

# HOW AND WHY TO TRACK UTILITY USAGE

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# Outline

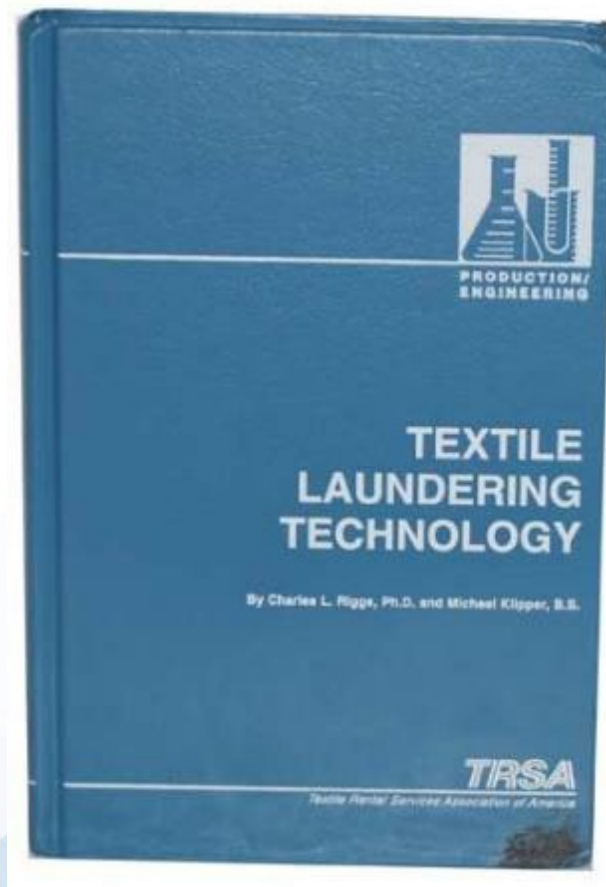
- Industry References
- Discussing Utility Usage
- Addressing Lack of Awareness
- Beginning Your Utility Tracking
- Utility Usage Report Example
- Utility Trend from Benchmarking Data
- Where do we go Next?

# WHAT THE INDUSTRY REFERENCES SAYING ABOUT UTILITIES



**“Reduction of energy utilization costs generally show good ROI’s, good cash flows, have an immediate positive effect on the net profit; and do not rely on other managerial issues, such as employees showing up, labor negotiations, holidays, etc.”**

**- Textile Laundering Technology**

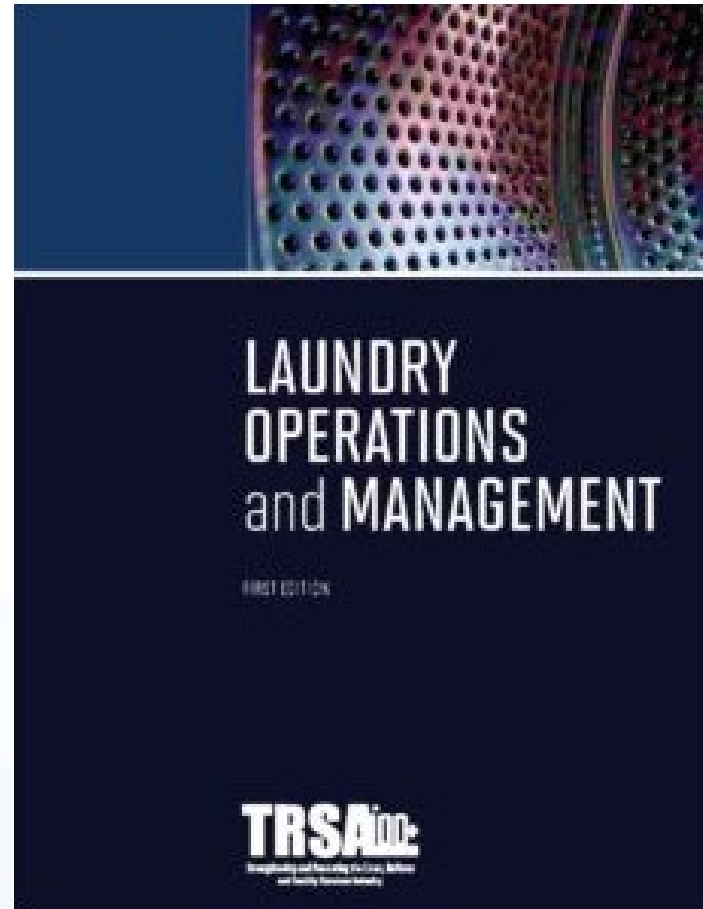


# What does TLT focus

- Boiler efficiency
- Total system efficiency
- Boiler performance
- Water quality – Blowdown
- Wastewater heat recovery
- Boiler stack economizer
- Flash steam loss

**“Since the Engineering Department must ensure that equipment runs, by default Engineering must ensure the efficiency and economy of energy utilization to run that equipment within the plant.”**

**- Laundry Operations and Management**



# What items does LOaM focus on?

- General calculations
  - Pounds of water removed/minute
  - BTU/pound of water removed
  - Percentage retained moisture
  - Sparge steam calculation
- Energy and water systems (boilers and process water systems)
- Equipment management



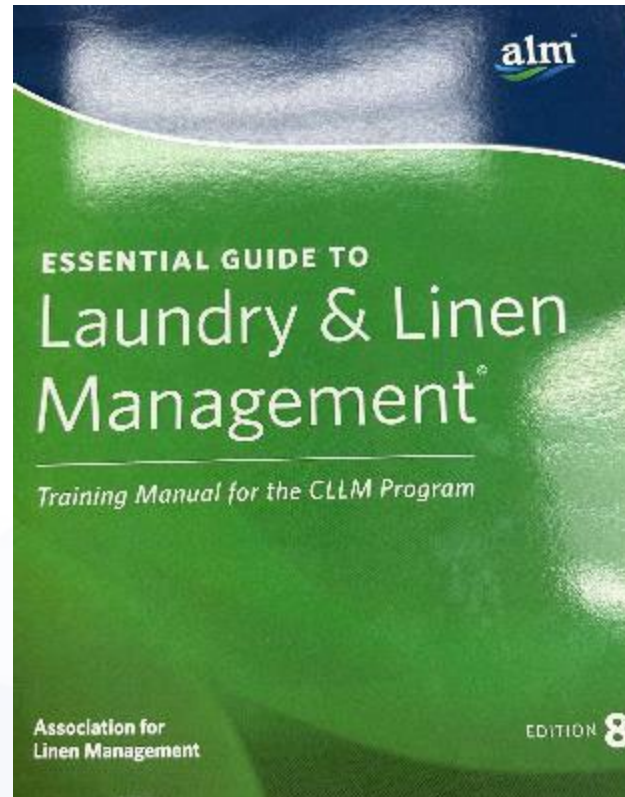
# LOaM provides a few key points

- Equipment and energy management are closely related
- Evaluate energy utilization metrics to identify the need for maintenance
- Looking at just the utility bill does not identify the source of the issue



**“As good stewards of the environment, it is very important that utilization of energy sources be carefully managed to minimize energy consumption where feasible”**

**- Laundry & Linen Management**



# What does L&L Management focus on?

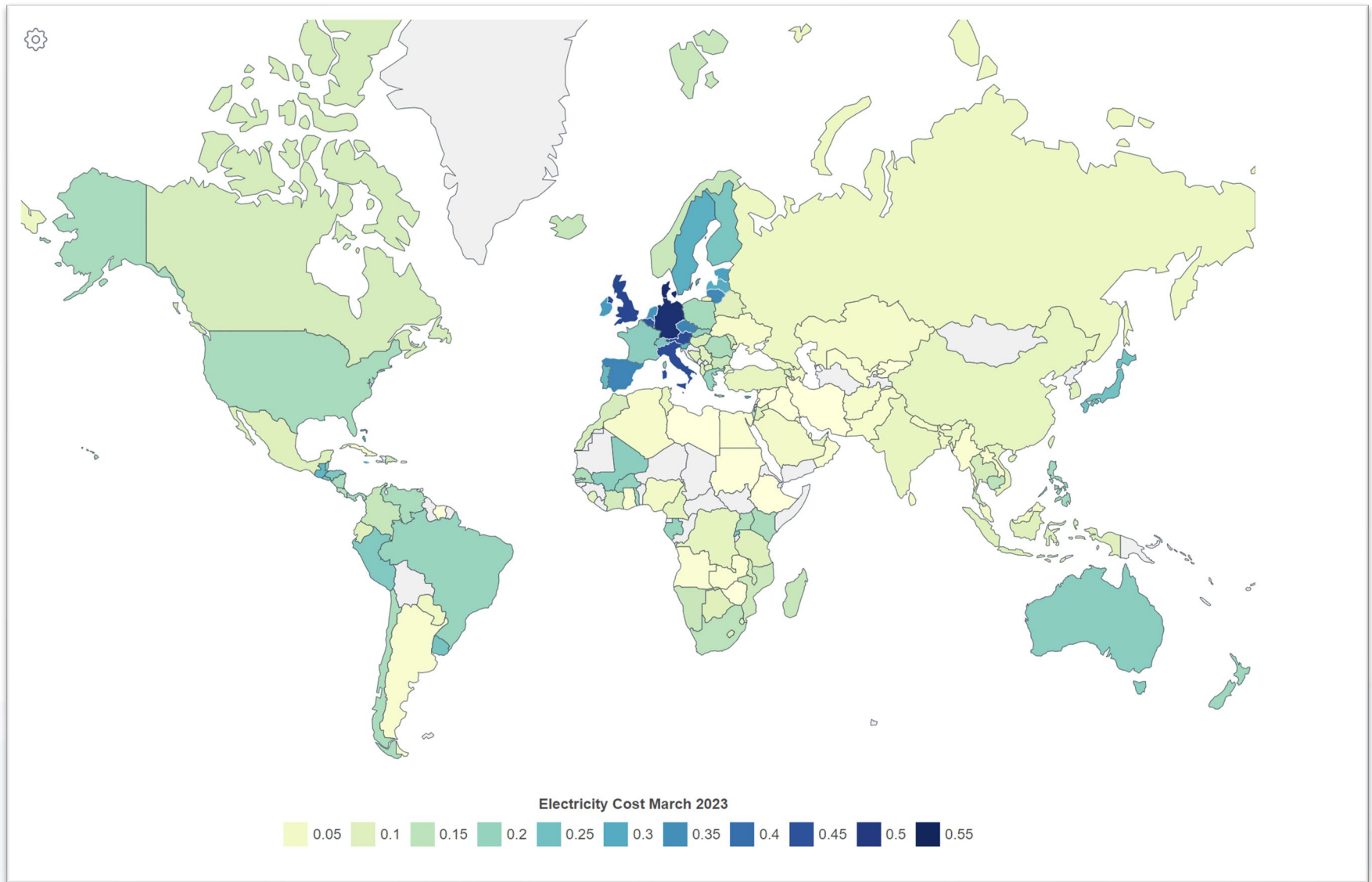
- Cause and effect
- Don't try to recover heat from the dryer exhaust
- Only two paragraphs

# What is this telling our industry?

- Boilers are the only thing you need to worry about because they use so much gas
- Utility management is engineering's responsibility
- Don't try to recover dryer heat

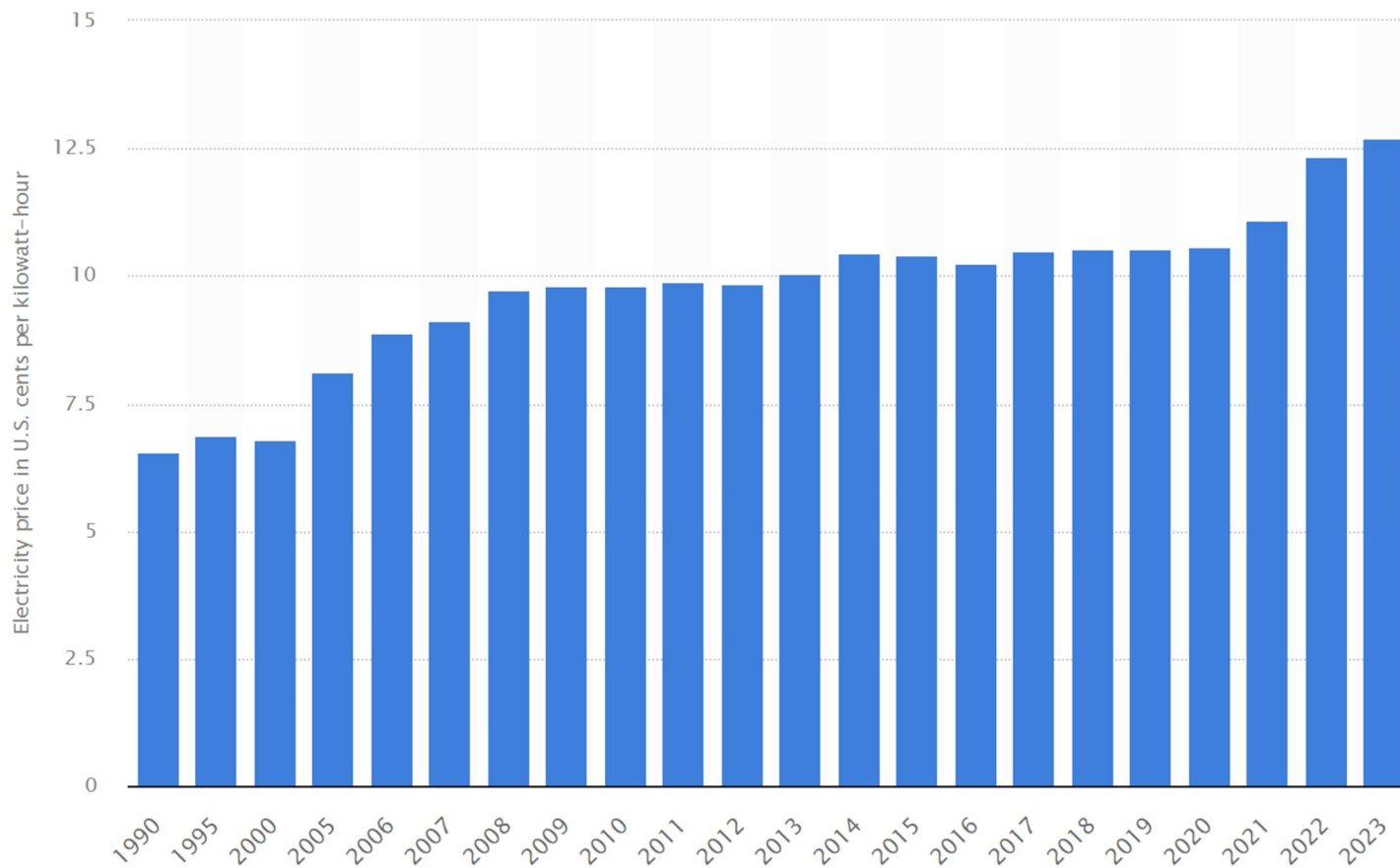


**Why aren't  
we talking  
more about  
utilities?**



<https://worldpopulationreview.com/country-rankings/cost-of-electricity-by-country>





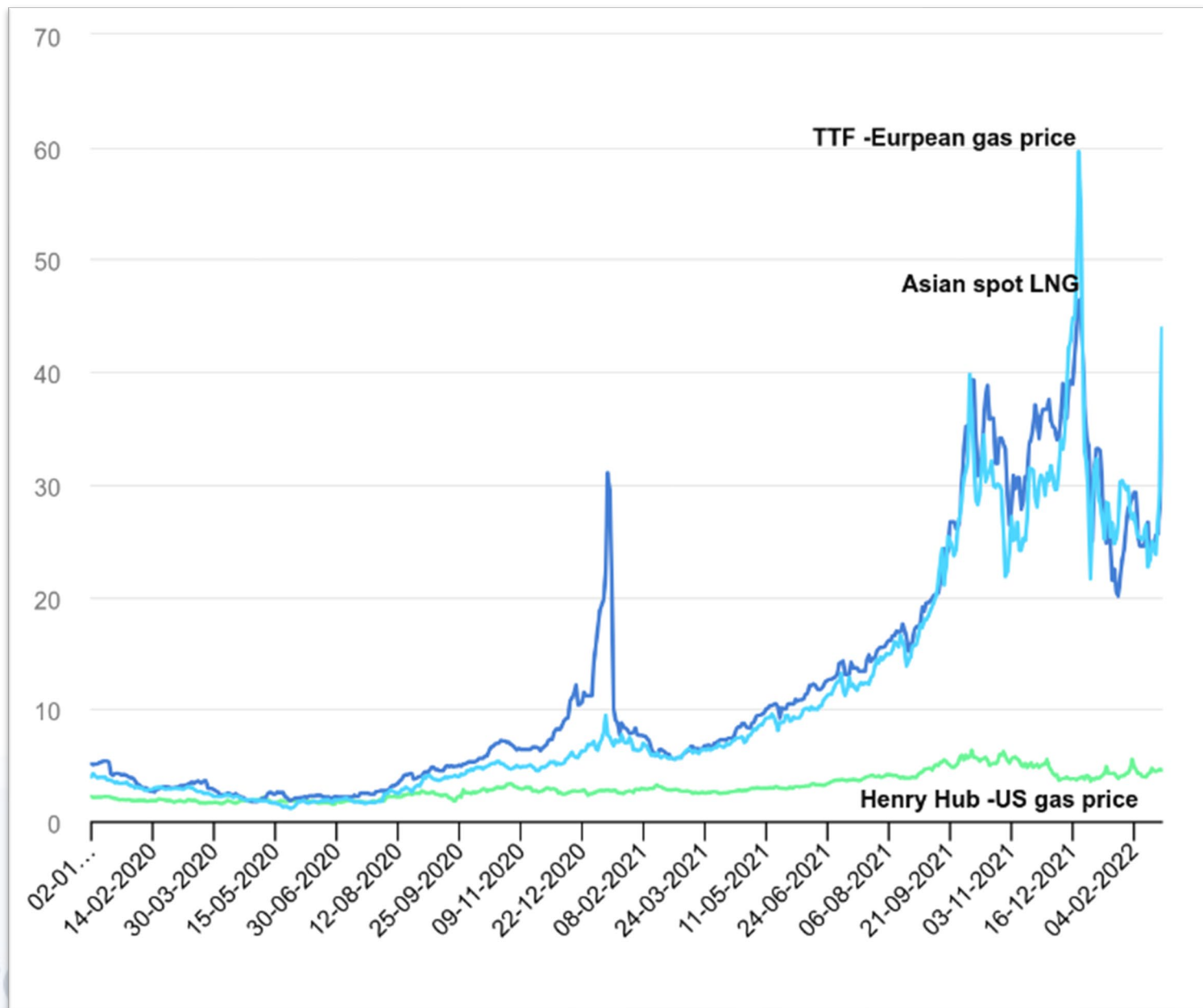
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<https://www.statista.com/statistics/183700/us-average-retail-electricity-price-since-1990/>





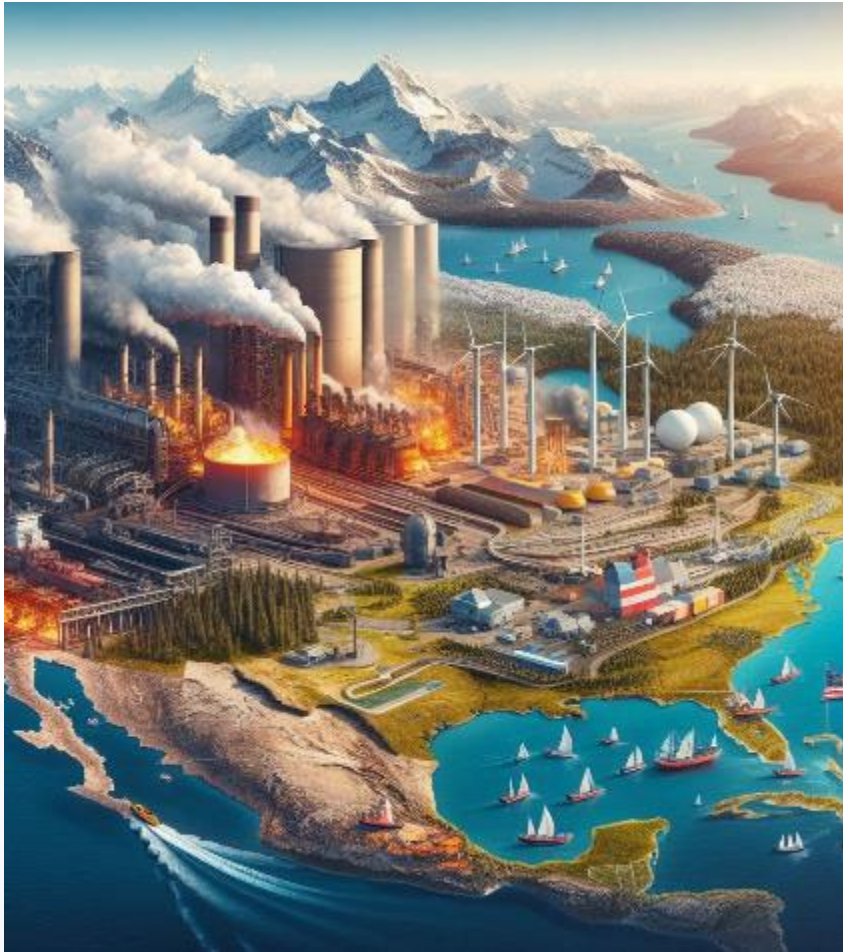
<https://www.iea.org/data-and-statistics/charts/natural-gas-prices-in-europe-asia-and-the-united-states-jan-2020-february-2022>



	Ranking		Cost (US¢)	Change
	Current	Prior	Cubic meter	Year On Year
Germany	1	1	178.1	0.0%
Denmark	2	2	172.0	+0.8
United Kingdom	3	3	123.2	+3.2%
The Netherlands	4	4	113.8	-0.5
France	5	5	108.3	+3.3
Belgium	6	6	101.9	+3.9%
Italy	7	7	72.7	+1.5%
Spain	8	8	71.2	+3.5%
Finland	9	9	64.3	+4.9%
Sweden	10	10	61.5	+1.1%
Australia	11	11	54.7	+4.7%
United States	12	12	54.3	+4.0%
South Africa	13	14	42.8	+20.4%
Canada	14	13	37.6	+2.9%

<https://www.waterworld.com/home/article/16190676/survey-finds-world-water-rates-rising>

# History can lead us astray



- **Abundant resources** - USA and Canada had vast amounts of coal, natural gas, hydropower, and water.
- **Less Regulation** – Compared to Europe, historically less stringent environmental regulations
- **Energy subsidies** - in the USA in the hundreds of billions of \$\$
- **Changing perceptions** – More conservation and renewable energy sources that have a higher cost

# Other thoughts on why more time is not spent

- Complexity
- Other Priorities
- Short vs Long-term
- Shifting Responsibilities
- Industry Culture
- Lack of Awareness

# ADDRESSING LACK OF AWARENESS

The greatest danger in times of turbulence,  
is not the turbulence, it's acting with  
yesterday's logic – Peter Drucker



# How do we address the lack of awareness?

- Record utility usage
- Compare to utility bills
- Establish your baseline measurements
- Create visibility on utility usage
- Address any changes to your baseline



# Record Utility Usage

- Identify what utilities you can measure
- What frequency can you measure?
  - Start/End of production and shifts
- Input the information into a spreadsheet or database



# Compare to Usage to Utility Bills



- Look for errors/estimated bills
- Do the measurements make sense?
- Utility bills often have a long delay between the end of a billing period and actually receiving the bill



# Establish Your Baseline

- Establishing your baseline helps to identify when something is now right
- Focus on usage per weight and cost per weight, we are very limited in addressing the actual cost of the utility
- A baseline is also helpful to know if a new piece of equipment, system, or other device is actually helping



# Create Visibility



- Don't let utility usage reports and information stop with one or two individuals
- Share the utility reports
- Post daily usage
- Talk about utility trends and what is being seen

# Address Changes to Your Baseline



If you see a shift on your baseline, get to the bottom of the issue



What caused the shift?



What was the cost?



How will you fix/repair?





# Start Recording

**United Hospital Services**  
Weekly Meter Readings

**OFFICIAL METER READINGS**

TIME	DATE	WATER BOILER x100	5" WATER cu. ft.	4" WATER cu. ft.	DOMESTIC WATER x100	SPRINKLER x1000	ROOF WATER x1000	SOFT WATER x100	SEWAGE FLOW x10
MON 5:30 AM	4/29/2024								
7 AM	4/29/2024								
4 PM	4/29/2024								
1:30 AM	4/29/2024								
5:30 AM	4/30/2024								
7 AM	4/30/2024								
4 PM	4/30/2024								
1:30 AM	4/30/2024								
5:30 AM	5/1/2024								
7 AM	5/1/2024								
4 PM	5/1/2024								
1:30 AM	5/1/2024								
5:30 AM	5/2/2024								
7 AM	5/2/2024								
4 PM	5/2/2024								
1:30 AM	5/2/2024								
5 AM	5/3/2024								
7 AM	5/3/2024								
4 PM	5/3/2024								
1:30 AM	5/3/2024								
5:30 AM	5/4/2024								
7 AM	5/4/2024								
4 PM	5/4/2024								
1:30 AM	5/4/2024								

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**United Hospital Services**  
Weekly Meter Readings

**OFFICIAL METER READINGS**

TIME	DATE	#2 AIR COMPRESS. HOURS	#2 AIR COMPRESS. HOURS	#1 AIR COMPRESS. HOURS	#1 BOOSTER HOURS	#2 BOOSTER HOURS	#3 BOOSTER HOURS
MON 5:30 AM	4/29/2024						
7 AM	4/29/2024						
4 PM	4/29/2024						
1:30 AM	4/29/2024						
5:30 AM	4/30/2024						
7 AM	4/30/2024						
4 PM	4/30/2024						
1:30 AM	4/30/2024						
5:30 AM	5/1/2024						
7 AM	5/1/2024						
4 PM	5/1/2024						
1:30 AM	5/1/2024						
5:30 AM	5/2/2024						
7 AM	5/2/2024						
4 PM	5/2/2024						
1:30 AM	5/2/2024						
5:30 AM	5/3/2024						
7 AM	5/3/2024						
4 PM	5/3/2024						
1:30 AM	5/3/2024						
5:30 AM	5/4/2024						
7 AM	5/4/2024						
4 PM	5/4/2024						
1:30 AM	5/4/2024						

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**United Hospital Services**  
Weekly Meter Readings

**OFFICIAL METER READINGS**

TIME	DATE	GAS METER cu. ft.	BOILER GAS cu. ft.	DRYER GAS cu. ft.	ELECT. A KW	ELECT. B KW	ELECT. C KW	ELECT. D KW
MON 5:30 AM	4/29/2024							
7 AM	4/29/2024							
4 PM	4/29/2024							
1:30 AM	4/29/2024							
5:30 AM	4/30/2024							
7 AM	4/30/2024							
4 PM	4/30/2024							
1:30 AM	4/30/2024							
5:30 AM	5/1/2024							
7 AM	5/1/2024							
4 PM	5/1/2024							
1:30 AM	5/1/2024							
5:30 AM	5/2/2024							
7 AM	5/2/2024							
4 PM	5/2/2024							
1:30 AM	5/2/2024							
5:30 AM	5/3/2024							
7 AM	5/3/2024							
4 PM	5/3/2024							
1:30 AM	5/3/2024							
5:30 AM	5/4/2024							
7 AM	5/4/2024							
4 PM	5/4/2024							
1:30 AM	5/4/2024							

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# Things we record related to utilities

- Water
  - Boiler
  - Incoming water
  - Domestic water
  - Sprinkler
  - Roof water (swamp coolers)
  - Softened water
- Sewerage
- Gas
  - Boilers
  - Dryers
- Electric

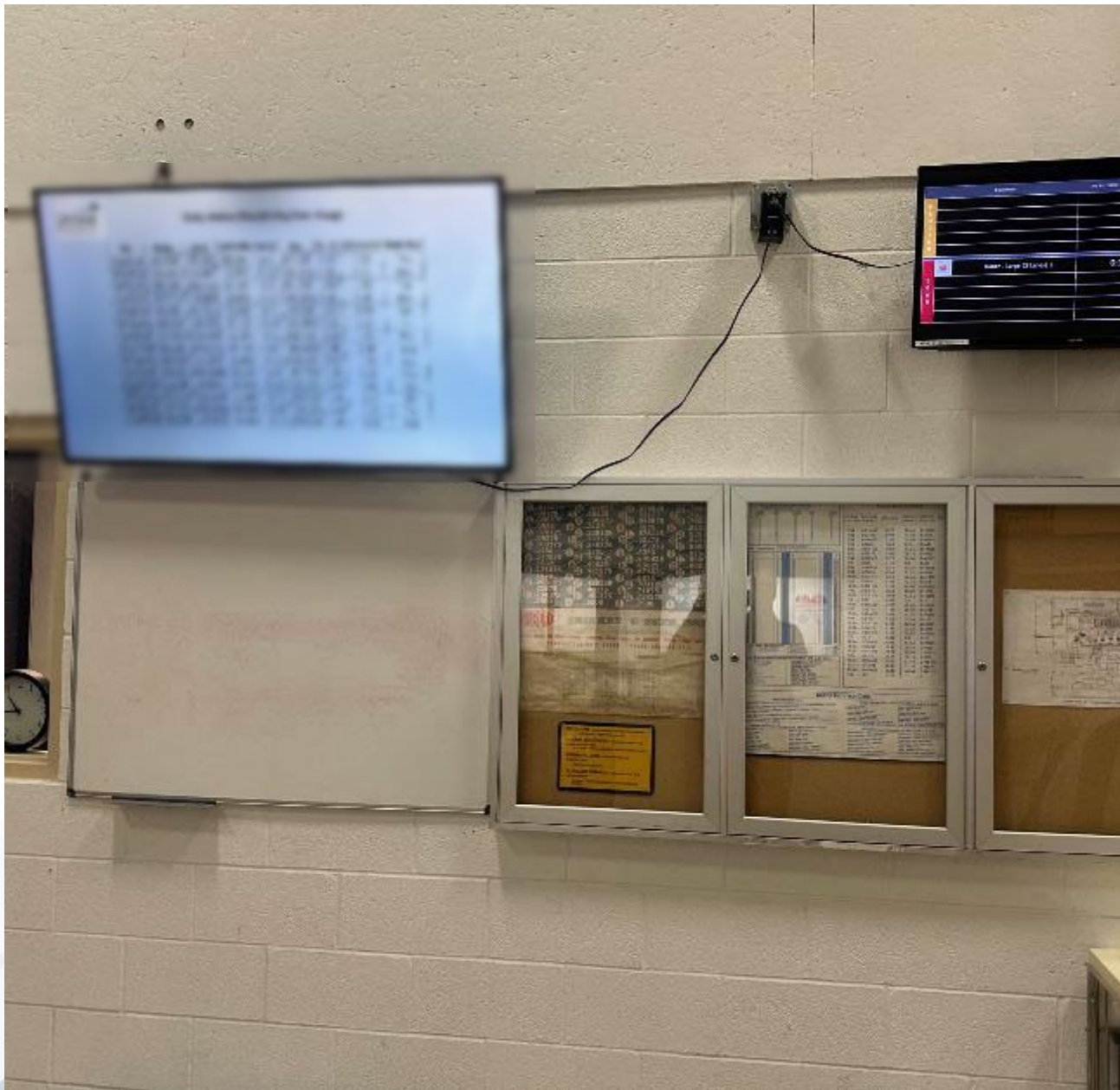
# Daily

- Clerk takes the meter readings and input them into a spreadsheet
- Spreadsheet will then turn the meter reads into usable units (ie gallons, therms, kWh)
- Information used to display usage on a display
- Saved for historical log





	A	B	C	D	E	F	G	H	I
1	Day	Water	Linen	Electricity	Per Lb	Gas	Per Lb	Gallons/Lb	Week Day
2	04/04/24	187,500	135,110	16,200	0.12	258,525	1.91	1.25	Thu
3	04/03/24	183,000	158,681	14,256	0.09	258,525	1.63	1.04	Wed
4	04/02/24	180,750	141,522	16,848	0.12	253,125	1.79	1.15	Tue
5	04/01/24	213,750	159,088	16,200	0.10	260,550	1.64	1.21	Mon
6	03/30/24	81,000	81,761	9,720	0.12	103,950	1.27	0.89	Sat
7	03/29/24	184,500	150,350	13,608	0.09	203,850	1.36	1.10	Fri
8	03/28/24	197,250	139,146	14,904	0.11	270,675	1.95	1.28	Thu
9	03/27/24	185,250	170,937	16,848	0.10	306,450	1.79	0.98	Wed
10	03/26/24	206,250	151,295	16,200	0.11	274,725	1.82	1.23	Tue
11	03/25/24	188,250	149,808	16,848	0.11	267,975	1.79	1.13	Mon
12	03/23/24	112,500	75,856	11,016	0.15	139,725	1.84	1.33	Sat
13	03/22/24	171,750	160,316	15,552	0.10	282,825	1.76	0.96	Fri
14	03/21/24	197,250	158,191	14,904	0.09	296,325	1.87	1.12	Thu
15	03/20/24	180,750	157,030	14,904	0.09	260,550	1.66	1.04	Wed
16									



# What's Next?

- You are now recording your utilities at specified intervals
- You are looking at your utility usage daily
- It's displayed and being shared
- What happens next?

# Next Steps

- Load into some form of a utility tracker at your pre-designated intervals
- Load your utility bill information into the tracker
- Establish how you want to identify out of range measurements
- Share with personnel

# The UHS Utility Report Breakdown

- Utility invoice amounts
  - Gas / Electric / Water / Sewer
- Monthly and YTD Usage
- *A Snapshot of Current to Prior Year*
- *YTD Comparison going back to beginning of the Utility Report*
- A series of charts



# Utility Invoice Amounts - Gas

	A	B	C	D	E	F	G
1	<b>Gas usage FY 2023</b>						
2							
3		Cost	ccf-TSG	therm multi	Total Therms	cost per therm	BTUs
4	January	\$39,855.70	107978	1.034	111648.75	\$0.357	111,648,754
5	February	\$34,072.98	91289.5	1.028	93845.59	\$0.363	93,845,590
6	March	\$38,114.60	98650.5	1.027	101314.10	\$0.376	101,314,104
7	April	\$31,659.89	80866.5	1.031	83373.35	\$0.380	83,373,346
8	May	\$29,197.18	76197.5	1.034	78788.24	\$0.371	78,788,244
9	June	\$28,932.52	74147.9	1.043	77336.27	\$0.374	77,336,273
10	July	\$26,387.57	68300	1.042	71168.57	\$0.371	71,168,573
11	August	\$29,778.90	76982.8	1.043	80293.05	\$0.371	80,293,047
12	September	\$28,855.22	76000.1	1.049	79724.05	\$0.362	79,724,052
13	October	\$33,988.89	89150.1	1.053	93875.10	\$0.362	93,875,096
14	November	\$36,049.55	96931.3	1.056	102359.45	\$0.352	102,359,449
15	December	\$37,425.60	100379	1.051	105498.23	\$0.355	105,498,232
16	YTD	\$394,318.58	1036873	n/a	1079224.76	\$0.365	1,079,224,759
17	Monthly Avg	\$32,859.88	86406.1	n/a	89935.3966	\$0.366	89,935,397

# Utility Invoice Amounts - Electric

	A	B	C	D
1	<b>Electrical usage FY 2023</b>			
2				
3		Cost	usage (kwh)	cost / kwh
4	January	\$ 47,737.32	441041.4	\$ 0.108
5	February	\$ 45,994.94	451166.4	\$ 0.102
6	March	\$ 49,325.31	479597.4	\$ 0.103
7	April	\$ 47,024.80	450540	\$ 0.104
8	May	\$ 40,495.92	456638.4	\$ 0.089
9	June	\$ 40,651.43	445851	\$ 0.091
10	July	\$ 41,043.91	461158.2	\$ 0.089
11	August	\$ 39,132.99	499158	\$ 0.078
12	September	\$ 37,489.56	443152.8	\$ 0.085
13	October	\$ 37,640.60	458496	\$ 0.082
14	November	\$ 38,242.07	398496	\$ 0.096
15	December	\$ 37,640.60	388938.6	\$ 0.097
16	YTD	\$502,419.47	5374234.4	\$ 0.093
17	Monthly Avg	\$41,868.29	447852.87	\$ 0.094



# Utility Invoice Amounts - Water

	A	B	C	D	E
1	<b>Water usage FY 2023</b>				
2					
3		Cost	Usage in ccf	Usage in 1000 Gal	cost / 1000 gal
4	January	\$ 13,450.16	6386	6480	\$ 2.076
5	February	\$ 13,981.06	6758	5086	\$ 2.749
6	March	\$ 12,662.49	5836	5605	\$ 2.259
7	April	\$ 11,641.77	5121	4564	\$ 2.551
8	May	\$ 12,792.64	5909	4641	\$ 2.757
9	June	\$ 12,761.74	5887	4888	\$ 2.611
10	July	\$ 12,311.93	5572	4636	\$ 2.656
11	August	\$ 13,117.62	6136	5373	\$ 2.442
12	September	\$ 13,331.92	6286	4883	\$ 2.730
13	October	\$ 13,700.85	6282	5304	\$ 2.583
14	November	\$ 13,848.28	6532	5221	\$ 2.653
15	December	\$ 12,720.69	5659	4912	\$ 2.590
16	YTD	\$156,321.14	72362	61594	\$ 2.538
17	Monthly Avg	\$13,026.76	6030	5133	\$ 2.554
18					

# Weekly Information

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	UHS Monthly and Y.T.D. Utility Usage w/ CWT															
2	Utility Usage								Cost per hundred weight							
3		Lbs Shipped	Dryer Gas - cf	Boiler Gas - cf	Total Gas - cf	Elec - kwh	Water -gal	Sewage - gal	dry therms / cwt	boiler therms / cwt	total gas therms /cwt	Total BTU / cwt	elect kwh / cwt	water gal / cwt	sewage gal / cwt	
4	January	3,776,397	2,791,860	3,658,793	6,450,653	390,450	4,582,800	3,894,463	0.78	1.02	1.79	2146	10.34	121.35	103.13	
5	Week 1	925,540	742,615	957,890	1,700,505	109,013	1,157,813	983,909	0.84	1.09	1.93	2331	11.78	125.10	106.31	
6	Week 2	972,480	716,680	920,204	1,636,884	98,325	1,110,075	943,342	0.77	0.99	1.77	2112	10.11	114.15	97.00	
7	Week 3	946,708	660,535	825,550	1,486,085	87,638	1,054,500	896,114	0.73	0.92	1.65	1964	9.26	111.39	94.66	
8	Week 4	931,668	672,030	955,149	1,627,179	95,475	1,260,413	1,071,099	0.76	1.08	1.83	2184	10.25	135.29	114.97	
9																
10	February	3,532,020	2,727,165	3,797,189	6,524,354	389,738	4,886,325	3,140,930	0.81	1.13	1.94	2316	11.03	138.34	88.93	
11	Week 1	873,140	630,515	881,994	1,512,509	91,200	1,088,700	699,816	0.76	1.06	1.82	2175	10.45	124.69	80.15	
12	Week 2	878,258	703,570	965,080	1,668,650	96,900	1,205,550	774,928	0.84	1.15	1.99	2371	11.03	137.27	88.23	
13	Week 3	879,126	672,505	957,002	1,629,507	97,613	1,335,938	858,741	0.80	1.14	1.95	2325	11.10	151.96	97.68	
14	Week 4	901,496	720,575	993,112	1,713,687	104,025	1,256,138	807,445	0.84	1.16	2.00	2390	11.54	139.34	89.57	
15																
16	March	4,526,576	3,345,235	4,564,622	7,909,857	483,788	5,975,738	3,727,665	0.78	1.06	1.83	2199	10.69	132.01	82.35	
17	Week 1	904,323	668,990	928,449	1,597,439	99,750	1,273,950	794,690	0.78	1.08	1.85	2231	11.03	140.87	87.88	
18	Week 2	932,384	630,040	806,271	1,436,311	87,638	1,091,550	680,909	0.71	0.91	1.62	1938	9.40	117.07	73.03	
19	Week 3	905,386	723,995	1,026,736	1,750,731	76,950	1,285,350	801,801	0.84	1.19	2.03	2320	8.50	141.97	88.56	
20	Week 4	900,247	655,975	930,954	1,586,929	122,550	1,168,500	728,910	0.77	1.09	1.85	2315	13.61	129.80	80.97	
21	Week 5	884,236	666,235	872,211	1,538,446	96,900	1,156,388	721,355	0.79	1.04	1.83	2201	10.96	130.78	81.58	
22	April	3,833,907	2,578,205	3,302,686	5,880,891	384,750	4,084,763	3,035,387	0.71	0.90	1.61	1953	10.04	106.54	79.17	
23	Week 1	956,160	602,870	810,327	1,413,197	91,200	1,021,725	759,244	0.66	0.89	1.55	1877	9.54	106.86	79.41	
24	Week 2	943,334	666,520	876,072	1,542,592	101,888	1,045,238	776,716	0.74	0.98	1.72	2086	10.80	110.80	82.34	
25	Week 3	985,356	693,310	874,168	1,567,478	106,163	1,038,825	771,951	0.74	0.93	1.67	2038	10.77	105.43	78.34	
26	Week 4	949,058	615,505	742,119	1,357,624	85,500	978,975	727,476	0.68	0.82	1.50	1809	9.01	103.15	76.65	
27																

# Comparison Information

Cost Comparison									
FY 23					FY 22				
therms/cwt	Jan	0.776	Jan	0.767	therms/cwt	Jan	1.017	Jan	0.997
	Feb	0.811	Feb	0.750		Feb	1.129	Feb	0.979
	Mar	0.776	Mar	0.722		Mar	1.059	Mar	1.059
	Apr	0.706	Apr	0.706		Apr	0.905	Apr	1.061
	May	0.680	May	0.716		May	0.868	May	1.045
	Jun	0.691	Jun	0.725		Jun	0.854	Jun	0.972
	Jul	0.677	Jul	0.729		Jul	0.821	Jul	0.937
	Aug	0.660	Aug	0.750		Aug	0.813	Aug	0.969
	Sep	0.695	Sep	0.740		Sep	0.837	Sep	0.984
	Oct	0.697	Oct	0.780		Oct	0.874	Oct	1.082
	Nov	0.721	Nov	0.785		Nov	0.947	Nov	1.183
	Dec	0.690	Dec	0.783		Dec	0.904	Dec	1.250
	Year	0.715	Year	0.746		Year	0.919	Year	1.043
cost/therm	Jan	0.357	Jan	0.325	cost/therm	Jan	0.357	Jan	0.379
	Feb	0.363	Feb	0.325		Feb	0.363	Feb	0.379
	Mar	0.376	Mar	0.337		Mar	0.376	Mar	0.393
	Apr	0.380	Apr	0.379		Apr	0.380	Apr	0.442
	May	0.371	May	0.361		May	0.371	May	0.421
	Jun	0.374	Jun	0.452		Jun	0.374	Jun	0.527
	Jul	0.371	Jul	0.344		Jul	0.371	Jul	0.402
	Aug	0.371	Aug	0.394		Aug	0.371	Aug	0.459
	Sep	0.362	Sep	0.340		Sep	0.362	Sep	0.397
	Oct	0.362	Oct	0.350		Oct	0.362	Oct	0.408
	Nov	0.352	Nov	0.323		Nov	0.352	Nov	0.376
	Dec	0.355	Dec	0.367		Dec	0.355	Dec	0.428
	Year	0.366	Year	0.358		Year	0.366	Year	0.418
cost/cwt	Jan	0.277	Jan	0.277	cost/cwt	Jan	0.363	Jan	0.360
	Feb	0.294	Feb	0.271		Feb	0.410	Feb	0.354
	Mar	0.292	Mar	0.270		Mar	0.398	Mar	0.396
	Apr	0.268	Apr	0.297		Apr	0.343	Apr	0.447
	May	0.252	May	0.287		May	0.322	May	0.419
	Jun	0.258	Jun	0.364		Jun	0.320	Jun	0.488
	Jul	0.251	Jul	0.279		Jul	0.304	Jul	0.358
	Aug	0.245	Aug	0.328		Aug	0.301	Aug	0.424



# A Monthly Snapshot

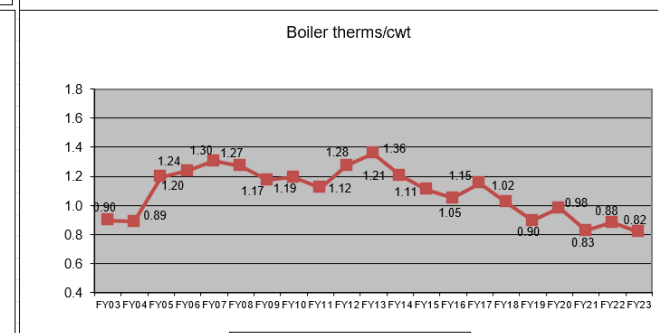
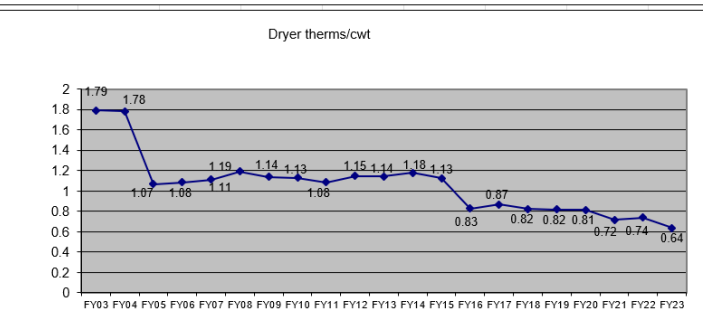
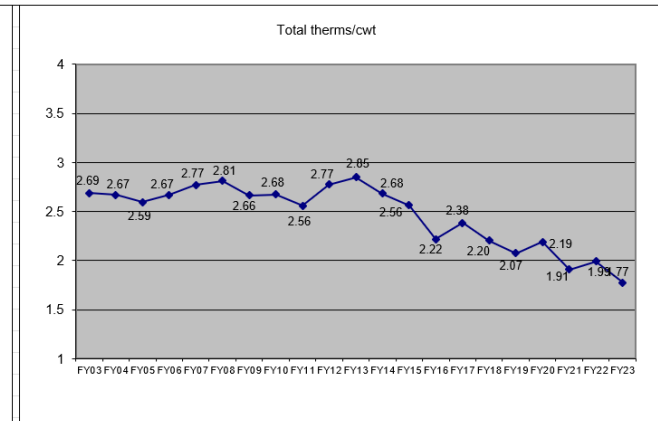
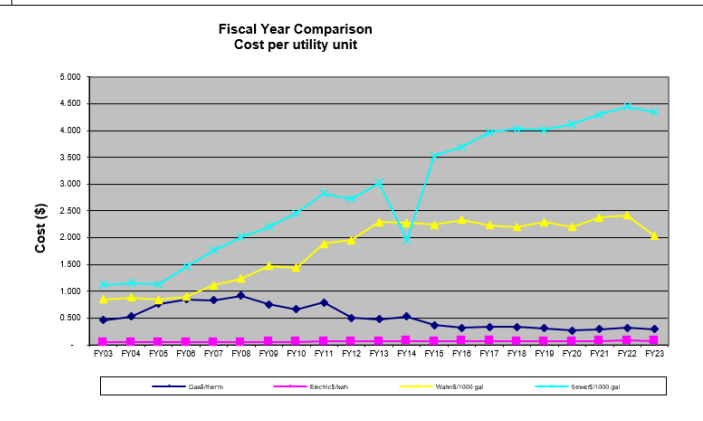
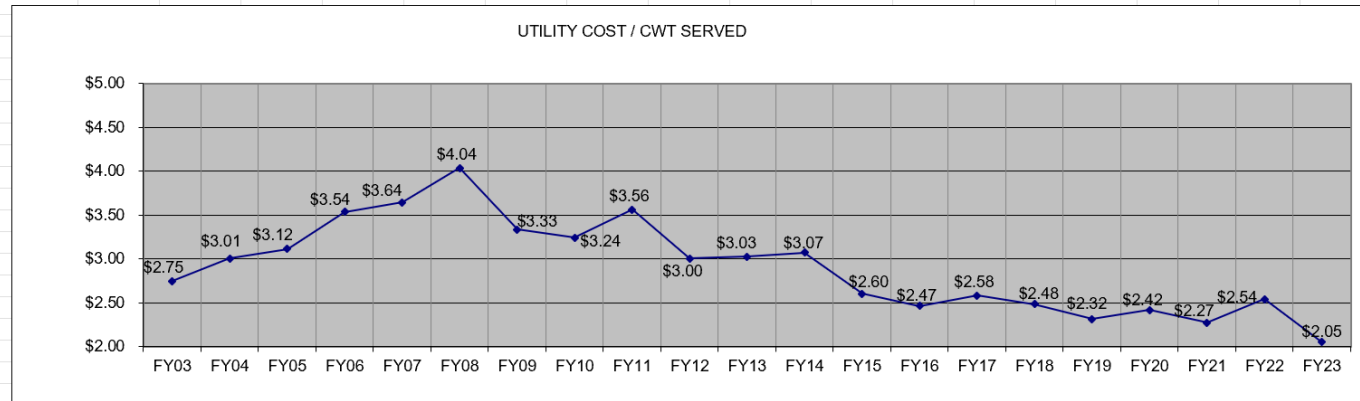
	A	B	C	D	E	F	G	H
1	Utility snapshot for the	12	month of	FY 23				
2								
3		Current Fiscal Year				Previous Fiscal Year		
4			MTD	YTD			MTD	YTD
5	Dryer Gas	therms/cwt	0.69	0.71		therms/cwt	0.78	0.75
6		cost/therm	\$0.35	\$0.37		cost/therm	\$0.37	\$0.36
7		cost/cwt	\$0.24	\$0.26		cost/cwt	\$0.32	\$0.30
8								
9	Boiler Gas	therms/cwt	0.90	0.92		therms/cwt	1.25	1.04
10		cost/therm	\$0.35	\$0.37		cost/therm	\$0.43	\$0.42
11		cost/cwt	\$0.32	\$0.34		cost/cwt	\$0.51	\$0.41
12								
13	All Gas	therms/cwt	1.59	1.63		therms/cwt	1.85	1.64
14		cost/therm	\$0.35	\$0.37		cost/therm	\$0.37	\$0.36
15		cost/cwt	\$0.57	\$0.60		cost/cwt	\$0.76	\$0.65
16								
17	Electric	kwh/cwt	9.17	10.52		kwh/cwt	11.97	12.84
18		cost/kwh	\$0.097	\$0.094		cost/kwh	\$0.115	\$0.110
19		cost/cwt	\$0.89	\$0.98		cost/cwt	\$1.31	\$1.34
20								
21	Water	gal/cwt	105	117		gal/cwt	121	113
22		cost/1000g	\$2.59	\$2.55		cost/1000g	\$3.02	\$2.73
23		cost/cwt	\$0.27	\$0.30		cost/cwt	\$0.41	\$0.34
24								
25	Sewer	gal/cwt	65	78		gal/cwt	67	90
26		cost/1000g	\$5.69	\$5.59		cost/1000g	\$6.18	\$5.84
27		cost/cwt	\$0.37	\$0.43		cost/cwt	\$0.39	\$0.50
28								
29	Total Energy	therms/cwt	1.91	1.99		therms/cwt	2.26	2.08
30		cost/cwt	\$1.45	\$1.58		cost/cwt	\$2.14	\$2.05
31		btu/lb	1908	1993		btu/lb	2264	2078
32								
33	Total Util	cost/cwt	\$2.10	\$2.31		cost/cwt	\$2.94	\$2.89
34								

# Yearly Comparison

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
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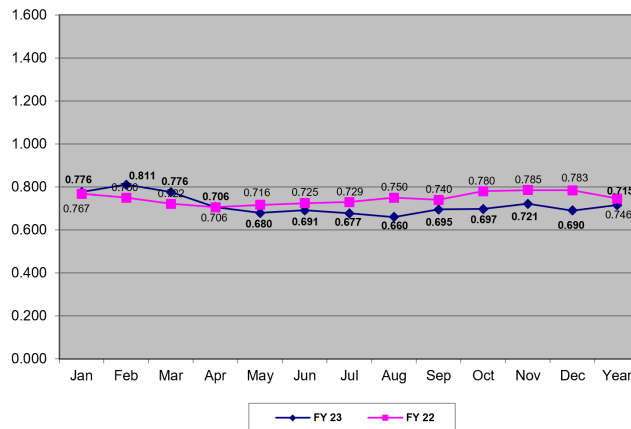


# Snapshot Charts

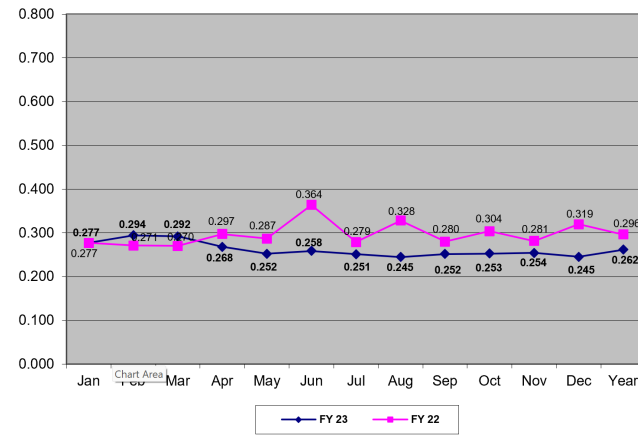


# Current Year Vs Prior Year Charts

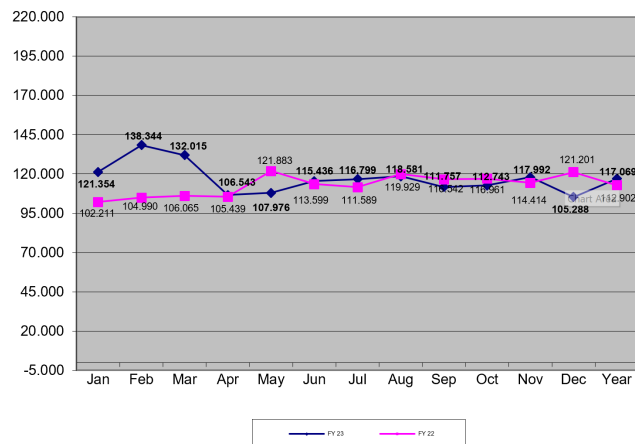
Dryer Gas (therms/cwt)



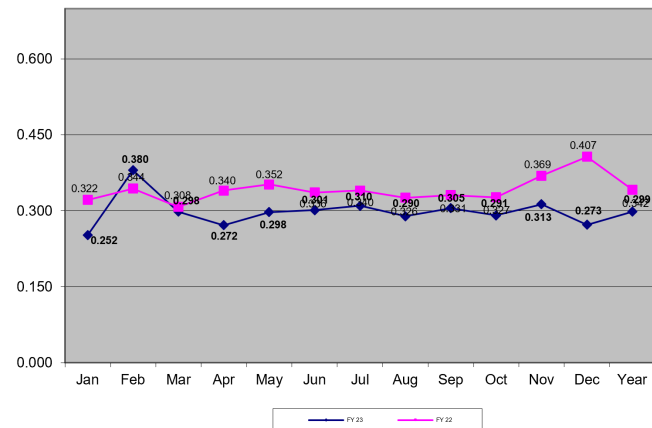
Dryer Gas (cost/cwt)



Water (gal/cwt)

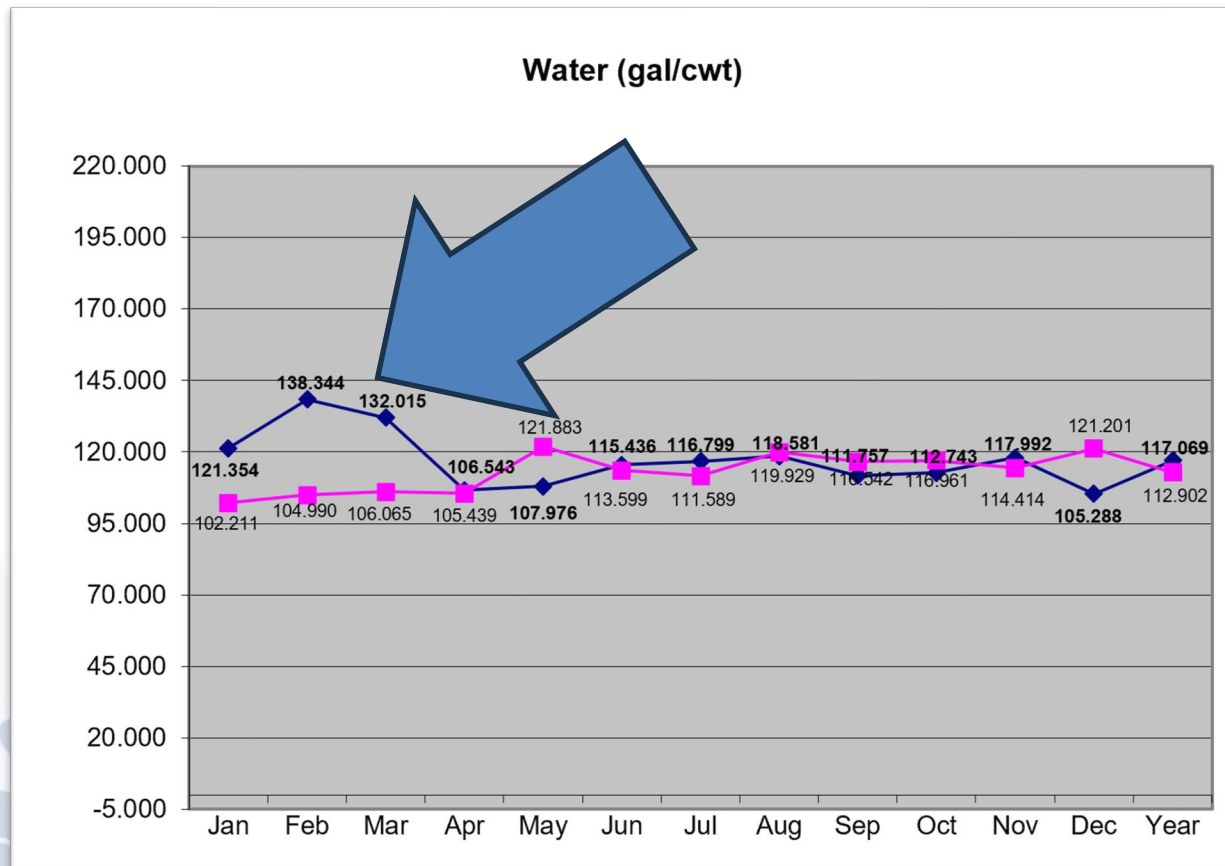


Water (cost/cwt)



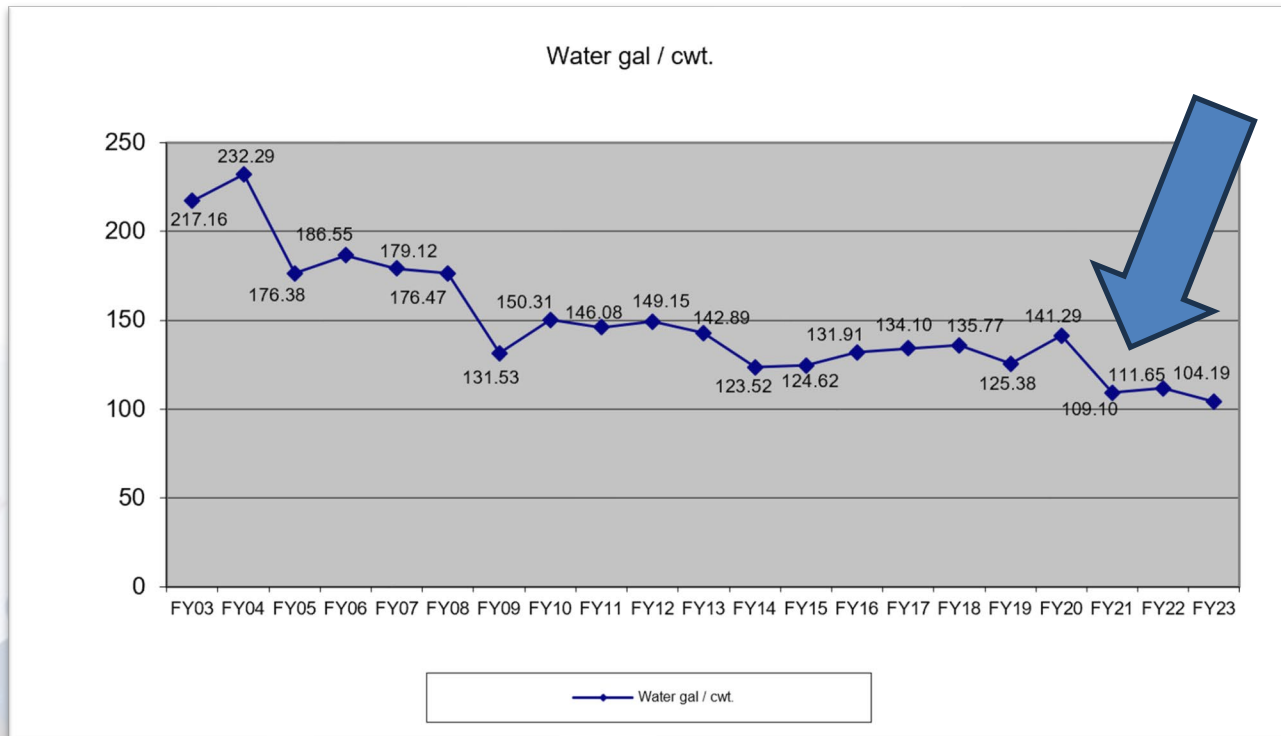
# What to do With the Information

- Find your outliers



# What else to do?

- Measure the improvements with new programming, new equipment, or a new product

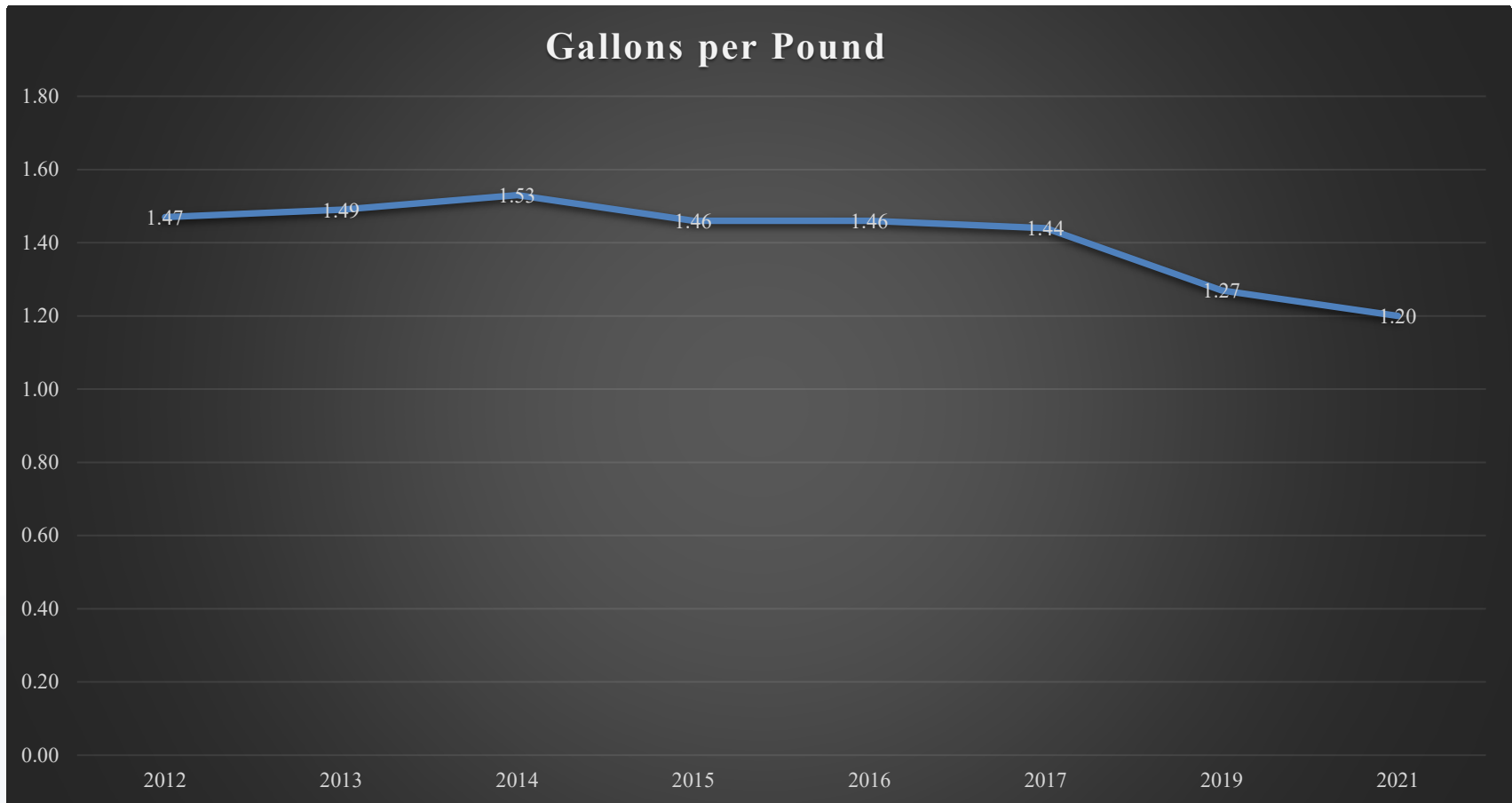


# UTILITY TRENDS

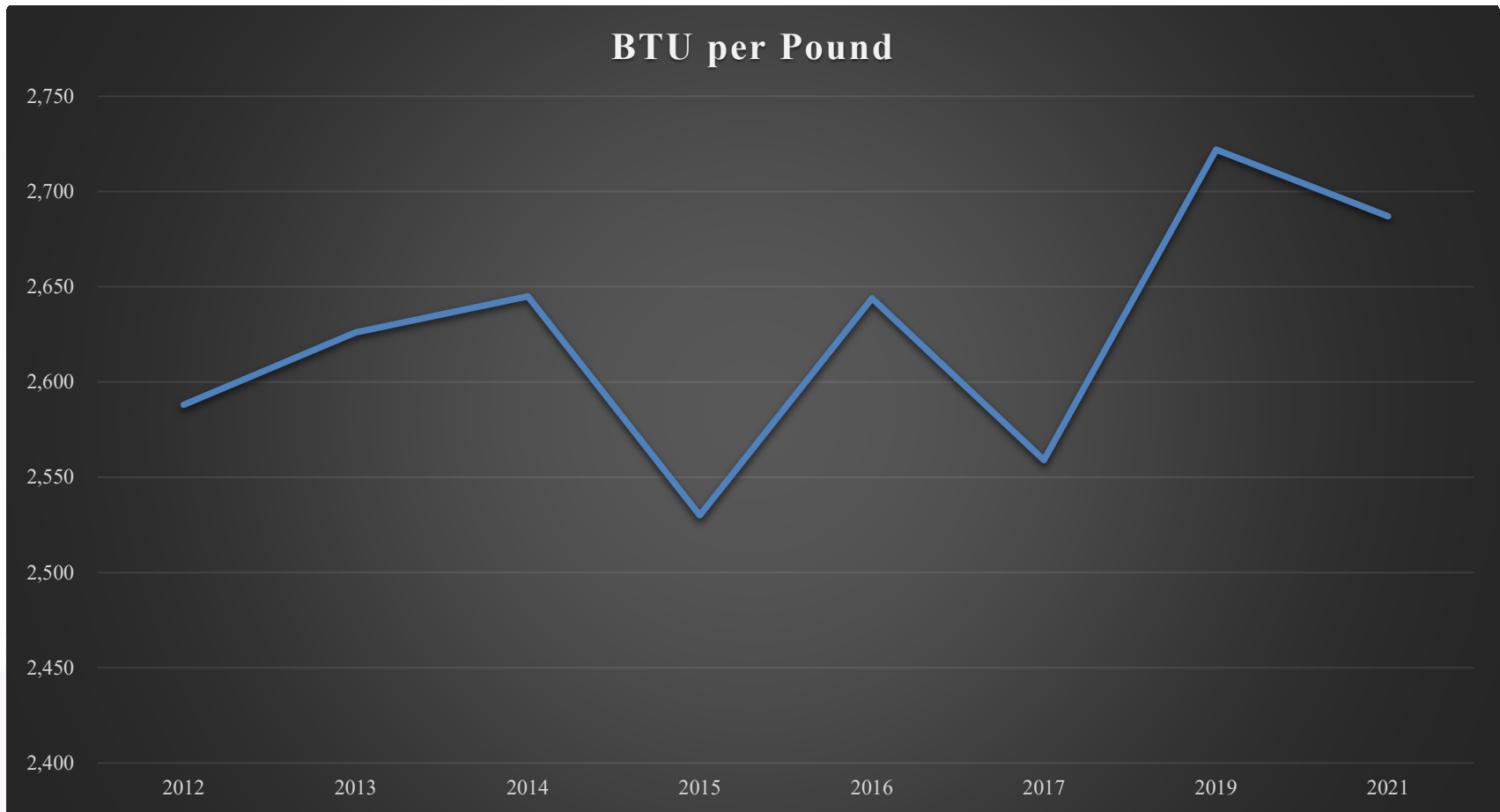




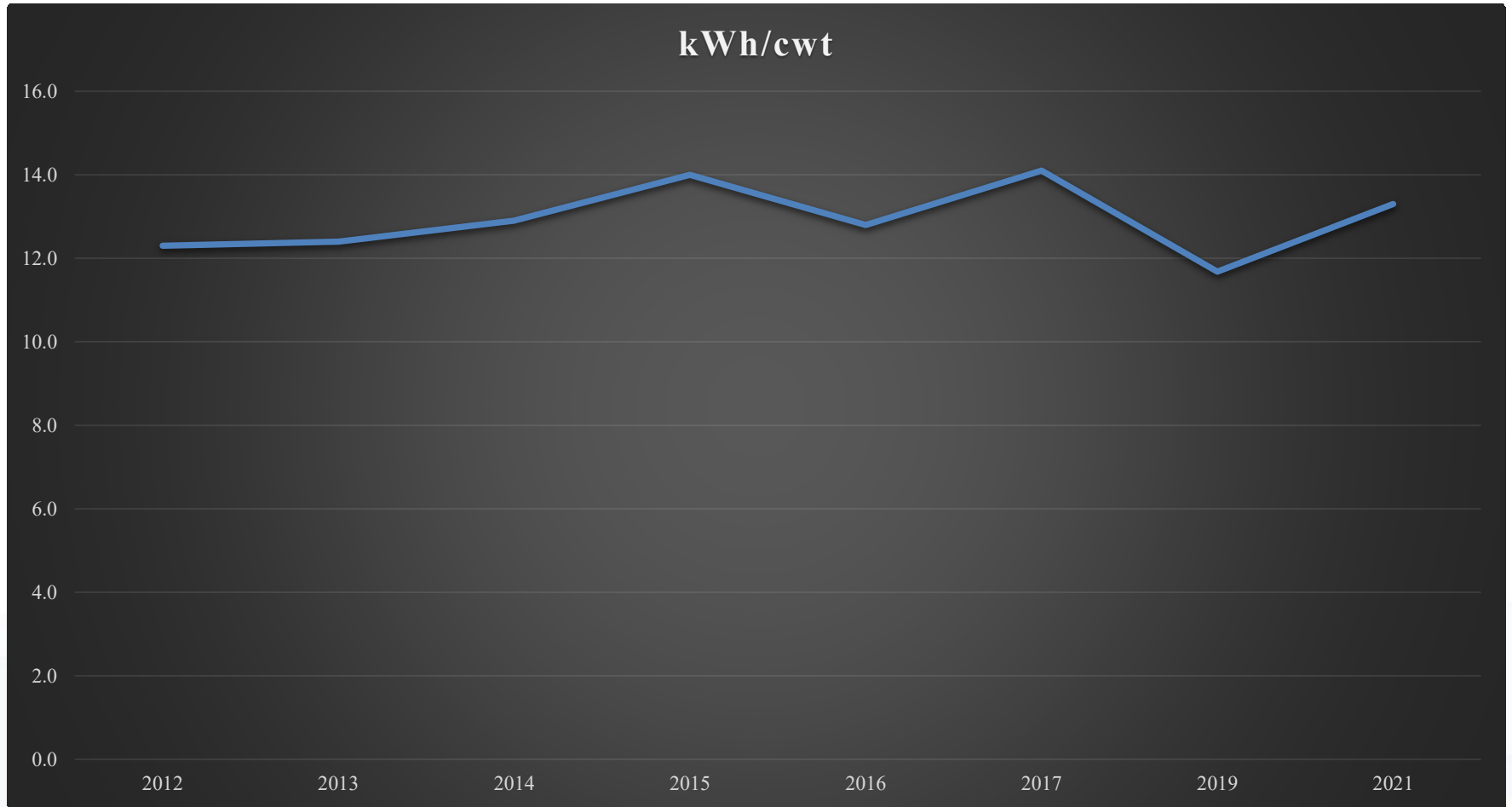
# Water



# Gas



# Electric

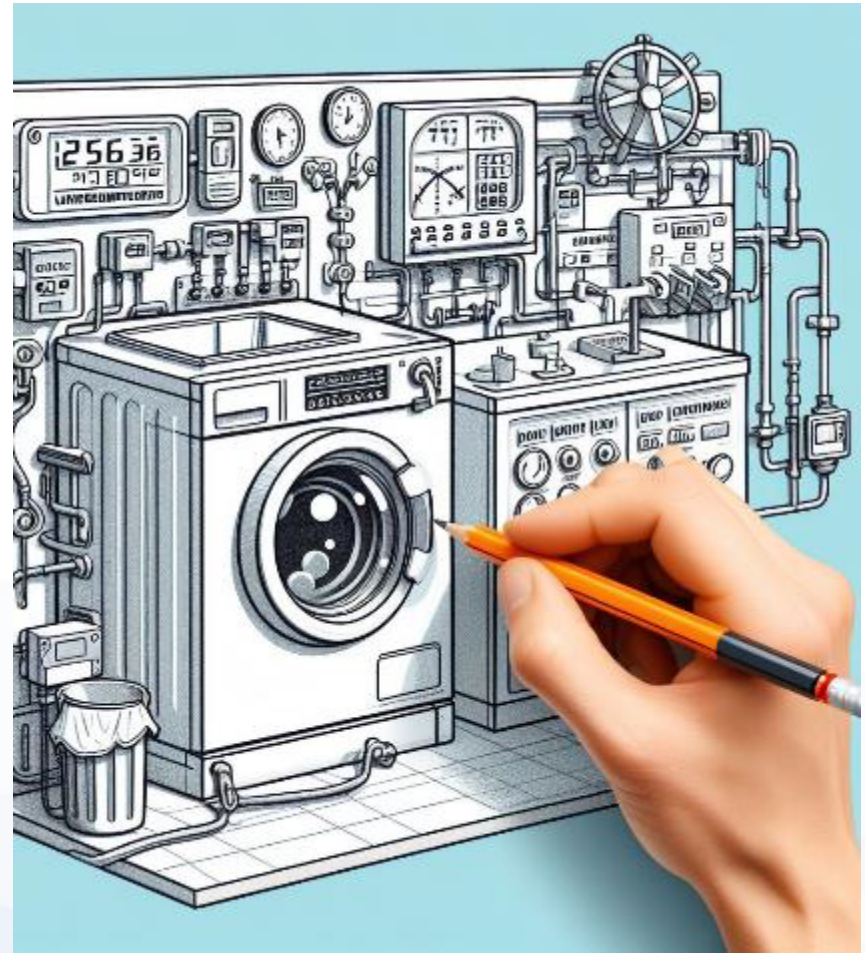


# Where do we go Next?



# Improve our Data Collection

- Meter additional equipment
- Automate data collection





# Equipment Improvements



- Purchase more efficient equipment
- Maintain the equipment
- Address immediately when usage increase
- Demand manufacturers continue to increase efficiencies through design and programming

# Prepare for increased costs and regulations

Notable utility rate increases approved for 2024

STATE/AREA	UTILITY	APPROVED 2024 RATE HIKE
Minnesota	CenterPoint Energy	5.4%
Oregon	Portland Gas and Electric	17%
Upstate New York	National Grid	5.9%
Connecticut	Eversource / UI	-39% / -19%
North Carolina	Duke Energy	10%
California	PG&E	12.8%
Georgia	Georgia Power	4.5%
Ohio	AEP	1% per year for next 4 years
Michigan	DTE Electric	6.38%

- Aging infrastructure
- Increase regulations
- Conversion from coal to natural gas to renewables
- Effluent discharge standards

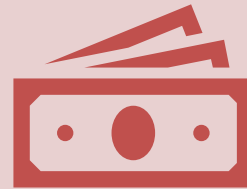
<https://www.solar.com/learn/will-electricity-prices-go-down/>



# Turn Utility Usage into the new POH



START TALKING ABOUT YOUR  
UTILITY USAGE



NORMALIZE THE DISCUSSION  
ABOUT YOUR UTILITY COSTS

# Questions?

