

# 2015 HVAC Market Report

Prepared for: New York State Energy Research and Development Authority

Issued: December 19, 2016

# **HVAC Market Share by Efficiency and Capacity**

## **January 1, 2015 - December 31, 2015**

This report is based on sales data reported to D+R International by HARDI members participating in the Unitary HVAC Market Report.

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**Prepared for:** NYSERDA

**Data Timeframe:** January 1, 2015 - December 31, 2015

**Custom Region:** NY and Northeastern, excluding NY

## Introduction

Heating, Air-conditioning & Distributors International (HARDI) and D+R International have been partnering since 2012. Distributor members of HARDI send their monthly sales data to D+R. In turn, D+R prepares quarterly updates of the HVAC markets for each participating distributor member.

## Estimation Methodology

The annual market size estimates are based on a stock-replacement model, developed by D+R using existing HVAC equipment stock data from the Energy Information Administration's 2009 Residential Energy Consumption Survey. D+R estimated equipment sales by dividing the total stock by average lifetimes of equipment to determine the number of probable replacements in a given year. HVAC equipment in new housing was estimated from U.S. Census data. D+R also developed a heat pump adjustment factor to account for heat pumps replacing some air conditioners, particularly in the cooling-dominated regions.

While this model drives the baseline market size, all other reporting metrics are based on the HARDI distributor data. These include:

- market growth
- efficiency distribution
- ducted/ductless percentage (within ASHPs and ACs)
- refrigerant type

Collected sales information always includes the distributor, branch location, model number, ZIP code shipped from, sales date, and quantity. D+R matches the model number to manufacturer specifications to determine values included in this report.

## Definitions

This section is an overview of what equipment and metrics D+R tracks and how D+R classifies them.

### Products

**Air Conditioner:** Split and packaged, single fuels air conditioning systems that have a SEER rating.

- Includes: split system AC, packaged AC
- Excludes: room air conditioners, dual fuel packaged units, package terminal air-conditioners

**Air-Source Heat Pumps:** Split and packaged, single fuels air conditioning systems that have a SEER rating.

- Includes: split system ASHP, packaged ASHP
- Excludes: reverse cycle room air conditioners, dual fuel packaged units, package terminal air-source heat pumps, ground-source heat pumps

**Furnaces:** All ducted fossil fuel, single fuel furnaces that have an AFUE rating.

- Includes: split system ASHP, packaged ASHP
- Excludes: reverse cycle room air conditioners, dual fuel packaged units, package terminal air-source heat pumps, ground-source heat pumps

**Ducted:** ACs and ASHPs (as defined above) that have ducting.

**Ductless:** Split system ACs and ASHPs (as defined above) that do not have ducts but do have an indoor air handler(s). These products often have inverter driven, variable speed compressors and are referred to as ductless mini-splits.

## Metrics

**SEER (nominal):** Nominal Seasonal Energy Efficiency Ratio of the outdoor condensing unit.

**HSPF:** Heating Season Performance Factor. In the case of split systems, the “lowest matched pair” value is reported.

**EER:** Energy Efficiency Ratio. In the case of split systems, the “lowest matched pair” value is reported.

**AFUE:** Annualized Fuel Utilization Efficiency of the equipment.

**Capacity (nominal):** Nominal heating or cooling capacity for the piece of equipment. For air conditioners, ground source heat pumps, and air source heat pumps, this is the capacity of the equipment to the closest half ton increment. For furnaces and boilers, this is the manufacturer specified input capacity.

Air Conditioners		
	Northeastern	NY
N-value	14,520	16,507

Air Conditioners - Percentage of Sales by Nominal SEER		
SEER	Northeastern	NY
13.00 - 13.99	75.6%	71.5%
14.00 - 14.99	3.2%	6.9%
15.00 - 15.99	0.5%	8.5%
16.00 - 16.99	16.4%	10.2%
17.00 - 17.99	1.1%	1.3%
18.00 - 18.99	0.8%	0.1%
19.00 - 19.99	0.8%	0.7%
20.00 - 20.99	0.0%	0.4%
21.00 - 21.99	1.6%	0.4%
22.00 - 22.99	0.0%	0.0%
23.00 - 23.99	0.0%	0.0%
24.00 - 24.99	0.0%	0.0%
25.00 - 25.99	0.0%	0.0%
>= 26.00	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>80,825</b>	<b>117,761</b>

Air Conditioners, Ducted - Percentage of Sales by Nominal SEER		
SEER	Northeastern	NY
13.00 - 13.99	79.2%	73.7%
14.00 - 14.99	3.1%	6.8%
15.00 - 15.99	0.1%	8.1%
16.00 - 16.99	16.8%	10.3%
17.00 - 17.99	0.1%	0.9%
18.00 - 18.99	0.7%	0.1%
19.00 - 19.99	0.0%	0.0%
20.00 - 20.99	0.0%	0.0%
21.00 - 21.99	0.0%	0.0%
22.00 - 22.99	0.0%	0.0%
23.00 - 23.99	0.0%	0.0%
24.00 - 24.99	0.0%	0.0%
25.00 - 25.99	0.0%	0.0%
>= 26.00	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>76,561</b>	<b>113,930</b>

Air Conditioners, Ductless - Percentage of Sales by Nominal SEER		
SEER	Northeastern	NY
13.00 - 13.99	11.1%	5.4%
14.00 - 14.99	5.5%	8.4%
15.00 - 15.99	8.7%	21.4%
16.00 - 16.99	8.3%	5.6%
17.00 - 17.99	17.6%	12.7%
18.00 - 18.99	2.0%	3.0%
19.00 - 19.99	15.7%	19.2%
20.00 - 20.99	0.5%	11.5%
21.00 - 21.99	30.7%	12.8%
22.00 - 22.99	0.0%	0.0%
23.00 - 23.99	0.0%	0.0%
24.00 - 24.99	0.0%	0.0%
25.00 - 25.99	0.0%	0.0%
>= 26.00	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>4,264</b>	<b>3,831</b>

<b>Air Conditioners - Percentage of Sales by Ducting Type</b>			
<u>Ducting Type</u>		<u>Northeastern</u>	<u>NY</u>
Ducted		94.7%	96.7%
Ductless		5.3%	3.3%
<b>Est. Unit Sales</b>		<b>80,825</b>	<b>117,761</b>

<b>Air Conditioners - Percentage of Sales by Refrigerant Type</b>			
<u>Refrigerant</u>		<u>Northeastern</u>	<u>NY</u>
R-22		19.4%	11.6%
R-410A		80.6%	88.4%
<b>Est. Unit Sales</b>		<b>80,825</b>	<b>117,761</b>

<b>Air Conditioners - Percentage of Sales by Capacity</b>			
<u>Tonnage</u>		<u>Northeastern</u>	<u>NY</u>
0.5		0.0%	0.0%
1.0		1.5%	1.0%
1.5		13.1%	11.8%
2.0		22.7%	24.3%
2.5		26.0%	22.5%
3.0		16.7%	17.4%
3.5		4.6%	5.4%
4.0		9.0%	8.9%
4.5		0.0%	0.8%
5.0		6.4%	7.9%
<b>Est. Unit Sales</b>		<b>80,825</b>	<b>117,761</b>

<b>Air Conditioners, Ducted - Percentage of Sales by Capacity</b>			
<u>Tonnage</u>		<u>Northeastern</u>	<u>NY</u>
0.5		0.0%	0.0%
1.0		0.0%	0.0%
1.5		12.6%	11.5%
2.0		22.7%	24.2%
2.5		27.0%	23.1%
3.0		16.7%	17.4%
3.5		4.8%	5.6%
4.0		9.4%	9.2%
4.5		0.0%	0.8%
5.0		6.8%	8.2%
<b>Est. Unit Sales</b>		<b>76,561</b>	<b>113,930</b>

<b>Air Conditioners, Ductless - Percentage of Sales by Capacity</b>			
<u>Tonnage</u>		<u>Northeastern</u>	<u>NY</u>
0.5		0.0%	0.0%
1.0		27.9%	29.2%
1.5		23.0%	20.9%
2.0		23.6%	26.8%
2.5		7.0%	6.0%
3.0		15.8%	16.2%
3.5		0.8%	0.7%
4.0		1.8%	0.0%
4.5		0.0%	0.0%
5.0		0.0%	0.2%
<b>Est. Unit Sales</b>		<b>4,264</b>	<b>3,831</b>

<b>Air Conditioners - Capacity SEER Cross-Tabulation for Northeastern Region</b>					
<u>Tonnage</u>	<u>13 SEER</u>	<u>14 SEER</u>	<u>15 SEER</u>	<u>16 SEER</u>	<u>17+ SEER</u>
0.5	0.0%	0.0%	0.0%	0.0%	0.0%
1.0	0.3%	0.6%	0.0%	0.3%	27.6%
1.5	8.9%	24.7%	5.1%	26.9%	26.8%
2.0	22.9%	22.9%	2.6%	21.9%	24.8%
2.5	30.1%	14.7%	17.9%	16.2%	1.1%
3.0	16.4%	20.8%	53.8%	16.4%	15.0%
3.5	4.7%	5.2%	7.7%	5.3%	0.0%
4.0	9.4%	8.7%	2.6%	8.5%	3.1%
4.5	0.0%	0.0%	0.0%	0.3%	0.0%
5.0	7.3%	2.4%	10.3%	4.3%	1.6%
<b>Est. Unit Sales</b>	<b>61,116</b>	<b>2,573</b>	<b>434</b>	<b>13,249</b>	<b>3,453</b>

<b>Air Conditioners - Capacity SEER Cross-Tabulation for NY</b>					
<u>Tonnage</u>	<u>13 SEER</u>	<u>14 SEER</u>	<u>15 SEER</u>	<u>16 SEER</u>	<u>17+ SEER</u>
0.5	0.0%	0.0%	0.0%	0.0%	0.0%
1.0	0.2%	0.4%	1.9%	0.0%	21.9%
1.5	12.7%	6.4%	4.7%	13.5%	17.4%
2.0	26.7%	16.1%	11.5%	22.5%	28.0%
2.5	25.5%	20.9%	11.8%	18.2%	0.0%
3.0	16.7%	15.0%	25.9%	17.8%	13.0%
3.5	4.3%	14.3%	4.9%	9.1%	0.0%
4.0	6.8%	23.3%	11.6%	9.6%	15.3%
4.5	1.0%	0.1%	0.0%	0.6%	0.0%
5.0	6.0%	3.6%	27.7%	8.6%	4.3%
<b>Est. Unit Sales</b>	<b>84,201</b>	<b>8,070</b>	<b>10,068</b>	<b>11,974</b>	<b>3,447</b>

Air Source Heat Pumps		
	Northeastern	NY
N-value	10,051	6,604

Air Source Heat Pumps - Percentage of Sales by Nominal SEER		
SEER	Northeastern	NY
13.00 - 13.99	5.4%	13.4%
14.00 - 14.99	4.0%	11.6%
15.00 - 15.99	2.7%	5.5%
16.00 - 16.99	8.4%	12.3%
17.00 - 17.99	6.5%	4.2%
18.00 - 18.99	15.4%	21.8%
19.00 - 19.99	9.3%	8.3%
20.00 - 20.99	9.4%	3.7%
21.00 - 21.99	6.8%	3.3%
22.00 - 22.99	7.5%	4.9%
23.00 - 23.99	1.5%	1.6%
24.00 - 24.99	0.4%	0.1%
25.00 - 25.99	8.8%	3.3%
>= 26.00	13.9%	6.0%
<b>Est. Unit Sales</b>	<b>28,559</b>	<b>41,615</b>

Air Source Heat Pumps, Ducted - Percentage of Sales by Nominal SEER		
SEER	Northeastern	NY
13.00 - 13.99	36.8%	45.8%
14.00 - 14.99	21.4%	36.2%
15.00 - 15.99	10.2%	7.7%
16.00 - 16.99	28.0%	6.6%
17.00 - 17.99	0.0%	0.2%
18.00 - 18.99	3.3%	1.8%
19.00 - 19.99	0.3%	0.6%
20.00 - 20.99	0.0%	1.0%
21.00 - 21.99	0.0%	0.0%
22.00 - 22.99	0.0%	0.0%
23.00 - 23.99	0.0%	0.0%
24.00 - 24.99	0.0%	0.0%
25.00 - 25.99	0.0%	0.0%
>= 26.00	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>4,134</b>	<b>12,118</b>

Air Source Heat Pumps, Ductless - Percentage of Sales by Nominal SEER		
SEER	Northeastern	NY
13.00 - 13.99	0.2%	0.0%
14.00 - 14.99	1.1%	1.5%
15.00 - 15.99	1.4%	4.6%
16.00 - 16.99	5.1%	14.7%
17.00 - 17.99	7.6%	5.9%
18.00 - 18.99	17.4%	30.0%
19.00 - 19.99	10.8%	11.5%
20.00 - 20.99	10.9%	4.8%
21.00 - 21.99	8.0%	4.6%
22.00 - 22.99	8.7%	7.0%
23.00 - 23.99	1.8%	2.3%
24.00 - 24.99	0.4%	0.2%
25.00 - 25.99	10.3%	4.7%
>= 26.00	16.2%	8.4%
<b>Est. Unit Sales</b>	<b>24,425</b>	<b>29,497</b>

Air Source Heat Pumps - Percentage of Sales by Ducting Type		
<u>Ducting Type</u>	<u>Northeastern</u>	<u>NY</u>
Ducted	14.5%	29.1%
Ductless	85.5%	70.9%
<b>Est. Unit Sales</b>	<b>28,559</b>	<b>41,615</b>

Air Source Heat Pumps, Ducted - Percentage of Sales by Refrigerant Type		
<u>Refrigerant</u>	<u>Northeastern</u>	<u>NY</u>
R-22	16.4%	4.1%
R-410A	83.6%	95.9%
<b>Est. Unit Sales</b>	<b>28,559</b>	<b>41,615</b>

Air Source Heat Pumps - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern</u>	<u>NY</u>
0.5	0.2%	0.1%
1.0	27.5%	20.2%
1.5	30.0%	18.4%
2.0	18.5%	20.6%
2.5	8.1%	11.0%
3.0	11.1%	18.2%
3.5	1.8%	3.6%
4.0	2.2%	4.8%
4.5	0.2%	0.3%
5.0	0.5%	2.8%
<b>Est. Unit Sales</b>	<b>28,559</b>	<b>41,615</b>

Air Source Heat Pumps, Ducted - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern</u>	<u>NY</u>
0.5	0.0%	0.0%
1.0	0.0%	0.0%
1.5	10.5%	6.2%
2.0	38.4%	17.9%
2.5	12.8%	21.2%
3.0	23.5%	23.9%
3.5	3.4%	9.0%
4.0	7.0%	11.0%
4.5	0.7%	1.1%
5.0	3.7%	9.6%
<b>Est. Unit Sales</b>	<b>4,134</b>	<b>12,118</b>

Air Source Heat Pumps, Ductless - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern</u>	<u>NY</u>
0.5	0.2%	0.1%
1.0	31.9%	28.5%
1.5	33.1%	23.4%
2.0	15.3%	21.7%
2.5	7.3%	6.8%
3.0	9.1%	15.8%
3.5	1.6%	1.4%
4.0	1.4%	2.2%
4.5	0.1%	0.0%
5.0	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>24,425</b>	<b>29,497</b>

Air Source Heat Pumps, Ducted - Percentage of Sales by HSPF		
<u>HSPF</u>	<u>Northeastern</u>	<u>NY</u>
7.70-8.19	44.5%	50.3%
8.20-8.49	46.4%	33.8%
8.50-8.99	2.0%	3.9%
9.00-9.49	6.9%	7.7%
9.50-9.99	0.3%	0.8%
10.00-10.49	0.0%	0.0%
10.50-10.99	0.0%	0.0%
11.00+	0.0%	3.4%
<b>Est. Unit Sales</b>	<b>4,134</b>	<b>12,118</b>

Air Source Heat Pumps, Ductless - Percentage of Sales by HSPF		
<u>HSPF</u>	<u>Northeastern</u>	<u>NY</u>
7.70-8.19	0.2%	0.1%
8.20-8.49	1.4%	1.0%
8.50-8.99	4.5%	4.7%
9.00-9.49	8.2%	23.9%
9.50-9.99	10.1%	17.3%
10.00-10.49	20.5%	16.5%
10.50-10.99	3.9%	5.1%
11.00+	51.2%	31.4%
<b>Est. Unit Sales</b>	<b>24,425</b>	<b>29,497</b>

Air Source Heat Pumps, Ducted - Percentage of Sales by Nominal EER		
<u>EER</u>	<u>Northeastern</u>	<u>NY</u>
< 10.00	3.1%	5.5%
10.00 - 10.99	0.5%	1.7%
11.00 - 11.99	51.2%	62.4%
12.00 - 12.99	36.2%	28.8%
13.00 - 13.99	9.0%	1.0%
14.00 - 14.99	0.0%	0.5%
15.00 - 15.99	0.0%	0.0%
16.00 - 16.99	0.0%	0.1%
17.00 - 17.99	0.0%	0.0%
18.00 - 18.99	0.0%	0.0%
19.00 - 19.99	0.0%	0.0%
20.00+	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>4,134</b>	<b>12,118</b>

Air Source Heat Pumps, Ductless - Percentage of Sales by Nominal EER		
<u>EER</u>	<u>Northeastern</u>	<u>NY</u>
< 10.00	13.8%	18.5%
10.00 - 10.99	4.3%	10.4%
11.00 - 11.99	0.8%	2.8%
12.00 - 12.99	31.8%	40.8%
13.00 - 13.99	31.8%	17.7%
14.00 - 14.99	8.1%	3.3%
15.00 - 15.99	4.2%	2.5%
16.00 - 16.99	1.6%	2.2%
17.00 - 17.99	0.0%	0.0%
18.00 - 18.99	3.6%	1.8%
19.00 - 19.99	0.0%	0.0%
20.00+	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>24,425</b>	<b>29,497</b>

Air Source Heat Pumps - Capacity SEER Cross-Tabulation for Northeastern Region					
<u>Tonnage</u>	<u>13 SEER</u>	<u>14 SEER</u>	<u>15 SEER</u>	<u>16 SEER</u>	<u>17+ SEER</u>
0.5	0.0%	0.0%	2.2%	0.1%	0.2%
1.0	0.0%	0.0%	6.7%	7.4%	33.4%
1.5	17.7%	10.9%	10.1%	1.4%	35.3%
2.0	30.9%	28.4%	28.8%	25.8%	16.2%
2.5	17.6%	17.2%	15.4%	2.8%	7.3%
3.0	17.7%	30.5%	22.5%	56.6%	4.6%
3.5	4.8%	4.8%	4.1%	0.7%	1.6%
4.0	6.0%	5.7%	9.0%	3.4%	1.4%
4.5	0.4%	0.6%	0.0%	0.7%	0.1%
5.0	4.9%	1.8%	1.1%	0.9%	0.0%
<b>Est. Unit Sales</b>	<b>1,555</b>	<b>1,149</b>	<b>759</b>	<b>2,405</b>	<b>22,691</b>

Air Source Heat Pumps - Capacity SEER Cross-Tabulation for NY					
<u>Tonnage</u>	<u>13 SEER</u>	<u>14 SEER</u>	<u>15 SEER</u>	<u>16 SEER</u>	<u>17+ SEER</u>
0.5	0.0%	0.0%	1.1%	0.0%	0.0%
1.0	0.0%	0.0%	5.0%	29.4%	28.5%
1.5	8.2%	6.1%	2.2%	1.5%	28.4%
2.0	15.3%	10.7%	23.8%	11.7%	25.4%
2.5	21.5%	25.9%	12.5%	3.7%	7.0%
3.0	22.9%	30.3%	37.1%	51.3%	5.7%
3.5	9.3%	9.9%	8.6%	0.0%	1.3%
4.0	11.8%	9.0%	3.6%	1.2%	3.1%
4.5	1.6%	0.0%	1.9%	0.0%	0.0%
5.0	9.4%	8.0%	4.2%	1.2%	0.4%
<b>Est. Unit Sales</b>	<b>5,558</b>	<b>4,821</b>	<b>2,275</b>	<b>5,123</b>	<b>23,838</b>

<b>Air Source Heat Pumps - Capacity HSPF Cross-Tabulation for Northeastern Region</b>						
<u>Tonnage</u>	<u>7.70-8.19</u>	<u>8.20-8.49</u>	<u>8.50-8.99</u>	<u>9.00-9.49</u>	<u>9.50-9.99</u>	<u>10.00+</u>
0.5	0.0%	0.0%	0.3%	0.0%	0.0%	0.3%
1.0	0.0%	3.4%	7.3%	7.1%	2.2%	40.2%
1.5	9.5%	2.7%	64.7%	18.2%	37.0%	32.7%
2.0	44.5%	41.0%	14.8%	7.9%	42.2%	12.9%
2.5	18.7%	6.3%	2.3%	4.5%	7.9%	7.6%
3.0	18.7%	40.4%	3.8%	59.9%	4.2%	3.6%
3.5	3.1%	1.8%	1.0%	0.0%	2.2%	1.7%
4.0	1.5%	3.6%	4.5%	1.9%	4.4%	1.0%
4.5	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%
5.0	4.0%	0.7%	0.0%	0.5%	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>1,882</b>	<b>2,250</b>	<b>1,182</b>	<b>2,283</b>	<b>2,471</b>	<b>18,490</b>

<b>Air Source Heat Pumps - Capacity HSPF Cross-Tabulation for NY</b>						
<u>Tonnage</u>	<u>7.70-8.19</u>	<u>8.20-8.49</u>	<u>8.50-8.99</u>	<u>9.00-9.49</u>	<u>9.50-9.99</u>	<u>10.00+</u>
0.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
1.0	0.0%	5.8%	5.5%	19.4%	6.1%	40.8%
1.5	11.4%	3.5%	38.3%	20.7%	9.7%	26.8%
2.0	31.3%	13.5%	21.7%	2.5%	61.4%	17.2%
2.5	16.7%	27.2%	2.4%	3.1%	11.9%	6.8%
3.0	15.2%	28.5%	17.0%	52.8%	1.6%	4.5%
3.5	9.2%	9.9%	6.3%	0.2%	2.0%	1.5%
4.0	3.5%	1.9%	4.0%	0.5%	7.2%	2.0%
4.5	0.7%	0.0%	0.0%	0.1%	0.0%	0.0%
5.0	11.9%	9.6%	4.7%	0.6%	0.0%	0.3%
<b>Est. Unit Sales</b>	<b>6,129</b>	<b>4,384</b>	<b>1,875</b>	<b>7,976</b>	<b>5,184</b>	<b>16,067</b>

<b>Air Source Heat Pumps, Ducted - Capacity HSPF Cross-Tabulation for Northeastern Region</b>						
<u>Tonnage</u>	<u>7.70-8.19</u>	<u>8.20-8.49</u>	<u>8.50-8.99</u>	<u>9.00-9.49</u>	<u>9.50-9.99</u>	<u>10.00+</u>
0.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.5	10.0%	2.2%	0.0%	0.0%	0.0%	0.0%
2.0	44.4%	54.3%	85.7%	4.2%	0.0%	0.0%
2.5	19.6%	1.9%	0.0%	0.0%	0.0%	0.0%
3.0	19.0%	33.3%	0.0%	58.3%	0.0%	0.0%
3.5	1.3%	2.5%	0.0%	0.0%	0.0%	0.0%
4.0	1.6%	4.9%	14.3%	29.2%	100.0%	0.0%
4.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5.0	4.2%	0.9%	0.0%	8.3%	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>1,839</b>	<b>1,916</b>	<b>83</b>	<b>284</b>	<b>12</b>	<b>0</b>

<b>Air Source Heat Pumps, Ducted - Capacity HSPF Cross-Tabulation for NY</b>						
<u>Tonnage</u>	<u>7.70-8.19</u>	<u>8.20-8.49</u>	<u>8.50-8.99</u>	<u>9.00-9.49</u>	<u>9.50-9.99</u>	<u>10.00+</u>
0.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.5	11.6%	3.4%	0.0%	0.0%	0.0%	0.0%
2.0	31.0%	15.0%	9.7%	3.3%	0.0%	3.7%
2.5	16.9%	27.7%	6.5%	0.0%	0.0%	0.0%
3.0	14.9%	28.8%	25.8%	70.5%	50.0%	33.3%
3.5	9.3%	11.6%	6.5%	3.3%	0.0%	0.0%
4.0	3.5%	2.2%	12.9%	9.8%	50.0%	33.3%
4.5	0.8%	0.0%	0.0%	1.6%	0.0%	0.0%
5.0	12.1%	11.2%	38.7%	11.5%	0.0%	29.6%
<b>Est. Unit Sales</b>	<b>6,097</b>	<b>4,101</b>	<b>476</b>	<b>937</b>	<b>92</b>	<b>415</b>

<b>Air Source Heat Pumps, Ductless - Capacity HSPF Cross-Tabulation for Northeastern Region</b>						
<u>Tonnage</u>	<u>7.70-8.19</u>	<u>8.20-8.49</u>	<u>8.50-8.99</u>	<u>9.00-9.49</u>	<u>9.50-9.99</u>	<u>10.00+</u>
0.5	0.0%	0.0%	0.3%	0.0%	0.0%	0.3%
1.0	0.0%	12.8%	7.5%	7.6%	2.2%	40.2%
1.5	0.0%	4.3%	67.0%	19.4%	37.0%	32.7%
2.0	46.7%	4.3%	12.2%	8.1%	42.3%	12.9%
2.5	0.0%	18.8%	2.3%	4.9%	7.9%	7.6%
3.0	13.3%	59.8%	3.9%	60.0%	4.2%	3.6%
3.5	40.0%	0.0%	1.0%	0.0%	2.2%	1.7%
4.0	0.0%	0.0%	4.2%	0.0%	4.2%	1.0%
4.5	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%
5.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>43</b>	<b>334</b>	<b>1,100</b>	<b>1,999</b>	<b>2,459</b>	<b>18,490</b>

<b>Air Source Heat Pumps, Ductless - Capacity HSPF Cross-Tabulation for NY</b>						
<u>Tonnage</u>	<u>7.70-8.19</u>	<u>8.20-8.49</u>	<u>8.50-8.99</u>	<u>9.00-9.49</u>	<u>9.50-9.99</u>	<u>10.00+</u>
0.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
1.0	0.0%	40.0%	6.3%	20.5%	6.2%	41.2%
1.5	0.0%	4.4%	43.7%	21.8%	9.8%	27.1%
2.0	60.0%	4.4%	23.4%	2.5%	61.9%	17.3%
2.5	0.0%	24.4%	1.8%	3.3%	12.0%	6.9%
3.0	40.0%	26.7%	15.8%	51.8%	1.2%	4.1%
3.5	0.0%	0.0%	6.3%	0.0%	2.0%	1.5%
4.0	0.0%	0.0%	2.7%	0.0%	6.9%	1.7%
4.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>32</b>	<b>284</b>	<b>1,399</b>	<b>7,039</b>	<b>5,092</b>	<b>15,653</b>

<b>Ground Source Heat Pumps - Percentage of Sales by Nominal EER</b>				
<u>EER</u>	<u>N-value</u>		<u>Northeastern</u>	<u>NY</u>
10.00 - 10.99	NY	1	0.0%	0.0%
11.00 - 11.99	Northeastern	1	0.0%	0.0%
12.00 - 12.99			0.0%	0.0%
13.00 - 13.99			100.0%	100.0%
14.00 - 14.99			0.0%	0.0%
15.00 - 15.99			0.0%	0.0%
16.00 - 16.99			0.0%	0.0%
17.00 - 17.99			0.0%	0.0%
18.00 - 18.99			0.0%	0.0%
19.00 - 19.99			0.0%	0.0%
20.00+			0.0%	0.0%
<b>Est. Unit Sales</b>			<b>Q</b>	<b>Q</b>

Furnaces		
	<u>Northeastern</u>	<u>NY</u>
N-value	10,607	17,817

Furnaces - Percentage of Sales by Nominal AFUE		
<u>AFUE</u>	<u>Northeastern</u>	<u>NY</u>
80.00 - 80.99	27.0%	38.0%
81.00 - 81.99	0.1%	0.0%
82.00 - 82.99	1.3%	0.5%
83.00 - 83.99	2.9%	1.4%
84.00 - 84.99	0.4%	0.4%
85.00 - 85.99	5.5%	2.6%
86.00 - 86.99	1.6%	0.6%
87.00 - 87.99	0.1%	0.0%
88.00 - 88.99	0.1%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.2%	0.2%
91.00 - 91.99	0.1%	0.0%
92.00 - 92.99	18.1%	12.9%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.1%	0.2%
95.00 - 95.99	14.2%	9.7%
96.00 - 96.99	23.0%	29.3%
97.00 - 97.99	5.1%	3.8%
98.00 - 98.99	0.2%	0.1%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>83,268</b>	<b>166,542</b>

Furnaces, Natural Gas - Percentage of Sales by Nominal AFUE		
<u>AFUE</u>	<u>Northeastern</u>	<u>NY</u>
80.00 - 80.99	30.4%	39.3%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.0%	0.0%
83.00 - 83.99	0.7%	0.1%
84.00 - 84.99	0.1%	0.0%
85.00 - 85.99	0.0%	0.0%
86.00 - 86.99	0.0%	0.0%
87.00 - 87.99	0.0%	0.0%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.0%	0.1%
91.00 - 91.99	0.1%	0.0%
92.00 - 92.99	20.7%	14.0%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.1%	0.2%
95.00 - 95.99	16.2%	10.5%
96.00 - 96.99	26.3%	31.6%
97.00 - 97.99	5.3%	4.1%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>67,276</b>	<b>154,205</b>

<b>Furnaces, Fuel Oil - Percentage of Sales by Nominal AFUE</b>		
<u>AFUE</u>	<u>Northeastern</u>	<u>NY</u>
80.00 - 80.99	2.5%	13.0%
81.00 - 81.99	0.5%	0.7%
82.00 - 82.99	10.5%	8.2%
83.00 - 83.99	19.0%	20.0%
84.00 - 84.99	2.2%	5.8%
85.00 - 85.99	45.6%	39.0%
86.00 - 86.99	13.5%	9.7%
87.00 - 87.99	0.8%	0.0%
88.00 - 88.99	1.0%	0.0%
89.00 - 89.99	0.4%	0.0%
90.00 - 90.99	2.0%	2.2%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	0.0%	0.0%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.0%	0.0%
95.00 - 95.99	0.0%	0.0%
96.00 - 96.99	0.0%	0.0%
97.00 - 97.99	0.0%	0.0%
98.00 - 98.99	2.0%	1.4%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>15,757</b>	<b>10,802</b>

<b>Furnaces - Percentage of Sales by Input Capacity</b>		
<u>BTU/hr.</u>	<u>Northeastern</u>	<u>NY</u>
< 40,000	0.4%	1.9%
40,000 - 59,999	15.6%	8.9%
60,000 - 79,999	28.6%	26.8%
80,000 - 99,999	31.9%	40.7%
100,000 - 119,999	16.7%	16.9%
120,000 - 139,999	4.2%	3.5%
>= 140,000	2.6%	1.4%
<b>Est. Unit Sales</b>	<b>83,268</b>	<b>166,542</b>

<b>Furnaces, Natural Gas - Percentage of Sales by Input Capacity</b>		
<u>BTU/hr.</u>	<u>Northeastern</u>	<u>NY</u>
< 40,000	0.5%	1.7%
40,000 - 59,999	18.4%	9.3%
60,000 - 79,999	29.5%	28.1%
80,000 - 99,999	33.7%	41.5%
100,000 - 119,999	12.5%	15.1%
120,000 - 139,999	4.8%	3.7%
>= 140,000	0.6%	0.7%
<b>Est. Unit Sales</b>	<b>67,276</b>	<b>154,205</b>

<b>Furnaces, Fuel Oil - Percentage of Sales by Input Capacity</b>		
<u>BTU/hr.</u>	<u>Northeastern</u>	<u>NY</u>
< 40,000	0.0%	0.0%
40,000 - 59,999	0.0%	0.2%
60,000 - 79,999	23.9%	7.8%
80,000 - 99,999	20.4%	34.9%
100,000 - 119,999	41.2%	44.1%
120,000 - 139,999	0.6%	0.9%
>= 140,000	13.9%	12.2%
<b>Est. Unit Sales</b>	<b>15,757</b>	<b>10,802</b>

Furnaces - Percentage of Sales by Motor Type		
<u>Motor Type</u>	<u>Northeastern</u>	<u>NY</u>
ECM	23.7%	29.5%
PSC	76.3%	70.5%
<b>Est. Unit Sales</b>	<b>83,268</b>	<b>166,542</b>

Furnaces - Percentage of Sales by Motor Type		
<u>Motor Type</u>	<u>Northeastern</u>	<u>NY</u>
ECM	24.4%	30.3%
PSC	75.6%	69.7%
<b>Est. Unit Sales</b>	<b>67,276</b>	<b>154,205</b>

Furnaces - Percentage of Sales by Motor Type		
<u>Motor Type</u>	<u>Northeastern</u>	<u>NY</u>
ECM	17.4%	17.2%
PSC	82.6%	82.8%
<b>Est. Unit Sales</b>	<b>15,757</b>	<b>10,802</b>

Furnaces - Percentage of Sales by Nominal AFUE and Motor Type in Northeastern Region		
<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	5.9%	31.3%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.0%	1.8%
83.00 - 83.99	3.8%	2.7%
84.00 - 84.99	0.0%	0.2%
85.00 - 85.99	2.6%	6.4%
86.00 - 86.99	4.6%	0.7%
87.00 - 87.99	0.2%	0.1%
88.00 - 88.99	0.0%	0.2%
89.00 - 89.99	0.0%	0.1%
90.00 - 90.99	0.0%	0.4%
91.00 - 91.99	0.0%	0.1%
92.00 - 92.99	0.0%	25.6%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.3%	0.0%
95.00 - 95.99	9.4%	14.9%
96.00 - 96.99	51.3%	15.7%
97.00 - 97.99	21.9%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>19,716</b>	<b>63,552</b>

**Furnaces, Natural Gas - Percentage of Sales by Nominal AFUE and Motor Type in Northeastern Region**

<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	6.6%	35.1%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.0%	0.0%
83.00 - 83.99	0.0%	1.1%
84.00 - 84.99	0.0%	0.0%
85.00 - 85.99	0.0%	0.0%
86.00 - 86.99	0.0%	0.0%
87.00 - 87.99	0.0%	0.0%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.0%	0.0%
91.00 - 91.99	0.0%	0.1%
92.00 - 92.99	0.0%	29.1%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.3%	0.0%
95.00 - 95.99	10.8%	16.9%
96.00 - 96.99	59.0%	17.8%
97.00 - 97.99	23.3%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>16,417</b>	<b>50,859</b>

**Furnaces, Fuel Oil - Percentage of Sales by Nominal AFUE and Motor Type in Northeastern Region**

<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	0.0%	3.7%
81.00 - 81.99	0.0%	0.4%
82.00 - 82.99	0.0%	15.1%
83.00 - 83.99	34.0%	14.6%
84.00 - 84.99	0.0%	1.5%
85.00 - 85.99	23.2%	53.6%
86.00 - 86.99	41.3%	5.4%
87.00 - 87.99	1.5%	0.7%
88.00 - 88.99	0.0%	1.4%
89.00 - 89.99	0.0%	0.6%
90.00 - 90.99	0.0%	3.0%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	0.0%	0.0%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.0%	0.0%
95.00 - 95.99	0.0%	0.0%
96.00 - 96.99	0.0%	0.0%
97.00 - 97.99	0.0%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>2,737</b>	<b>13,020</b>

<b>Furnaces - Percentage of Sales by Nominal AFUE and Motor Type in NY</b>		
<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	10.1%	47.3%
81.00 - 81.99	0.1%	0.0%
82.00 - 82.99	0.0%	0.8%
83.00 - 83.99	2.2%	1.1%
84.00 - 84.99	0.0%	0.4%
85.00 - 85.99	0.6%	2.6%
86.00 - 86.99	0.6%	0.7%
87.00 - 87.99	0.0%	0.0%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.0%	0.3%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	9.3%	15.7%
93.00 - 93.99	0.0%	0.1%
94.00 - 94.99	0.7%	0.0%
95.00 - 95.99	3.5%	12.5%
96.00 - 96.99	59.0%	18.5%
97.00 - 97.99	13.8%	0.0%
98.00 - 98.99	0.2%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>49,162</b>	<b>117,381</b>

<b>Furnaces, Natural Gas - Percentage of Sales by Nominal AFUE and Motor Type in NY</b>		
<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	10.2%	49.3%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.0%	0.0%
83.00 - 83.99	0.0%	0.1%
84.00 - 84.99	0.0%	0.0%
85.00 - 85.99	0.0%	0.0%
86.00 - 86.99	0.0%	0.0%
87.00 - 87.99	0.0%	0.0%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.0%	0.1%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	9.7%	16.9%
93.00 - 93.99	0.0%	0.1%
94.00 - 94.99	0.7%	0.0%
95.00 - 95.99	3.6%	13.5%
96.00 - 96.99	61.3%	19.9%
97.00 - 97.99	14.3%	0.0%
98.00 - 98.99	0.2%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>46,729</b>	<b>107,476</b>

<b>Furnaces, Fuel Oil - Percentage of Sales by Nominal AFUE and Motor Type in NY</b>		
<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	0.0%	18.6%
81.00 - 81.99	4.1%	0.1%
82.00 - 82.99	0.0%	11.6%
83.00 - 83.99	62.9%	14.4%
84.00 - 84.99	0.0%	5.6%
85.00 - 85.99	17.1%	37.0%
86.00 - 86.99	15.9%	9.7%
87.00 - 87.99	0.0%	0.0%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.0%	3.1%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	0.0%	0.0%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.0%	0.0%
95.00 - 95.99	0.0%	0.0%
96.00 - 96.99	0.0%	0.0%
97.00 - 97.99	0.0%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>1,862</b>	<b>8,939</b>

<b>Boilers</b>		
	<u>Northeastern</u>	<u>NY</u>
N-value	5,620	3,632

<b>Boilers - Percentage of Sales by Nominal AFUE</b>		
<u>AFUE</u>	<u>Northeastern</u>	<u>NY</u>
80.00 - 80.99	0.6%	2.7%
81.00 - 81.99	0.3%	0.7%
82.00 - 82.99	8.3%	18.8%
83.00 - 83.99	5.3%	9.5%
84.00 - 84.99	10.0%	5.7%
85.00 - 85.99	35.1%	33.0%
86.00 - 86.99	6.6%	2.7%
87.00 - 87.99	3.6%	2.2%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.2%	1.5%
91.00 - 91.99	8.1%	1.8%
92.00 - 92.99	0.6%	1.0%
93.00 - 93.99	1.5%	0.3%
94.00 - 94.99	1.5%	1.2%
95.00 - 95.99	16.3%	15.4%
96.00 - 96.99	1.9%	3.6%
97.00 - 97.99	0.1%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>89,697</b>	<b>104,496</b>

<b>Boilers, Natural Gas - Percentage of Sales by Nominal AFUE</b>		
<u>AFUE</u>	<u>Northeastern</u>	<u>NY</u>
80.00 - 80.99	1.4%	4.0%
81.00 - 81.99	0.3%	1.0%
82.00 - 82.99	17.0%	24.5%
83.00 - 83.99	9.4%	13.4%
84.00 - 84.99	6.6%	4.4%
85.00 - 85.99	1.6%	17.7%
86.00 - 86.99	0.0%	0.0%
87.00 - 87.99	0.0%	0.0%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.4%	2.2%
91.00 - 91.99	17.3%	2.7%
92.00 - 92.99	1.1%	1.3%
93.00 - 93.99	3.3%	0.4%
94.00 - 94.99	3.2%	1.5%
95.00 - 95.99	34.6%	22.7%
96.00 - 96.99	3.7%	4.3%
97.00 - 97.99	0.2%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>45,352</b>	<b>64,123</b>

<b>Boilers, Fuel Oil - Percentage of Sales by Nominal AFUE</b>		
<u>AFUE</u>	<u>Northeastern</u>	<u>NY</u>
80.00 - 80.99	0.0%	0.0%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.6%	3.9%
83.00 - 83.99	1.4%	1.1%
84.00 - 84.99	13.1%	9.2%
85.00 - 85.99	65.0%	69.7%
86.00 - 86.99	12.8%	8.9%
87.00 - 87.99	7.0%	7.3%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.0%	0.0%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	0.0%	0.0%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.0%	0.0%
95.00 - 95.99	0.0%	0.0%
96.00 - 96.99	0.0%	0.0%
97.00 - 97.99	0.0%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
<b>Est. Unit Sales</b>	<b>44,345</b>	<b>40,373</b>

<b>Boilers - Percentage of Sales by Input Capacity</b>		
<u>BTU/hr.</u>	<u>Northeastern</u>	<u>NY</u>
< 40,000	0.2%	0.6%
40,000 - 59,999	3.1%	0.5%
60,000 - 79,999	4.7%	7.4%
80,000 - 99,999	21.8%	21.8%
100,000 - 119,999	35.1%	24.2%
120,000 - 139,999	11.7%	17.2%
>= 140,000	23.4%	28.2%
<b>Est. Unit Sales</b>	<b>89,697</b>	<b>104,496</b>

<b>Boilers, Natural Gas - Percentage of Sales by Input Capacity</b>		
<u>BTU/hr.</u>	<u>Northeastern</u>	<u>NY</u>
< 40,000	0.4%	0.9%
40,000 - 59,999	6.7%	0.8%
60,000 - 79,999	9.1%	10.5%
80,000 - 99,999	8.6%	15.7%
100,000 - 119,999	32.1%	25.9%
120,000 - 139,999	16.9%	13.5%
>= 140,000	26.2%	32.8%
<b>Est. Unit Sales</b>	<b>45,352</b>	<b>64,123</b>

<b>Boilers, Natural Gas - Percentage of Sales by Input Capacity</b>		
<u>BTU/hr.</u>	<u>Northeastern</u>	<u>NY</u>
< 40,000	0.0%	0.0%
40,000 - 59,999	0.0%	0.0%
60,000 - 79,999	0.5%	0.9%
80,000 - 99,999	34.4%	36.6%
100,000 - 119,999	38.5%	19.7%
120,000 - 139,999	7.0%	23.8%
>= 140,000	19.5%	19.0%
<b>Est. Unit Sales</b>	<b>44,345</b>	<b>40,373</b>