1cf Gas (Power) = ? (Energy)

	Energy	Power		
	Cubic Foot/Feet	British Thermal Units	MMBtu	Therm
2017	cf (1)	1032	0.001032	0.01032
	CcF (100)	103200	0.1032	1.032
	McF (1000)	1032000	1.032	10.32
2018	cf (1)	1036	0.001036	0.01036
	CcF (100)	103600	0.1036	1.036
	McF (1000)	1036000	1.036	10.36

1kWh = ? (Energy Table)

	Energy	Power		
	Watts	British Thermal Units	MMBtu	Therm
Standard	Wh (1)	3.413	0.00000341	0.00003413
	kWh (1000)	3,413	0.003413	0.03413

Important Resources

	Source
Conversions	https://www.eia.gov/tools/faqs/faq.php?id=45&t=8
Converstion Tables	https://www.eia.gov/energyexplained/units-and-calculators/energy-conversion-calculators.php
Understanding the difference between Power and Energy	Holladay, Martin. (2012, June 22). Understanding Energy Units. Green Building Advisor. Retrieved from: https://www.greenbuildingadvisor.com/article/understanding-energy-units
Design Temperature Tables	https://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/County%20Level%20Design%20Temperature%20Reference%20Guide%20-%202015-06-24.pdf
Heat Load Calculations	https://www.greenbuildingadvisor.com/article/out-with-the-old-in-with-the-new
Degree Days	https://www.degreedays.net/#generate
Q&A with Holladay and Dorsett	https://www.greenbuildingadvisor.com/question/should-i-replace-my-aquatherm-hydronic-heat-system-with-a-heat-pump

Equipment Sizing Conclusions

			Averages
Read Dates	Dec 28 to Jan 30, 2020	Dec 28 to Jan 30, 2020	
Days of Service	33	33	
CcF's Used	46	46	
Less Cooking/ Hotwater (B6-12)	34	34	
Equipment Label BTU/h (Estimated Efficiency = .80) - Auguatherm Hydronic Heat	65,000 BTU/h	65,000 BTU/h	
Efficiency x CcF = How many CcF used to heat the house	27.2	27.2	
MMBTU	2.807	2.807	
Balance Point (in degrees)	65	60	
DegreeDays assuming above Balance Point B$9 (from DegreeDays.net)	678.5	521	
BTUs per Degree Day at assumed Balance Point (B$9)	4137	5387	
BTUs per Degree Hour at assumed Balance Point (B$9)	172	224	
99 % Outside Design Temperature (Richmond, VA). See:	18	18	
Difference (Balance Point - Outdoor Design Temp)	47	42	
Implied Heat Load	8000	9428	
Equipment Sizing (1.4) BTU/h	11,200	13,199	12,199.5

Key

	= known data from utility bills and equipment labels
	= conclusionary data