

Calculation of MONTHLY HEATING DEMAND based on Local Heating Degree Days

Hartford, CT - HDD for the last 3 years

Customer: 2biker

Address: ?

Location: Hartford, CT

Square Footage: **3,800** Square Footage of the home

Gallons of oil used: **1,500** **5678** Liter of oil used from Jan <> Dec

Cost of oil: **\$5,625** cost for oil from Jan <> Dec

BTUs from oil: 208,500,000 61108 kW (#2 Heating oil has 138,000 BTU/gallon)

Lbs of wood pellets: 26,063 11728 Kg based on 8000 BTU/Lbs of wood pellets real heating value

Short Tons of pellets: 13.03 11.73 Tons of pellets

652 Bags of pellets

81 Fills of 8 bags of pellets into the BioWIN dayhopper

\$3,258 Cost of wood pellets

Estimated savings: **\$2,367** cost savings per year with wood pellets

42%

Add efficiency gain: **15%** Efficient pellet boiler <> inefficient oil boiler

57%

\$3,211 overall cost savings

								24h	12h	
Month	HDD	% heat	Oil gallons		Oil BTU's	BTU/day	BTU/24h	BTU/12h	BTU/SF	BTU/SF
3/1/2011	830	0.17	249		34,396,396 BTU	1,146,547	47,773	95,546	12.6	25.1
4/1/2011	412	0.08	124		17,073,874 BTU	569,129	23,714	47,427	6.2	12.5
5/1/2011	170	0.03	51		7,045,045 BTU	234,835	9,785	19,570	2.6	5.1
6/1/2011	41	0.01	12		1,699,099 BTU	56,637	2,360	4,720	0.6	1.2
7/1/2011	3	0.00	1		124,324 BTU	4,144	173	345	0.0	0.1
8/1/2011	9	0.00	3		372,973 BTU	12,432	518	1,036	0.1	0.3
9/1/2011	53	0.01	16		2,196,396 BTU	73,213	3,051	6,101	0.8	1.6
10/1/2011	338	0.07	102		14,007,207 BTU	466,907	19,454	38,909	5.1	10.2
11/1/2011	540	0.11	162		22,378,378 BTU	745,946	31,081	62,162	8.2	16.4
12/1/2011	820	0.16	246		33,981,982 BTU	1,132,733	47,197	94,394	12.4	24.8
1/1/2012	976	0.20	HDD 293		40,446,847 BTU	1,348,228	56,176	112,352	14.8	29.6
2/1/2012	803	0.16	4995 241	1,500	33,277,477 BTU	1,109,249	46,219	92,437	12.2	24.3
3/1/2012	558	0.11	163		22,550,957 BTU	751,699	31,321	62,642	8.2	16.5
4/1/2012	390	0.08	114		15,761,421 BTU	525,381	21,891	43,782	5.8	11.5
5/1/2012	136	0.03	40		5,496,291 BTU	183,210	7,634	15,267	2.0	4.0
6/1/2012	65	0.01	19		2,626,904 BTU	87,563	3,648	7,297	1.0	1.9
7/1/2012	3	0.00	1		121,242 BTU	4,041	168	337	0.0	0.1
8/1/2012	11	0.00	3		444,553 BTU	14,818	617	1,235	0.2	0.3
9/1/2012	104	0.02	30		4,203,046 BTU	140,102	5,838	11,675	1.5	3.1
10/1/2012	268	0.05	78		10,830,925 BTU	361,031	15,043	30,086	4.0	7.9
11/1/2012	731	0.14	214		29,542,561 BTU	984,752	41,031	82,063	10.8	21.6
12/1/2012	867	0.17	254		35,038,852 BTU	1,167,962	48,665	97,330	12.8	25.6
1/1/2013	1,041	0.20	HDD 305		42,070,871 BTU	1,402,362	58,432	116,864	15.4	30.8
2/1/2013	948	0.19	5122 278	1,500	38,312,378 BTU	1,277,079	53,212	106,423	14.0	28.0
3/1/2013	826	0.14	208		28,644,999 BTU	954,833	39,785	79,569	10.5	20.9
4/1/2013	467	0.08	117		16,195,175 BTU	539,839	22,493	44,987	5.9	11.8
5/1/2013	210	0.04	53		7,282,627 BTU	242,754	10,115	20,230	2.7	5.3
6/1/2013	56	0.01	14		1,942,034 BTU	64,734	2,697	5,395	0.7	1.4
7/1/2013	4	0.00	1		138,717 BTU	4,624	193	385	0.1	0.1
8/1/2013	21	0.00	5		728,263 BTU	24,275	1,011	2,023	0.3	0.5
9/1/2013	145	0.02	36		5,028,480 BTU	167,616	6,984	13,968	1.8	3.7
10/1/2013	331	0.06	83		11,478,807 BTU	382,627	15,943	31,886	4.2	8.4
11/1/2013	676	0.11	170		23,443,123 BTU	781,437	32,560	65,120	8.6	17.1
12/1/2013	988	0.17	248		34,263,026 BTU	1,142,101	47,588	95,175	12.5	25.0
1/1/2014	1,191	0.20	HDD 299		41,302,898 BTU	1,376,763	57,365	114,730	15.1	30.2
2/1/2014	1,054	0.18	5969 265	1,500	36,551,851 BTU	1,218,395	50,766	101,533	13.4	26.7

Hartford, CT

Heating Degree Days 3-year average: 2011, 2012, 2013 & 2014

21 kW BioWIN100

	HDD	%	Oil consumption	Oil BTU's	BTU/day	BTU/24h	BTU/16h	BTU/12h
Mar average	738	0.14	207 Gal 783 L	28,530,784 BTU 8,362 kW	920,348 269.7	38,348 11.2	57,522 16.9	76,696 22.5
Apr average	423	0.08	118 Gal 448 L	16,343,490 BTU 4,790 kW	583,696 171.1	24,321 7.1	36,481 10.7	48,641 14.3
May average	172	0.03	48 Gal 181 L	6,607,987 BTU 1,937 kW	213,161 62.5	8,882 2.6	13,323 3.9	17,763 5.2
Jun average	54	0.01	15 Gal 57 L	2,089,345 BTU 612 kW	69,645 20.4	2,902 0.9	4,353 1.3	5,804 1.7
Jul average	3	0.00	1 Gal 4 L	128,094 BTU 38 kW	4,132 1.2	172 0.1	258 0.1	344 0.1
Aug average	14	0.00	4 Gal 14 L	515,263 BTU 151 kW	17,175 5.0	716 0.2	1,073 0.3	1,431 0.4
Sep average	101	0.02	28 Gal 104 L	3,809,308 BTU 1,116 kW	122,881 36.0	5,120 1.5	7,680 2.3	10,240 3.0
Oct average	312	0.06	88 Gal 332 L	12,105,647 BTU 3,548 kW	390,505 114.5	16,271 4.8	24,407 7.2	32,542 9.5
Nov average	649	0.12	182 Gal 689 L	25,121,354 BTU 7,363 kW	837,378 245.4	34,891 10.2	52,336 15.3	69,782 20.5
Dec average	892	0.17	249 Gal 944 L	34,427,953 BTU 10,090 kW	1,110,579 325.5	46,274 13.6	69,411 20.3	92,548 27.1
Jan average	1,069	0.20	299 Gal 1132 L	41,273,539 BTU 12,097 kW	1,375,785 403.2	57,324 16.8	85,987 25.2	114,649 33.6
Feb average	935	0.17	261 Gal 989 L	36,047,236 BTU 10,565 kW	1,162,814 340.8	48,451 14.2	72,676 21.3	96,901 28.4

71652 BTU/hr Nominal

54% Output

34%

12%

4%

0%

1%

7%

23%

49%

65%

80%

68%

5,362

1.00

1500

Description: Fahrenheit-based heating degree days for a base temperature of 65F

Source: www.degreedays.net (using temperature data from www.wunderground.com)

Accuracy: Estimates were made to account for missing data: the "% Estimated" column shows how much each figure was affected (0% is best, 100% is worst)

Station: HARTFORD-BRAINARD AIRPORT, CT, US (72.65W,41.74N)

Station ID: KHFD

