for Stationary
Generators Is NOT Subject
to this Tax.**

Alaska Air Fuel, Inc.

P.O. Box 360
Palmer, AK 99645

Email: alaskaairfuel@hotmail.com
Phone: 907-317-5368

Invoice

Date	Invoice #
4/13/2017	1300

Bill To Kokhanok Electric Peducia Andrew P.O. Box 1007 Kokhanok, AK 99606

Ship To Kokhanock, AK

Rep	Date Sold	Time	Terms	Trip #	Destination	Aircraft #
NS	4/13/2017		Net 15	77	PFKK	N96358

Quantity	Description	Rate	Amount
3,200	HS DF #1 SE	3.897	12,470.40
3,200	AK State Motor Fuel Tax	0.08	256.00
3,200	AK Motor Fuel Tax - Surcharge	0.0095	30.40
3,200	US Federal LUST Fee	0.001	3.20
3,200	AK Kenai City Sales Tax	0.00938	30.00
Total			\$12,790.00

Payment Received
 Date: _____ Amount: _____ Initials: _____

All taxes get added into the Rate on the Fuel Report Form except for the \$0.08/gallon motor fuel tax. This fuel is \$3.9169/gallon (round off to 4 decimal points).

**Alaska Motor Fuel Tax
Waiver Form**
Must be completed and
submitted to every fuel
vendor used the first of
every year.

Reset

Print

Department of Revenue
Tax Division
PO Box 110420
Juneau, AK 99811-0420

**Alaska Motor Fuel Tax
Certificate of Use**

Note to the Seller:
This certificate must be completed at the time of the first sale in each calendar year and covers all sales in the same category for the remainder of the year, except for fuel exported.

Purchaser Name	EIN	Telephone Number
Mailing Address	City, State Zip Code	

Purpose of form: The certificate of use declares that the buyer or transferee has obtained or will obtain fuel that will be used by the buyer in a manner that qualifies for exemption. The certificate of use form is given to the seller.

When is a certificate of use required? A certificate of use is required for fuel that qualifies for the following exemptions:

Exemption Category (Check One)

- official use by federal, state or local government agencies¹
- jet propulsion air craft operating exclusively in flights to and from foreign countries²
- residual fuel oil (bunker fuel) (#6 diesel)
- commercial stationary power plant of 100 kilowatts or less
- charitable institution
- to heat facilities of a mining or construction business
(complete the information on back of form)
- nonprofit power associations for generating electrical energy for resale
- fuel exported to other states or foreign countries
(complete the following information for each export)

Fuel Type:

- 65 Gasoline
- 124 Gasohol
- 125 Aviation Gas
- 130 Jet Fuel
- 160 Diesel

¹The certificate of use does not apply to fuel purchased by a local government agency for sale to residents. See Form 04-539, Election to Defer Tax.

²This certificate of use does not apply to purchases by an air carrier for use in both domestic and foreign flights. See Form 04-539, Election to Defer Tax.

Expected date of export	Destination
Owner of fuel when exported	Carrier

- In addition, a fuel supplier may require a Certificate of Use for the following:**
- fuel used to heat private or commercial buildings or facilities, except that a certificate of use is required when fuel is used to heat facilities of a mining or construction business.
 - fuel used in stationary power plants operating as public utility plants and generating electrical energy for sale to the general public.
 - fuel used in a generator for a domestic purpose in single or multiple unit private dwellings, including mobile homes, but not including watercraft.

Retention period. Each certificate of use must be retained for three years after the end of the year for which this certificate of use is in effect.

Purchaser's sworn statement: The undersigned understands that the fraudulent use of this certificate will subject all guilty parties, upon conviction, to a fine not to exceed \$25,000 or imprisonment for not more than three years, or both, under AS 43.05.290. The undersigned shall, upon request, supply satisfactory evidence establishing the purpose for which the fuel was or will be used.

I declare under penalty of unsworn falsification that I have examined this certificate and to the best of my knowledge and belief it is a true, correct and complete statement and that this fuel will not be delivered to a common storage tank servicing both taxable and non-taxable uses. I understand that if I subsequently use the fuel for a taxable purpose, I am liable for the applicable motor fuel tax.

Purchaser Signature	Date
---------------------	------

**Do not send this certificate of use to the Department of Revenue unless you are a reseller claiming a refund.
Keep on file for three years.**

Alaska Motor Fuel Tax Refund Form

Use this form to get a refund if a fuel vendor charged your utility the Motor Fuel Tax

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Alaska Department of Revenue															
2	Claim for Refund															
3	Motor Fuel Tax															
4	Department of Revenue															
5	Tax Division															
6	PO Box 110420															
7	Juneau, AK 99811-0420															
8	Send Refund to: (Name and Address)						EIN or SSN			DEPARTMENT USE ONLY						
9	Attention: Peducia Andrew						92-0071118			FSN:						
10	Kokhanok Electric						Business Type/Occupation			Range of Dates for Fuel Purchased						
11	P.O. Box 1007						Electric Utility			FROM: 4/1/2017						
12	Kokhanok, AK 99606									TO: 9/30/2017						
13	Telephone Number				Fax Number		E-mail address									
14	907-282-2342				907-282-2264		kokhanokelectric@hotmail.com									
15	<i>Report all gallons in whole numbers</i>															
16	4 Requires that a schedule be attached (see instructions).															
17																
18																
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36																
37																

	Aviation		Gasoline		Diesel		Gasohol		I Refund Total
	A Gasoline (Gallons)	B Jet Fuel (Gallons)	C Highway (Gallons)	D Marine (Gallons)	E Highway (Gallons)	F Marine (Gallons)	G 8 Cents (Gallons)	H 2 Cents (Gallons)	
1. Exported	4								
2. U.S. Government									
3. State & Local Government									
4. Charitable institutions									
5. Heating									
6. Public utilities									
7. Stationary power plants					9,600				
8. Foreign flights	4								
9. Other (attach explanation)									
10. Total gallons (lines 1 - 9)	0	0	0	0	9,600	0	0	0	
Rate	0.047	0.032	0.080	0.050	0.080	0.050	0.080	0.020	
11. Refund (line 10 X rate)	\$ -	\$ -	\$ -	\$ -	\$ 768.00	\$ -	\$ -	\$ -	\$ 768.00
12. Total exempt fuel refund (add line 11, columns A through H)									\$ 768.00

Fuel Conversions (to a lower tax rate only)									
13. Highway to marine		+	-	+	-				
14. Other (specify)		+	-	+	-				

544 Claim for Refund	544.1 Schedule of Invoices	544.2 Equipment List	544.3 Foreign Flights
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Ready

COST DETAILS FOR FUEL MARK-UP Fuel Deliveries and Labor

Fuel Purchases 2017						
Date	Gasoline	Price/Gallon	Diesel #1	Price/Gallon		
					\$24,940.00	
					\$ 2,803.26	
					\$27,743.26	All Operators
3/17/2017			2000	\$ 3.3815		
3/21/2017			2000	\$ 3.8150		
4/13/2017			3200	\$ 3.9074	\$28,900.00	
4/13/2017			3200	\$ 3.9074	\$ 2,572.00	
5/1/2017			3200	\$ 3.9000	\$31,472.00	
5/26/2017			3200	\$ 3.8465	\$15,736.00	50%
6/16/2017	3400	\$ 4.2799				
6/22/2017			3200	\$ 3.6769	\$19,970.00	
7/15/2017			3200	\$ 3.7501	\$ 1,777.00	
7/15/2017			3200	\$ 3.7501	\$21,747.00	
8/8/2017			3200	\$ 3.8369	\$10,873.50	50%
8/8/2017			3200	\$ 3.8369		
9/28/2017			3200	\$ 4.0500	\$54,352.76	Employee Labor
10/4/2017			3200	\$ 4.0700		
10/4/2017			3200	\$ 4.0700		
10/4/2017			3200	\$ 4.0700		
10/9/2017			3200	\$ 4.0700		
10/20/2017			3200	\$ 4.0700		
11/7/2017	3401.7	\$ 4.4550				
12/28/2017	3400	\$ 4.3100				
	10201.7	\$ 4.3675	52000	\$ 3.9208		

COST DETAILS FOR FUEL MARK-UP Other Direct and Related Expenses

Kokhanok										
Fuel Cost - Delivered to Tank Farm										
4/1/2018										
Fuel	Annual Volume	Price per Gallon (inc taxes)	Transportation Cost	Base Price per Gallon	Total Variable Cost	Price/Gal with Other Direct Costs	Price/Gal (incl other and related expense)	Current Pricing	Difference	
Unleaded Gasoline	10,202	\$ 4.3675		\$ 4.3675	\$ 44,555.41	\$ 5.2762	\$ 5.3700	\$ 6.02	(0.65)	
Diesel Fuel #2				\$ -	\$ -					
Diesel Fuel #1	52,000	\$ 3.9208		\$ 3.9208	\$ 203,882.15	\$ 4.8296	\$ 4.9233	\$ 5.60	(0.68)	
Total Cost	62,202				\$ 248,437.57					
Other Direct Costs:	2017 Costs	Cost per Gallon								
Insurance	\$ -									
Electricity	\$ -									
Supplies	\$ 1,056									
Outside Labor	\$ -									
Employee Labor	\$ 54,353									
Interest Expense	\$ 1,118									
Total Direct Expenses	56,526	\$ 0.9088								
					\$ 278.49					
					\$ 239.10					
					\$ 199.58					
Other Related Expense:					\$ 159.93					
R & R Reserve					\$ 120					
Training & Conferences					\$ 80.23					
Miscellaneous					\$ 40.18					
Depreciation					\$ -					
Operations Reserves					\$ -					
Management (RAFS)	5,833				\$ -					
Total Related Expenses	\$ 5,833	\$ 0.0938			\$ -					
					\$ -					
					\$ -					
Total Cost of Fuel Operations	\$ 310,797	\$ 1.0025			\$ -					
					\$ 1,117.66					

Interest from DCCED Fuel Loan

Mark-up

\$ 1.0025

Fuel Department must invoice Electric Utility to prove the mark-up to the RCA. Electric Utility must pay Fuel Department charges. Yes, fuel is more expensive this way – but the electric utility is helping to support the fuel utility and PCE will cover the cost to electric customers.

Mar-18					
Fuel Hauling from Airport to Community Fuel Tanks					
Date		Gallons		Cost/Gallon	Total Cost
10/4/2017		9,600		\$ 1.0025	\$ 9,624.00
10/19/2017		3,200		\$ 1.0025	\$ 3,208.00
10/20/2017		3,200		\$ 1.0025	\$ 3,208.00
1/31/2018		3,200		\$ 1.0025	<u>\$ 3,208.00</u>
					\$ 19,248.00

Annual Report to the RCA

The Non-Fuel costs included in this report are considered along with fuel costs, line loss, fuel efficiency, and customer rates when determining your utility's PCE rate.

UTILITY EXPENSES – PROPER CODING MAKES END OF YEAR REPORTING EASIER

- **Personnel**
 - Wages/Stipends
 - Employer Taxes
 - Workman's Compensation Insurance
- **Electric Operating Expenses**
 - Purchased power
 - Generator Oil (*Delo 400/Lube Oil*)
 - Generator Filters (*oil, fuel, air*)
 - Generator Repairs/Maintenance (*parts and the freight for those parts*)
 - Tools (*shovels, wrenches, kits*)
 - Equipment Rental (*even if rented from local City, Tribe, or Corporation*)
 - Other (*ex: brush cutting, fire extinguishers, coolant, motor gas, utility vehicles or heavy equipment*)
- **Electric General/Admin Expenses**
 - Outside Professional Services (*lawyers, accountants, bookkeepers, engineers*)
 - Insurance (*property, workman's comp can be included here or in personnel*)
 - Office Supplies
 - *paper/pens/printer ink/staplers/staples/file folders, etc.*
 - *printers/copiers/computers (equipment over \$500 must be depreciated)*
 - Postage (*stamps, any dealing with post office*)
 - Office Rent
 - Travel (*must be related to business or training – include per diem, car rental*)
 - Training (*Rural Energy Conference, AVTEC, AMPY, PCE, Utility Board, etc.*)
 - Bad Debt Expense (*bounced checks, unpaid electric bills to be written off*)
 - RCA Fees (*for \$471 Annual Report and \$39 Fuel Report Reviews*)
 - Other
 - *Phone/Fax/Internet*
 - *Utilities for Office*
- **Other Expenses**
 - Interest (*Fuel Loan, Power Project Loan*)
 - Depreciation
 - *Costs for or a new or improved building, a piece of equipment, or major repairs to generation or transmission – something that should last many years - must be divided up by however many years the item is expected to remain useful. This fraction of the cost is how much can be counted as an expense in any one year. RCA list of common items and expected lifespan is included with this lesson.*
 - *Amortized items are also included in this category – say you purchase a large quantity of supplies that get used up (such as lube oil or filters), but this quantity will last for more than one year. You must estimate how many years the quantity will last and divide the cost up by that number of years.*

Description of various utility expenses eligible for consideration when calculating a PCE rate.

Data from the YTD can be copied and pasted directly onto Page 5 of the Annual Report Form.

UTILITY NAME: _____
 ELECTRIC UTILITY PCE DATA FORM
 TEST PERIOD: January 2016 through December 2016

MONTH	KWH GENERATED			KWH SOLD	GALLONS CONSUMED	STATION SERVICE
	DIESEL	HYDRO/WIND	TOTAL			
January 2016	46,000		46,000	43,183	3,412	2342
February 2016	35,000		35,000	29,927	3,191	2500
March 2016	39,100		39,100	33,131	3,144	2623
April 2016	35,200		35,200	30,057	3,181	2246
May 2016	32,100		32,100	27,079	2,814	2339
June 2016	25,200		25,200	21,385	2,242	1804
July 2016	24,600		24,600	21,234	2,171	2112
August 2016	31,100		31,100	27,680	2,707	2590
September 2016	33,300		33,300	27,600	2,813	2115
October 2016	37,000		37,000	30,973	3,093	2613
November 2016	42,100		42,100	35,673	3,620	2239
December 2016	48,200		48,200	38,884	4,025	2,776
TOTAL	428,900		428,900	366,646	36,413	28,299

Did the utility purchase power during this test period? Yes No

Total kWh purchased: _____
 Total cost of purchased power: _____

2016 Generation and Sales Data

Month	POWER PLANT			
	KWh Generated	Station Service	Fuel Used	Peak Demand
January	46,000	2,342	3,412	64
February	35,000	2,500	3,191	63
March	39,100	2,623	3,144	75
April	35,200	2,246	3,181	66
May	32,100	2,339	2,814	65
June	25,200	1,804	2,242	49
July	24,600	2,112	2,171	48
August	31,100	2,590	2,707	59
September	33,300	2,115	2,813	62
October	37,000	2,613	3,093	69
November	42,100	2,239	3,620	79
December	48,200	2,776	4,025	82
Total	428,900	28,299	36,413	

Month	KWH SOLD							PCE ELIGIBLE KWH		
	Residential	Commercial	Community Facilities	Fed/State	School	Unbilled	Total	Residential	Community Facilities	Total
Jan	15,843	2,887	16,312	655	7,334	132	43,183	15,388	11,690	27,078
Feb	12,818	4,334	4,808	580	7,387	-	29,927	12,773	4,808	17,581
Mar	14,034	4,775	5,082	648	8,123	491	33,131	13,858	5,082	18,920
Apr	12,370	4,654	5,194	435	7,404	-	30,057	12,293	5,194	17,487
May	11,549	4,752	4,422	277	6,079	-	27,079	11,547	4,422	15,969
Jun	10,418	4,592	4,097	320	1,958	-	21,385	10,418	4,097	14,515
July	11,035	5,218	3,431	255	1,296	-	21,234	11,035	3,431	14,466
Aug	12,490	5,181	4,690	252	4,947	-	27,680	12,490	4,690	17,180
Sep	12,296	5,055	3,136	452	6,682	-	27,600	12,280	3,136	15,416
Oct	14,914	5,368	3,180	756	6,775	-	30,973	14,240	3,180	17,400
Nov	16,215	2,358	8,964	518	7,818	-	35,673	15,370	8,964	24,334
Dec	16,205	5,949	9,571	650	6,489	-	38,884	15,328	9,571	24,897
Total	160,186	55,123	72,847	5,796	72,071	623	366,646	157,018	68,225	225,243

RCA "Expected Lives" DEPRECIATION RATES

Generators	14	7%
Transformers	20 - 25	4% - 5%
Poles, Towers	25	4%
Overhead Lines	25	4%
Underground Conduit	25	4%
Meters	20 - 25	4% - 5%
Services	25	4%
Buildings	30	3.33%
Office Equipment	10	10%
Vehicles	4 - 6	16% - 25%
Fuel Tanks	15	6.66%
Computers	6	16.67%
Street Lights	20	5%
Power Stat Meters/Displays	10	10%
Small Engines	5	20%
Amortization: (Suggested)		
Top End Generator Overhaul	3	33.3%
Full Generator Overhaul	5	20%
Training	3 - 5	20% - 33.3%
Oil Spill Clean up	3 - 5	20% - 33.3%

4

5

How to Calculate % of Diesel Generation, Fuel Efficiency, and Line Loss

And what the RCA thinks about it.

(teach middle and high school students to make these calculations and let them post each month's utility generation performance on flyers around town)

RCA FUEL EFFICIENCY STANDARDS

For a utility that uses diesel fuel to generate more than 80% of its total kWhs generated:

Annual Diesel Generation	Efficiency Standard
< 100,000 kWhs	9.5 kWhs/gallon of diesel fuel consumed
100,000 – 499,999 kWhs	10.5 kWhs/gallon of diesel fuel consumed
500,000 – 999,999 kWhs	11.5 kWhs/gallon of diesel fuel consumed
1,000,000 – 9,999,999 kWhs	12.5 kWhs/gallon of diesel fuel consumed
10,000,000 + kWhs	13.5 kWhs/gallon of diesel fuel consumed

For a utility that uses diesel fuel to generate less than 80% of its total kWhs generated:

Annual Diesel Generation	Efficiency Standard
< 100,000 kWhs	8.5 kWhs/gallon of diesel fuel consumed
100,000 – 499,999 kWhs	10.0 kWhs/gallon of diesel fuel consumed
500,000 – 999,999 kWhs	11.0 kWhs/gallon of diesel fuel consumed
1,000,000 – 9,999,999 kWhs	12.0 kWhs/gallon of diesel fuel consumed
10,000,000 + kWhs	13.0 kWhs/gallon of diesel fuel consumed

HOW TO CALCULATE % OF DIESEL GENERATION AND FUEL EFFICIENCY

Diesel % of Generation = Total Diesel kWhs divided by Total kWhs Generated

(total generated includes hydro/wind/solar kWhs)

$$\begin{aligned}\text{Diesel \% of Generation} &= 50,590 \text{ kWhs Diesel Generated} / 50,590 \text{ kWhs Generated} \\ &= 1 \\ &= 1 \times 100\% = 100\%\end{aligned}$$

What if only 24,590 of those kWhs was generated by diesel and 26,000 by wind power?

$$\begin{aligned}\text{Diesel \% of Generation} &= 24,590 / 50,590 \\ &= .486 \\ &= .486 \times 100\% = 49\%\end{aligned}$$

Fuel Efficiency = Total kWhs Generated divided by Gallons of Diesel Consumed

$$\begin{aligned}\text{Fuel Efficiency} &= 50,590 \text{ kWhs} / 4,540 \text{ Gallons Used} \\ &= 11.14 \text{ kWhs/gallon}\end{aligned}$$

HOW TO CALCULATE LINE LOSS

Line Loss = ((Total kWh Generated – Station Service) - Total kWh Sold)/Total kWh Generated

All utilities experience line loss. There are always losses through heat when power travels along electric wires. Transformers use power, too.

The RCA established 12% as the upper limit for acceptable line loss.

Example: In May, a utility had the following statistics. What was their line loss?

Generated	46,610 kWhs of electricity
Station Service	4,654 kWhs
kWhs Sold	39,170 kWhs

$$\begin{aligned}\text{Line Loss} &= ((46,610 \text{ kWhs} - 4,654 \text{ kWhs}) - 39,170 \text{ kWhs}) / 46,610 \text{ kWhs} \\ &= (41,956 \text{ kWhs} - 39,170 \text{ kWhs}) / 46,610 \text{ kWhs} \\ &= 2,786 / 46,610 \\ &= .059 \times 100\% \\ &= \mathbf{5.9\%}\end{aligned}$$

Setting Customer Rates

Add up all your costs (fuel and non-fuel).

Add up how many kWhs you sold.

Divide costs by kWhs sold.

UTILITY NAME
2017

DATE: _____

DO THIS PAGE FIRST!

SUBMITTED 2017 ELECTRIC EXPENSES

DO NOT OVERWRITE
Formulas in Shaded Cells

NON-FUEL COSTS #VALUE!

Personnel Gross		
Gross Wages	A	\$ - (includes stipends)
Taxes	B	
Workers Comp	C	
Outside Professional Services	D	
Insurance	E	
Office Supplies	F	
Postage	G	
Office Rent	H	
Travel	J	
Training	J	
Bad Debt Expense	K	
RCA Fees	L	
Other	M	

(A - S) Enter numbers from utility's Profit and Loss
(T) Depreciation & Amortization is the total for the year's Depreciation as reported on page 6 of the Annual Report.
(U) Fuel Loan (DCRA), Power Project Loan Fund (AEA), etc.
(W) Total gallons used from page 5 of the Annual Report (same # as a year's monthly fuel use as reported to AEA)
(X) is the latest weighted average fuel price used by the RCA to calculate your PCE rate (see latest fuel report review)
(Y) is the last price per gallon paid to your fuel vendor

General & Administrative \$ - Operating Expenses \$ -

(Z) is cost of purchased power

Depreciation & Amortization (Repl Reserve) T
Interest Expense U **Disallowed Expenses** V

(V) Disallowed Expenses Should be in rates, but won't count for PCE calculation (loan payments, food, door prizes, donations, lobbying)

FUEL COSTS
2017 Gallons Used W Latest Weighted Ave. Cost/Gallon X #VALUE!

Last fuel price = Y	Purchased Power Z
TOTAL EXPENSES #VALUE!	

(1-7) Come from Y-T-D
(8-14) = current customer rates
Enter "Suggested Rates" at will to see how rates affect Revenue

ESTIMATED 12-MONTH REVENUE PCE as of 0/0/00 \$0.0000

SUGGESTED RATES CAN BE CHANGED TO NOTE EFFECT ON CUSTOMERS & REVENUE

	2017 kWh	Suggested Rates	Estimated Revenue	Customer Pays
Residential < 501	1	\$ -	\$ -	\$ -
Residential 501 +	2	\$ -	\$ -	\$ -
Commercial	3	\$ -	\$ -	\$ -
Community Facilities	4	\$ -	\$ -	\$ -
Federal/State - Other	5	\$ -	\$ -	\$ -
Federal/State - School	6	\$ -	\$ -	\$ -
Unbilled	7			
Total KWh Used	28	Customer Income	\$ -	

REVENUE IF RATES DON'T CHANGE

	2017 kWh	Current Rate	Estimated Revenue
1	1	\$ 8	8
2	2	\$ 9	18
3	3	\$ 10	30
4	4	\$ 11	44
5	5	\$ 12	60
6	6	\$ 13	78
7	7	\$ 14	98
Total	28		238

EST REVENUE DIFFERENCE #REF!

REVENUE DIFFERENCE #REF!

Sample Res Bill 578 kWhs \$ -

Sample Res Bill 578 kWhs #REF!

Use figures from the Income Statement and data from the YTD to complete a Rate Analysis after each Annual Report to the RCA.

Don't type over shaded cells as they contain formulas to do calculations for you.

UTILITY NAME
2017

DATE: _____

SUBMITTED 2017 ELECTRIC EXPENSES

DO NOT OVERWRITE
Formulas in Shaded Cells

NON-FUEL COSTS 359,220

Personnel Gross	Gross Wages	\$ 100,156.00	\$ 119,126.00	(includes stipends)
	Taxes	\$ 11,777.00		
	Workers Comp	\$ 7,193.00		

(A - S) Enter numbers from utility's Profit and Loss

(T) Depreciation & A mortization is the total for the year's Depreciation as reported on page 6 of the Annual Report

(U) Fuel Loan (DCRA), Power Project Loan Fund (AEA), etc.

(W) Total gallons used from page 5 of the Annual Report (same # as a year's monthly fuel use as reported to AEA)

(X) is the latest weighted average fuel price used by the RCA to calculate your PCE rate (see latest fuel report review)

(Y) is the last price per gallon paid to your fuel vendor

(Z) is cost of purchased power

(V) Disallowed Expenses
Should be in rates, but won't count for PCE calculation (loan payments, food, door prizes, donations, lobbying)

Outside Professional Services	\$ 29,894.00	Generator Oil	\$ 5,837.00
Insurance	\$ 22,043.00	Generator Filters	\$ 2,680.00
Office Supplies	\$ 2,413.00	Generator Repairs/Maint (+ Frt)	\$ 20,569.00
Postage	\$ 3,668.00	Tools	\$ 655.00
Office Rent	\$ 4,752.00	Equipment Rental	\$ 650.00
Travel	\$ 21,315.00	Other (wire, coolant, cleaning supplies, etc.)	\$ 11,837.00
Training	\$ 6,810.00		
Bad Debt Expense	\$ 10,441.00		
RCA Fees	\$ 510.00		
Other	\$ 13,958.00		
General & Administrative	\$ 115,804.00	Operating Expenses	\$ 42,228.00
Depreciation & Amortization (Repl Reserve)	\$ 67,272.00		
Interest Expense	\$ 14,790.00	Disallowed Expenses	\$ 25.00

FUEL COSTS	Latest Weighted Ave. Cost/Gallon	
2017 Gallons Used	80,585	\$ 2,9007
		\$ 233,752.91

Last fuel price =	\$ 2,6404	Purchased Power	\$ 28,456
		TOTAL EXPENSES	\$ 592,988

(1-7) Come from Y-T-D

(8-14) = current customer rates
Enter "Suggested Rates" at will to see how rates affect Revenue

ESTIMATED 12-MONTH REVENUE

Current or Predicted PCE	\$0.3528
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SUGGESTED RATES CAN BE CHANGED TO NOTE EFFECT ON CUSTOMERS & REVENUE

	2017 kWh	Suggested Rates	Estimated Revenue	Customer Pays
Residential < 501	562310	\$ 0.6000	\$ 337,386	\$ 0.2472
Residential 501 +	0	\$ 0.6000	\$ -	\$ 0.6000
Commercial	519269	\$ 0.6000	\$ 311,561	
Community Facilities	66279	\$ 0.6000	\$ 39,767	\$ 0.2472
Federal/State - Other	7313	\$ 0.6000	\$ 4,388	
Federal/State - School	0	\$ 0.6000	\$ -	
Unbilled	25671			
Total kWh Used	1,180,842		Customer Income \$ 693,103	
EST REVENUE DIFFERENCE			\$ 100,105	

Sample Res Bill	578 kWhs	\$ 170.40
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Current or Predicted PCE	\$0.3528
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REVENUE IF RATES DON'T CHANGE

	2017 kWh	Current Rates	Estimated Revenue
Residential < 501	562310	\$ 0.6700	\$ 376,748
Residential 501 +	0	\$ 0.6700	\$ 0
Commercial	519269	\$ 0.6700	\$ 347,910
Community Facilities	66279	\$ 0.6700	\$ 44,407
Federal/State - Other	7313	\$ 0.6700	\$ 4,900
Federal/State - School	0	\$ 0.6700	\$ 0
Unbilled	25671		\$ 0
Total kWh Used	1,180,842		\$ 773,965
REVENUE DIFFERENCE			180,967

Sample Res Bill	578 kWhs	\$ 210.86
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You can play around with suggested rates to see how changes will affect your expected revenue.

Your estimated revenue should be enough so you can save for future repairs or equipment replacement.

Next, I'll show you how to guess your new PCE rate...

Your PCE Rate

Depends on Line Loss, Fuel Efficiency,
Non-fuel and Fuel Expenses, and
Customer Rates

The RCA may increase your kWhs sold if line loss is higher than 12%. This will decrease your PCE rate.

UTILITY NAME
POWER COST EQUALIZATION CALCULATION
BASED ON TEST YEAR ENDING 12/31/17

		Submitted	
		2017	
A.	Total kWh Generated	1,322,404	
B.	Total kWh Sold	1,180,842	
C.	Total Non-Fuel Costs	\$ 156,942	
D.	Total Non-Fuel Costs/kWh (C / B)	\$ 0.1329	
E.	Total Fuel Costs	\$ 203,360	48,419 Gal
F.	Fuel Costs/kWh (E / B)	\$ 0.1722	4.2000 \$ per gal
G.	Eligible Cost/kWh	\$ 0.3051	203,360 Total Cost
H.	Eligible Cost/kWh (G) less base rate in effect (\$.1758)	\$ 0.1293	- Purchased Power
I.	Lesser of (H) or \$.8570 / kWh	\$ 0.1293	
J.	Average Class Rates (less \$.1758)		
	Residential	\$ 0.1742	\$ 0.3500
	Community Facility	\$ 0.1142	\$ 0.2900
	Lesser of: (I) x 95% or (J)		
K.	Residential	\$ 0.1229	
	Community Facility	\$ 0.1142	
	Funding Level in Effect	100%	Customer Pays
L.	PCE Subsidy Rate		
	Residential	\$ 0.1229	0.2271
	Community Facility	\$ 0.1142	0.1758

Get these numbers from page 5 of Annual Report

Get from page 4 of Annual Report Outside Income will be subtracted from Non-Fuel Exp.

Get from page 5 of Annual Report Gallons of fuel used will be reduced if fuel efficiency is too low

If you buy power put the cost here

This number changes every July 1st per RCA

Enter current or proposed rates

Eligible Costs on line G (.3051) is the breaking point. Charging anything lower than line G will reduce the PCE Subsidy Rate