

2016 HVAC Market Report

Prepared for: New York State Energy Research and Development Authority

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HVAC Market Share by Efficiency and Capacity

January 1, 2016 - December 31, 2016

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, 2016 - December 31, 2016

Custom Region: New York State (NYS) and Northeastern (excluding NYS)
Northeastern includes: CT, MA, ME, NH, RI, VT

Notes: Q denotes areas where there was insufficient data to release a number or develop market estimates.

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.

N-Value: Sample size (total number of units) used in the analysis.

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 and 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

Boilers: All natural gas and fuel oil boilers that have an AFUE rating.

- Excludes: Water furnaces or other systems that contain an air-handler

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 are often have inverter driven, variable speed compressors and are referred to as ductless mini-splits.

Ground Source Heat Pumps (GSHP): Split and packaged, single fuel air conditioning systems that uses the ground (as opposed to the air) as a heat transfer mechanism.

- Includes: split system GSHP, packaged GSHP
- Excludes: All room type air conditioners, ASHPs of all kinds

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.

Notes on data coverage

- D+R International does not make any distinctions between residential and commercial sales of HVAC systems/products. D+R International only aggregates and publishes distributor data. D+R International does not track the type of consumer that distributors sell to.
- HARDI includes data collected from NYC and Long Island in the HARDI Mid-Atlantic region, while the rest of NY State is covered under the HARDI Northeast region. NYSERDA incorporates all of NYS into its NY data. This may lead to differences and discrepancies between NYSERDA reports and HARDI data.

The NE region defined by NYSERDA (does not contain NYS) is to be included for comparison purposes.

Suggested Citation

- D+R International. 2017. 2016 HVAC Market Report, prepared for the New York State Energy Research and Development Authority.

Air Conditioners		
	<u>Northeastern*</u>	<u>NYS</u>
N-value	15,196	21,626

Air Conditioners - Percentage of Sales by Nominal SEER		
<u>SEER</u>	<u>Northeastern*</u>	<u>NYS</u>
13.00 - 13.99	71.4%	58.2%
14.00 - 14.99	5.8%	12.9%
15.00 - 15.99	1.3%	14.2%
16.00 - 16.99	17.8%	10.4%
17.00 - 17.99	1.3%	2.0%
18.00 - 18.99	0.4%	0.1%
19.00 - 19.99	0.1%	0.3%
20.00 - 20.99	0.6%	0.8%
21.00 - 21.99	0.8%	0.3%
22.00 - 22.99	0.1%	0.0%
23.00 - 23.99	0.4%	0.5%
24.00 - 24.99	0.0%	0.3%
25.00 - 25.99	0.0%	0.0%
>= 26.00	0.0%	0.0%
Est. Unit Sales	83,788	121,080

Air Conditioners, Ducted - Percentage of Sales by Nominal SEER		
<u>SEER</u>	<u>Northeastern*</u>	<u>NYS</u>
13.00 - 13.99	73.8%	60.4%
14.00 - 14.99	5.7%	13.0%
15.00 - 15.99	1.1%	13.9%
16.00 - 16.99	18.5%	10.7%
17.00 - 17.99	0.4%	1.8%
18.00 - 18.99	0.4%	0.0%
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%
Est. Unit Sales	79,713	115,699

Air Conditioners, Ductless - Percentage of Sales by Nominal SEER		
<u>SEER</u>	<u>Northeastern*</u>	<u>NYS</u>
13.00 - 13.99	24.3%	8.0%
14.00 - 14.99	6.1%	9.7%
15.00 - 15.99	6.1%	19.6%
16.00 - 16.99	3.7%	2.9%
17.00 - 17.99	19.1%	5.8%
18.00 - 18.99	1.2%	3.2%
19.00 - 19.99	2.2%	6.7%
20.00 - 20.99	11.7%	17.5%
21.00 - 21.99	16.3%	7.0%
22.00 - 22.99	1.5%	0.0%
23.00 - 23.99	7.7%	11.7%
24.00 - 24.99	0.0%	7.8%
25.00 - 25.99	0.0%	0.0%
>= 26.00	0.0%	0.0%
Est. Unit Sales	4,075	5,380

*Does not include NYS

Air Conditioners - Percentage of Sales by Ducting Type		
<u>Ducting Type</u>	<u>Northeastern*</u>	<u>NYS</u>
Ducted	95.1%	95.6%
Ductless	4.9%	4.4%
Est. Unit Sales	83,788	121,080

Air Conditioners - Percentage of Sales by Refrigerant Type		
<u>Refrigerant</u>	<u>Northeastern*</u>	<u>NYS</u>
R-22	7.1%	2.1%
R-410A	92.9%	97.9%
Est. Unit Sales	83,788	121,080

Air Conditioners - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern*</u>	<u>NYS</u>
0.5	0.0%	0.1%
1.0	1.4%	1.5%
1.5	12.5%	12.5%
2.0	21.9%	22.7%
2.5	24.8%	22.0%
3.0	18.3%	17.5%
3.5	5.5%	5.6%
4.0	8.9%	9.4%
4.5	0.1%	0.5%
5.0	6.6%	8.1%
Est. Unit Sales	83,788	121,080

Air Conditioners, Ducted - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern*</u>	<u>NYS</u>
0.5	0.0%	0.0%
1.0	0.0%	0.0%
1.5	12.4%	12.1%
2.0	22.0%	23.0%
2.5	25.3%	22.6%
3.0	18.4%	17.7%
3.5	5.7%	5.8%
4.0	9.2%	9.8%
4.5	0.1%	0.5%
5.0	6.9%	8.5%
Est. Unit Sales	79,713	115,699

Air Conditioners, Ductless - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern*</u>	<u>NYS</u>
0.5	0.4%	1.9%
1.0	28.1%	34.7%
1.5	15.6%	22.2%
2.0	20.2%	15.8%
2.5	15.0%	8.2%
3.0	15.6%	14.2%
3.5	1.5%	1.0%
4.0	3.5%	2.1%
4.5	0.1%	0.0%
5.0	0.0%	0.0%
Est. Unit Sales	4,075	5,380

*Does not include NYS

Air Conditioners - 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%	0.0%	0.0%	0.0%
1.0	0.3%	0.0%	1.5%	0.0%	30.8%
1.5	8.9%	14.7%	76.9%	20.8%	16.8%
2.0	23.3%	19.9%	0.0%	18.0%	23.8%
2.5	28.5%	20.0%	2.5%	18.4%	0.2%
3.0	17.4%	25.0%	13.1%	20.0%	17.5%
3.5	5.2%	6.6%	4.5%	6.8%	5.4%
4.0	9.0%	11.7%	1.5%	9.5%	3.6%
4.5	0.0%	0.0%	0.0%	0.3%	0.2%
5.0	7.4%	2.1%	0.0%	6.3%	1.8%
Est. Unit Sales	59,853	4,830	1,098	14,943	3,064

Air Conditioners - Capacity SEER Cross-Tabulation for NYS					
<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%	0.1%
1.0	0.2%	0.0%	1.6%	0.0%	26.4%
1.5	14.3%	8.9%	5.8%	14.0%	17.0%
2.0	27.9%	15.4%	10.2%	22.4%	17.1%
2.5	27.0%	18.4%	13.5%	18.4%	0.1%
3.0	15.2%	14.7%	27.8%	20.8%	17.0%
3.5	4.2%	13.8%	4.0%	7.6%	0.0%
4.0	5.7%	25.2%	9.0%	7.8%	18.8%
4.5	0.8%	0.0%	0.0%	0.5%	0.0%
5.0	4.6%	3.5%	28.1%	8.5%	3.3%
Est. Unit Sales	70,510	15,560	17,140	12,590	5,280

*Does not include NYS

Air Source Heat Pumps		
	Northeastern*	NYS
N-value	9,185	9,592

Air Source Heat Pumps - Percentage of Sales by Nominal SEER		
SEER	Northeastern*	NYS
13.00 - 13.99	1.4%	1.0%
14.00 - 14.99	7.4%	20.9%
15.00 - 15.99	2.9%	6.8%
16.00 - 16.99	4.7%	7.0%
17.00 - 17.99	6.5%	5.1%
18.00 - 18.99	17.7%	22.5%
19.00 - 19.99	11.0%	14.9%
20.00 - 20.99	13.5%	6.3%
21.00 - 21.99	8.1%	3.6%
22.00 - 22.99	6.6%	3.3%
23.00 - 23.99	1.8%	1.7%
24.00 - 24.99	0.4%	1.0%
25.00 - 25.99	5.8%	1.7%
>= 26.00	12.1%	4.1%
Est. Unit Sales	29,568	43,418

Air Source Heat Pumps, Ducted - Percentage of Sales by Nominal SEER		
SEER	Northeastern*	NYS
13.00 - 13.99	11.6%	3.6%
14.00 - 14.99	60.7%	71.2%
15.00 - 15.99	8.6%	8.5%
16.00 - 16.99	11.6%	6.5%
17.00 - 17.99	0.3%	1.0%
18.00 - 18.99	7.0%	2.2%
19.00 - 19.99	0.1%	3.4%
20.00 - 20.99	0.0%	2.0%
21.00 - 21.99	0.0%	0.4%
22.00 - 22.99	0.1%	0.2%
23.00 - 23.99	0.0%	0.4%
24.00 - 24.99	0.0%	0.5%
25.00 - 25.99	0.0%	0.1%
>= 26.00	0.0%	0.0%
Est. Unit Sales	2,965	11,352

Air Source Heat Pumps, Ductless - Percentage of Sales by Nominal SEER		
SEER	Northeastern*	NYS
13.00 - 13.99	0.2%	0.1%
14.00 - 14.99	1.4%	3.1%
15.00 - 15.99	2.3%	6.2%
16.00 - 16.99	4.0%	7.2%
17.00 - 17.99	7.2%	6.5%
18.00 - 18.99	18.9%	29.7%
19.00 - 19.99	12.2%	19.0%
20.00 - 20.99	15.0%	7.9%
21.00 - 21.99	9.1%	4.7%
22.00 - 22.99	7.3%	4.4%
23.00 - 23.99	2.0%	2.2%
24.00 - 24.99	0.4%	1.2%
25.00 - 25.99	6.5%	2.2%
>= 26.00	13.5%	5.5%
Est. Unit Sales	26,603	32,065

*Does not include NYS

Air Source Heat Pumps - Percentage of Sales by Ducting Type		
<u>Ducting Type</u>	<u>Northeastern*</u>	<u>NYS</u>
Ducted	10.0%	26.1%
Ductless	90.0%	73.9%
Est. Unit Sales	29,568	43,418

Air Source Heat Pumps, Ducted - Percentage of Sales by Refrigerant Type		
<u>Refrigerant</u>	<u>Northeastern*</u>	<u>NYS</u>
R-22	2.7%	0.0%
R-410A	97.3%	100.0%
Est. Unit Sales	29,568	43,418

Air Source Heat Pumps - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern*</u>	<u>NYS</u>
0.5	0.5%	0.1%
1.0	21.5%	15.1%
1.5	28.1%	17.0%
2.0	20.9%	20.1%
2.5	10.4%	10.8%
3.0	12.8%	21.7%
3.5	1.6%	4.6%
4.0	3.1%	6.9%
4.5	0.1%	0.3%
5.0	0.8%	3.2%
Est. Unit Sales	29,568	43,418

Air Source Heat Pumps, Ducted - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern*</u>	<u>NYS</u>
0.5	0.0%	0.0%
1.0	0.0%	1.0%
1.5	5.0%	4.2%
2.0	30.6%	14.2%
2.5	18.4%	18.0%
3.0	22.8%	21.5%
3.5	4.1%	12.2%
4.0	10.2%	15.2%
4.5	0.0%	1.3%
5.0	8.8%	12.3%
Est. Unit Sales	2,965	11,352

Air Source Heat Pumps, Ductless - Percentage of Sales by Capacity		
<u>Tonnage</u>	<u>Northeastern*</u>	<u>NYS</u>
0.5	0.6%	0.2%
1.0	23.7%	20.1%
1.5	30.5%	21.5%
2.0	19.9%	22.2%
2.5	9.6%	8.2%
3.0	11.8%	21.8%
3.5	1.4%	1.9%
4.0	2.4%	4.0%
4.5	0.1%	0.0%
5.0	0.0%	0.0%
Est. Unit Sales	26,603	32,065

*Does not include NYS

Air Source Heat Pumps, Ducted - Percentage of Sales by HSPF		
HSPF	Northeastern*	NYS
7.70-8.19	15.0%	7.9%
8.20-8.49	62.8%	57.2%
8.50-8.99	8.3%	6.8%
9.00-9.49	12.0%	8.1%
9.50-9.99	1.7%	1.9%
10.00-10.49	0.3%	2.5%
10.50-10.99	0.0%	0.8%
11.00+	0.0%	14.8%
Est. Unit Sales	2,965	11,352

Air Source Heat Pumps, Ductless - Percentage of Sales by HSPF		
HSPF	Northeastern*	NYS
7.70-8.19	0.1%	0.5%
8.20-8.49	1.7%	3.4%
8.50-8.99	2.5%	5.3%
9.00-9.49	7.8%	20.4%
9.50-9.99	13.5%	14.5%
10.00-10.49	18.0%	13.3%
10.50-10.99	5.2%	10.3%
11.00+	51.2%	32.3%
Est. Unit Sales	26,603	32,065

Air Source Heat Pumps, Ducted - Percentage of Sales by Nominal EER		
EER	Northeastern*	NYS
< 10.00	1.4%	2.1%
10.00 - 10.99	1.0%	1.8%
11.00 - 11.99	61.4%	42.7%
12.00 - 12.99	30.1%	47.3%
13.00 - 13.99	6.0%	4.9%
14.00 - 14.99	0.0%	0.9%
15.00 - 15.99	0.0%	0.0%
16.00 - 16.99	0.0%	0.2%
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%
Est. Unit Sales	2,965	11,352

*Does not include NYS

Air Source Heat Pumps, Ductless - Percentage of Sales by Nominal EER		
<u>EER</u>	<u>Northeastern*</u>	<u>NYS</u>
< 10.00	12.5%	16.0%
10.00 - 10.99	10.3%	18.0%
11.00 - 11.99	1.0%	3.2%
12.00 - 12.99	32.5%	36.9%
13.00 - 13.99	31.9%	17.8%
14.00 - 14.99	5.1%	3.8%
15.00 - 15.99	4.2%	2.3%
16.00 - 16.99	0.4%	0.9%
17.00 - 17.99	0.0%	0.0%
18.00 - 18.99	2.1%	1.1%
19.00 - 19.99	0.0%	0.0%
20.00+	0.0%	0.0%
Est. Unit Sales	26,603	32,065

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%	2.3%	0.5%	0.6%	
1.0	0.0%	0.0%	8.6%	14.6%	24.1%	
1.5	4.8%	8.4%	9.8%	3.5%	32.4%	
2.0	6.5%	32.9%	25.2%	7.7%	20.5%	
2.5	18.5%	20.1%	7.9%	20.0%	9.1%	
3.0	16.1%	22.4%	40.2%	47.6%	9.2%	
3.5	15.3%	3.3%	2.6%	0.5%	1.4%	
4.0	14.5%	7.7%	3.0%	3.5%	2.6%	
4.5	0.0%	0.0%	0.0%	0.0%	0.1%	
5.0	24.2%	5.2%	0.4%	2.3%	0.0%	
Est. Unit Sales	403	2,176	864	1,400	24,725	

Air Source Heat Pumps - Capacity SEER Cross-Tabulation for NYS						
<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	6.2%	0.0%	0.9%	0.0%	0.0%	
1.0	0.0%	0.0%	2.6%	41.0%	18.8%	
1.5	0.0%	4.0%	5.8%	2.2%	24.3%	
2.0	2.1%	12.8%	11.8%	7.1%	25.1%	
2.5	12.4%	22.1%	8.5%	13.5%	7.0%	
3.0	13.4%	27.1%	50.8%	23.9%	16.8%	
3.5	3.1%	10.6%	4.5%	0.4%	3.2%	
4.0	29.9%	12.3%	8.0%	8.9%	4.5%	
4.5	3.1%	0.0%	4.5%	0.0%	0.0%	
5.0	29.9%	11.0%	2.6%	2.8%	0.4%	
Est. Unit Sales	439	9,071	2,944	3,048	27,916	

*Does not include NYS

Air Source Heat Pumps - Capacity HSPF Cross-Tabulation for Northeastern* Region						
<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%	0.3%	0.4%	0.0%	0.0%	0.1%
1.0	0.0%	7.3%	0.9%	11.2%	0.2%	30.0%
1.5	3.5%	4.6%	60.0%	23.7%	30.3%	30.9%
2.0	35.1%	30.6%	10.2%	2.7%	52.7%	16.8%
2.5	0.0%	20.5%	5.3%	11.2%	8.7%	9.7%
3.0	19.3%	26.0%	8.4%	50.4%	5.8%	8.1%
3.5	22.8%	1.8%	0.0%	0.0%	0.1%	1.7%
4.0	1.8%	4.9%	11.1%	0.7%	2.3%	2.7%
4.5	0.0%	0.0%	3.6%	0.0%	0.0%	0.0%
5.0	17.5%	4.0%	0.0%	0.1%	0.0%	0.0%
Est. Unit Sales	482	2,312	899	2,429	3,645	19,800

*Does not include NYS

Air Source Heat Pumps - Capacity HSPF Cross-Tabulation for NYS						
<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%	0.3%
1.0	0.8%	1.3%	0.2%	18.3%	1.6%	27.1%
1.5	14.5%	1.5%	44.3%	19.5%	12.8%	21.5%
2.0	19.1%	16.0%	14.2%	3.3%	70.3%	17.8%
2.5	19.1%	22.3%	9.0%	4.5%	5.8%	9.1%
3.0	24.4%	38.5%	12.2%	50.8%	3.9%	13.8%
3.5	6.9%	11.1%	2.6%	1.3%	2.6%	4.1%
4.0	3.8%	0.8%	11.1%	1.4%	2.9%	5.9%
4.5	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%
5.0	9.9%	8.4%	6.3%	0.9%	0.0%	0.4%
Est. Unit Sales	1,063	7,592	2,480	7,451	4,883	19,948

Air Source Heat Pumps, Ducted - Capacity HSPF Cross-Tabulation for Northeastern* Region						
<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	4.4%	1.1%	0.0%	13.9%	0.0%	0.0%
2.0	35.6%	46.6%	20.0%	5.6%	60.0%	0.0%
2.5	0.0%	23.3%	0.0%	8.3%	0.0%	0.0%
3.0	22.2%	10.6%	4.0%	55.6%	0.0%	100.0%
3.5	13.3%	3.2%	0.0%	0.0%	0.0%	0.0%
4.0	2.2%	8.5%	76.0%	13.9%	40.0%	0.0%
4.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5.0	22.2%	6.9%	0.0%	2.8%	0.0%	0.0%
Est. Unit Sales	443	1,862	246	355	49	10

*Does not include NYS

Air Source Heat Pumps, Ducted - Capacity HSPF Cross-Tabulation for NYS						
<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%	11.1%
1.5	20.2%	0.3%	2.5%	0.0%	0.0%	10.6%
2.0	24.5%	19.2%	8.6%	4.2%	0.0%	12.0%
2.5	17.0%	24.8%	11.1%	1.0%	17.4%	0.0%
3.0	9.6%	28.2%	18.5%	42.7%	73.9%	10.6%
3.5	7.4%	15.1%	3.7%	14.6%	0.0%	35.6%
4.0	5.3%	1.0%	19.8%	22.9%	8.7%	12.5%
4.5	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%
5.0	13.8%	11.4%	35.8%	14.6%	0.0%	7.4%
Est. Unit Sales	895	6,495	771	914	219	2,057

Air Source Heat Pumps, Ductless - Capacity HSPF Cross-Tabulation for Northeastern* Region						
<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%	0.7%	0.5%	0.0%	0.0%	0.1%
1.0	0.0%	17.4%	1.0%	11.8%	0.2%	30.0%
1.5	0.0%	9.4%	67.5%	24.3%	30.4%	30.9%
2.0	33.3%	8.7%	9.0%	2.5%	52.7%	16.8%
2.5	0.0%	16.7%	6.0%	11.3%	8.7%	9.7%
3.0	8.3%	47.1%	9.0%	50.1%	5.8%	8.1%
3.5	58.3%	0.0%	0.0%	0.0%	0.1%	1.7%
4.0	0.0%	0.0%	3.0%	0.0%	2.1%	2.7%
4.5	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%
5.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Est. Unit Sales	39	451	653	2,074	3,596	19,790

*Does not include NYS

Air Source Heat Pumps, Ductless - Capacity HSPF Cross-Tabulation for NYS						
<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%	0.3%
1.0	2.7%	5.0%	0.3%	19.5%	1.7%	28.0%
1.5	0.0%	5.0%	53.3%	20.8%	13.1%	22.1%
2.0	5.4%	7.0%	15.4%	3.2%	71.9%	18.1%
2.5	24.3%	15.3%	8.5%	4.7%	5.5%	9.6%
3.0	62.2%	67.8%	10.9%	51.4%	2.3%	14.0%
3.5	5.4%	0.0%	2.4%	0.4%	2.6%	2.3%
4.0	0.0%	0.0%	9.3%	0.0%	2.8%	5.6%
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%
Est. Unit Sales	168	1,097	1,709	6,536	4,664	17,891

Ground Source Heat Pumps - Percentage of Sales by Nominal EER				
<u>EER</u>	<u>N-value</u>		<u>Northeastern*</u>	<u>NYS</u>
10.00 - 10.99	NYS	6	0.0%	0.0%
11.00 - 11.99	Northeastern*	9	0.0%	0.0%
12.00 - 12.99			0.0%	0.0%
13.00 - 13.99			66.7%	33.3%
14.00 - 14.99			22.2%	66.7%
15.00 - 15.99			11.1%	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%
Est. Unit Sales			Q**	Q**

** Q denotes insufficient information to develop full market estimates

Furnaces		
	<u>Northeastern*</u>	<u>NYS</u>
N-value	10,559	23,810

Furnaces - Percentage of Sales by Nominal AFUE		
<u>AFUE</u>	<u>Northeastern*</u>	<u>NYS</u>
80.00 - 80.99	25.9%	36.8%
81.00 - 81.99	0.0%	0.1%
82.00 - 82.99	1.3%	0.5%
83.00 - 83.99	2.3%	0.9%
84.00 - 84.99	0.2%	0.3%
85.00 - 85.99	6.2%	2.7%
86.00 - 86.99	2.7%	0.4%
87.00 - 87.99	0.2%	0.0%
88.00 - 88.99	0.2%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.4%	0.2%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	15.1%	19.9%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.0%	0.1%
95.00 - 95.99	17.2%	10.6%
96.00 - 96.99	24.4%	25.0%
97.00 - 97.99	3.6%	2.4%
98.00 - 98.99	0.2%	0.1%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	79,079	158,166

Furnaces, Natural Gas - Percentage of Sales by Nominal AFUE		
<u>AFUE</u>	<u>Northeastern*</u>	<u>NYS</u>
80.00 - 80.99	29.7%	37.8%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.0%	0.1%
83.00 - 83.99	0.5%	0.1%
84.00 - 84.99	0.1%	0.1%
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	17.5%	21.2%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.0%	0.1%
95.00 - 95.99	19.9%	11.3%
96.00 - 96.99	28.3%	26.7%
97.00 - 97.99	3.9%	2.5%
98.00 - 98.99	0.0%	0.1%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	62,449	148,233

*Does not include NYS

Furnaces, Fuel Oil - Percentage of Sales by Nominal AFUE		
AFUE	Northeastern*	NYS
80.00 - 80.99	1.5%	14.3%
81.00 - 81.99	0.1%	0.8%
82.00 - 82.99	9.9%	7.4%
83.00 - 83.99	14.3%	15.1%
84.00 - 84.99	1.2%	3.7%
85.00 - 85.99	45.8%	48.0%
86.00 - 86.99	19.8%	7.7%
87.00 - 87.99	1.5%	0.1%
88.00 - 88.99	1.2%	0.0%
89.00 - 89.99	0.4%	0.0%
90.00 - 90.99	2.6%	1.6%
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	1.7%	1.2%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	16,496	8,939

Furnaces - Percentage of Sales by Input Capacity		
BTU/hr.	Northeastern*	NYS
< 40,000	0.6%	0.7%
40,000 - 59,999	16.9%	20.7%
60,000 - 79,999	30.1%	29.6%
80,000 - 99,999	30.4%	31.6%
100,000 - 119,999	15.7%	13.6%
120,000 - 139,999	3.9%	2.8%
>= 140,000	2.4%	1.0%
Est. Unit Sales	79,079	158,166

Furnaces, Natural Gas - Percentage of Sales by Input Capacity		
BTU/hr.	Northeastern*	NYS
< 40,000	0.7%	0.7%
40,000 - 59,999	20.3%	21.6%
60,000 - 79,999	31.0%	30.9%
80,000 - 99,999	32.5%	31.4%
100,000 - 119,999	10.6%	11.9%
120,000 - 139,999	4.3%	2.8%
>= 140,000	0.6%	0.6%
Est. Unit Sales	62,449	148,233

Furnaces, Fuel Oil - Percentage of Sales by Input Capacity		
BTU/hr.	Northeastern*	NYS
< 40,000	0.0%	0.0%
40,000 - 59,999	0.0%	0.1%
60,000 - 79,999	26.1%	8.5%
80,000 - 99,999	18.8%	36.8%
100,000 - 119,999	41.6%	43.7%
120,000 - 139,999	1.7%	3.2%
>= 140,000	11.7%	7.7%
Est. Unit Sales	16,496	8,939

*Does not include NYS

Furnaces - Percentage of Sales by Motor Type		
<u>Motor Type</u>	<u>Northeastern*</u>	<u>NYS</u>
ECM	21.0%	27.5%
PSC	79.0%	72.5%
Est. Unit Sales	79,079	158,166

Furnaces, Natural Gas - Percentage of Sales by Motor Type		
<u>Motor Type</u>	<u>Northeastern*</u>	<u>NYS</u>
ECM	21.2%	27.6%
PSC	78.8%	72.4%
Est. Unit Sales	62,449	148,233

Furnaces, Oil - Percentage of Sales by Motor Type		
<u>Motor Type</u>	<u>Northeastern*</u>	<u>NYS</u>
ECM	18.9%	18.1%
PSC	81.1%	81.9%
Est. Unit Sales	16,496	8,939

*Does not include NYS

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	5.6%	27.3%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.0%	2.0%
83.00 - 83.99	3.8%	1.9%
84.00 - 84.99	0.0%	0.1%
85.00 - 85.99	3.7%	5.6%
86.00 - 86.99	6.5%	1.1%
87.00 - 87.99	0.2%	0.3%
88.00 - 88.99	0.0%	0.3%
89.00 - 89.99	0.0%	0.1%
90.00 - 90.99	0.0%	0.5%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	0.0%	22.6%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.2%	0.0%
95.00 - 95.99	4.2%	19.1%
96.00 - 96.99	61.1%	19.0%
97.00 - 97.99	14.7%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	16,595	62,485

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%	30.6%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.0%	0.0%
83.00 - 83.99	0.0%	0.7%
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%	25.6%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.3%	0.0%
95.00 - 95.99	4.9%	21.6%
96.00 - 96.99	72.2%	21.5%
97.00 - 97.99	16.0%	0.0%
98.00 - 98.99	0.0%	0.0%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	13,212	49,237

*Does not include NYS

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%	2.6%
81.00 - 81.99	0.0%	0.3%
82.00 - 82.99	0.0%	16.9%
83.00 - 83.99	27.1%	11.2%
84.00 - 84.99	0.0%	1.2%
85.00 - 85.99	26.3%	48.2%
86.00 - 86.99	45.5%	9.8%
87.00 - 87.99	1.1%	2.2%
88.00 - 88.99	0.0%	2.2%
89.00 - 89.99	0.0%	0.7%
90.00 - 90.99	0.0%	4.7%
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%
Est. Unit Sales	3,116	13,379

Furnaces - Percentage of Sales by Nominal AFUE and Motor Type in NYS		
<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	13.7%	44.7%
81.00 - 81.99	0.1%	0.0%
82.00 - 82.99	0.0%	0.6%
83.00 - 83.99	1.6%	0.6%
84.00 - 84.99	0.0%	0.2%
85.00 - 85.99	0.4%	0.8%
86.00 - 86.99	0.3%	0.5%
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	5.8%	27.9%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.3%	0.0%
95.00 - 95.99	4.6%	12.6%
96.00 - 96.99	65.8%	11.6%
97.00 - 97.99	7.2%	0.0%
98.00 - 98.99	0.2%	0.0%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	43,455	114,710

*Does not include NYS

Furnaces, Natural Gas - Percentage of Sales by Nominal AFUE and Motor Type in NYS		
<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	13.2%	45.4%
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%	0.2%
91.00 - 91.99	0.0%	0.0%
92.00 - 92.99	6.0%	29.1%
93.00 - 93.99	0.0%	0.0%
94.00 - 94.99	0.3%	0.0%
95.00 - 95.99	4.8%	13.2%
96.00 - 96.99	68.1%	12.1%
97.00 - 97.99	7.5%	0.0%
98.00 - 98.99	0.2%	0.0%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	40,975	107,258

Furnaces, Fuel Oil - Percentage of Sales by Nominal AFUE and Motor Type in NYS		
<u>AFUE</u>	<u>ECM</u>	<u>PSC</u>
80.00 - 80.99	0.0%	29.8%
81.00 - 81.99	3.5%	0.2%
82.00 - 82.99	0.0%	15.1%
83.00 - 83.99	68.8%	12.6%
84.00 - 84.99	0.0%	5.2%
85.00 - 85.99	16.3%	20.5%
86.00 - 86.99	10.6%	13.4%
87.00 - 87.99	0.7%	0.0%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.0%	3.3%
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%
Est. Unit Sales	1,614	7,325

Boilers		
	<u>Northeastern*</u>	<u>NYS</u>
N-value	5,653	3,446

Boilers - Percentage of Sales by Nominal AFUE		
<u>AFUE</u>	<u>Northeastern*</u>	<u>NYS</u>
80.00 - 80.99	0.5%	2.1%
81.00 - 81.99	0.2%	0.4%
82.00 - 82.99	6.7%	16.2%
83.00 - 83.99	4.8%	11.2%
84.00 - 84.99	17.2%	8.1%
85.00 - 85.99	32.8%	28.4%
86.00 - 86.99	7.8%	2.8%
87.00 - 87.99	3.0%	1.4%
88.00 - 88.99	0.0%	0.0%
89.00 - 89.99	0.0%	0.0%
90.00 - 90.99	0.2%	0.9%
91.00 - 91.99	5.0%	2.6%
92.00 - 92.99	0.5%	1.3%
93.00 - 93.99	0.6%	0.0%
94.00 - 94.99	2.4%	1.1%
95.00 - 95.99	16.4%	20.5%
96.00 - 96.99	1.4%	2.9%
97.00 - 97.99	0.0%	0.0%
98.00 - 98.99	0.5%	0.0%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	85,481	99,002

Boilers, Natural Gas - Percentage of Sales by Nominal AFUE		
<u>AFUE</u>	<u>Northeastern*</u>	<u>NYS</u>
80.00 - 80.99	1.2%	3.0%
81.00 - 81.99	0.0%	0.6%
82.00 - 82.99	14.0%	20.6%
83.00 - 83.99	7.8%	15.6%
84.00 - 84.99	19.6%	7.0%
85.00 - 85.99	1.5%	13.2%
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%	1.3%
91.00 - 91.99	10.7%	3.8%
92.00 - 92.99	1.0%	1.7%
93.00 - 93.99	1.3%	0.0%
94.00 - 94.99	5.2%	1.6%
95.00 - 95.99	33.6%	28.2%
96.00 - 96.99	2.8%	3.4%
97.00 - 97.99	0.0%	0.0%
98.00 - 98.99	1.0%	0.0%
99.00 - 99.99	0.0%	0.0%
Est. Unit Sales	43,221	60,751

*Does not include NYS

Boilers, Fuel Oil - Percentage of Sales by Nominal AFUE		
<u>AFUE</u>	<u>Northeastern*</u>	<u>NYS</u>
80.00 - 80.99	0.0%	0.0%
81.00 - 81.99	0.0%	0.0%
82.00 - 82.99	0.2%	4.6%
83.00 - 83.99	1.5%	1.9%
84.00 - 84.99	15.6%	11.5%
85.00 - 85.99	61.5%	67.3%
86.00 - 86.99	15.2%	9.7%
87.00 - 87.99	5.9%	4.9%
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	0.1%	0.1%
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%
Est. Unit Sales	42,260	38,251

Boilers - Percentage of Sales by Input Capacity		
<u>BTU/hr.</u>	<u>Northeastern*</u>	<u>NYS</u>
< 40,000	0.0%	0.5%
40,000 - 59,999	4.1%	0.3%
60,000 - 79,999	10.1%	7.7%
80,000 - 99,999	19.6%	19.3%
100,000 - 119,999	31.4%	22.2%
120,000 - 139,999	14.3%	23.1%
>= 140,000	20.5%	26.9%
Est. Unit Sales	85,481	99,002

Boilers, Natural Gas - Percentage of Sales by Input Capacity		
<u>BTU/hr.</u>	<u>Northeastern*</u>	<u>NYS</u>
< 40,000	0.0%	0.7%
40,000 - 59,999	9.1%	0.4%
60,000 - 79,999	20.7%	10.6%
80,000 - 99,999	6.5%	13.0%
100,000 - 119,999	26.2%	24.0%
120,000 - 139,999	16.4%	21.7%
>= 140,000	21.2%	29.5%
Est. Unit Sales	43,221	60,751

Boilers, Fuel Oil - Percentage of Sales by Input Capacity		
<u>BTU/hr.</u>	<u>Northeastern*</u>	<u>NYS</u>
< 40,000	0.0%	0.0%
40,000 - 59,999	0.0%	0.0%
60,000 - 79,999	1.0%	1.5%
80,000 - 99,999	31.5%	35.8%
100,000 - 119,999	37.0%	18.0%
120,000 - 139,999	12.2%	22.3%
>= 140,000	18.3%	22.4%
Est. Unit Sales	42,260	38,251

*Does not include NYS