

When Electric Bills Give You the Third Degree

The Scene: Your financials were just distributed. Ten minutes later your email box is blowing up with ALL CAPS emails asking why your electricity expense is 23% higher than what was budgeted. You look at the bills and the rate is the same but the usage is excessively high compared to last year and the year before. What happened?

Unless you're allowing a department store to hook up to your power line, it is likely due to a change in the weather. Sounds like a good explanation but how do you explain that to your supervisor or deliver that message to an owner that has unmistakable credibility? Understanding the impact of degree days is critical.

Explaining Degree Days: Degree days is a measurement that explains the difference between the average daily mean temperature and what it will take to heat or cool a building or facility to meet the desired building point temperature (BPT).

For example, if the average outside temperature per day is 59 degrees Fahrenheit for a month and your BPT is 65 degrees, then the heating degree days (HDD) = $65 - 59 \times$ the number of days in a month or period of heating degree days.

**Heating degree season begins
July 1**

**Cooling degree day season begins
January 1**

$65F - 59F = 6 \text{ HDD} \times 31 \text{ days in the period} = 186 \text{ HDD in the period}$

Consequently, if last year the average temperature was 62 degrees for the same period, the number of heating degree days was less:

$65F - 62F = 3 \times 31 \text{ days in the period} = 93 \text{ HDD in the period}$
Or, a 50% increase in HDD year over year for the same period.

The same concept applies for cooling degree days (CDD). If the average temperature is above 65F then there will be additional cooling degree days.

$75F - 65F = 10 \times 31 \text{ days in the period} = 310 \text{ CDD in the period}$

The prior year, same period;

$70F - 65F = 5 \times 31 \text{ in the period} = 155 \text{ CDD in the prior year}$
Or, a 50% increase in CDD year over year for the same period.

Why Degree Days Matter

A good resource for finding out your HDDs or CDDs for the period reflected on your bill by zip code is www.weatherdatadepot.com. Type in your zip code location for the account you're investigating, the BPT and run the report:



Free Degree Day Reports

Weather Data Depot is your source for *free* heating degree day and cooling degree day reports and charts! Degree day comparisons are useful for energy management, energy efficiency and utility bill tracking.

Heating degree days: Heating degree days indicate how winter weather affects building heating energy use.

Cooling Degree Days: Cooling degree days indicate how summer weather affects building cooling energy use.

EnergyCAP: EnergyCAP software, the sponsor of Weather Data Depot, tracks your utility bills and statistically correlates degree days to energy use data.



Location: ? Balance Point: ? Units: °F °C

Enter Postal Code, Weather Station Code, or City, State

Base Year: ? Comparison Year: ?

Monthly Degree Day Comparison (Station: MDEC [View Map](#))

Month	Base Year (2012)			Comparison Year (2013)			Comparison Percentages		
	HDD	CDD	TDD	HDD	CDD	TDD	HDD	CDD	TDD
January	836	0	836	862	0	862	3%		3%
February	691	0	691	833	0	833	20%		20%
March	370	5	375	749	0	749	102%		99%
April	324	14	338	309	26	335	-4%		0%
May	31	124	155	136	105	241	338%	-15%	55%
June	4	251	255	0	277	277		10%	8%
July	0	482	482	0	445	445		-7%	-7%
August	0	373	373	0	292	292		-21%	-21%
September	28	170	198						
October	228	28	256						
November	658	0	658						
December	684	0	684						
Through August	2256	1249	3505	2889	1145	4034	28%	-8%	15%
Annual Total	3854	1447	5301						

This chart is the credibility you need when explaining why there is a variance with your electric or gas budget. For example: Why did your heat usage rise this May vs. May 2012? The temperature was significantly cooler which created a 338% difference in HDD over last year. By using this information, it's easy to explain your budget variance.

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Kate joined the Minol USA team in August of 2009. She currently oversees the Energy Management Program with a special emphasis on utility provider bill payment, cost avoidance and green initiatives.

Prior to joining Minol USA, she was employed by REIT AvalonBay Communities, Inc. for more than 20 years where she was responsible for increasing water, sewer, electric and gas collections via onsite associate training; augmenting utility reimbursements by instituting a collection and training process, creating and implementing a new utility recovery program, "Hot Water Energy, as well as developing a reinstatement and centralization of the collections programs for AvalonBay's portfolio which consisted of more than 150 properties. While with AvalonBay, Kate also successfully lobbied for the passing of the submetering law in Massachusetts in 2005.

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Statistic: EIA 2012 AEO Annual Energy Outlook Table 19; EIA 2009 RECS, Table CE1.1.