



Increasing Energy Efficiency in Small Multifamily Properties in the Northeast: Recommendations for Policy Action

Northeast Energy Efficiency Partnerships
April 2014

About NEEP



Northeast Energy Efficiency Partnerships

Northeast Energy Efficiency Partnerships (NEEP) was founded in 1996 as a non-profit whose mission is to serve the Northeast and Mid-Atlantic to accelerate energy efficiency in the building sector through public policy, program strategies and education. Our vision is that the region will fully embrace energy efficiency as a cornerstone of sustainable energy policy to help achieve a cleaner environment and a more reliable and affordable energy system. NEEP's vision is that the work done will increase the visibility of and build momentum for the multi-family market so as to achieve deep energy savings through comprehensive retrofits in the Northeast and Mid-Atlantic regions.

About HR&A Advisors



HR&A Advisors is an industry-leading real estate, economic development and energy efficiency consulting firm. HR&A's clients include real estate owners and investors, hospitals and universities, cultural institutions, community development organizations, and local governments. HR&A acknowledges the expertise and assistance of The Compass Group in preparing this report.



Development of the 2013 Multi-family White Paper was led by NEEP’s Multi-family Project Manager: Ed Londergan.

The following NEEP staff served as reviewers and provided invaluable feedback, input and edits: Jim O’Reilly, Carolyn Sarno, Tung Huynh, Allison Webster, Kevin Rose, Darren Port and Alicia Dunn.

Acknowledgements

NEEP and HR&A Advisors would like to thank the following people for their assistance by providing information and input for this report.

Lori Kerr	National Resources Defense Council
Maria Leonardi	Connecticut Clean Energy Finance and Investment Authority
Linda Darveau	EPA Region One
Caitriona Cook	Conservation Services Group
Beth Lonergan	National Grid
Pat Coleman	Massachusetts Department of Energy Resources
John Majercak	Center for Eco-Technology
Mike Colgrove	NYSERDA
Rick Meinking	Efficiency Maine Trust
Sandy Fazeli	National Association of State Energy Officials
Brian Henderson	National Association of State Energy Officials
Dave Evans	Pennsylvania Housing Finance Agency
Glenn Reed	Energy Futures Group
Andrew Burr	Institute for Market Transformation
Libby Dodson	Pennsylvania State Energy Office
Elise Reuschenberg Lambert	Maryland Department of Housing and Community Development
Peter Wilcox	New Buildings Institute
Kate Johnson	American Council for an Energy-Efficient Economy
Shekar Narasimhan	Beekman Advisors LLC
Polly Nichol	Vermont Housing and Conservation Board
Ted Toon	U.S. Department of Housing and Urban Development
Rick Goodeman	Southwest Minnesota Housing Partnership

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EXECUTIVE SUMMARY



Residential multifamily properties represent not only a significant share of the housing stock in the region, but a significant opportunity to capture energy efficiency savings through cost-effective retrofit measures. The ability to attain these savings has never been more vital, as state policymakers throughout the Northeast and Mid-Atlantic regions of the United States are setting ever stronger energy efficiency goals.

In the Northeast and Mid-Atlantic region, the small multifamily housing sector - defined as housing in buildings with between five and 20 units - accounts for approximately 2.1 million occupied housing units out of a total of 26 million total housing units.

However, much of the potential energy efficiency in these units remains unrealized. The nature of the multifamily housing stock - and, in particular, the small multifamily sector - creates a unique set of challenges that have until now largely stymied the retrofit market. Yet some successful models for reaching the small multifamily sector have begun to emerge. This paper is meant to inform energy efficiency stakeholders and policymakers about best practices gleaned from examining existing programs and policies addressing energy efficiency in the small multifamily housing market; to identify continuing gaps in the ability to penetrate that market to an even greater extent; and to present recommendations for programs and policies that may hold the promise of additional energy savings.

The Challenge

The multifamily housing sector presents energy efficiency program administrators with a far more complex market than the single-family residential or commercial sectors. This complexity is further exacerbated in the small multifamily sector, which includes market actors and forces that are often more reflective of the single-family residential market, though it is technically categorized as a commercial market sector.

In addition, the small multifamily stock in the region is old and overwhelmingly urban: In all but Maine, New Hampshire and Vermont, more than 95 percent of the small multifamily stock is located in large urban areas.¹ Nearly three quarters of the rental units are more than 30 years old, and 44 percent are more than 50 years old. Only seven percent of the stock has been built since 2000. As with many older, urban buildings in the Northeast U.S., many of these units are also heated with

¹ The Census Bureau currently identifies two types of “urban areas:” urbanized areas of 50,000 or more people, and urban clusters of at least 2,500 and less than 50,000 people, both representing densely developed territory and encompassing residential, commercial, and other non-residential urban land uses. “Rural” encompasses all population, housing, and territory not included within an urban area.



oil, which, unlike electricity and natural gas, is a fuel not subject to utility commission regulation.

Of the total number of multifamily units in the region, 86 percent of the small multifamily units are rentals, and as a group, they account for more than 40 percent of all multifamily rentals in the region. This generally means that the owners of these multifamily units do not pay the heating or electricity bills in the individual units.

Overcoming these market barriers is a considerable challenge - one which policymakers and energy efficiency program administrators have struggled with for years. And, while market barriers exist for the entire multifamily sector, small multifamily properties face specific market barriers and challenges including:

- **Limited data on and ability to reach owners.** Owners are generally individuals or small business owners that do not participate in any government housing related programs, and there is a lack of reliable ownership information. For these reasons, it is difficult to characterize and reach them.
- **Limited capacity for building improvements and access to capital for owners.** Minimal resources for building maintenance, and a higher lending risk due to cash flow volatility, restrict owners' ability to acquire funding.
- **Limited focus by federal, state, and local housing programs.** In the past, there has been sporadic attention paid to the small multifamily market by government housing programs, resulting in a deficiency of necessary programs and consistent funding for the sector.

And, as noted above, small multifamily rental units face the market barrier of the “split incentive,” where the owner of the building may purchase and install equipment, but it is the individual tenant who pays the heating and electricity bills.

Policy Recommendations

To address these challenges, NEEP engaged a regional leadership group dedicated to researching and examining the small multifamily sector. The following policy recommendations are the result of this extensive combination of direct “on the ground” meetings with landlords and tenants, interviews with key stakeholders, and thorough analysis of the most current small multifamily unit census data.

Small multi-family properties have long been recognized as a major portion of the affordable housing stock across the country. A recent report from the Federal Reserve Board of Governors noted: “About 70 percent of lower-income renters live in small multi-family rental properties, which are primarily privately owned and are concentrated in the northeastern part of the nation.”

¹ Matthew Lambert, “Preserving the Small Rental Housing Sector,” Cascade, No. 73, (Winter 2010). Note that this report defined “small multifamily” as 2-50 units.

Given the challenges listed above, policymakers and other stakeholders need to focus on making the multifamily sector a key outreach sector target, both in terms of policies and program strategies. This report identifies several potentially promising policy options and opportunities for enhancing the energy efficiency opportunity in small multifamily properties in the region. Among these are:

- **Improve disclosure of energy information to drive market valuation of building energy performance.** Building energy rating seeks to ensure that real estate markets value energy efficiency by requiring that information about building energy performance be disclosed to potential buyers, renters, the public, and financial institutions. Building energy rating and disclosure ordinances have been adopted in several cities in the region, though they generally apply to larger multifamily properties. With increasing momentum for building energy rating and disclosure, policymakers now have the opportunity to expand this requirement to the small multifamily sector.
- **Support continued work on energy efficiency heating fuel programs.** Unregulated fuels constitute a major source of heating in the region and, in particular the Northeast and New York. Development of efficiency programs, while challenging, could result in considerable savings. [See Vermont Fuel Efficiency Project case study on page 60.](#)
- **Support public and private financing mechanisms.** The Obama Administration has focused on providing a financial incentive to allow Housing Finance Agencies and Community Development Financial Institutions to make refinance acquisition or rehab loans available to small (five to 49-unit) properties. The securitization of these loans on the secondary market could lead to an increase in the availability of capital for multifamily lending. The mobilization effort to support this proposal will help build awareness among policymakers of the importance of energy efficiency in the small multifamily housing stock.

Program Opportunities

In addition to public policy, some of the existing ratepayer-funded energy efficiency programs in the region provide constructive examples of how to address the small multifamily housing sector. A number of stakeholders have provided further thinking for how such programs can be structured and administered. These program recommendations include:

- **Refine the development of “one-stop” programs - and ensure they focus on the small multifamily sector.** By consolidating resources and program offerings, it is possible to deliver a comprehensive program to small multifamily property owners resulting in increased participation and savings.
- **Develop a deeper and more targeted understanding of the small multifamily sector.** Understanding the specific needs and interest of property owners can lead to their increased participation in energy efficiency programs.
- **Establish goals for greater savings in the small multifamily sector.** As state energy



efficiency planning processes are undertaken, policymakers and stakeholders have the opportunity to set savings targets that increase over time and require a more specific focus on hard-to-reach sectors such as the small multifamily market.

Case Studies

To further inform a dialogue for improvements in efficiency retrofit opportunities in the small multifamily market, this report also includes a number of case studies that provide illustrative examples of successful ratepayer-funded energy efficiency program efforts. These include examples drawn from:

- Efficiency Maine’s Multifamily Program
- Massachusetts Mass Save Program
- NYSERDA’s Multifamily perform Program
- National Grid’s Rhode Island Multifamily Program
- Pennsylvania Housing Finance Agency
- Vermont Fuel Efficiency Partnership

Each of these case studies provides important lessons that can assist the design, development and operation of new and existing programs. **By highlighting these case studies and combining those examples with input from various stakeholders, this report also draws several high-level conclusions to inform continuing efforts to advance energy efficiency retrofits in the small multifamily housing sector. These include:**

1. Leverage existing resources to maximize program potential.
2. Understand the challenges in program development.
3. Define the program classification to reduce customer confusion.
4. Secure consistent funding to allow for ongoing operation.
5. Offer a single point of contact to streamline the customer experience.
6. Make program features easily accessible and understandable.

While challenges are considerable, energy efficiency stakeholders and policy makers can be assured that there are resources available to work effectively within their markets and raise awareness of efficiency opportunities.

Introduction and Methodology

NEEP facilitates leadership groups in the areas of high performance schools, public buildings, and building energy codes, thereby encouraging stakeholders to join the conversation. By working closely with stakeholders and policymakers, we can provide the information and resources that are crucial in promoting energy efficiency measures.

During the past year, NEEP engaged a regional leadership group dedicated to address barriers to advancing the retrofitting of small multifamily buildings. To refine the policy recommendations developed by this leadership, NEEP led research, including:

- Two focus groups convened in Portland, ME, in November, 2013. One group consisted of small multifamily unit owners and investors, and the other consisted of tenants.
- Telephone and online interviews with efficiency program administrators who deal with the small multifamily sector, in order to get a better understanding of how efficiency programs are utilized within this sector, as well as a thorough picture of differences between owner/investor needs and tenant needs. These differences can figure heavily in split incentive instances where owners may bear responsibility for making improvements to their properties, but tenants are responsible for paying their utility bills.
- An inventory of pertinent data highlighting specific small multifamily unit characteristics in each of the mid-Atlantic and Northeastern states. The data, which is featured in Part 1, primarily comes from the most current (2011) version of the American Community Survey (ACS), which is an ongoing annual survey conducted by the U.S. Census Bureau. Some additional data were derived from the most current (2011) version of the American Housing Survey, which is sponsored by the Department of Housing and Urban Development and conducted by the U.S. Census Bureau in every odd-numbered year.

The following report includes a detailed analysis of the information gathered as a result of these efforts. It is hoped that this information, as well as the recommendations that follow, provide a solid consensus-based framework for efficiency stakeholders and policymakers who will focus on this key sector.

PART I:
DATA ON SMALL MULTIFAMILY PROPERTIES IN THE NORTHEAST AND MID-ATLANTIC REGIONS



This section provides summary information and commentary on the numbers, average, general location (urban or rural), fuel type, and - for rental properties - cash rent for small multifamily properties in the region. The information is presented and analyzed for the region as a whole, for its two primary sub-regions (Northeast and the Mid-Atlantic), and on a state-by-state basis.²

By comparing and contrasting data gleaned from both regional and state perspectives, energy efficiency stakeholders will begin to get a better understanding of characteristics and circumstances that must be taken into consideration in order to promote public policies and create effective energy efficiency programs throughout the region.

Small Multifamily Properties in the Northeast, New York and the Mid-Atlantic

The entire region (Northeast, New York and the Mid-Atlantic) contains over 5.1 million multifamily housing units. Small multifamily buildings—defined as housing in buildings with between five and 20 units—comprise approximately 2.1 million (or 42 percent) of this stock.

The region’s housing stock has the following “baseline” characteristics:

- **Year constructed.** The multifamily rental housing stock is old, with nearly half of units in all building types built before 1960.
- **Location.** Multifamily rental housing is overwhelmingly located in urban areas.
- **Rent.** Average cash rent in the region’s multifamily buildings is \$1,009 per month. Average rent in small multifamily stock (between 5-19 unit buildings) is nearly \$100 lower than average rent in larger buildings (20+ units.) This illustrates the importance of the small multifamily stock as a source of affordable housing.
- **Heating fuel.** The majority of units in all rental building types use natural gas as the primary fuel for heating. Approximately one quarter of units use fuel oil.
- **Unit size.** Multifamily rental housing units are distributed relatively evenly across size categories. This distribution suggests that multifamily buildings are an important housing type for a range of household sizes.

² For the purposes of this report, “Northeast” consists of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; and the “Mid-Atlantic” consists of Delaware, the District of Columbia, Maryland, New York, New Jersey, and Pennsylvania.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,834,176	100%	2,485,440	100%	4,319,616	100%
Constructed prior to 1940	521,276	28%	640,292	26%	1,161,568	27%
Constructed 1940-1959	302,607	16%	500,943	20%	803,550	19%
Constructed 1960-1979	555,591	30%	714,065	29%	1,269,656	29%
Constructed 1980-1999	328,008	18%	380,786	15%	708,794	16%
Constructed 2000 or later	126,694	7%	249,354	10%	376,048	9%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,826,087	100%	2,453,823	100%	4,279,910	100%
In urban areas (top 100 MSAs)	1,762,190	97%	2,417,653	99%	4,179,843	98%
Outside urban areas	63,897	3%	36,170	1%	100,067	2%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$956	\$1,047	\$1,009

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,834,176	100%	2,485,440	100%	4,319,616	100%
Electricity used for heating	300,552	16%	333,590	13%	634,142	15%
Natural Gas used for heating	949,186	52%	1,339,336	54%	2,288,522	53%
Fuel Oil used for heating	460,848	25%	651,086	26%	1,111,934	26%
Other (e.g. propane)	123,590	7%	161,428	6%	285,018	7%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,834,176	100%	2,485,440	100%	4,319,616	100%
0-1 Bedrooms	330,655	18%	509,479	20%	840,134	19%
2 Bedrooms	476,561	26%	656,549	26%	1,133,110	26%



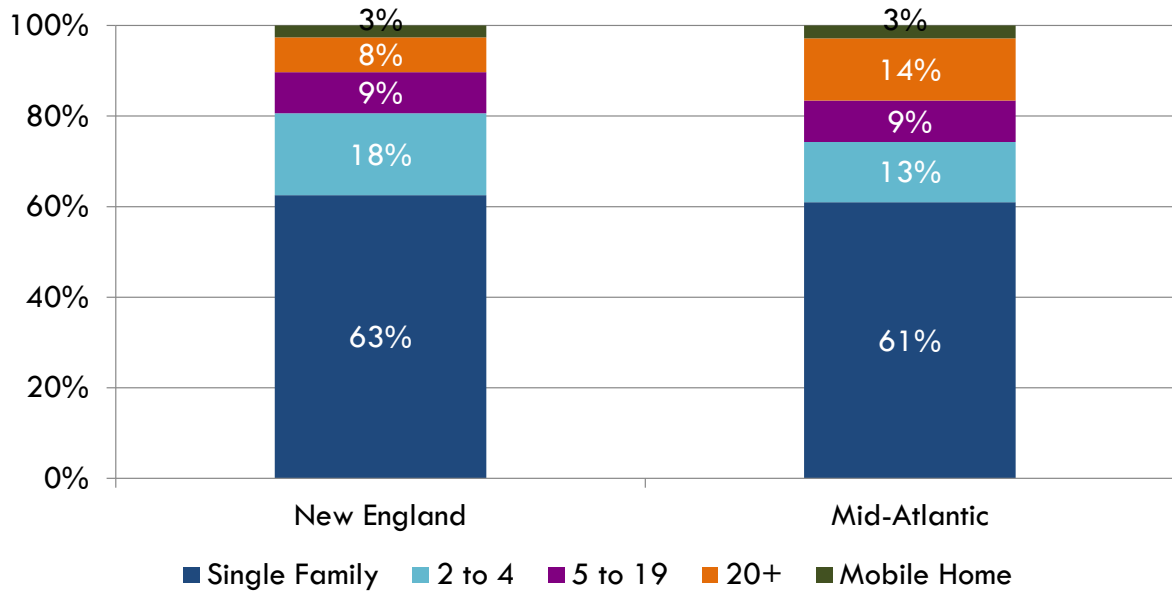
Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
3 Bedrooms	643,293	35%	833,319	34%	1,476,612	34%
More than 3 Bedrooms	383,667	21%	486,093	20%	869,760	20%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	2,124,605	100%	3,006,238	100%	5,130,843	100%
Rental (5+)	1,834,176	86%	2,485,440	83%	4,319,616	84%
Ownership (5+)	290,429	14%	520,798	17%	811,227	16%

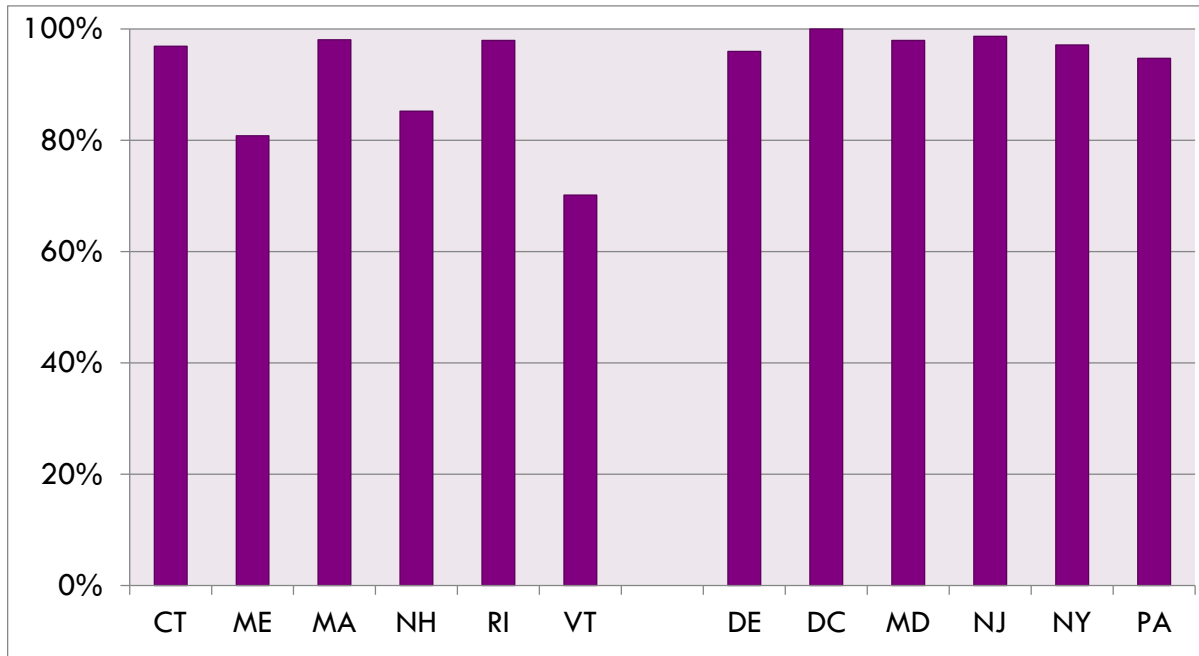
Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

Multifamily Housing Comprises Approximately One Third of Northeast Housing



Source: HR&A, American Community Survey

Percentage of Small Multifamily Stock Located in Urban Areas



Source: HR&A, American Community Survey

Small Multifamily Properties in the Northeast

The Northeast sub-region is home to almost one million multifamily units, of which just over 800,000 are rentals. Small multifamily units comprise more than half of the overall stock (52 percent). Baseline characteristics include:

- **Year constructed.** Nearly 40 percent of the multifamily units were constructed before 1960. The difference between small buildings and large buildings is particularly pronounced, with 48 percent of small buildings built before 1960, compared to only 30 percent of larger buildings.
- **Location.** Even more than in other states and regions, multifamily units are overwhelmingly urban. Overall, more than 9 out of every 10 units are in urban areas.
- **Rent.** Larger multifamily buildings have a higher monthly cash rent (\$854) than smaller multifamily buildings (\$771), with an overall average of \$811 per month.
- **Heating fuel.** Small and large rental buildings exhibit similar characteristics in fuel use, with natural gas and oil used in roughly equal proportions.
- **Size.** The number of bedrooms in Northeast multifamily rental housing is similar to that in the Northeast as a whole: there is a range of unit sizes.



Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	415,878	100%	389,452	100%	805,330	100%
Constructed prior to 1940	144,866	35%	81,724	21%	226,590	28%
Constructed 1940-1959	55,591	13%	35,776	9%	91,367	11%
Constructed 1960-1979	117,432	28%	126,480	32%	243,912	30%
Constructed 1980-1999	74,194	18%	93,908	24%	168,102	21%
Constructed 2000 or later	23,795	6%	51,564	13%	75,359	9%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	410,976	100%	378,736	100%	789,712	100%
In urban areas (top 100 MSAs)	387,775	94%	366,524	97%	754,299	96%
Outside urban areas	23,201	6%	12,212	3%	35,413	4%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$771	\$854	\$811

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	415,878	100%	389,452	100%	805,330	100%
Electricity used for heating	50,001	12%	48,998	13%	98,999	12%
Natural Gas used for heating	158,542	38%	156,093	40%	314,635	39%
Fuel Oil used for heating	171,096	41%	154,925	40%	326,021	40%
Other (e.g. propane)	36,239	9%	29,436	8%	65,675	8%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	415,878	100%	389,452	100%	805,330	100%
0-1 Bedrooms	65,148	16%	61,546	16%	126,694	16%
2 Bedrooms	118,898	29%	110,912	28%	229,810	29%

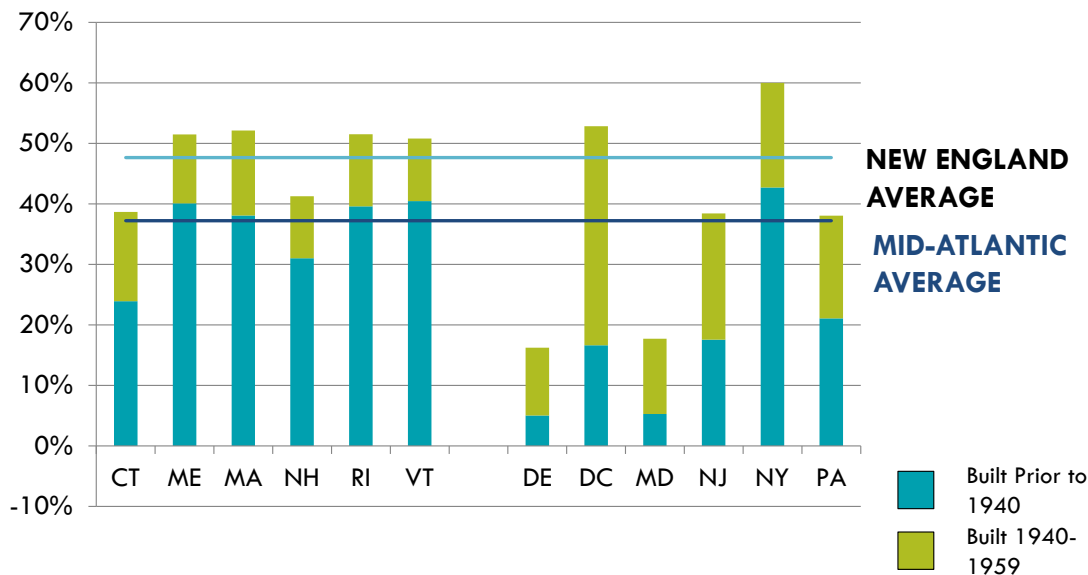
Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
3 Bedrooms	150,090	36%	139,848	36%	289,938	36%
More than 3 Bedrooms	81,742	20%	77,146	20%	158,888	20%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	504,424	100%	461,815	100%	966,239	100%
Rental (5+)	415,878	82%	389,452	84%	805,330	83%
Ownership (5+)	88,546	18%	72,363	16%	160,909	17%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

Percentage of Small Multifamily Rental Stock More Than 50 Years Old



Source: HR&A, American Community Survey

Small Multifamily Properties in the Northeast, State by State

The following information includes unique characteristics concerning multifamily stock in each of the Northeast states.

CONNECTICUT

Rental stock is relatively newer, with both small (5-19) and larger (20+) units built after 1940. Unlike other Northeast states, rents are similar in 5-19 unit buildings and 20+ unit buildings. There are also fewer small condos. The state's 5-19 unit stock is modestly more likely to be rented instead of owned by tenants.



Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	88,384	100%	92,444	100%	180,828	100%
Constructed prior to 1940	21,150	24%	15,365	17%	36,515	20%
Constructed 1940-1959	13,026	15%	11,678	13%	24,704	14%
Constructed 1960-1979	28,192	32%	32,736	35%	60,928	34%
Constructed 1980-1999	21,154	24%	24,099	26%	45,253	25%
Constructed 2000 or later	4,862	6%	8,566	9%	13,428	7%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	87,906	100%	92,799	100%	180,705	100%
In urban areas (top 100 MSAs)	85,180	97%	91,193	98%	176,373	98%
Outside urban areas	2,726	3%	1,606	2%	4,332	2%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$935	\$949	\$942

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	88,384	100%	92,444	100%	180,828	100%
Electricity used for heating	13,346	15%	13,959	15%	27,305	15%
Natural Gas used for heating	28,106	32%	29,397	32%	57,503	32%
Fuel Oil used for heating	41,982	47%	43,911	48%	85,893	47%
Other (e.g. propane)	4,950	6%	5,177	6%	10,127	6%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

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Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

MAINE

While smaller units are more likely to have been constructed prior to 1940, larger units are much more likely to have been built between 1960 and 1999. This may be a reflection of demographic shifts in the state toward more senior citizens and fewer families with children at home. Units are also more likely to be located outside urban areas, compared with those in other Northeast states.

As far as rents are concerned, Maine exhibits relatively little difference in rents between the 5-19 unit and 20+ unit rental stock. However, the units are much more reliant on fuel oil, even by comparison to the Northeast region. Units tend to be larger, and there are virtually no condos. In fact, 94 percent of Maine's multifamily housing stock is rental, compared to 83 percent for the Northeast region.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	32,321		92,444	100%	180,828	100%
Constructed prior to 1940	12,959		15,365	17%	36,515	20%
Constructed 1940-1959	3,681		11,678	13%	24,704	14%
Constructed 1960-1979	7,794		32,736	35%	60,928	34%
Constructed 1980-1999	6,254		24,099	26%	45,253	25%
Constructed 2000 or later	1,633		8,566	9%	13,428	7%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.



Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	31,688	100%	16,299	100%	47,987	100%
In urban areas (top 100 MSAs)	25,603	81%	13,577	83%	39,180	82%
Outside urban areas	6,085	19%	2,722	17%	8,807	18%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$664	\$648	\$659

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	32,321	100%	17,173	100%	49,494	100%
Electricity used for heating	1,551	5%	824	5%	2,375	5%
Natural Gas used for heating	1,487	5%	790	5%	2,277	5%
Fuel Oil used for heating	22,657	70%	12,038	70%	34,695	70%
Other (e.g. propane)	6,626	21%	3,521	21%	10,147	21%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	32,321	100%	17,173	100%	49,494	100%
0-1 Bedrooms	4,590	14%	2,439	14%	7,029	14%
2 Bedrooms	9,890	31%	5,255	31%	15,145	31%
3 Bedrooms	12,282	38%	6,526	38%	18,808	38%
More than 3 Bedrooms	5,559	17%	2,953	17%	8,512	17%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	34,497	100%	18,189	100%	966,239	100%
Rental (5+)	32,321	94%	17,173	94%	805,330	94%
Ownership (5+)	2,176	6%	1,016	6%	160,909	6%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

MASSACHUSETTS

Rental stock is relatively typical for the Northeast region, probably because such a large share of the region's multifamily stock is in Massachusetts. Even so, the state's multifamily rental stock is more likely to have been constructed between 1980 and 1999 than in the Northeast region overall. Because units are more likely found in urban areas, rural-associated fuels (e.g., propane and wood) are less likely to be utilized.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	213,693	100%	215,109	100%	428,802	100%
Constructed prior to 1940	81,367	38%	50,443	23%	131,810	31%
Constructed 1940-1959	30,011	14%	18,986	9%	48,997	11%
Constructed 1960-1979	60,383	28%	69,690	32%	130,073	30%
Constructed 1980-1999	29,798	14%	43,774	20%	73,572	17%
Constructed 2000 or later	12,134	6%	32,216	15%	44,350	10%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	211,530	100%	205,922	100%	417,452	100%
In urban areas (top 100 MSAs)	207,377	98%	202,773	98%	410,150	98%
Outside urban areas	4,153	2%	3,149	2%	7,302	2%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$959	\$1,059	\$1,009

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	213,693	100%	215,109	100%	428,802	100%
Electricity used for heating	29,062	14%	29,255	14%	58,317	14%
Natural Gas used for heating	104,068	49%	104,758	49%	208,826	49%
Fuel Oil used for heating	69,878	33%	70,341	33%	140,219	33%
Other (e.g. propane)	10,685	5%	10,755	5%	21,440	5%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.



Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	213,693	100%	215,109	100%	428,802	100%
0-1 Bedrooms	36,114	17%	36,353	17%	72,467	17%
2 Bedrooms	60,261	29%	60,661	28%	120,922	29%
3 Bedrooms	74,151	36%	74,643	36%	148,794	36%
More than 3 Bedrooms	43,167	20%	43,452	20%	86,619	20%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	257,285	100%	261,316	100%	518,601	100%
Rental (5+)	213,693	83%	215,109	83%	428,802	83%
Ownership (5+)	43,592	17%	46,207	17%	89,799	17%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

NEW HAMPSHIRE

Rental stock tends to be older and more rural, meaning more use of fuels associated with rural development. Units are also larger, compared with other Northeast states, as they are more likely to have two or three bedrooms.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	35,120	100%	28,033	100%	63,153	100%
Constructed prior to 1940	10,897	31%	4,162	15%	15,059	24%
Constructed 1940-1959	3,598	10%	1,109	4%	4,707	7%
Constructed 1960-1979	8,945	25%	8,358	30%	17,303	27%
Constructed 1980-1999	9,512	27%	10,313	37%	19,825	31%
Constructed 2000 or later	2,168	6%	4,091	15%	6,259	10%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	34,416	100%	27,605	100%	62,021	100%
In urban areas (top 100 MSAs)	29,331	85%	24,667	89%	53,998	87%
Outside urban areas	5,085	15%	2,938	11%	8,023	13%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	N/A	N/A	N/A

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	35,120	100%	28,033	100%	63,153	100%
Electricity used for heating	2,739	8%	2,187	8%	4,926	8%
Natural Gas used for heating	6,884	20%	5,494	20%	12,378	20%
Fuel Oil used for heating	17,525	50%	13,988	50%	31,513	50%
Other (e.g. propane)	7,972	23%	6,364	23%	14,336	23%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	35,120	100%	28,033	100%	63,153	100%
0-1 Bedrooms	4,425	13%	3,532	13%	7,957	13%
2 Bedrooms	10,852	31%	8,662	31%	19,514	31%
3 Bedrooms	13,486	38%	10,765	38%	24,251	38%
More than 3 Bedrooms	6,357	18%	5,074	18%	11,431	18%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	40,344	100%	32,490	100%	72,834	100%
Rental (5+)	35,120	87%	28,033	84%	63,153	87%
Ownership (5+)	5,224	13%	4,457	16%	9,681	13%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

RHODE ISLAND

The 5-19 unit rental stock is older compared to the rest of Northeast, with buildings more likely to have been constructed prior to 1940. Natural gas use is more prevalent, while other fuels (e.g., propane and wood) are less prevalent. Units tend to be larger and more likely to have 3 bedrooms. Rhode Island also has fewer condos. The multifamily housing stock is 89 percent rental, versus 83 percent for the region.



Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	31,201	100%	28,745	100%	59,946	100%
Constructed prior to 1940	12,359	40%	5,237	18%	17,596	29%
Constructed 1940-1959	3,709	12%	2,505	9%	6,214	10%
Constructed 1960-1979	8,782	28%	10,599	37%	19,381	32%
Constructed 1980-1999	4,426	14%	8,134	28%	12,560	21%
Constructed 2000 or later	1,925	6%	2,270	8%	4,195	7%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	30,286	100%	28,739	100%	59,025	100%
In urban areas (top 100 MSAs)	29,654	98%	28,179	98%	57,833	98%
Outside urban areas	632	2%	560	2%	1,192	2%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	N/A	N/A	N/A

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	31,201	100%	28,745	100%	59,946	100%
Electricity used for heating	2,621	8%	2,415	8%	5,036	8%
Natural Gas used for heating	15,663	50%	14,430	50%	30,093	50%
Fuel Oil used for heating	11,732	38%	10,808	38%	22,540	38%
Other (e.g. propane)	1,185	4%	1,092	4%	2,277	4%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	31,201	100%	28,745	100%	59,946	100%
0-1 Bedrooms	5,023	16%	4,628	16%	9,651	16%
2 Bedrooms	9,423	30%	8,681	30%	18,104	30%
3 Bedrooms	12,044	39%	11,096	39%	23,140	39%

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
More than 3 Bedrooms	4,711	15%	4,340	15%	9,051	15%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	36,033	100%	31,173	100%	67,206	100%
Rental (5+)	31,201	87%	28,745	92%	59,946	89%
Ownership (5+)	4,832	13%	2,428	8%	7,260	11%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

VERMONT

The 5-19 unit stock is older compared to the rest of Northeast, with buildings more likely to have been constructed prior to 1940. However, the 20+ unit stock is newer, with buildings more likely to have been built after 1979. Rents tend to be higher in smaller buildings, as opposed to the Northeast region, where they tend to be higher in larger buildings. In Vermont, 26 percent of Vermont’s multifamily stock is located in rural areas, with the highest prevalence of rural units in the region. Fuels such as propane and wood are utilized more than natural gas, and there are fewer condos, with 89 percent of Vermont’s multifamily stock constituting rentals.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	15,159	100%	7,948	100%	23,107	100%
Constructed prior to 1940	6,134	40%	1,780	22%	7,914	34%
Constructed 1940-1959	1,566	10%	325	4%	1,891	8%
Constructed 1960-1979	3,336	22%	1,509	19%	4,845	21%
Constructed 1980-1999	3,050	20%	2,447	31%	5,497	24%
Constructed 2000 or later	1,073	7%	1,887	24%	2,960	13%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	15,150	100%	7,372	100%	22,522	100%
In urban areas (top 100 MSAs)	10,630	70%	6,135	83%	16,765	74%
Outside urban areas	4,520	30%	1,237	17%	5,757	26%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of ‘urban’ areas.



	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$762	\$737	\$753

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	15,159	100%	7,948	100%	23,107	100%
Electricity used for heating	682	4%	358	5%	1,040	5%
Natural Gas used for heating	2,334	15%	1,224	15%	3,558	15%
Fuel Oil used for heating	7,322	48%	3,839	48%	11,161	48%
Other (e.g. propane)	4,821	32%	2,527	32%	7,348	32%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	15,159	100%	389,452	100%	805,330	100%
0-1 Bedrooms	2,092	14%	61,546	14%	126,694	14%
2 Bedrooms	4,078	27%	110,912	27%	229,810	27%
3 Bedrooms	5,867	39%	139,848	39%	289,938	39%
More than 3 Bedrooms	3,122	21%	77,146	21%	158,888	21%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	17,044	100%	8,800	100%	25,844	100%
Rental (5+)	15,159	89%	7,948	84%	23,107	89%
Ownership (5+)	1,885	11%	852	16%	2,737	11%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

Small Multifamily Properties in the Mid-Atlantic

The Mid-Atlantic region is home to 4.1million multifamily units, of which 3.5 million are rental units. Small multifamily units comprise a high percentage of the overall stock. Baseline characteristics include:

- **Year constructed.** Nearly half of the multifamily rental units are in buildings constructed before 1960. Small rental buildings are slightly less likely to have been constructed before 1960 and slightly more likely to have been constructed between 1980-1999.
- **Location.** Multifamily rental buildings are overwhelmingly located in urban areas.
- **Rent.** The average monthly cash rent for a multifamily unit is \$1,054. Units in small buildings are 7 percent more affordable with average cash rent of \$1,011, versus \$1,084 in larger buildings.
- **Heating fuel.** Over 56 percent of the multifamily rental housing stock uses natural gas for heating. Fuel oil and electricity have much lower usage at 22 percent and 15 percent, respectively.
- **Size.** As with the Northeast region overall, multifamily rental units are distributed fairly evenly across a range of sizes. The largest single category is 3 bedroom units (34 percent). There are equal numbers of 0-1 bedroom and 3+ bedroom units.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,418,298	100%	2,095,988	100%	3,514,286	100%
Constructed prior to 1940	376,410	27%	558,568	27%	934,978	27%
Constructed 1940-1959	247,016	17%	465,167	22%	712,183	20%
Constructed 1960-1979	438,159	31%	587,585	28%	1,025,744	29%
Constructed 1980-1999	253,814	18%	286,878	14%	540,692	15%
Constructed 2000 or later	102,899	7%	197,790	9%	300,689	9%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,415,111	100%	2,075,087	100%	3,490,198	100%
In urban areas (top 100 MSAs)	1,374,415	97%	2,051,129	99%	3,425,544	98%
Outside urban areas	40,696	3%	23,958	1%	64,654	2%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.



	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$1,011	\$1,084	\$1,054

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,418,298	100%	2,095,988	100%	3,514,286	100%
Electricity used for heating	250,551	18%	284,592	14%	535,143	15%
Natural Gas used for heating	790,644	56%	1,183,243	56%	1,973,887	56%
Fuel Oil used for heating	289,752	20%	496,161	24%	785,913	22%
Other (e.g. propane)	87,351	6%	131,992	6%	219,343	6%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	1,418,298	100%	2,095,988	100%	3,514,286	100%
0-1 Bedrooms	265,507	19%	447,933	21%	713,440	20%
2 Bedrooms	357,663	25%	545,637	26%	903,300	26%
3 Bedrooms	493,203	35%	693,471	33%	1,186,674	34%
More than 3 Bedrooms	301,925	21%	408,947	20%	710,872	20%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	1,620,181	100%	2,544,423	100%	4,164,604	100%
Rental (5+)	1,418,298	88%	2,095,988	82%	3,514,286	84%
Ownership (5+)	201,883	12%	448,435	18%	650,318	16%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

Small Multifamily Properties in the Mid-Atlantic, State by State

The following information includes unique characteristics concerning multifamily stock in each of the Mid-Atlantic states and the District of Columbia.

DELAWARE

Multifamily rental stock is newer, with nearly 40 percent constructed since 1979. There is

more reliance on electric heat, compared with the region, with lower prevalence of natural gas. Delaware produces no natural gas. Its supply comes from an interstate natural gas pipeline system, which may account in part for its larger reliance on electric heat. Units tend to be larger (three bedrooms or more), and the stock is 90 percent rental, (versus 84 percent for the Mid-Atlantic region.)

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	25,405	100%	11,389	100%	36,794	100%
Constructed prior to 1940	1,281	5%	603	5%	1,884	5%
Constructed 1940-1959	2,843	11%	1,661	15%	4,504	12%
Constructed 1960-1979	10,249	40%	4,177	37%	14,426	39%
Constructed 1980-1999	7,805	31%	3,243	28%	11,048	30%
Constructed 2000 or later	3,227	13%	1,705	15%	4,932	13%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	25,498	100%	11,396	100%	36,894	100%
In urban areas (top 100 MSAs)	24,470	96%	11,092	97%	35,562	96%
Outside urban areas	1,028	4%	304	3%	1,332	4%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	N/A	N/A	N/A

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	25,405	100%	11,389	100%	36,794	100%
Electricity used for heating	7,672	30%	3,439	30%	11,111	30%
Natural Gas used for heating	10,187	40%	4,567	40%	14,754	40%
Fuel Oil used for heating	4,344	17%	1,948	17%	6,292	17%
Other (e.g. propane)	3,202	13%	1,435	13%	4,637	13%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.



Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	25,405	100%	11,389	100%	36,794	100%
0-1 Bedrooms	2,134	8%	957	8%	3,091	8%
2 Bedrooms	5,335	21%	2,392	21%	7,727	21%
3 Bedrooms	11,229	44%	5,034	44%	16,263	44%
More than 3 Bedrooms	6,707	26%	3,006	26%	9,713	26%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	27,354	100%	13,511	100%	40,865	100%
Rental (5+)	25,405	93%	11,389	84%	36,794	90%
Ownership (5+)	1,949	7%	2,122	16%	4,071	10%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

DISTRICT OF COLUMBIA

Stock is more “middle aged” compared to the region, with buildings more likely to have been built between 1940 and 1959. Average rents for the 20+ unit stock are 46 percent higher than for the 5-19 unit stock (compared with only a 7 percent difference in the region.) This is probably because larger buildings are also likely to be newer, hence more desirable. There is also greater use of fuels associated with urban development. Multifamily stock is heated one third by electricity and two-thirds by natural gas, with no significant use of any other fuel types. Units tend to be smaller (0-1 bedroom), with a higher percentage of condos.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	36,999	100%	68,170	100%	105,169	100%
Constructed prior to 1940	6,150	17%	13,720	20%	19,870	19%
Constructed 1940-1959	13,398	36%	20,026	29%	33,424	32%
Constructed 1960-1979	11,728	32%	19,348	28%	31,076	30%
Constructed 1980-1999	3,941	11%	5,828	9%	9,769	9%
Constructed 2000 or later	1,782	5%	9,248	14%	11,030	10%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	36,884	100%	67,229	100%	104,113	100%
In urban areas (top 100 MSAs)	36,884	100%	67,229	100%	104,113	100%
Outside urban areas	0	0%	0	0%	0	0%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$948	\$1,381	\$1,229

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	36,999	100%	68,170	100%	105,169	100%
Electricity used for heating	12,062	33%	22,223	33%	34,285	33%
Natural Gas used for heating	23,013	62%	42,402	62%	65,415	62%
Fuel Oil used for heating	1,073	3%	1,977	3%	3,050	3%
Other (e.g. propane)	851	2%	1,568	2%	2,419	2%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	36,999	100%	68,170	100%	105,169	100%
0-1 Bedrooms	14,985	41%	27,609	41%	42,594	41%
2 Bedrooms	10,064	27%	18,542	27%	28,606	27%
3 Bedrooms	7,770	21%	14,316	21%	22,086	21%
More than 3 Bedrooms	4,180	11%	7,703	11%	11,883	11%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	42,757	100%	90,325	100%	133,082	100%
Rental (5+)	36,999	87%	68,170	75%	105,169	79%
Ownership (5+)	5,758	13%	22,155	25%	27,913	21%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.



MARYLAND

Stock is much newer, with 44 percent of buildings constructed since 1979. Rents for the 20+ unit stock are 23 percent lower than for the 5-19 unit stock - a reverse of the regional pattern. There is also greater reliance on electric heat. This is offset by lower use of natural gas and fuel oil. Units are much larger (4 bedroom + are common) than is typical for the region.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	239,695	100%	133,801	100%	373,496	100%
Constructed prior to 1940	12,607	5%	8,805	7%	21,412	6%
Constructed 1940-1959	29,816	12%	13,328	10%	43,144	12%
Constructed 1960-1979	104,219	43%	42,165	32%	146,384	39%
Constructed 1980-1999	70,184	29%	37,816	28%	108,000	29%
Constructed 2000 or later	22,869	10%	31,687	24%	54,556	15%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	236,911	100%	127,621	100%	364,532	100%
In urban areas (top 100 MSAs)	231,993	98%	124,410	97%	356,403	98%
Outside urban areas	4,918	2%	3,211	3%	8,129	2%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$1,123	\$865	\$1,030

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	239,695	100%	133,801	100%	373,496	100%
Electricity used for heating	93,960	39%	52,450	39%	146,410	39%
Natural Gas used for heating	106,664	44%	59,541	44%	166,205	44%
Fuel Oil used for heating	26,606	11%	14,852	11%	41,458	11%
Other (e.g. propane)	12,465	5%	6,958	5%	19,423	5%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	239,695	100%	133,801	100%	373,496	100%
0-1 Bedrooms	28,284	12%	15,789	12%	44,073	12%
2 Bedrooms	54,650	23%	30,507	23%	85,157	23%
3 Bedrooms	89,646	37%	50,042	37%	139,688	37%
More than 3 Bedrooms	67,115	28%	37,463	28%	104,578	28%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	283,028	100%	163,638	100%	446,666	100%
Rental (5+)	239,695	85%	133,801	82%	373,496	84%
Ownership (5+)	43,333	15%	29,837	18%	73,170	16%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

NEW JERSEY

Stock is modestly newer, with buildings more likely to have been constructed in 1940 or later. Rents are similar between the 20+ unit stock and the 5-19 unit stock. There is more use of fuels associated with urban development. Natural gas prevalence is higher, and use of fuel oil is lower, than in the region generally.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	247,384	100%	263,216	100%	510,600	100%
Constructed prior to 1940	43,463	18%	33,677	13%	77,140	15%
Constructed 1940-1959	51,577	21%	48,936	19%	100,513	20%
Constructed 1960-1979	87,888	36%	88,452	34%	176,340	35%
Constructed 1980-1999	45,767	19%	54,198	21%	99,965	20%
Constructed 2000 or later	18,689	8%	37,953	14%	56,642	11%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	249,285	100%	259,613	100%	508,898	100%
In urban areas (top 100 MSAs)	246,012	99%	256,781	99%	502,793	99%
Outside urban areas	3,273	1%	2,832	1%	6,105	1%



Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of ‘urban’ areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$1,078	\$1,063	\$1,070

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	247,384	100%	263,216	100%	510,600	100%
Electricity used for heating	26,965	11%	28,691	11%	55,656	11%
Natural Gas used for heating	182,569	74%	194,253	74%	376,822	74%
Fuel Oil used for heating	30,676	12%	32,639	12%	63,315	12%
Other (e.g. propane)	7,174	3%	7,633	3%	14,807	3%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	247,384	100%	263,216	100%	510,600	100%
0-1 Bedrooms	44,034	18%	46,852	18%	90,886	18%
2 Bedrooms	63,330	26%	67,383	26%	130,713	26%
3 Bedrooms	79,905	32%	85,019	32%	164,924	32%
More than 3 Bedrooms	60,115	24%	63,962	24%	124,077	24%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	304,185	100%	316,227	100%	620,412	100%
Rental (5+)	247,384	81%	263,216	83%	510,600	82%
Ownership (5+)	56,801	19%	53,011	17%	109,812	18%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

NEW YORK

Because New York State has 56 percent of the region’s multifamily rental stock, data tends to mirror data for the region. Still, there are some key differences. Buildings tend to be much older (constructed prior to 1940.) In part because of the age of the stock, fuel oil is more

likely to be used for heating. Electricity is also modestly less likely to be used for heating. Units tend to be smaller, with more 0-1 bedrooms and fewer 3+ bedrooms.

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	599,449	100%	1,367,716	100%	1,967,165	100%
Constructed prior to 1940	256,105	43%	466,397	34%	722,502	37%
Constructed 1940-1959	103,653	17%	347,018	25%	450,671	23%
Constructed 1960-1979	129,068	22%	341,818	25%	470,886	24%
Constructed 1980-1999	73,135	12%	124,256	9%	197,391	10%
Constructed 2000 or later	37,488	6%	88,227	6%	125,715	6%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	599,418	100%	1,363,442	100%	1,962,860	100%
In urban areas (top 100 MSAs)	582,094	97%	1,353,820	99%	1,935,914	99%
Outside urban areas	17,324	3%	9,622	1%	26,946	1%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$1,090	\$1,142	\$1,126

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	599,449	100%	1,367,716	100%	1,967,165	100%
Electricity used for heating	55,749	9%	127,198	9%	182,947	9%
Natural Gas used for heating	330,296	55%	753,612	55%	1,083,908	55%
Fuel Oil used for heating	172,641	29%	393,902	29%	566,543	29%
Other (e.g. propane)	40,763	7%	93,004	7%	133,767	7%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	599,449	100%	1,367,716	100%	1,967,165	100%
0-1 Bedrooms	142,669	24%	325,516	24%	468,185	24%



Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
2 Bedrooms	161,252	27%	367,916	27%	529,168	27%
3 Bedrooms	188,826	31%	430,831	32%	619,657	32%
More than 3 Bedrooms	106,702	18%	243,453	18%	350,155	18%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	673,746	100%	1,680,884	100%	2,354,630	100%
Rental (5+)	599,449	89%	1,367,716	81%	1,967,165	84%
Ownership (5+)	74,297	11%	313,168	19%	387,465	16%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

PENNSYLVANIA

Rental stock tends to be newer, with buildings more likely to have been built between 1980 and 1999. Units are larger with 3-bedroom units more common compared to the region. There are also fewer condos. Multifamily stock is 92 percent rental (versus 84 percent for the region).

Breakdown By Age of Structure	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	269,366	100%	251,696	100%	521,062	100%
Constructed prior to 1940	56,804	21%	35,366	14%	92,170	18%
Constructed 1940-1959	45,729	17%	34,198	14%	79,927	15%
Constructed 1960-1979	95,007	35%	91,625	36%	186,632	36%
Constructed 1980-1999	52,982	20%	61,537	24%	114,519	22%
Constructed 2000 or later	18,844	7%	28,970	12%	47,814	9%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units.

Urban versus Non-Urban Areas	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	267,115	100%	245,786	100%	512,901	100%
In urban areas (top 100 MSAs)	252,962	95%	237,797	97%	490,759	96%
Outside urban areas	14,153	5%	7,989	3%	22,142	4%

Source: Census Bureau American Community Survey 2011, 5-year estimates, units occupied by renters in buildings of 5 or more units. These data use the Census 2000 definition of 'urban' areas.

	Buildings of 5-19 Units	Buildings of 20+ Units	Buildings of 5+ Units
Average Cash Rent	\$778	\$873	\$824

Source: Census Bureau ACS 2011, 3-year estimates, units occupied by renters paying cash rent, in buildings of 5 or more units.

Fuel Used for Heating	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	269,366	100%	251,696	100%	521,062	100%
Electricity used for heating	54,143	20%	50,591	20%	104,734	20%
Natural Gas used for heating	137,915	51%	128,868	51%	266,783	51%
Fuel Oil used for heating	54,412	20%	50,843	20%	105,255	20%
Other (e.g. propane)	22,896	8%	21,394	8%	44,290	8%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Number of Bedrooms	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Rental Units	415,878	100%	389,452	100%	805,330	100%
0-1 Bedrooms	33,401	12%	31,210	12%	64,611	12%
2 Bedrooms	63,032	23%	58,897	23%	121,929	23%
3 Bedrooms	115,827	43%	108,229	43%	224,056	43%
More than 3 Bedrooms	57,106	21%	53,360	21%	110,466	21%

Source: Census Bureau American Community Survey 2011, 3-year estimates, units occupied by renters in buildings of 5 or more units. The source data are for all housing units and do not provide detail by owner-renter or by number of units. The table above uses the percentage distribution for all housing units and applies that same percentage distribution to each multifamily rental category.

Breakdown by Rental & Ownership	Buildings of 5-19 Units	%	Buildings of 20+ Units	%	Buildings of 5+ Units	%
Occupied Multifamily Units	289,111	100%	279,838	100%	568,949	100%
Rental (5+)	269,366	93%	251,696	90%	521,062	92%
Ownership (5+)	19,745	7%	28,142	10%	47,887	8%

Source: Census Bureau American Community Survey 2011, 3-year estimates, occupied units in buildings of 5 or more units.

Comparison of the Small Multifamily Housing Stock in Northeast and the Mid-Atlantic

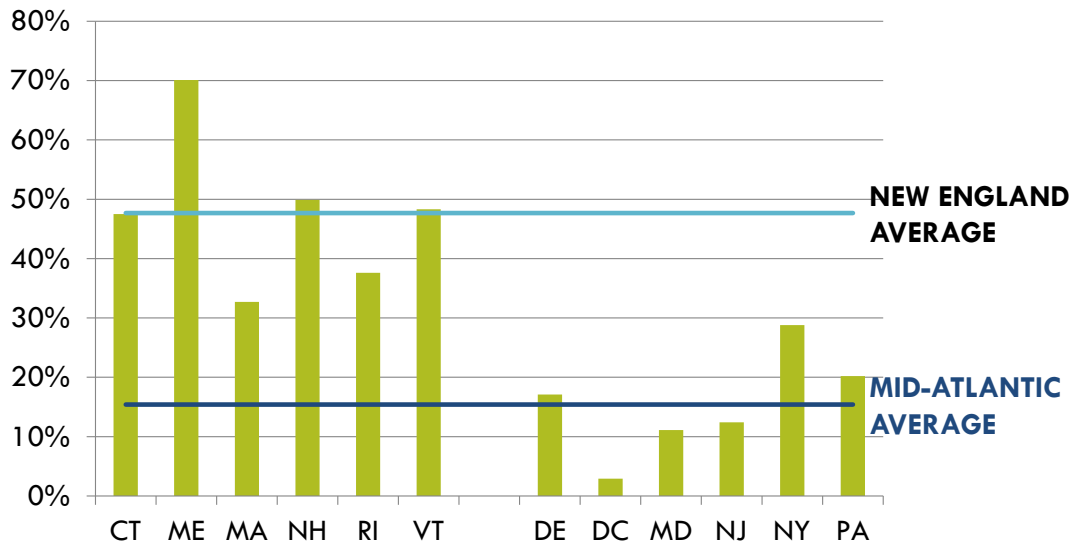
There are some key differences between the small multifamily stock of Northeast and that of the Mid-Atlantic.

- In the Northeast 40 percent of small multifamily units rely on fuel oil, compared to 22 percent in Mid-Atlantic, while 56 percent in the Mid-Atlantic use natural gas, versus 39 percent in the Northeast.



- Northeast is much more reliant on heating oil than the Mid-Atlantic because many parts of the region lack the pipelines to connect to natural gas supplies. The Mid-Atlantic has more such infrastructure, plus closer proximity to large natural gas supplies.
- Mid-Atlantic and District of Columbia units are somewhat smaller in size, as well as older than Northeast units.
- Larger Mid-Atlantic and District of Columbia buildings are somewhat more likely to be condos than their Northeast counterparts.

Percentage of Small Multifamily Rental Stock Using Fuel Oil for Heating



Source: HR&A, American Community Survey

PART II: BARRIERS TO IMPROVING THE ENERGY EFFICIENCY OF SMALL MULTIFAMILY PROPERTIES



In Part 1 of this paper, we examined in detail the multifamily unit characteristics of the regions and the states that NEEP serves. By looking at circumstances such as building age and location, energy usage and size of the units, we can begin to clarify what must be done, both regionally and locally, to promote energy efficiency in this key market.

This section will address challenges common throughout the Northeast and Mid-Atlantic regions. By examining and understanding the common barriers that stakeholders face, we can move forward

in the development of initiatives and policies to tap into the enormous potential for energy efficiency in the multifamily market.

According to key findings of a focus group conducted in Maine, small multifamily building owners and managers view investments in energy efficiency improvements as one of the only ways they can reduce building expenses. They also believe these improvements can help them maintain or increase the re-sale value of the building. Yet, while evidence suggests that interest in energy efficiency is increasing among multifamily housing owners, there is no national or regional data quantifying this activity. The consensus view—taking available national information from building owners, tenants, efficiency program administrators, housing practitioners and policymakers into account—is that only a very small share of the multifamily stock has benefitted from energy efficiency improvements.³

Some successful state and local approaches have been launched in the region. Examples include the New York State Energy Research and Development Authority’s (NYSERDA’s) Multifamily Performance Program, which enrolled more than 113,000 units in New York between May 2007 and July 2011 and various programs by National Grid, which reached more than 242,000 multifamily households throughout New England between 1998 and 2010. A few emerging programs have targeted small multifamily properties specifically, such as Efficiency Maine’s [Multifamily Efficiency Program](#), which aims to retrofit 1,800 units.

Nevertheless, there are challenging barriers that no efforts to date have been able to overcome at any scale. More than three decades of research literature on barriers to building energy efficiency is consistent in identifying overarching obstacles that generally exist for almost any building type. A robust body of analysis has developed on the challenges to in-

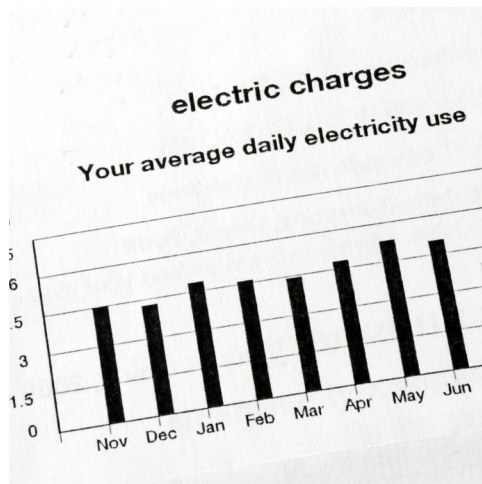
³ See for example, U.S. Department of Housing and Urban Development, “Quantifying Energy Efficiency in Multifamily Housing,” Evidence Matters, (Summer 2011).



creasing energy efficiency in multifamily properties.⁴ The primary barriers are:

- **Inadequate information:** Building owners (as well as would-be providers of capital to improve them) generally lack information on building energy use and performance, opportunities to improve it, and the costs and benefits of specific energy efficiency investments. Building owners who took part in NEEP’s Focus Leadership Group indicated that the time needed to research available efficiency options is perhaps their largest hurdle in implementing efficiency projects. Although they are aware of efficiency programs, most owners and managers have not used them because of the perceived time needed to fill out paperwork and complete the project.
- **Insufficient capital:** Building owners generally lack access to capital to fund energy efficiency investments. While potentially innovative models for financing building energy retrofits are being tested, mainstream lenders are almost universally unwilling to provide capital based solely on projected future savings from efficiency improvements.⁵
- **Impediments to scale:** Building owners are part of a highly fragmented, decentralized industry, in which an array of financing structures, ownership regimes, and regulatory requirements may apply based on building type and location. This poses barriers to aggregation and economies of scale.

Split Incentive



Most multifamily properties are leased or rented. This often involves a “split incentive” scenario, where owners may bear responsibility for making improvements to their properties, but tenants are responsible for paying their utility bills. In these cases, owners may not benefit from any energy cost savings their improvements generate. Likewise, if tenants are responsible for paying energy costs, owners have little or no incentive to improve the energy efficiency of their buildings.

As part of its Multifamily Leadership Group, NEEP

⁴ See for example: Matthew Brown and Mark Wolfe, *Energy Efficiency in Multifamily Housing: A Profile and Analysis*, Energy Programs Consortium (June 2007); Stockton Williams, *Bringing Home the Benefits of Energy Efficiency to Low-Income Households: The Case for a National Commitment*, Enterprise Community Partners (2008); Charlie Harak, *Up the Chimney: How HUD’s Inaction Costs Taxpayers Millions and Drives Up Utility Bills for Low-Income Families*, National Consumer Law Center (August 2010); Nehemiah Stone, *U.S. Multifamily Energy Efficiency Potential by 2020*, Benningfield Group, Incorporated, (October 2009); Todd Trehubenko and Deidre Schmidt, *Multifamily Utility Usage Data: Issues and Opportunities*, Recap Real Estate Advisors and Living Cities, (May, 2011); Andrea Krukowski and Andrew C. Burr, *Energy Transparency in the Multifamily Housing Sector: Assessing Energy Benchmarking and Disclosure Policies*, Institute for Market Transformation, (December 2012).

⁵ The exception would be municipal, educational, and hospital facilities that have access to “energy performance contracts” through “energy services companies.” These vehicles have not been viable for multifamily properties to date.

conducted telephone and online surveys with program administrators who deal with the small multifamily sector. Administrators were asked questions such as: “What, in your experience, are the primary property owners/managers concerns?”, “What, in your experience, are the primary tenants concerns?”, and “What do you think is the most effective strategy to overcome the split incentive barrier?” Survey results showed:

- **The primary property owners and managers’ concerns are financial.** They need low-interest financing that could make the investment cash-flow positive from the beginning. They are reluctant to incur upfront costs. Their goal is a solvent business with low maintenance and operating costs, minimal comfort/health impact on residents, and reliable projected utility savings.
- **The primary tenant concerns are comfort, affordability and health.** They are not willing to incur expenses with a payback longer than their possible tenancy, and are concerned about the possibility of rent increases.

These findings are corroborated by the findings of NEEP’s focus leadership groups with both owners/landlords and tenants. Owners believe that tenants value aesthetic upgrades over energy efficiency upgrades. Tenants indicated that they typically prioritize cost, location, and amount of natural light and space, etc. For them, efficiency becomes more of an issue when they are responsible for heat payment, have lived in the apartment for a period of time, and/or are feeling some discomfort.

While there is no one common strategy for overcoming the split incentive barrier, possible solutions include:

- Building energy rating and disclosure.
- Promoting awareness of savings benefits to both owners and tenants.
- Promoting awareness of low-cost financing to create cash-flow positive investments, as well as Property Assessed Clean Energy (PACE) financing instruments.

To the extent split incentives are a major barrier to multifamily residential energy efficiency, it may be exacerbated in multifamily properties that have received federal housing assistance (as a significant share of the stock has) due to housing program regulations that effectively prohibit or severely discourage owners from making energy efficiency improvements by preventing them from realizing the full amount of the savings.⁶ Under the primary federal rental housing assistance programs, tenant rents most often include utilities, which are estimated at a fixed rate. Owners who make energy savings improvements are typically either required to return them to the federal government or prohibited from raising rents. An extreme ex-

⁶ Under the primary federal rental housing assistance programs, tenant rents most often include utilities, which are estimated at a fixed rate. Owners who make energy savings improvements are typically either required to return them the federal government or prohibited from raising rents. See for example Samuel Dastrup, Simon McDonnell, and Vincent Reina, “Household Energy Bills and Subsidized Housing,” *Cityscape: A Journal of Policy Development and Research*, (November 2012). Some states, such as New York, have attempted to address this issue through state and local policies.



ample is properties assisted under certain programs administered by the U.S. Department of Housing and Urban Development (HUD) that require “budget based rent increases,”⁷ in which all savings in owner-paid utilities essentially go to reduce HUD subsidies. HUD may have an incentive to make energy retrofit investments, but the owner may not.

These broad barriers to energy efficiency in almost any kind of building, including small multifamily properties, tend to engage the attention of energy efficiency programs. However, several additional barriers apply to the small multifamily sector in particular. They are:

Limited data on owners (including ability to reach them.) Housing analysts have long lamented that even though small multifamily properties are an important part of the nation’s housing stock, very little information exists about their ownership, management, and financial condition.⁸ A substantial share of the stock is believed to be owned by individual “Mom and Pop” investors and small businesses. Typically, these owners do not use any public subsidy programs to acquire or improve their properties, so information on these properties is not tracked by HUD or state housing finance agencies as part of ongoing affordable housing tracking.⁹ Similarly, these “unsubsidized” owners are less likely to be active in any statewide or regional trade associations. Yet the rent data and collective wisdom suggest that these properties are an important component of the affordable housing supply.

While the Census-based data, such as what is used for this report, provides a partial picture of the market, it is limited by its structure as a population survey and thus lacks detailed information on financial status, ownership, management, and energy costs of rental units.¹⁰ Deeper data analysis and concerted outreach at a state and local level are necessary to gain a full understanding of the small multifamily sector.

Limited capacity and access to conventional capital for owners. According to a number of industry reports, owners of small multifamily properties often lack the expertise needed to manage their properties and do not have the resources to hire professional property managers or invest in regular maintenance.¹¹ Small multifamily properties face major obstacles to securing financing to make any kind of improvements. Smaller properties tend to have more volatility in their year-to-year cash flows than larger properties, which makes them riskier for lenders to underwrite. As a result, lenders often require small loan borrowers to pledge guarantees or other collateral in addition to property cash flow - a severe burden on many small property owners.

7 United State Department of Housing and Urban Development, Section 8 Project-Based Rent Adjustments Using the Annual Adjustment Factor (AAF)

8 See for example William Apgar and Shekar Narasimhan, Enhancing Access to Capital for Smaller Unsubsidized Multifamily Rental Properties, Harvard University Joint Center for Housing Studies, (November 2006).

9 Ibid: “Even though relatively large shares of these units [in 5 -49 unit properties] are occupied by lower-income families, the overwhelming majority is unsubsidized” (p.1).

10 The most recent national survey of rental property ownership was the 2001 Residential Finance Survey (RFS). An update is expected this year. The most detailed national survey of rental property characteristics, the Property Owners and Managers Survey, has not been updated since 1996. No update is planned.

11 Fannie Mae, Fannie Mae’s Role in the Small Multifamily Loan Market, (First Quarter 2010).

A lender's cost to underwrite a small loan on a small property is likely to be virtually the same as the lender's cost to underwrite a much larger loan on a large property. The financing fees on small loans are seen as riskier and tend to be more complicated and expensive for lenders to underwrite than larger loans.¹² Transaction costs may be particularly high (as a percentage of the loan amount) for financing and refinancing small rental properties. For these reasons, lenders prefer to work with owners of large properties.

Finally, the lending market for small loans is highly fragmented, with more than 2,600 lenders originating an annual average of six multifamily loans each, according to Fannie Mae (which generally defines small loans as serving properties of up to 49 units).¹³ Many of these lenders are community banks, which are facing a host of pressures in the current market for small loans, which, if it existed, could increase liquidity and result in more affordable and available financing.

Lack of attention by federal, state, and local housing programs. As both a cause and consequence of the factors listed above, small multifamily properties have not been targeted by as many financing efforts as the larger counterparts.

In the mid-1990s, the Federal Housing Administration, which is part of the U.S. Department of Housing and Urban Development, developed special mortgage loan processing and underwriting procedures aimed at increasing the availability of financing for newly constructed and substantially rehabilitated small multifamily properties. However, relatively few properties have benefitted, based on HUD budget and financial information.

From 2001 - 2003, Fannie Mae and Freddie Mac were given "bonus points" toward their Congressionally-mandated "affordable housing goals" for purchases of mortgages on properties containing 5 - 50 units. However, this requirement was dropped after 2003, even though an independent analysis later determined: "Bonus points for GSE purchases of goal-qualifying mortgages on small multifamily properties had a major impact on the GSE's role in this segment of the mortgage market in 2001-03."¹⁴ (HUD Secretary Alfonso Jackson cited the success of the policy as the reason for ending it.)¹⁵

12 Ibid.

13 Ibid.

14 Paul B. Manchester, Effectiveness of HUD's Housing Goal Incentives for Freddie Mac and Fannie Mae: Small Multifamily & Certain Single-Family Rental Properties, U.S. Department of Housing and Urban Development, (May 30, 2006).

15 Mortgage Wire, "HUD Cancels GSE 'Bonus Points' for Apartment Loans," January 30, 2004.



PART III: PUBLIC POLICIES TO IMPROVE ENERGY EFFICIENCY OF SMALL MULTIFAMILY PROPERTIES

While the challenges presented in Part II of this paper are considerable, we have identified several policy options that provide promising opportunities for advancing energy efficiency in small multifamily units.

Certainly, a top priority should be to secure more funding, from any potential source. It is possible that as much as \$3.7 billion¹⁶ could be needed to make basic energy improvements to the remaining small multifamily inventory in the region. But even as utility funding for energy efficiency is expected to increase in a number of the region's states in the coming years, there is no guarantee of how much will be available for this sector. And, in terms of general housing funding, state and local agencies, already overwhelmed by need in many communities, expect to see resources decline in the coming years. As one example, the federal HOME block grant, which provides “gap” funding to small multifamily projects, has been cut by nearly \$1 billion since 2010.¹⁷

However, aside from more funding, there are additional policy opportunities for improving the stock's energy efficiency. In this section, we examine these options in depth. At a time when policymakers throughout the Northeast and Mid-Atlantic regions are setting stronger efficiency goals, these options are urgent and timely. Through continued regional coordination and sharing of key information, energy efficiency stakeholders and policymakers can effectively serve as advocates for these policies at both state and regional levels.

A. Improve Access to Building Energy Information

Building Energy Rating & Disclosure (BER&D) allows real estate markets to value energy efficiency by requiring information about building energy performance to be disclosed to potential buyers, renters, the public and financial institutions. This encourages energy efficiency improvements by allowing the real estate market to properly account for and value it.

Also, in the past few years, a small but growing number of states and cities have adopted various requirements for the mandatory disclosure of building energy use and/or performance. A handful of these policies, such as in Austin, Boston, New York, Seattle, and Washington, D.C., have included multifamily properties, even though they are mostly limited to large buildings of at least 20,000 square feet and greater.

¹⁶ Matthew Lambert, “Preserving the Small Rental Housing Sector,” *Cascade*, No. 73, (Winter 2010). Note that this report defined “small multifamily” as 2-50 units.

¹⁷ This figure is an illustrative order of magnitude based on the following calculations: 1) There are 2.1 million occupied units in small multifamily properties in the Northeast, of which an estimated 1.5 million were built before 1980; 2) it is assumed that 10 percent of these units have received recent energy efficiency improvements, leaving 1.35 million; 3) it is assumed that these units would need a minimum investment of \$2,750 in efficiency improvements, which is the national average per-unit investment under the U.S. Department of Energy's Weatherization Assistance Program before the enactment of the federal “stimulus” in 2009; 4) 1.35 million x \$2,750 = \$3.7 billion.

Even with these developments, it has often proven difficult for landlords, building managers and tenants to access this information. There is an opportunity for policymakers and advocates in the region to validate the viability of building energy disclosure policies for small multifamily properties by promoting more efforts to make this information easier for landlords and tenants to find and understand.

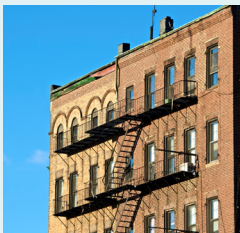
In 2006, Maine enacted a law that requires owners of rental properties to provide prospective tenants with information on the energy efficiency of their units. A required “disclosure form” describes features of the unit that bear on its energy use, such as the insulation levels and the type of heating fuel used. For each unit that is being listed for rent, the owner must post the form in a prominent location, provide the form to anyone who requests it in person, and retain the signed form for a minimum of seven years.

The law also requires the development of energy efficiency standards that are suggested for rental properties used as a primary residence. An owner is not required to meet these standards; however, the standards provide guidance to owners seeking to improve the efficiency of rental properties.¹⁸

However, according to one report, only 11 percent of renters surveyed indicated they had received the form during the first few months the policy was in effect; this was nearly six years ago, however.¹⁹ One reason for the apparent low uptake may be a lack of resources for follow up to tenants and owners. A more robust demonstration program— one that includes enhanced education and marketing efforts to make sure that both landlords and tenants know where they can find energy efficiency information—would increase owner and tenant awareness concerning the Maine policy, or similar policies in other states.

For additional information on building rating and disclosure in the region see Building Energy Rating and Disclosure Policies Update and Lessons From the Field published by NEEP in February 2013.

Massachusetts Low Income Energy Affordability Network



Another disclosure example is the Massachusetts Low Income Energy Affordability Network, which utilizes low-cost energy benchmarking software developed by WegoWise. Last fall, the Network identified \$137 million in energy savings in low-income multi-family properties. Advocates could encourage all state housing agencies in the region to utilize this or similar technologies to generate energy efficiency information that can be given to multi-family building owners and residents.¹

1 PR News Wire, “WegoWise Identifies \$137 Million in Energy Savings for Mass Save Building Efficiency Platform Tracks 45,000 Units for Low Income Multifamily Program,” Boston Business Journal, (Oct. 24, 2012).

18 Maine Public Utilities Commission: <http://www.maine.gov/mpuc/online/forms/EnergyEfficiencyDisclosure.html>

19 Rachel Cluett and Jennifer Amann, “Residential Energy se Disclosure,” American Council for an EnergyEfficiency Economy, (April 2013)



B. Develop or Expand Energy Efficiency Heating Fuel Programs

Energy efficiency advocates and policymakers have long recognized the importance of developing energy efficiency programs for energy sources not regulated by the states, such as fuel oil, propane, kerosene, and wood.

In terms of the “technical potential” for energy efficiency, a report focused on National Grid’s Rhode Island service territory suggested that an efficiency program for gas and unregulated fuels could generate significant savings from the multifamily sector. The report, which looked at all properties with 5 units or greater, noted: “Multifamily buildings were identified by multiple interviewees as an untapped market with a lot of opportunity. It is also believed that many of the larger multifamily buildings are heated with steam, which also represents a good opportunity for savings. An increased focus on multifamily buildings would capture more gas savings.”²⁰

However, advocates and policymakers have also experienced first-hand the challenge in overcoming the opposition to such programs at the state and local level; as a report from Oak Ridge National Laboratory noted: “Because many heating fuels are not generally regulated, there are few locations where program funding through a direct charge on heating fuel has been put into place - Vermont is the only current example.”²¹ Legislation to create a similar program in Massachusetts is pending in the state legislature.

If local objections can be overcome, it is the Oak Ridge report’s assessment that “there is certainly potential to expand the number of locations with this funding mechanism.”²² As the data in Part I of this paper suggests, a comprehensive policy agenda requires a solution for properties served by unregulated fuels.

Unregulated Fuels in the Multifamily Market

Unregulated fuels are as prevalent in larger multi-family properties as they are in smaller ones, meaning that the challenge applies to the entire multi-family stock in the Northeast. Unregulated fuels also provide heat for a significant share of small and large multi-family properties in the Northeast and New York, which not only represent a large number of units overall, but have a wide array of resources and organizations dedicated to accelerating energy efficiency.

20 Vermont Energy Investment Corporation and Optimal Energy, “Opportunity Report for Gas and Unregulated Fuels Efficiency Savings in National Grid’s Rhode Island Service Territory,” National Grid, (July 11, 2012).

21 Energy Futures Group and Vermont Energy Investment Corporation, “Funding for Energy Efficiency Programs for Unregulated Fuels,” Oak Ridge National Laboratory, (April 2011).

22 Ibid.

Number of Multifamily Buildings Using Oil Heat in New England and New York

State	Small Buildings	Large Buildings	Total
Connecticut	41,982	43,911	85,893
Maine	22,657	12,038	34,695
Massachusetts	69,878	70,341	140,219
New Hampshire	17,525	13,988	31,513
New York	172,641	393,902	566,543
Rhode Island	11,732	10,808	22,540
Vermont	7,322	3,839	11,161
TOTAL			892,564 units

National Level: New Financing Policy for Small Multifamily Properties

There is a compelling case for advocates to mobilize support from throughout the region for one significant federal policy proposal. First, a common federal policy campaign can be an efficient and effective way to energize the states in the region in support of a common goal. Second, given the housing and energy importance of small multifamily properties in the region, it may be possible to engage a broad-based multi-stakeholder energy/environmental/housing coalition that could have significant influence. Finally, the act of mobilizing itself will build awareness among policymakers of the importance of energy efficiency in the small multifamily stock.

One potentially promising opportunity could be improving the FHA small multifamily program mentioned in Part II. The Obama Administration is committed to this, as evidenced by its FY 2013 budget proposal, in which HUD seeks to:

“...expand on the Department’s demonstration authority to make Section 542(b) Risk Share loans available to small multifamily properties (5 to 49 units). These small properties are underserved by the conventional market, and are traditionally underserved by FHA as well. This request focuses on the particular needs of very small (20 units and under), unsubsidized properties. These small properties comprise a significant share of rental housing in certain urban areas. Small multifamily properties are an important focus for the Department to meet its affordable housing and community development goals. These properties are more likely to be owned by small entities or individuals, tend to be concentrated in lower -income neighborhoods, and often offer rents affordable to households below median income.”²³

Through this program, the administration aims to:

- Reduce transaction costs to make small loans attractive and viable for more lenders;
- Enable the securitization of loans on the secondary market;

²³ Energy Futures Group and Vermont Energy Investment Corporation, “Funding for Energy Efficiency Programs for Unregulated Fuels,” Oak Ridge National Laboratory, (April 2011).



- Involve well-capitalized lenders that have a successful small multifamily track record;
- Allow for the delegation of underwriting, processing, and servicing, and;
- Rely on existing statutory authority, or require minor, no-cost statutory changes

As proposed, this program would create a financial incentive - primarily through a HUD waiver of certain transaction costs - for Housing Finance Agencies and Community Development Financial Institutions to make refinance, acquisition or rehab loans available to small (5 to 49 -unit) properties. Lenders approved by the Government National Mortgage Association (Ginnie Mae) (also part of HUD) could then securitize those loans on the secondary market, increasing the availability of capital for more multifamily lending. This appears to be the first time in nearly 20 years that the federal government has proposed a new national initiative targeting small multifamily properties. Congress has not yet acted on the Administration's request to enact the proposal.

The region is home to some of the nation's leading HFAs and CDFIs, which are the focus of the policy. In addition, the proposal appears to have a reasonable chance of enactment: HUD is not seeking funding from Congress. It is only seeking authorization to modify existing FHA authority for the proposed purpose.

PART IV: MULTIFAMILY PROGRAM ADMINISTRATION RECOMMENDATIONS

In Part III, we examined public policy opportunities that are either pending or in place. However, any comprehensive initiative for addressing energy efficiency in small multifamily units must also examine effective and innovative programs that have been developed by forward-thinking stakeholders.

In this section, we examine opportunities for advocates, researchers and administrators to supplement the policy efforts addressed in Part III by utilizing these existing programs, and exploring opportunities for them to address small multifamily efficiency more effectively.

A. Creating “One-stop” Programs and Ensuring They Focus on Small Multifamily

With a “one-stop” program, all major program elements - information, contractor, financing, monitoring - are delivered through a single organization or channel. The “one-stop” energy efficiency retrofit program operated by ACTION-Housing, serving Southwestern Pennsylvania, delivers a typically comprehensive menu of services:

- Utility Analysis - Benchmarks the building, determining its potential for savings.
- Energy Audit - A detailed energy audit determines where the building is wasting energy.
- One-stop Report - Outlines recommended cost saving upgrades. Measures are recommended solely on the basis of cost-effectiveness.
- Financing Assistance - Assistance securing funding for the desired property improvements. Funding sources could include, but are not limited to, property reserves, utility rebates, and traditional loans.
- Contractor Selection/Construction Management - Select qualified and experienced contractors from the program’s network. The one-stop also manages the construction process as an owner’s representative.
- Education Modules - Educational sessions for tenants, maintenance staff, and property managers to detail their critical role in minimizing the property’s energy use.
- Savings Verification - The one-stop monitors the building’s energy use by evaluating post-retrofit utility bills to ensure savings are being realized.

In addition to ACTION-Housing’s program, there are a number of other “one-stop” programs focused on the multifamily sector operating in the Northeast. They include Efficiency Maine’s Multifamily Program; Maryland Department of Housing and Community Development’s EMPOWER Maryland; Mass Save, sponsored by Massachusetts’ gas and electric utilities and energy efficiency service providers; National Grid’s EnergyWise services; the Massachusetts Low-Income Multifamily Retrofit Energy Program, implemented by the aforementioned LEAN Network; the New York State Research and Development Authority’s (NYSERDA’s) multifamily initiatives, and programs of Efficiency Vermont and the Vermont Housing and Conservation



Board. Other similar programs are in development, such as a planned initiative of the Pennsylvania Housing Finance Agency. The agency described its rationale in creating the program as follows:

“It has become apparent to us that in order for owners to effectively complete multifamily energy retrofitting in Pennsylvania, there exists a great need for a one-stop-shop. This one-stop-shop would guide the owners through every step of the process, from benchmarking the energy usage of their property through post-retrofit performance monitoring and maintenance review. Depending on the specific needs and characteristics of the property and the owner, we would offer services to perform all or part of the process, or just provide guidance through each step.”²⁴

Leveraging Resources of “One-stop” Programs

Recognized as one of the most successful program in the country at improving the energy efficiency of small multi-family properties, the Energy Savers program run by CNT-Energy in the Chicago area, utilizes the “one-stop” approach. As of February 2013, Energy Savers had retrofitted more than 10,000 apartments. “Many are operated by mom and pop owners who are probably brutally aware of their energy costs, but busy schedules, a lack of product knowledge and financial hurdles might be keeping them from moving forward on any improvements that could net them savings in the long run.”

¹ Chicago Tribune, Mary Ellen Podmolik, February 1, 2013

Some of these “one-stop” multifamily energy efficiency programs have been established by individual agencies or organizations that have amassed the necessary skills and resources to deliver a comprehensive suite of services. Others have emerged as a result of collaboration among a number of actors. The Massachusetts Low-Income Multifamily Retrofit Energy Program, for example, was developed through a partnership between multiple electric and gas utilities, state agencies, local public housing authorities and owners and operators of multifamily housing serving the state. An independent assessment of the program’s development described its origins as follows:

[O]wners of multifamily properties often had to apply completely separately to a utility’s residential and commercial pro-

grams, as a building could have a mix of master meters (requiring participation in the commercial utility program) and individual tenant meters (requiring participation in the residential utility program). Further, an electric utility’s program might address lighting and appliances, but do nothing to address inefficient heating plant or the building envelope, while a gas utility’s program would not address lighting and plug loads, thus forcing the owner to apply to two separate companies to address the whole building. As a result of these and other barriers, most owners of affordable

²⁴ David Evans, “Multifamily Retrofits in Pennsylvania: Proposal for a One Stop Shop,” Pennsylvania Housing Finance Agency, (2012).

multifamily housing gave up trying to access the utility programs. The utilities agreed to consider revising their programs so that multifamily owners could achieve true one-stop shopping and obtain services that would address the full range of efficiency needs in these buildings.²⁵

Understanding and Overcoming the Challenge of “One-stop” Programs

It is important to note that “one-stop” programs can be challenging to implement. According to an assessment of the Massachusetts program by the American Council for an Energy Efficient Economy (ACEEE), which recognized it as one of the leading programs of its kind in the country, the program has not been able to secure sufficient funding for natural gas providers to meet all the natural gas efficiency needs in the state’s multifamily housing stock.²⁶

Despite the apparent proliferation of “one-stop” approaches to residential energy efficiency, there is no consensus on the optimal way to organize and implement one. While one would expect “one-stop” programs to vary in areas of program design and implementation, they generally share common elements, most notably a strong policy framework, consistent source of funding, and a multi-year plan that establishes achievable and measurable goals.

Helping Owners Sort Out Efficiency Program Classifications

An issue that affects the design, development and operation of multifamily programs is the classification used by program administrators. Some programs are classified as commercial, some as residential, and some have no consistent classification of multifamily housing. This can result in confusion for the property owner or manager as to whether their building qualifies for specific programs. Possible solutions include:

- **Establishing a single point of contact.** Programs such as Mass Save have established single points of contact, so that property owners have a single point where they can find all the information they need about program eligibility, features and incentives.
- **Leveraging existing incentives.** Initiatives such as National Grid’s Rhode Island Multifamily Program overcomes this obstacle by leveraging existing incentives in both their residential and commercial programs, and by offering service levels based on an owner’s specific needs.

Making “One-stop” Programs Easier to Find

A key to the Rhode Island program’s success is the coordination with other energy efficiency program implementation vendors to reach and interact with multifamily customers. This relates to another important issue for stakeholders: making program information easy to find. While websites for these programs are available, they must be easy to find, use and understand for the customer. This reflects on the customer experience. Customers are more likely

²⁵ National Housing Trust, www.nhtinc.org/downloads/ma_utility_funded_limerp.pdf

²⁶ Seth Nowak, Martin Kushler, Patti Witte, and Dan York, “Leaders of the Pack: ACEEE’s Third National Review of Exemplary Energy Efficiency Programs,” ACEEE (June, 2013).



to participate if they can clearly understand the eligibility and features of the program.

Clearly, the “one-stop shop” model provides advantages not available in programs that deliver services and components separately. An expansion of such programs in the region could provide a significant increase in energy savings from the multifamily sector.

City of Somerville, Massachusetts

A feasibility study of one-stop program for residential energy efficiency for the City of Somerville, Mass. indicated three criteria that must be considered when developing a “one-stop shop.” They are:

- *How well can the organizational structure organize existing communities, contractors, the utility companies, homeowners, renters and low-income residents?*
- *How sustainable is the funding for the program? How likely is it that the program will be able to operate independently for the long-term?*
- *How well can the program reach people of varying incomes? Will the program cater to a certain population to the exclusion of others, or will it be able to reach out to a variety of people through different financing tools?*

B. Developing a Deeper and More Targeted Understanding of the Small Multifamily Sector

As Part I of this paper suggested, the small multifamily stock in the Northeast as a whole has broadly similar characteristics, with a number of variations by geography in terms of physical characteristics and energy supply. While current detailed information on the ownership of the stock in the region is not available, it is likely that it is widely varied, as it is in the country generally. One analyst characterized the diverse ownership of small multifamily properties as follows:

While the category does include the archetypical landlord, it also includes the occupant-owner of a very small multi-unit building; the amateur real-estate investor who invests excess capital in a tax-advantaged real-estate transaction; the realtor or other real-estate professional whose business expands to include management and ownership of real estate; the first-generation immigrant looking to enter the middle class through ownership of real estate; the absentee, and typically passive, investor; as well as the speculator.

Address an Owner’s Specific Needs

Each of these owner types has specific needs and interests that must be addressed to engage them in an energy efficiency program. As one example, consider the tax-motivated real estate investor. Such an owner’s ability to utilize an energy efficiency subsidy program may require careful structuring so as not to result in adverse income tax impacts on the owner. For instance, if subsidy funds were provided as a grant to the property owner, they may be taxable at the time it was received. If the funds are structured as a loan, there should be

good reason to think that the loan is likely to be repaid, for instance, through anticipated utility savings. Otherwise, the Internal Revenue Service is likely to treat the loan as if it were a donation or grant.²⁷

In addition, tax considerations may dictate that the interest rate be at least the “applicable federal rate” that the Internal Revenue Service will respect as a market rate of interest (generally, a loan at a below-market interest rate results in some level of taxable income to the borrower at the time the loan is made). Any portion of an energy retrofit loan that is not repaid is likely to result in taxable income at the time the loan is forgiven or otherwise written off.

Of course, energy efficiency investments may be associated with positive tax consequences for owners as well. For example, interest on an energy retrofit loan is likely to be tax deductible, and energy retrofit investments may themselves be deductible (either at the time they are made or, more likely, over time via depreciation deductions).

Certainly, finances and affordability are top concerns for nearly all owners. According to findings NEEP’s Multifamily Leadership Group with owners of small multifamily units, many owners and managers have only vaguely thought about payback periods, which they said were easily achieved when converting from oil to gas heat. Frequently cited recent energy improvements made to multifamily buildings include replacement windows, basement insulation, and more effective electrical lighting. Owners are more likely to respond positively when they know that stakeholders thoroughly understand their concerns and needs.

Extend Outreach to the “Mom and Pops” and Small Urban Business Associations

While community-based “mission-oriented” owners active in their local and state affordable housing system may, generally, be easier to identify and more responsive to outreach, efforts must also ultimately address the much larger segment of the small multifamily owner base that are “mom and pops” and small businesses. In some parts of the region, trade groups representing these owners exist. Examples include state and regional affiliates of the National Apartment Association,²⁸ the Mid-Atlantic Real Estate Investors Association, and the Small Property Owners Association in Massachusetts, which claims to be, “the largest rental property owner association in Massachusetts and the only one that represents small property owners exclusively.”²⁹

Small urban business associations could be another avenue to explore. As one leading housing expert has noted, “many two-and three-family properties are owner-occupied, with the owners living in one unit and renting out the others. In many communities an immigrant family will buy a triple-decker and rent the other units to members of their extended family or

27 www.irs.gov; www.dsireusa.org/incentives

28 National Apartment Association, <http://www.apartmentjournal.com/associations/>

29 Small Property Owners Association, <http://spoa.com/about-spoa/>



fellow-immigrants, often an important step in sinking roots and building wealth.”³⁰ Further research could identify the markets where immigrant owners control a significant share of the small multifamily stock.

Utilize Market Analysis and Segmentation (MAS)

Understanding the property level characteristics of the small multifamily sector at a more “granular level” is also critical. Experience with energy efficiency in the large multifamily and commercial real estate sectors suggests that a detailed Market Analysis and Segmentation (MAS) can be helpful for sharpening program design and ensuring cost effective outreach. The MAS develops a set of prioritization criteria and identifies specific properties, owners, and/or communities that appear to be, based on the criteria, most likely candidates to make energy improvements.

The MAS is typically done at the city or county level. While the potentially available and useful datasets for small multifamily properties are not as robust as they are for, say, commercial real estate, it may be possible to develop relatively robust MAS reports for the small multifamily sector in jurisdiction in the region. The 2013 release of the U.S. Census Bureau’s Residential Finance Survey should provide information on multifamily property ownership, management, and financial status. At the local level, useful data for a more targeted analysis is likely available from public agencies, market analysts, brokers, and loose-knit membership organizations.

It may also be possible to develop a set of criteria that identify the most likely candidates among multifamily owners for initial outreach in targeted submarkets, such as larger cities. Subject to further refinement, such criteria could include:

- Building age of at least 30 years old;
- Relatively high energy costs;
- Ability to take on modest additional debt;
- Inclusion in a portfolio of similar properties;
- Participation in a housing or energy efficiency subsidy program; and
- Mission-oriented owner.

Ultimately, interviews with a representative sample of owners would likely be necessary to fully understand the opportunities for program participation.

³⁰ Alan Mallach, “Challenges of the Small Rental Property Sector,” New England Community Developments, Federal Reserve Bank of Boston, 2009.



The easier it is for property owners to determine program eligibility, features and incentives, the more likely they are to participate. Successful programs such as Mass Save have a single point of contact that ensures coordination and consistency, and serves as a conduit for customer, audit vendor, installation contractor, and program administrators. This central point of contact minimizes customer confusion, streamlines the application process, and provides a seamless customer experience.

Some programs are classified as commercial, some as residential and some have no consistent classification of multifamily housing. This can result in confusion for the property owner or manager as to whether multifamily housing qualifies for a specific program, multiple programs or, in some cases, no program at all. To overcome this, National Grid created the Rhode Island multifamily program that leverages the existing incentives in both their residential and commercial programs. National Grid recognized early on that multifamily building owners needs can be met by providing tiers of service. The program has successfully demonstrated that energy efficiency services and solutions are needed across the state and that coordination with other energy efficiency program implementation vendors to appropriately target and interact with multifamily customers is effective.



CONCLUSION

As is evident through the information presented in this paper the regional potential for the retrofit of multifamily properties is enormous. This potential cuts across all sectors of the design, construction, power supply, bank and insurance, energy rating, supply chain and real estate sectors. The regions multifamily housing stock will play an increasing vital role as population shifts bring more people to urban centers. Leadership opportunities within this housing market sector on all scales are clearly emerging, creative and inventive approaches are encouraged and vital to transformation.

The information and recommendations in this white paper are intended to guide policymakers and other stakeholders as they consider future commitments to advancing energy efficiency in the small multifamily sector.

Stakeholders are encouraged to:

- **Include the small multifamily sector in planning for current and future initiatives.** While it is undeniable that the small multifamily market has not received the same focus and attention as the single-family residential or commercial sectors, the energy savings potential is tremendous and must be addressed.
- **Collaborate on approaches and solutions to common problems and issues.** As has been shown, the small multifamily sector contains significant challenges as well as new opportunities. Sharing knowledge and resources is essential to moving the market forward.
- **Set high energy savings goals for the sector.** The small multifamily sector can play a critical role in increasing energy efficiency and reducing greenhouse gases.

APPENDIX A

Case Studies

The following case studies provide an overview of the programs and successful projects throughout the region.

- Efficiency Maine's Multifamily Program
- Massachusetts Mass Save Program
- NYSERDA's Multifamily Perform Program
- National Grid's Rhode Island Multifamily Program
- Pennsylvania Housing Finance Agency
- Vermont Fuel Efficiency Partnership



EFFICIENCY MAINE'S MULTIFAMILY EFFICIENCY PROGRAM

After receiving \$4.5 million in seed funding from the Department of Energy's Better Buildings Neighborhood Program, the Governor's Office of Energy Independence and Security (OEIS), through Efficiency Maine, launched Maine's Multi-family Efficiency Program (MEP), which is a statewide initiative targeting comprehensive multi-family buildings.

Modeling after the state's highly successful Home Energy Savings program (HESP) for single-family homes, MEP offers no-cost energy benchmarking and direct cash rebates for energy efficiency upgrades among Maine's medium size multi-family between five and twenty units. Two financial incentive paths are available including the Prescriptive Path targeting projects with traditional energy-saving measures, such as air sealing and insulation, boiler upgrades, lighting, and other similar retrofits. On the other hand, the Modeling Path is a better fit for more complex projects encompassing more unique measures. The program's energy efficiency upgrades will provide at least 20% energy savings for each upgraded multi-family unit.

Incentive #1	
Paid upon approval of the Energy Reduction Plan	
Prescriptive Path	\$100 per apartment unit
Modeling Path	\$200 per apartment unit or 100% of the Partner's fee to develop the Energy Reduction Plan, whichever is less
Incentive #2	
Paid upon final inspection and approval of installed scope of work	
All Paths	Up to \$1,400 per apartment or 50% of installed costs, whichever is less

- Whole-building benchmarking services are available to most multi-family housing buildings free of charge. Using ENERGY STAR Portfolio Manager, building owners will receive an assessment of the building's current energy efficiency as compared to other buildings of similar size, establish a baseline to measure energy improvement, and enable owners to track monthly energy consumption.
- Incentives are available to all fuel types including oil and propane that make up a significant portion of fuels used to heat Maine's multi-family buildings.
- MEP employs a network of qualified program partners including energy professionals, vendors, suppliers, and contractors. Program administrators also leverage these relationships with program partners to promote and market the multi-family program to prospective multi-family building owners.
- The program often engages stakeholders through regular public meetings in urban areas with high concentration of multi-family buildings. These meetings create awareness through word-of-mouth and further gain traction through the program's partners and build on the experience with the single-family program.

PROGRAM PROFILE

State: Maine

Administrator: Efficiency Maine Trust

Timeline: 2012 to present

Maine Multi-family Rental Units¹:
Buildings of 5-19 units: 32,321
Buildings of 20+ units: 17,731

Eligibility:
 Multi-family buildings (5-20 units)
 Market rate & affordable housing
 Non-restrictive fuel types

Funding: US DOE's SEP Special Project funds (ARRA) of approximately \$4.5 million²

Incentives:
 Free benchmarking
 Rebates for energy efficiency measures (e.g., insulation, air sealing, high efficiency boilers and furnaces, lighting upgrades, ENERGY STAR appliances, etc.)

Program's Status (as of June 2013)³:
Benchmark
 Pipeline: 2,630 units
 Completed: 2,477 units
Energy Reduction Plans
 Submitted: 1,591 units
 Approved: 1,329
Retrofits
 In construction: 907 units
 Completed: 185 units

Source: ¹ Census Bureau American Community Survey, 2011
² [DOE Better Buildings Neighborhood Program](#)
³ [Presentations at NEEP 2013 Multi-family Workshop](#)



A Seven Unit Apartment Building in Bangor is more Energy Efficient and more Comfortable

First Project Completed Under Multifamily Efficiency Program

It's widely known that Maine has some of the oldest housing stock in the country making many of the homes excellent candidates for energy efficiency upgrades. Efficiency Maine helps home owners and business owners throughout Maine improve energy efficiency by providing education and incentive programs to help fund qualified projects.

The Multifamily Efficiency Program is a new program that began in the summer of 2012 and serves multifamily buildings with 5 to 20 units, a market that previously had not qualified for incentives under other Efficiency Maine programs.

In November, the first project to receive incentives from the Multifamily Efficiency Program was completed – a seven unit building in Bangor. The building was constructed in 1912, and many of its original heating systems were still in use. Following an energy audit from Facility Management Group, Inc. in Dexter, computer models calculated that the building could reduce its overall energy use by more than 30% with some simple retrofit measures. By adding insulation, sealing air leaks, installing energy efficient windows and replacing the boiler with a high-efficiency condensing boiler, residents will experience improved comfort while the property owner experiences lower energy usage and utility bills.

Objectives:

- Reduce energy costs for the building.
- Reduce electricity and fuel usage.
- Reduce building heating maintenance cost.
- Improve residents' comfort.

Strategies:

- Engage a qualified program partner to develop an Energy Reduction Plan.
- Add spray foam insulation to basement wall and roof
- Seal air leaks
- Install ENERGY STAR®-rated windows
- Replace the boiler with a high-efficiency condensing boiler with added controls
- Insulate heating and hot water pipes



efficiencymaine.com
866-376-2463

Projected Annual Savings

\$5,640





MASSSAVE® MULTIFAMILY PROGRAM

Following the passage of the 2008 Green Communities Act which mandated the acquisition of all cost-effective energy efficiency measures, Massachusetts' gas and electric utilities and energy efficiency service providers, known as Program Administrators (PAs) came together to create MassSave®. MassSave® Multi-family Assessment provides a no-cost residential energy assessment to facilities with five (5) or more dwelling units. The assessment also helps building owners and managers, as well as tenants, to identify energy efficiency upgrades eligible for MassSave® incentives. Income-eligible residents living in multi-family facilities owned by or operated by a non-profit entity or a public housing authority may qualify for greater incentives under the Low Income Multi-family Program.

Program Highlights

- Under the MassSave® statewide umbrella framework, while each PA is still responsible for program delivery within its service territory, the collaborative approach enables a coordinated effort among the PAs to ensure consistency in program offerings, maximize savings, and capture economies of scale.
- Co-branding among individual PAs logos and Mass-Save brand reduces customer confusion and enhances program recognition while increasing the value and trust with customers
- Collaborative marketing effort among PAs and MA Department of Energy Resource continues working to accommodate individual PA needs within the context of a single statewide marketing campaign. The one-stop shop approach aims to streamline the process and provide services that address whole-building energy retrofits.

Utilize Multi-family Market Integrator (MMI) to serve as single-point-contact for customers, audit vendors, installation contractors, and PAs, thus, ensuring better coordination and consistency among services offered. Diverse incentive offerings include no-cost, no-commitment energy assessment; rebates for lighting, weatherization, heating and cooling upgrades. Qualified multi-family projects are eligible for financing up to \$100,000.

PROGRAM PROFILE

State: Massachusetts

Administrator: MassSave® is sponsored by Massachusetts' gas and electric utilities and energy efficiency service provider, including NSTAR, National Grid, WMECO, Cape Light Compact, and Unutil

MA Multi-family Rental Units¹:

Buildings of 5-19 units: 213,693

Buildings of 20+ units: 428,802

Applicable Sector:

Multi-family Residential (5+ units)*

Eligible Benefits:

No-cost home energy assessment
Eligible upgrades include:

- lighting upgrades & occupancy sensors
- water heating equipment
- insulation & air sealing
- high-efficiency heating and cooling equipment
- programmable thermostat

Funding: System Benefits Charge

Financing Mechanism: Eligible participants can apply for [MassSave Financing for Business](#) up to \$100,000

Program Budget (2012)²:

Electric: \$13,746,872

Gas: \$4,236,785

Annual Energy Savings (2012)²:

Electric: 17,999 MWh

Gas: 42,931 MMBTU

* Income-eligible residents living in non-institutional multi-family facilities owned or operated by a non-profit entity or a public housing authority may qualify under [Low Income Multi-Family Program](#).

Source: ¹ [Census Bureau, 2011 American Community Survey](#)

² [MA Energy Efficiency Advisory Council, 2012 Costs & Savings Report](#)

NYSERDA'S MULTIFAMILY PERFORMANCE PROGRAM

Launched in 2006, NYSERDA's Multi-family Performance Program (MPP) has been a major component of the agency's multi-family energy efficiency portfolio.¹ The program, which serves multi-family buildings with five or more residential units and four or more floors, aims to increase energy efficiency in both existing multi-family structures and new constructions by improving the building energy performance. Through technical assistance and available incentives, MPP provides the opportunities for multi-family building owners/managers to reduce their buildings' energy uses and realize substantial cost savings, while offers residents a more comfortable, healthy and sustainable living environment. Both market-rate and low-income/affordable-rent buildings are eligible to participate. By consolidating previous multi-family initiatives under the current portfolio, NYSERDA's goal is to provide a "one-stop-shop" experience for participants to easily navigate the services that agency has to offer.

Program Highlights

- Comprehensive performance-based incentives account for market-rate and low-income buildings in both existing and new construction multi-family.
- Besides rebates, the program leverages existing funding from Green Jobs - Green New York to offer zero-interest financing up to 50% of project cost.
- MPP utilizes both traditional and online marketing strategies, as well as markets through program-approved Partners.
- Participants are required to hire one of the Partners in order to receive incentives. Program Partners are also encouraged to maintain a close relationship and become the building owners' representative and helping them through the project.
- Incentives are paid upon successful completion of key milestones in a project's development (see table below).
- To comply with the State's updated Technical Reference Manual, NYSERDA requires every energy-saving measures to pass the Total Resource Cost test analysis. For existing buildings, there is also a minimum performance standard of 15 percent in total energy reduction determined by the energy models that are included in the Energy Reduction Plan established after the initial benchmarking.

PROGRAM PROFILE

State: New York

Administrator: New York State Energy Research and Development Authority (NYSERDA)

Program: Multi-family Performance Program (MPP)

Timeline: 2006 to present

New York Multi-family Rental Units¹:

Buildings of 5-19 units: 599,499

Buildings of 5+ units: 1,967,165

Buildings of 20+ units: 1,367,716

Applicable Sector:

Multi-family Residential (5+ units)

Existing & New Constructions

Market Rate & Low-income

Funding: System Benefits Charge

Financing Mechanism: introduced in 2012, [Green Jobs - Green New York](#) financing offers 0% interest loans covering 50% of the cost of the improvement up to \$5,000 per unit or \$500,000 per energy-saving project

Program Budget (2010-2012)²:

Electric: \$9.1 million

Gas: \$29.7 million

Energy Savings (2010-2012)²:

Electric: 46,593 MWh

Gas: 581,807 MMBtu

Source: ¹Census Bureau American Community Survey, 2011

²[Supplemental Revision to SBC Operating Plan, March 2011](#)

¹ The other component of NYSERDA's Multi-family Energy Performance Program is the Advanced Submetering Program. Advanced submetering technology allows residents to control their own energy use with real-time data. NYSERDA offers to pay \$250 per meter, up to 50% of the installed cost of the system.

An unexpected leader in the movement toward energy efficiency



135 Broadway, Saranac Lake, NY

The building at 135 Broadway, in downtown Saranac Lake, NY, was ready for an upgrade. The **90-plus-year-old mixed-use commercial and residential building had experienced a long period of deferred maintenance, and it showed—especially in its utility bills.** With energy costs continuing to rise, TSB Development, LLC, **the owner of the building, decided to make some changes.**

Through NYSERDA's Multifamily Performance Program (MPP), TSB secured valuable incentives and connected with a local Multifamily Performance Partner. Together, the two

companies **developed a plan to make comprehensive energy efficiency improvements to 135 Broadway,** converting it from a leaky energy waster to a model of energy efficiency.

The improved 135 Broadway was a groundbreaking success. It achieved **energy savings of 27 percent,** and was **the first MPP project to earn New York's Energy Smart label** and plaque. Since its renovation, 135 Broadway has been a key inspiration for the dozens of projects that have followed in its footsteps.

About NYSERDA's Programs for Multifamily Buildings

New York State Energy Research and Development Authority (NYSERDA) offers a portfolio of programs and incentives for owners, facility managers, developers and condo/co-op boards of multifamily buildings with five or more units. Our initiatives make it easier to assess, fund, implement and measure energy efficiency upgrades that improve building performance and your bottom line.



NATIONAL GRID'S RHODE ISLAND MULTIFAMILY PROGRAM

In order to address the fragmented experience related to current multi-family energy efficiency offerings in the state, National Grid, the main electric and gas utility provider in Rhode Island, created a comprehensive program for the multi-family sector with new resources aimed at better coordination of existing services. The new Multi-family Program kicked off in 2013 with the creation of the Multi-family Coordinator that serves a single-point-contact for existing services offered through the company's portfolio, including EnergyWise Multi-family (see profile), Income-Eligible Multi-family, EnergyStar® HVAC.

PROGRAM HIGHLIGHTS

- Single-point-contact for all multi-family offerings provides a better streamlined process for customers.
- The Program Coordinator acts a primary contact for both the customers and representative of vendors within the different programs.
- The program consolidates and takes advantage of existing offers without creating new overlapping services.
- A multi-family property may be eligible for services and incentives under more than one program. With the assistance of the multi-family coordinator, it reduces the complexity while offering a better coordination of services, easier access to information, and transparent reporting.
- The company employs a focus group method to acquire customer feedbacks.
- A plan to include benchmarking of multi-family properties is also being developed
- Even though renters/tenants cannot apply for National Grid's multi-family incentives directly, they will be receiving the Home Energy Report given sub-metering is available in their building.

PROGRAM PROFILE

State: Rhode Island

Program: EnergyWise *Multi-family*

Administrator: National Grid

RI Multi-family Rental Units¹:

Buildings of 5-19 units: 31,201

Buildings of 20+ units: 28,745

Eligibility*:

- A landlord/owner of an eligible 5+ unit multi-family facility
- A homeowners' association representative for a condo

Benefits:

- No cost energy assessment
- Free CFLs, low-flow showerheads, aerators, hot water pipe and tank wraps
- Incentives up to 50% of project costs for insulation and air sealing measures

Funding: System Benefits Charge

Program Budget (2013)²:

Electric: \$3.1 million

Gas: \$3.3 million

Annual Energy Savings (2013)²:

Electric: 4,185 MWh

Gas: 26,967 MMBtu

*In 2013, efficiency offerings for income eligible multi-family properties were consolidated into the Income Eligible Multi-family programs. The available incentives are the similar to those offered under EnergyWise and C&I Retrofit.

Source: ¹ [Census Bureau, 2011 American Community Survey](#)

² [National Grid, 2013 Energy Efficiency Program Plan](#)



Case Study: 10-unit Apartment Building in Cumberland, RI

In 2013, a 10-unit apartment building in Cumberland, RI worked with National Grid through its Multi-family Program to help improve the energy performance of the building, generating significant energy and cost savings for the owner and tenants.

In total, the project measures were installed for a cost of just under \$10,000. Projected annual energy savings include about 7,000 kWh for the electric measures and about 350 therms for the gas measures.

This translates into annual electric utility bill savings of about \$7,000 and gas utility bill savings of just over \$5,000, creating a very short payback period for the building.



Solutions

Lighting & Appliances

- Hardwired LED fixtures in the bedrooms and kitchens
- CFL bulbs in appropriate lamps and fans
- Exterior LED wallpack fixtures
- 3 energy efficiency refrigerators

Envelope

- R-19 cellulose in the attics
- Air sealing of the units
- Domestic hot water pipe wrap

Costs

- Total project costs under \$10,000

Benefits

- Project annual energy savings: 7,000 kWh in electricity; 350 therms in gas
- Annual bill savings: \$7,000 (electricity) & \$5,000 (gas)
- Short payback period

PENNSYLVANIA HOUSING FINANCE AGENCY
Cheshire Home Assisted Living for the Elderly - 13 Units

Built in 1900, Cheshire Home is a three-story affordable housing (HUD's Section 202) located in Philadelphia, PA. The building has twelve supportive housing units, plus the superintendent apartment. All utilities are paid by the owners (Community Property Management).



Project Summary

In 2010, Bone Energy Services performed an on-site assessment of Cheshire Home. The goal of the audit was to identify potential improvements in energy efficiency of the buildings, as well as health and comfort of the occupants. The initial benchmarking indicates a higher than average use of energy (natural gas and electricity) and water as compared to buildings of its size in Philadelphia. Based on the building's energy audit, the following retrofits were implemented in 2012:

- Air sealing of basement and wall, insulate attic sloped ceiling cavities
- Lighting upgrades
- Boiler replacement, pipe insulation, thermostatic valves installed on radiators
- Install indirect-fired tank hot water heater
- High-efficient appliances
- Venting replacement
- Health and safety measures (dehumidifier installed in basement, gas leak repair, chimney repair)

The project was managed by the Pennsylvania Housing Finance Agency (PHFA) through its Preservation through Smart Rehab Program. The majority of funding came from DOE's Weatherization Assistance Program (WAP). There was a 26 percent reduction in energy use one year after the retrofit.

About Pennsylvania Housing Finance Agency (PHFA)

The Pennsylvania Housing Finance Agency continues to be a major source of financing for the acquisition, rehabilitation, construction, or preservation of affordable rental housing.

- PennHOMES Program: interest-free deferred payment loans to support development of affordable housing
- Taxable and Tax-Exempt Program: financing for building/ rehabilitating rental units through the sale of bonds.
- Housing Tax Credit Program: federal tax credit exemption for developers of affordable rental housing
- Preservation through Smart Rehab Program: financing retrofits projects in PA's affordable housing stock

THE CHALLENGE

Over 100 year-old building with higher than average energy use due to aging equipment, air leakage, and poor insulation. There is a need to improve energy efficient to reduce operating costs to owner and increase occupant health and comfort.

THE SOLUTION

Improve building shell through air sealing and insulation. Replace boiler and hot water heater with high efficiency heating equipment. Lighting upgrades. Ventilation repair.

FINANCING

WAP Dollars:.....	\$78,000
Replacement Reserve:.....	\$5,647
Total Project Costs:.....	\$83,647

BENEFITS

Actual Energy Savings:	
Electricity.....	5,420 kWh
Gas.....	3,285 therms
Annual Energy Savings:.....	\$10,283
Life Cycle Savings:.....	\$121,590
Simple Payback:	6.6 months



VERMONT FUEL EFFICIENCY PROJECT

The Challenges to Establishing a New Statewide Multifamily Efficiency Program

Vermont Fuel Efficiency Partnership (VFEP) began in the aftermath of fuel price spikes and economic turmoil in 2008. Using revenues from the Regional Greenhouse Gas Initiative (RGGI), the Department of Public Service (Vermont's energy office) provided initial funding for what became VFEP, with the goal of protecting the state's affordable housing stock from future price shocks.

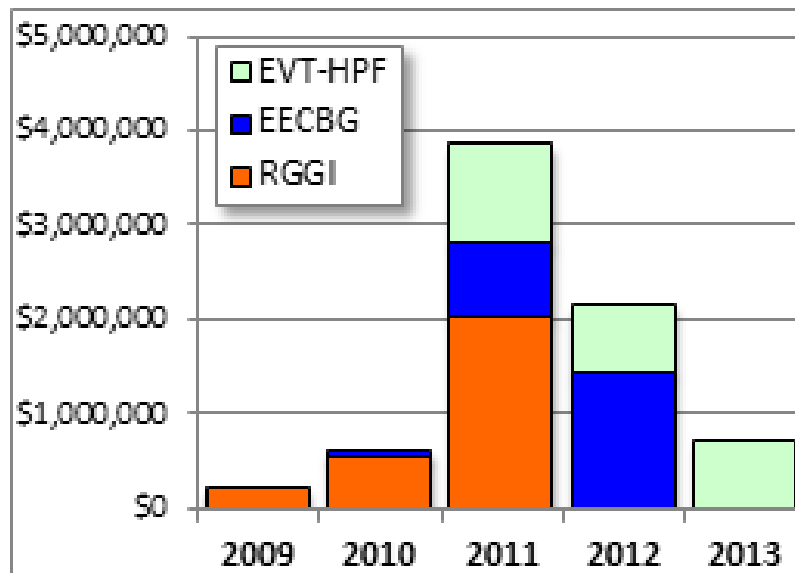
VFEP was designed to coordinate existing efficiency programs (Weatherization Assistance Program, Efficiency Vermont), state housing agencies (Vermont Housing & Conservation Board, Vermont Housing Finance Agency), and state and local housing developers (Housing Vermont, regional housing trusts). VFEP provides technical support and substantial additional incentives to achieve a much higher level of energy efficiency improvements than had been possible before.

The challenges to establishing a new statewide multifamily efficiency program are many, to name a few:

- setting up mechanics and determining screening and funding parameters;
- providing Owners/Developers with sufficient technical and project support to move projects, and achieve estimated savings;
- dealing with turf issues and mismatched program requirements among project funders;
- lack of staff early on in establishment of the program;
- ebb and flow of funding.

VFEP funding profile since inception:

EVT-HPF is RGGI and other efficiency money, via Efficiency Vermont



EECBG is ARRA stimulus funds

RGGI is Regional Greenhouse Gas Initiative

In the summer of 2013, VFEP undertook a study to see how well they were delivering comprehensive work. VFEP wanted to know whether actual savings was close to what they estimated, in order to improve the quality of their estimates. They were also curious whether they could draw conclusions about what types of measures are most effective.

VFEP collected actual fuel usage data on projects that had been in service at least one full heating season. Of about 160 buildings completed by September 2012, VFEP was able to collect acceptable data on about 50; about 20 had really good data quality. Reasons buildings dropped out include:

- bulk fuels with infrequent summer fills, and/or deliveries that were not fills;
- vacancies, pre- or post-retrofit;
- unexplained holes in records, probably due to vacancies.

VFEP knew from previous experience that bulk fuels are difficult to use in statistical analysis. But gained a greater appreciation of the many other factors affecting both modeling and estimating savings, and making a meaningful comparison of estimated and actual usage, such as:

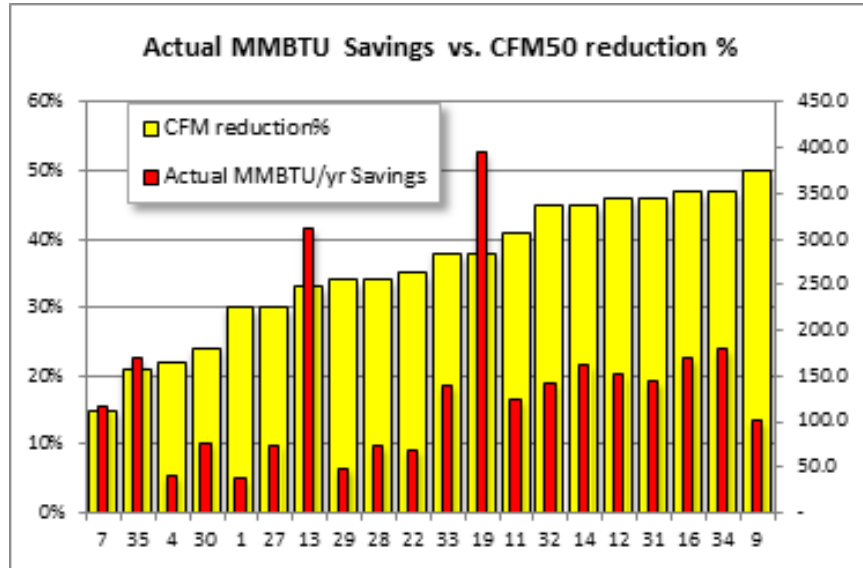
- length of pre-retro usage history, especially with bulk fuels, greatly affects the quality of modeling and estimates; four or more years apparently balances out variability due to occupants;
- disaggregating space heat from domestic hot water (DHW) is important to estimating savings from improvements to each, but without actually metering is at best an educated guess, which introduces a wiggle factor of unknown dimension;
- normalizing savings estimates to post- period adds another wiggle factor; vacancies especially in pre-period greatly increase the wiggle.

Mindful especially of the last caveat, VFEP calculated actual average savings on the 50 buildings to be about 24%, compared to revised estimated savings of 31% - revised, that is, from original estimates averaging 40%. The discrepancy is from changes in how VFEP applied assumptions to various modeling questions, and particularly to not having accounted for ventilation in early models.

Ventilation emerged as a major issue, especially in larger buildings. One 40-unit building actually had significantly higher usage post-, despite a new condensing gas boiler, cellar foundation wall insulation, air sealed and insulated attic. Continuously operating bath fans were also installed. On re-visiting, VFEP found fans set to higher CFM than spec and also triggering full-speed operation for longer periods than spec. Other projects showed significant impacts from ventilation, prompting VFEP to rethink their standard practice of recommending fans 30 CFM continuous / 80 CFM motion-triggered boost. Heat-recovery ventilation is tough in rehab, but VFEP continues to incentivize it wherever possible. If exhaust-only is the only option, VFEP looks for better controls than simply motion-activated controls.

Buildings that had the best results showed some common themes:

- Attic airsealing and insulation (of course; every building gets this);
- Infiltration reduction generally correlates with better savings;
- Foundation insulation (typically 3" spray polyurethane foam on interior) shows less correlation but still looks pretty effective;
- Heating system improvements, and especially solar hot water, are good hits; the bigger the building, the more important.
- Greater Infiltration Reduction generally correlates with better savings.



The 20 buildings (of total 50) with statistically best data quality.

The lessons we learned for running a better program are:

- Detailed fuel history - and vacancy history - greatly improves modeling and reliability of savings estimates;
- Sufficient staff resources to allow close project management is critically important - including frequent engagement from design stage through weekly site visits in construction, and progress blower-door tests to maximize effectiveness of airsealing;
- Include balanced (heat-recovery) ventilation instead of exhaust-only whenever possible;
- HVAC commissioning prior to final sign-off is also critically important (would have caught the over-ventilation problem at the 40-unit building), and is typically given short shrift.

Vermont Fuel Efficiency Partnership is a statewide program of Central Vermont Community Action Council.

This study was funded in part by the Office of Economic Opportunity (Dept of Children & Families, Agency of Human Services, State of Vermont), and by Efficiency Vermont.

Funding for the work came from contracts with the Dept of Public Service (State of Vermont) using funds from the Regional Greenhouse Gas Initiative and the Energy Efficiency & Conservation Block Grant of the American Recovery and Reinvestment Act; and also from contracts with Efficiency Vermont.

For more information:

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APPENDIX B

Additional Resources

- [NEEP Multifamily Resource Center](#) - Multiple resources, presentations, reports, and links on multifamily issues, challenges and successes locally, regionally and nationally
- [Efficiency Maine Trust Multifamily Efficiency Program](#) - Comprehensive information on the various components of the program
- [Mass Save Multifamily Program](#) - Massachusetts program for multifamily residential energy efficiency
- [NYSERSDA Multifamily Performance Program](#) - Information on existing building retrofits and new construction
- [ACEEE Multifamily Energy Savings Project](#) - Multiple resources on reports and links
 - [Multifamily Energy Efficiency: Insights on Program Best Practices to Align Stakeholder Interests](#). Minnesota Department of Commerce and Minnesota Department of Energy Resources
 - [Partnering for Success: An Action Guide for Advancing Utility Energy](#): A Report by National Housing Trust, ACEEE, CNT Energy, and the National Consumer Law Foundation
- [National Housing Trust](#) - The National Housing Trust is the nation's leading expert in "preserving and improving" affordable housing
- [U.S. Housing and Urban Development Multifamily Programs](#) - HUD's Federal Housing Administration (FHA) "Office of Multifamily Housing Programs" is responsible for the overall management, development, direction and administration of HUD's Multifamily Housing Programs.
- [Stewards for Affordable Housing for the Future](#) - Launched in 2003, SAHF has eleven sophisticated not-for-profit members who acquire, preserve and are committed to long-term, sustainable ownership and continued affordability of multifamily rental properties for low-income families, seniors, and disabled individuals.
- [Energy Star Multifamily Resources](#) - Success stories and energy savings tips