

MEMORANDUM

To: Lisa Skumatz, Bob Wirtshafter, Ralph Prah, Connecticut EEB Evaluation Administrators

From: Nicole Rosenberg, Jared Powell, and Samuel Manning, NMR

Date: June 30, 2020

Re: Connecticut R1965 HP/HPWH Baseline and Potential Market Assessment Study: Preliminary Market Size Results

This memorandum serves as an interim deliverable for the R1965 Heat Pump / Heat Pump Water Heater (HPWH) Baseline and Potential Assessment study. The study includes a market characterization effort that addresses the following research questions:

- What is the size of the market for residential heat pumps in Connecticut?
- What types of systems are being sold?
- What are the Companies' program penetration rates in the heat pump market?
- Where have programs been successful and unsuccessful?

This memo summarizes some of the preliminary results for the market sizing effort, which estimated the number of heat pump and HPWH systems installed in Connecticut in 2019 and the market share captured by the Companies' programs.¹ As described in [Appendix A](#), the values presented in this memo represent approximations rather than actual counts. These preliminary results will be updated based on findings from additional study tasks, including interviews and surveys with HVAC contractors and interviews with distributors and manufacturers of heat pump systems.

Preliminary key findings include the following:

- **Inverter-driven² mini-split heat pumps (MSHPs) and ducted, central air-source heat pumps (ASHPs)³**
 - Since 2013, annual MSHP installations have ranged between approximately 4,200 and 5,700 units, with an average of 4,889. The annual ASHP market has been about half that size, at just under 2,200 units on average.

¹ The study focuses on equipment rated for residential use, including any residential-grade systems that might be installed in light commercial applications.

² These systems are usually, but not always, installed in ductless configurations.

³ MSHP and ASHP estimates rely on Heating, Air-conditioning, & Refrigeration Distributors International (HARDI) data. NMR obtained all HARDI data referenced and included in this report from the HARDI Unitary Report via the DRIVE portal, prepared by D+R International under data license by HARDI members. Reuse is prohibited without permission. All rights reserved.

- Since 2017,⁴ the share of the MSHP market captured by the programs jumped from 47% to 91%. In that same time frame, the programs only captured between 5% and 7% of the ASHP market.
- There has been a considerable rise in the number of higher-efficiency MSHP (18+ SEER) installations since 2013. Installations increased from 58% to 83% of the MSHP market since 2013. However, since 2017, the average cooling efficiency of the market has remained relatively flat, at just below 20 SEER for the market as a whole and around 21.5 for program systems.⁵
- Since 2017, approximately 75% of incentivized MSHPs were 20 SEER or higher.
- **Geothermal (or ground source) heat pumps (GSHPs)**
 - The GSHP market is small; there have been around 100 annual installations in recent years.
- **HPWHs**
 - The HPWH market is estimated to represent between approximately 1,800 and 2,400 annual installations in Connecticut. The vast majority – at least two-thirds – receive program incentives.

These findings resulted in the following preliminary recommendations, which are likely to be updated as the study gathers additional information:

- Investigate opportunities to increase the size of the MSHP market and/or increase program standards to drive the efficiency of the market. The programs' MSHP market share has increased rapidly in recent years, even though the overall size of the market has remained relatively flat. The increase in market share does not appear to have yielded a substantial increase in the average efficiency of installed units, even as increasingly efficient units have come to market. Remaining research tasks will continue to investigate these findings.
- Given the programs' small share of the ducted ASHP market, investigate opportunities to drive installations of ducted ASHPs that are inverter-driven. These newer models provide efficiency performance closer to that of ductless MSHPs (which are inverter-driven).
- Given concerns about program tracking data, continue to investigate ways to develop tracking systems that can readily identify potential instances of double-counting.

⁴ Program data was only obtained for 2017 to 2019.

⁵ HARDI data do not include heating efficiency (HSPF). Heating performance will be described in the final report.

Section 1 Air-Source Heat Pump Market Size Estimates

This section describes the size of the Connecticut market for air-source heat pumps (ASHPs). It separately presents information about ductless mini- and multi-split air-source heat pumps (MSHPs) and ducted ASHPs.⁶ It also describes the market share of the Companies' programs in the market (i.e., what percentage of installed units received program incentives). The methodology used to estimate the market size, including the limitations of available data sources, is provided in [Appendix A](#).

1.1 CONNECTICUT ASHP AND MSHP PROGRAM BACKGROUND

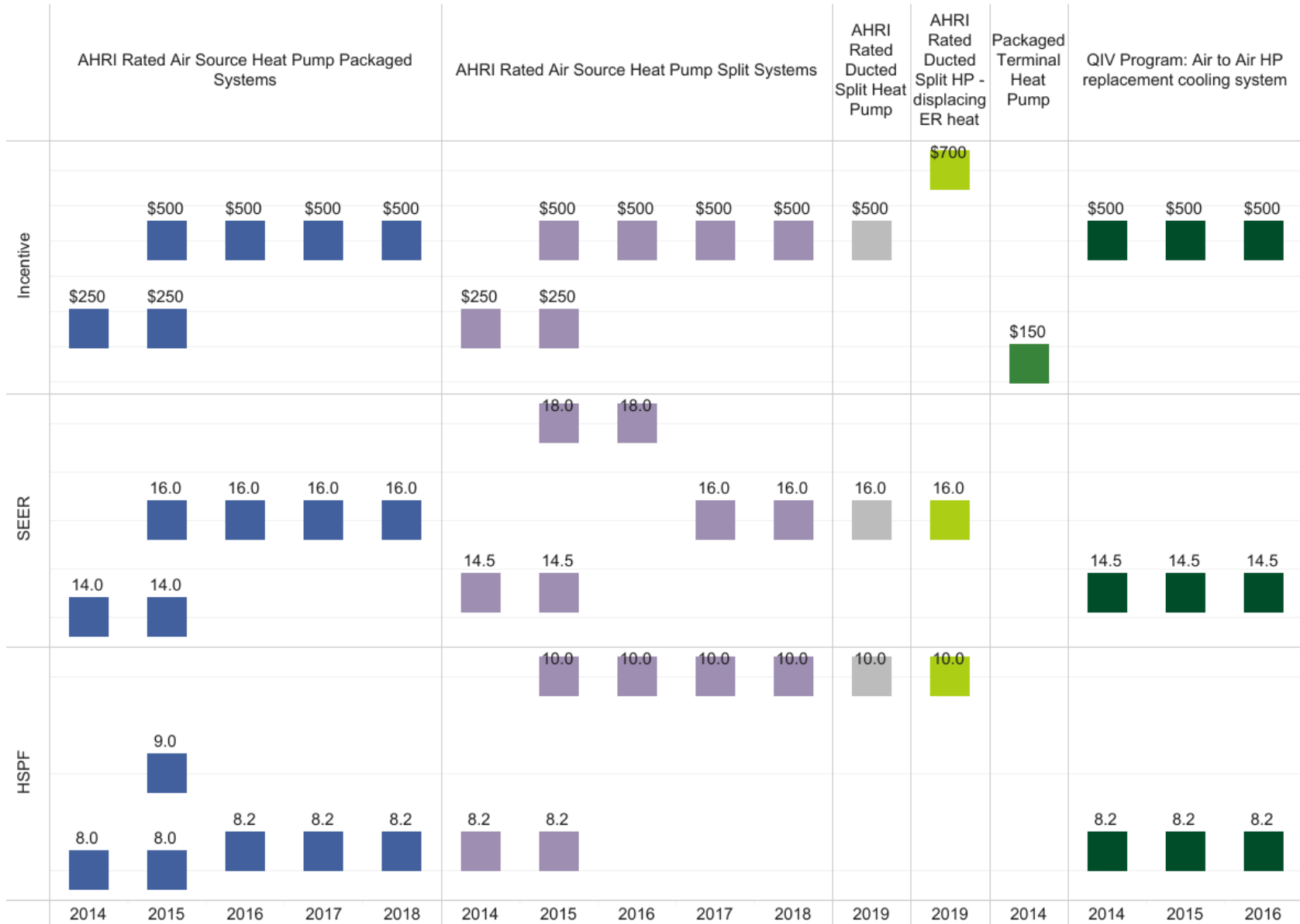
Most of the residential MSHPs incentivized by the Companies pass through the HVAC midstream program offering. This program provides incentives to the distributor, where the buy-down reduces the cost to the installation contractor. For ASHPs, incentives are generally in the form of rebates, which are provided to the end-user or contractor after installation. The Home Energy Solutions (HES) program also incentivizes ASHPs and MSHPs as an add-on measure for HES participants, and the Residential New Construction (RNC) program indirectly incentivizes ASHPs and MSHPs as they can contribute to a home's overall efficiency performance. [Figure 1](#) displays the residential MSHP program requirements since 2014, and [Figure 2](#) displays the residential ASHP program requirements since 2014.

⁶ For the purposes of this study, MSHP is used to refer to inverter-driven systems. These are usually installed in ductless configurations. ASHP is used to refer to non-inverter, central ducted systems. MSHPs have an inverter-driven compressor that conditions space through one or more distribution points (single-zone or multi-zone) – such as a wall-mounted cassette or a ceiling cassette. These high-efficiency units have evolved over time and many can now be installed in ductless, ducted, or mixed configurations. For the purposes of this report, the MSHPs include inverter-driven heat pump systems, regardless of configuration. ASHPs denote traditional heat pump systems, which condition space through a central distribution system. As time passes, more of the central ducted systems may shift to being more efficient, inverter-driven systems.

Figure 1: Connecticut Residential Incentives for MSHPs, 2014-2019



Figure 2: Connecticut Residential Incentives for Ducted ASHPs, 2014-2019



1.2 OVERALL MSHP AND ASHP MARKET

The following subsection describes MSHP and ASHP sales volumes in Connecticut based on Heating, Air-conditioning, & Refrigeration Distributors International (HARDI) data, including a comparison to other HVAC system volumes and an estimate of the market share of the Companies' programs among the heat pump market.

Since 2013, the annual number of MSHPs installed in Connecticut is estimated to range between 4,200 and 5,700 units. MSHPs have seen some annual variability in unit sales, but annual sales indicate a relatively stable market.

The annual market size for ASHPs was smaller, ranging between 2,000 and 2,400 units since 2013. ASHPs have also seen some annual variability, but the market has remained similarly flat. Additional study research activities will address future market trends, as described by key market actors.

The total MSHP and ASHP market size estimates are based on HARDI data and are included from 2013 through 2019 (see [Appendix A.2](#) for additional details).⁷ The equipment volumes presented in [Table 1](#) represent the total market size for MSHP and ASHPs that provide heating and cooling functions.⁸

Table 1: Preliminary ASHP and MSHP Market Estimates

Year	MSHPs (units)	ASHPs (units)
2013	4,552	1,993
2014	5,673	2,270
2015	4,190	2,380
2016	4,316	2,097
2017	5,502	2,297
2018	5,079	2,292
2019	4,912	2,039

1.3 MSHP AND ASHP VS. OTHER HVAC INSTALLATION VOLUMES

In addition to heat pump systems, the HARDI data include state-level sales estimates for HVAC equipment types, including gas and oil furnaces, central air conditioners, and ductless air conditioners (which are essentially ductless mini-splits without a heating function). [Figure 3](#) displays the volume of equipment sales for each type of equipment that is included for Connecticut.⁹ Overall, gas furnaces and central air-conditioners serve the majority of the market. However, MSHPs serve as the third most prevalent system type installed in Connecticut. Heat pumps overtook oil furnace sales between 2016 and 2017, which was potentially driven by the

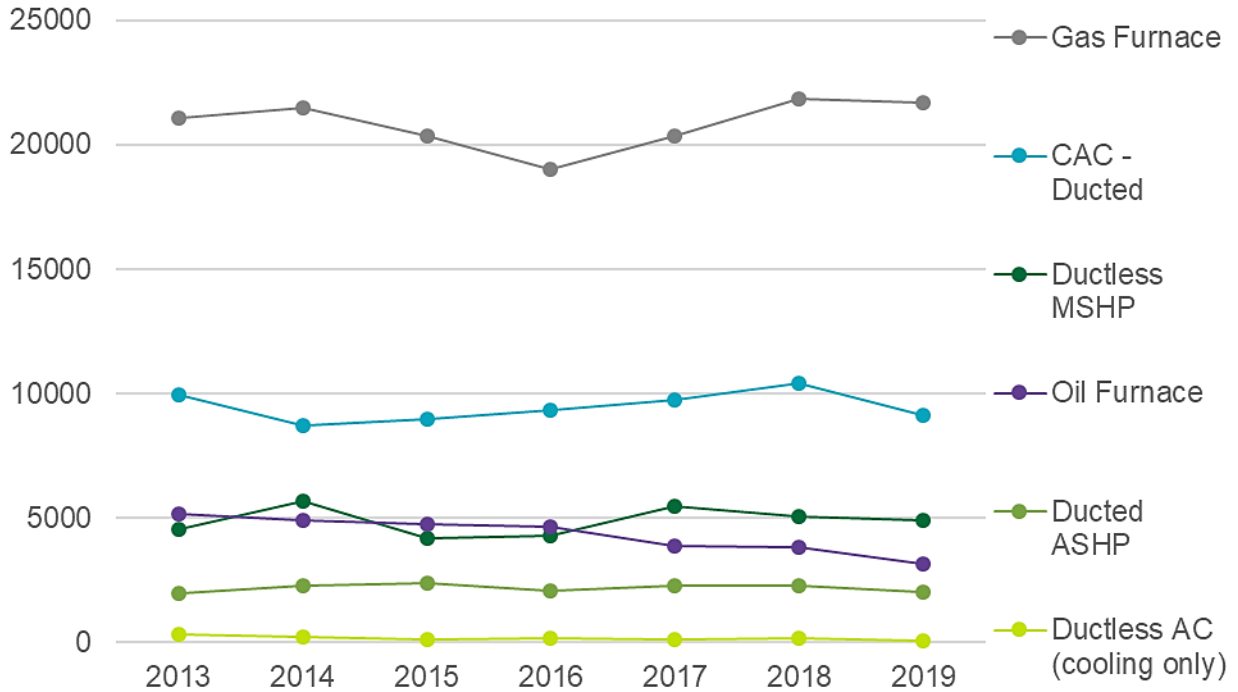
⁷ This study's final report will address retrofit vs. new construction installations and residential vs. commercial sales, or MSHP configuration (single-zone vs. multi-zone vs. centrally ducted) details; those breakdowns are not included in the HARDI data.

⁸ This excludes HARDI's estimate for cooling-only ductless heat pumps.

⁹ HARDI sales data for boilers is only available at the regional level due to a lack of market coverage in the boiler market.

Companies' midstream intervention. However, according to HARDI estimates, there were still over 3,000 oil furnaces sold in 2019 – indicating potential for the Companies to displace oil furnace sales with incentivized heat pump technology.

Figure 3: Estimated Connecticut Annual Equipment Unit Sales (HARDI), 2013-2019



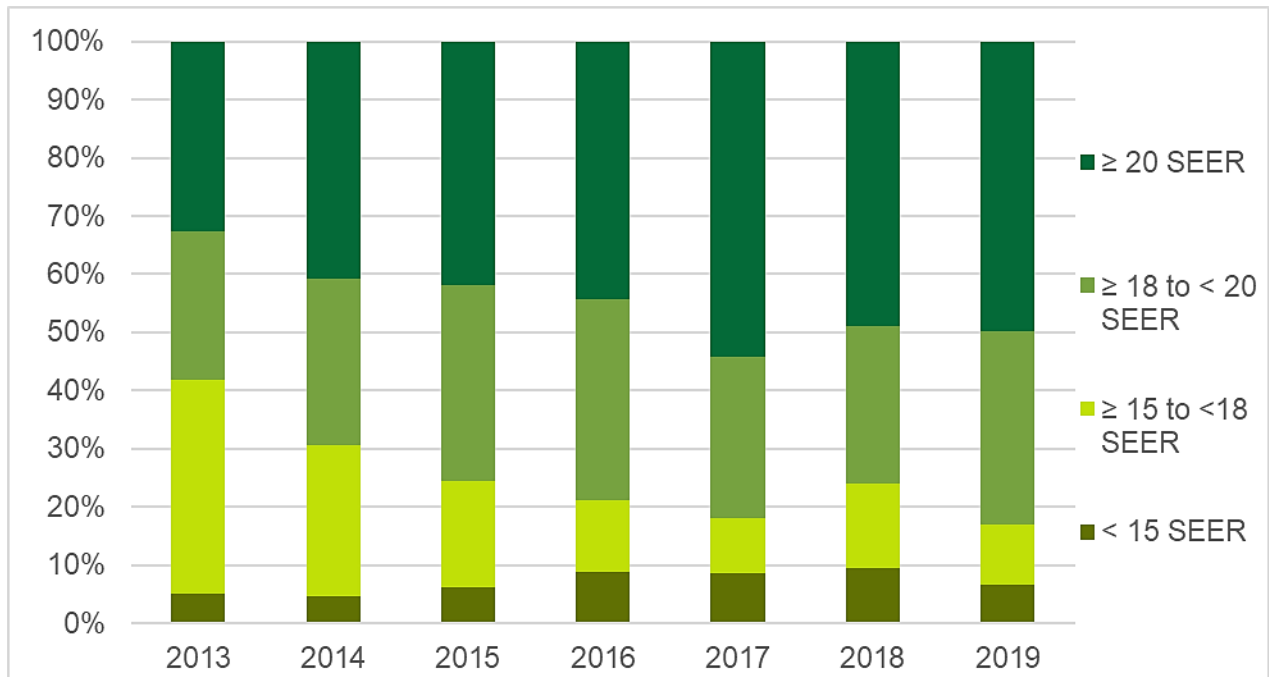
1.4 MSHP AND ASHP EFFICIENCY

The HARDI data include estimates of HVAC equipment by efficiency level. The proportion of the MSHP market by efficiency level is detailed in Figure 4. This memo only includes MSHP efficiency levels.¹⁰

Since 2013, there has been a considerable rise in the number of higher-efficiency MSHP installations (18+ SEER) in Connecticut. This share of the MSHP market increased from 58% to 83% of the market. Generally, sales of MSHPs in the middle efficiency tier (15 to just below 18 SEER) have shifted to sales of higher-efficiency models. HARDI data indicate there is still a small number of MSHP systems below 15 SEER being sold, even though federal standards shifted to a 15 SEER minimum in 2015. This indicates that there is a potential for old stock to remain in circulation even after federal manufacturing standards change.

¹⁰ Program tracking data includes EER, not SEER, values for ASHP cooling efficiency, while HARDI data include SEER. The final report may include conversions to allow for direct comparisons of ASHP systems.

Figure 4: Proportion of Annual MSHP Units Sold by Efficiency (SEER)



1.5 MSHP AND ASHP PROGRAM ACTIVITY

A review of program tracking data from 2017 to 2019 identified potential overlap between programs, which led to uncertainty in total program counts. Data limitations included non-unique placeholder account numbers and account number and system matches in different program data sets, which reflects potential double-counting of system installations. The program market share estimates described below reflect an attempt to identify and remove and such overlap to the extent possible, but some uncertainty in the figures presented below remains.

1.5.1 Program Market Share

Since 2017, the number of MSHPs incentivized by the programs has increased substantially, from nearly 2,600 units to nearly 4,500 (a 72% increase). In contrast, the programs incentivized only a small number of ducted ASHPs in that time frame, well under 200 each year. Table 2 displays the total number of MSHPs and ASHPs installed as a result of direct and indirect program incentives.

Table 2: Program ASHP and MSHP Counts

Year	Total Incentivized Units	Programs			
		Midstream HVAC	HVAC Add-on (HES)	RNC	SBEA
<i>Total MSHP program counts (units)</i>					
2017	2,599	2,450	109	36	4
2018	3,738	3,590	36	105	7
2019	4,479	4,344	30	95	10
<i>Total ASHP program counts (units)</i>					
2017	106	--	58	45	3
2018	167	--	53	110	4
2019	94	--	42	49	3

Given the relatively flat MSHP market and the increased program activity, the programs' MSHP market share increased dramatically – by 44% – since 2017. In 2017, the programs are estimated to have incentivized just under half of the MSHP market, and this increased to a 91% market share in 2019. The rapid increase in market share was driven by high levels of sales through the midstream HVAC program over the past three years. The programs' ASHP market share is much lower, representing only 5% to 7% of the market from 2017 through 2019. Table 3 shows the relative market share of the Companies' programs based on the counts provided above.

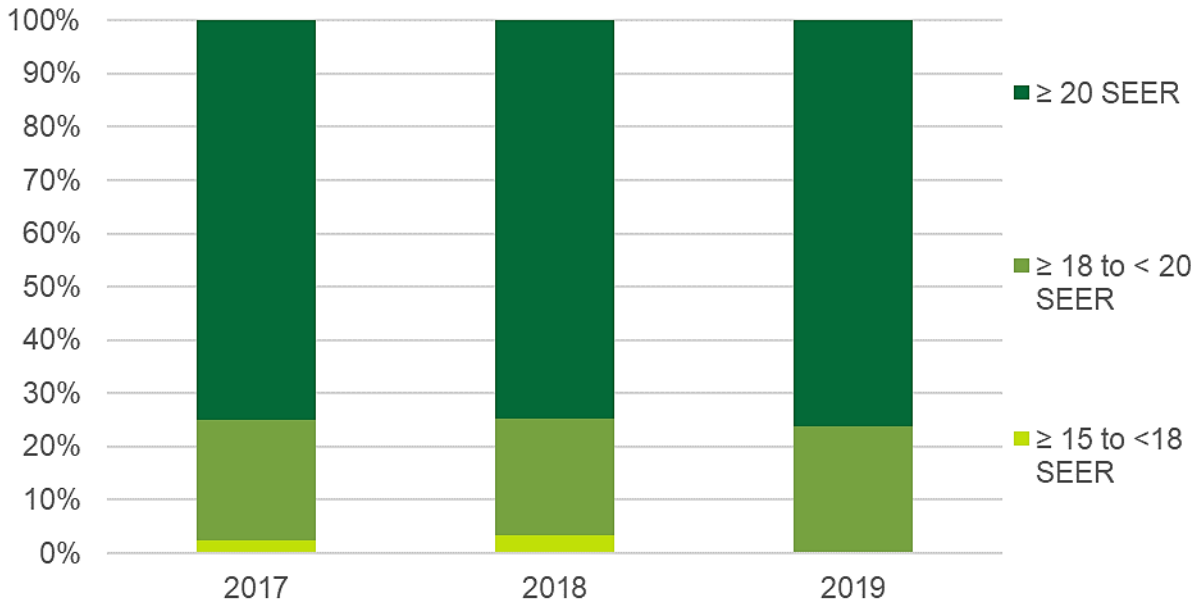
Table 3: MSHP and ASHP Market Share by Program

Year	Total Incentivized Units	Programs			
		Midstream HVAC	HVAC Add-on (HES)	RNC	SBEA
<i>Program penetration of MSHP market</i>					
2017	47%	45%	2%	1%	0%
2018	74%	71%	1%	2%	0%
2019	91%	88%	1%	2%	0%
<i>Program penetration of ASHP market</i>					
2017	5%	--	3%	2%	0%
2018	7%	--	2%	5%	0%
2019	5%	--	2%	2%	0%

1.5.2 Efficiency of Program Units

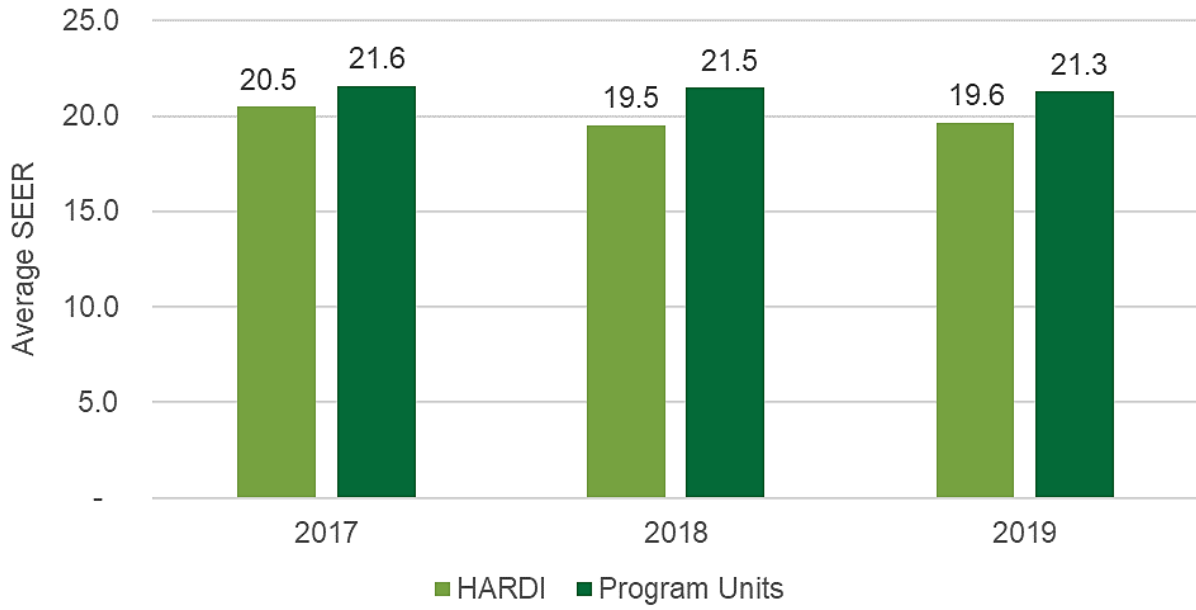
Since 2017, approximately 75% of the incentivized MSHP units were 20 SEER or higher. In 2019, all program MSHPs were at least 18 SEER or higher. The program has a higher proportion of units that are 20+ SEER than the market average (approximately 75% vs. 50%).

Figure 5: Annual Program MSHP Units by Efficiency (SEER)



The average efficiency of MSHP units dropped slightly (4%) since 2017, from 20.5 to 19.6 in 2019. The average efficiency of program MSHP units remained higher overall, but still decreased slightly, from 21.6 to 21.3 SEER. Additional study activities will investigate these market trends. In particular, the study will investigate the popularity of multi-head heat pump systems (*multi-splits*) that tend to achieve lower efficiency levels than mini-split systems that only have one indoor blower unit.

Figure 6: Average Efficiency of MSHP Market vs. Average Efficiency of Program (SEER)



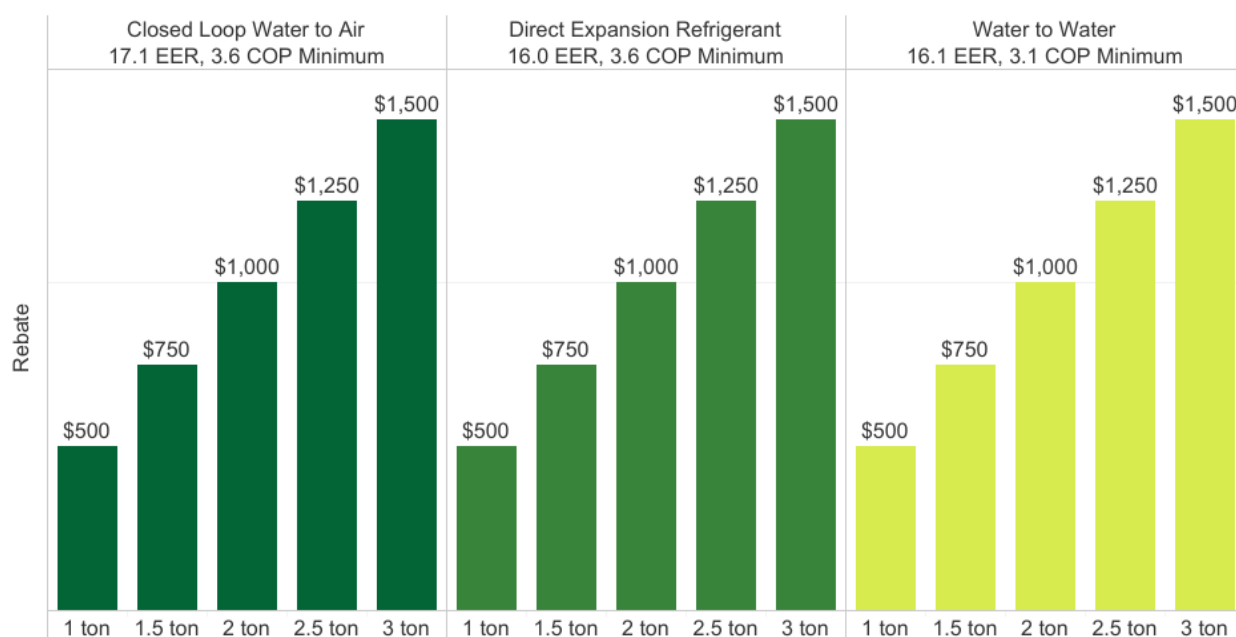
Section 2 Geothermal Market Size Estimates

This section focuses on the Connecticut market for geothermal or ground-source heat pump (GSHP) systems and the market share of the Companies' programs (i.e., the percentage of installed units that received program incentives).

2.1 CONNECTICUT GEOTHERMAL PROGRAM BACKGROUND

GSHPs are incentivized by the Companies through a downstream rebate offered through the RNC program or as an add-on HVAC measure for HES participants. [Figure 7](#) displays the residential GSHP program requirements since 2014, which have remained largely unchanged.

Figure 7: Connecticut Residential Incentives for GSHPs



2.2 OVERALL GSHP MARKET

The MSHP and ASHP market estimates rely on HARDI data, but HARDI data do not include GSHPs. Accordingly, the GSHP market size estimates rely on RNC and existing home baseline studies from Connecticut and surrounding states (see [Appendix A.3](#) for additional details, including data limitations). This section presents GSHP market size estimates as a range, using different data sources to develop estimates of the number of systems installed.

The study estimates that the annual GSHP market is quite small; it represents well under 200 units ([Table 4](#)). Relying on Connecticut-specific data yields a low estimate of the number of units installed in a given year (fewer than 100 in 2019). A blended penetration value from Connecticut, Rhode Island, and Massachusetts studies yields a high-end estimate of 144 installations in 2019. The average of these two values provides a middle estimate of 110

installations in 2019. [Table 4](#) also presents an estimate of the number of systems installed in retrofit and in new construction applications, with slightly more being installed in new homes than existing ones.

Table 4: Preliminary GSHP Market Estimates

Year	High Estimate: Based on CT, MA, and RI Data	Middle Estimate: Average of High and Low	Low Estimate: CT Data Only
<i>Residential retrofit</i>			
2017	78	66	59
2018	42	29	22
2019	49	36	29
<i>New construction</i>			
2017	85	68	52
2018	92	72	53
2019	95	73	52
<i>Total GSHP market</i>			
2017	164	135	111
2018	133	102	75
2019	144	110	81

2.3 GSHP PROGRAM ACTIVITY

The number of incentivized GSHPs remained below 100 in each year, and were 46% lower in 2019 relative to 2017. In 2018, GSHP installations decreased by 51% compared to 2017, and increased by 11% from 2018 to 2019 ([Table 5](#)). (Given the relatively small number of systems installed, minor annual fluctuations can yield substantial percentage changes.)

Table 5: Program GSHP Counts

Year	Total Units	Programs		
		Residential Rebates	RNC	SBEA
<i>Total GSHP program counts (units)</i>				
2017	76	53	21	2
2018	37	16	21	--
2019	41	23	18	--

The estimated program penetration for GSHPs has decreased since 2017. In 2017, the program penetration was estimated to be between 46% and 69%, while it was between 29% and 51% of the market in 2019 (Table 6).

Table 6: GSHP Program Market Share

Year	High Estimate: Based on CT, MA, and RI Data	Middle Estimate: Average of High and Low	Low Estimate: CT Data Only
<i>Program penetration of GSHP market</i>			
2017	46%	56%	69%
2018	28%	36%	49%
2019	29%	37%	51%

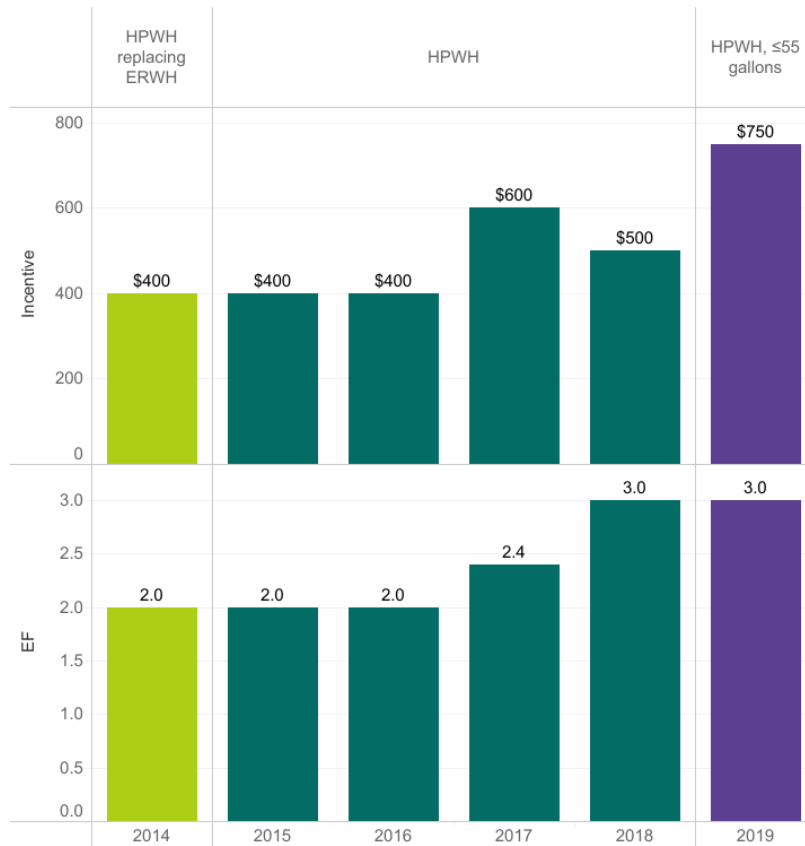
Section 3 Heat Pump Water Heater Market Size Estimates

This section focuses on the total size of the Connecticut market for Heat Pump Water Heater (HPWH) systems and the market share of the Companies' programs in the overall market (i.e., what percentage of the installed units received program incentives).

3.1 CONNECTICUT HPWH PROGRAM BACKGROUND

Most of the HPWHs incentivized by the Companies pass through the midstream program. This program uses two delivery channels: one through the distributor, where the buy-down reduces the cost to the installer, and one with an instant discount at retail outlets, such as Lowe's or Home Depot. The HES program also incentivizes HPWHs as an add-on measure for HES participants, and the RNC program indirectly incentivizes HPWHs as they contribute to a home's overall performance. [Figure 8](#) displays the residential HPWH program requirements since 2014.

Figure 8: Connecticut Residential Incentives for HPWH, 2014-2019¹¹



¹¹ Prior to 2019, there was no size requirement associated with the HPWH incentive. In 2019, the program added an equipment size requirement of ≤55 gallons of capacity and increased the overall incentive amount from \$500 to \$750.

3.2 OVERALL HPWH MARKET

As with GSHPs, the market size estimates are presented as a range of equipment volumes given limitations in available market data (see [Appendix A.4](#) for additional details). The ranges are informed by new construction and existing baseline studies conducted in Connecticut and surrounding states. [Table 7](#) shows the estimated number of HPWHs installed in retrofit and new construction applications, and indicates a growing HPWH market.

Table 7: Preliminary HPWH Market and Program Estimates

Year	High Estimate: Based on CT, MA, and RI Data	Middle Estimate: Average of High and Low	Low Estimate: CT Data Only
<i>Residential retrofit</i>			
2016	980	943	906
2017	1,224	1,152	1,079
2018	1,483	1,373	1,264
2019	1,733	1,587	1,441
<i>New construction</i>			
2016	629	497	365
2017	655	561	467
2018	853	766	678
2019	635	528	404
<i>Total HPWH market</i>			
2016	1,609	1,440	1,271
2017	1,879	1,713	1,546
2018	2,336	2,139	1,942
2019	2,368	2,115	1,845

3.3 HPWH PROGRAM ACTIVITY

As with MSHPs and ASHPs, program tracking data from 2017 to 2019 indicated potential overlap between HPWH incentive programs, which led to uncertainty in total program counts. The program market share estimates described below reflect an attempt to identify and remove any such overlap to the extent possible, but some uncertainty in the figures presented below remains.

The number of incentivized HPWHs (including indirectly incentivized units) decreased by 13% since 2017. In 2018, incentivized HPWH installations decreased by 2% compared to 2017; they decreased by another 11% from 2018 to 2019. [Table 8](#) displays the total number of HPWHs that were installed with the support of program incentives.

Table 8: Program HPWH Counts

Year	Total Units	Programs	
		HPWH (Midstream and Instant Rebate)	RNC
<i>Total HPWH program counts (units)</i>			
2017	1,994	1,803	190
2018	1,949	1,548	402
2019	1,726	1,620	106

The programs' HPWH market share may have decreased somewhat since 2017, but it still represents the vast majority of the market. In 2017, the program penetration was estimated to cover the entire HPWH market. The program coverage of the market potentially dropped to between 73% and 94% of the total market in 2019. Table 9 shows market share values for 2017 that are higher than 100%, which is not possible. These data irregularities are attributable to working with different, and sometimes conflicting, data sources. For example, the baseline studies may slightly underestimate the size of the market, or program tracking data irregularities may have yielded an overestimate of program units. The final report will address this in more detail.

Table 9: HPWH Program Market Share

Year	High Estimate: Based on CT, MA, and RI Data	Middle Estimate: Average of High and Low	Low Estimate: CT Data Only
<i>Program penetration of HPWH market</i>			
2017	106%	116%	129%
2018	83%	91%	100%
2019	73%	82%	94%

Appendix A Methodology

This section provides a high-level overview of the methodology used to develop these preliminary estimates. This information will be supplemented in the final report.

A.1 DATA SOURCES

The preliminary market size estimates rely on primary and secondary data, as there is no one single, commercially available database of all mechanical equipment installed in a given state. Due to the limitations of available data, it is important to note that the values presented in this memo represent approximations rather than actual counts. Throughout, the memo assumes that systems sold in a given year would be installed in that same year. Therefore, references to system sales and installations should be considered to be synonymous.

The literature review task included in this study gathered relevant secondary data sources and compiled primary research efforts conducted as a part of previous evaluation and market research studies. The study will use in-depth interviews and surveys included in subsequent research tasks to fill in data gaps. These in-depth interviews and surveys will also provide additional insight into the functioning of the market. The specific methods for calculating estimates differ by equipment type as the available data varied by equipment type.

For ASHPs, both inverter and non-inverter, the study used HARDI data to determine the size of the market. The HARDI data provide sales estimates from 2013 to the present for ASHPs, CACs, and furnaces and boilers (gas/propane and oil).¹² HARDI data are primarily based on sales invoices and other reports from HVAC distributors that are HARDI members. Those sales invoices are weighted to represent all equipment sales across a given region based on the EIA's 2015 Residential Energy Consumption Survey (RECS) and Commercial Building Energy Consumption Survey (CBECS) and the U.S. Census' American Housing Survey.

The HARDI data include the following relevant metrics for each of the following equipment types:

- Proportion of ducted and ductless ASHPs and central air conditioners
- Estimated efficiency distribution
- Equipment capacity

NMR vetted the HARDI market size estimates as a part of this study and for related work in other states.¹³ For the purposes of this study, the HARDI equipment estimates are assumed to equal the size of the market for each corresponding state.

The Companies also provided tracking data for incentivized residential-grade heat pumps installed in both residential and commercial settings, from their portfolio of programs. The study used program data, secondary data, and HARDI data to analyze the past and the current state of

¹² Note that boiler equipment is only estimated at the census region level due to limited volumes of equipment.

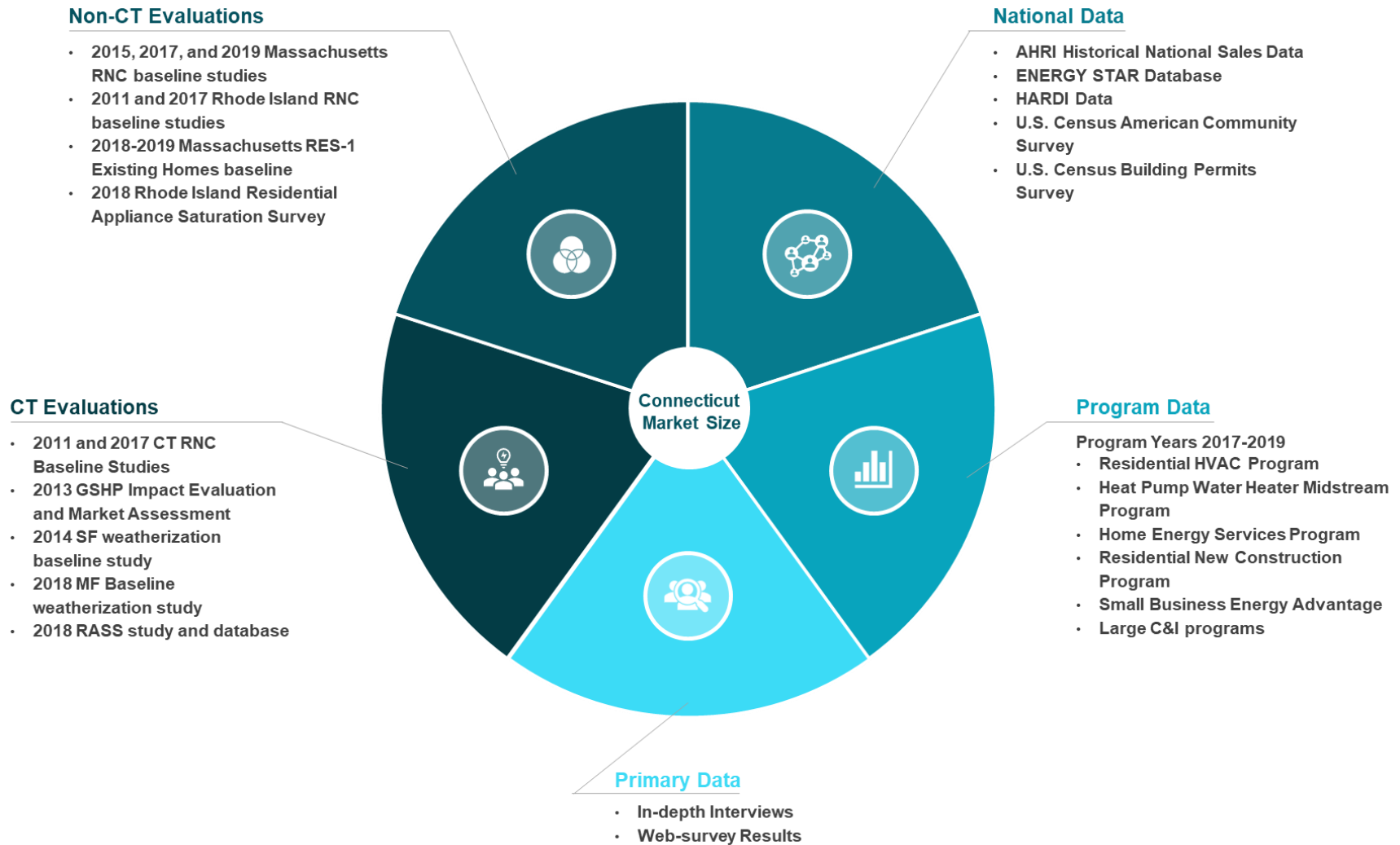
¹³ http://ma-eeac.org/wordpress/wp-content/uploads/TXC65_HARDI_Data_Memo_Final_2019.11.15.pdf

the market, program penetration of the market, and provide insights into potential future trends of heat pump adoption in Connecticut.

The study drew upon a variety of sources. [Figure 9](#) depicts the data sources reviewed, explored, and ultimately used to develop market estimates. Additional details on how the study leveraged these different data sources are provided below.

Program Data Limitations. The Companies provided program data for 2017 through 2019 to determine the program penetration for the equipment types covered in the study. The study found potential discrepancies, such as equipment that appeared to have been incentivized in two programs – issues that have not been resolved as of this memo. The counts presented in this report may reflect some instances of equipment that was counted in multiple programs, due to the presence of records with non-final account numbers or inconsistent addresses.

Figure 9: Preliminary Market Estimate Data Sources



A.2 ASHP MARKET SIZE METHODOLOGY

The study relied on HARDI data to construct market estimates for all ASHPs. The HARDI data include sales estimates from 2013 through 2019. For the final report, HARDI data will be used to benchmark the Connecticut market against other states, including the following:



Connecticut



Massachusetts



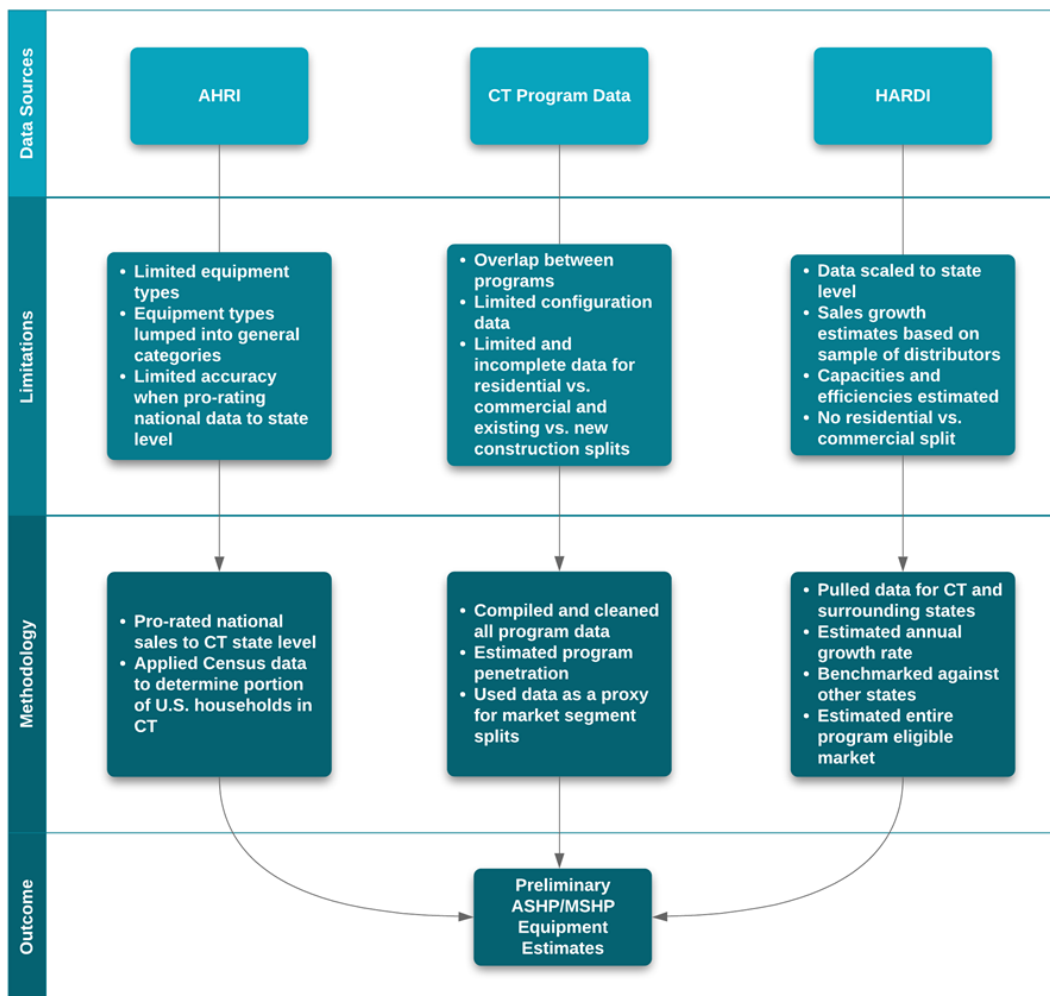
New York



Rhode Island

Figure 10 depicts, at a high-level, the methodology used to process the MSHP and ASHP data sources used for this memo. Each data source has limitations that are identified within the figure.

Figure 10: MSHP and ASHP Market Estimate Methodology



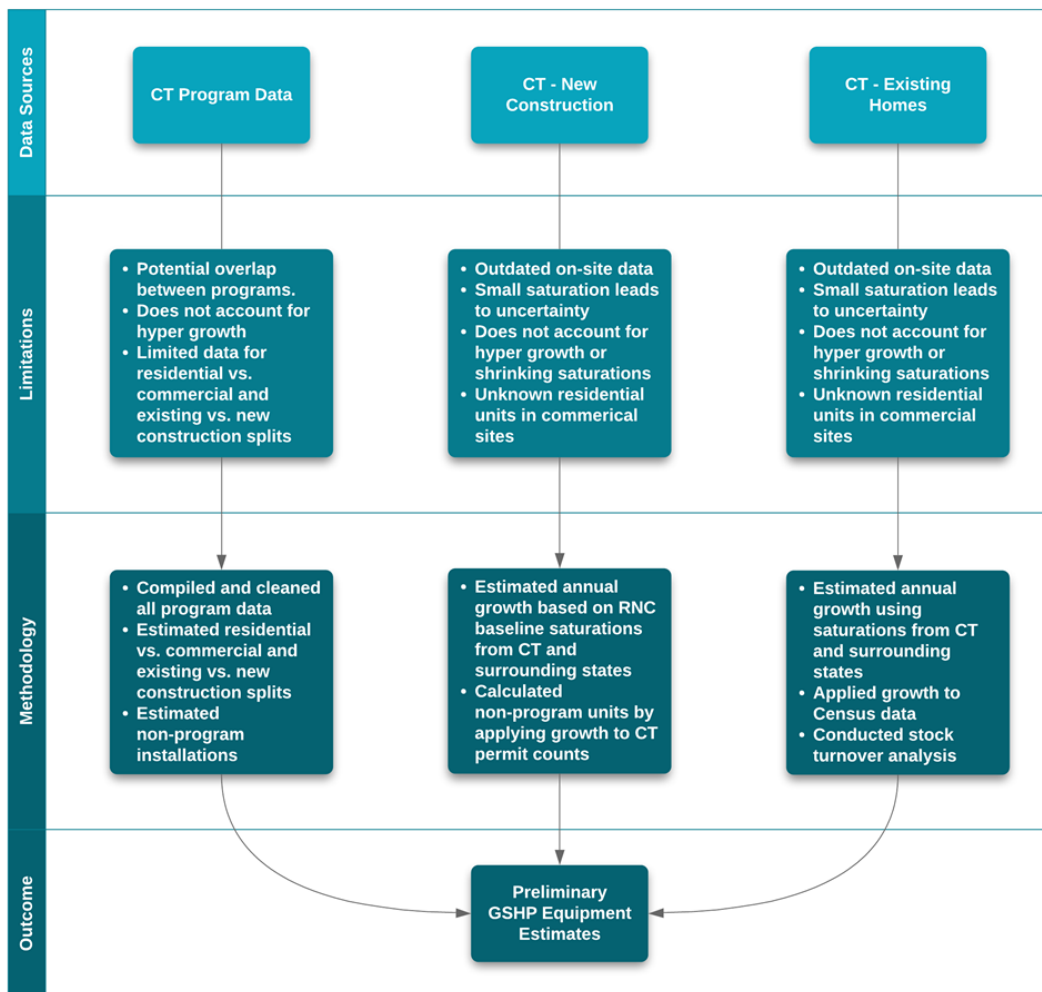
A.3 GSHP MARKET SIZE METHODOLOGY

The study relied on multiple data sources to estimate the GSHP market size given that the penetration of geothermal systems in recent Connecticut studies was less than 1% of homes. Readers should note that there is inherent uncertainty involved in scaling up such a small penetration to represent an entire market. Market size estimates used a linear regression model to estimate equipment saturation over time, based on existing baseline study data. The study constructed the GSHP preliminary estimates under three scenarios:

1. Connecticut baseline saturation results only. This is a lower estimate.
2. Connecticut, Massachusetts, and Rhode Island baseline saturation results. This blended approach relies on penetration figures from neighboring states to avoid overweighting limited baseline results in Connecticut. This yields a higher market size estimate.
3. An average annual growth rate of scenario 1 and scenario 2 results.

Figure 11 depicts the methodology used to estimate the size of the Connecticut GSHP market. Supplemental findings will be incorporated, where possible, into final market estimates.

Figure 11: GSHP Market Estimate Methodology



A.4 HPWH MARKET SIZE METHODOLOGY

The study relied on multiple data sources, such as the most recent Connecticut baseline studies, more recent baseline studies from adjacent states, program tracking data, and Census data. The estimates used a linear regression model to estimate equipment saturation over time. As with GSHPs, the study constructed the HPWH preliminary estimates under three scenarios for new construction and existing home markets:

1. Connecticut baseline saturation results only. This is a lower, more conservative estimate.
2. Connecticut, Massachusetts, and Rhode Island baseline saturation results included. This blended approach relies on penetration figures from neighboring states. This yields a higher market size estimate.
3. An average annual growth rate of scenario 1 and scenario 2 results.

The study applied the estimated penetration rates calculated from each scenario to new construction permit rates and to occupied existing home counts. A stock-turnover analysis was conducted on existing homes using a 13-year effective useful life (EUL).¹⁴ Supplemental findings from surveys and in-depth interviews may be used to adjust these preliminary estimates for the final report.

Figure 12 depicts the methodology that the study used to develop the estimated size of the HPWH market in Connecticut.

¹⁴ https://www.energizect.com/sites/default/files/2020%20PSD_Final_3.1.20%20Filing.pdf

Figure 12: HPWH Market Estimate Methodology

