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Policy Research Shop

Renewable Energy Incentives

Evaluating the Suitability of Property Tax Exemptions and PACE Financing for Lebanon, New Hampshire

Presented to the Lebanon, NH Energy Advisory Committee

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EXECUTIVE SUMMARY

This report assesses the suitability of two renewable energy incentive programs, property tax exemptions and Property Assessed Clean Energy (PACE), for Lebanon, New Hampshire. We find that property tax exemptions are popular in theory but are seldom claimed in the New Hampshire municipalities that currently offer them. We present a series of estimates of the expected fiscal impact on Lebanon were property tax exemptions to be enacted. We also describe how and where the PACE program has been implemented and assess the likely impact of legal challenges to its financing structure. Since the program is fairly new, data on its impact is unavailable, so we present three case studies to help officials predict the impact PACE adoption would have on Lebanon.



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1. INTRODUCTION

Many municipalities across New Hampshire and the United States are looking for ways to provide incentives to prompt homeowners to switch from nonrenewable energy sources such as coal, oil, and gas to renewable energy sources such as solar, wind, and wood. In this report, we sequentially investigate two incentive programs for renewable energy systems: property tax exemptions and the Property Assessed Clean Energy (PACE) municipal loan program. We describe how each program works and when and where it has been enacted. Where possible, we estimate the fiscal impact of each program on the municipalities currently operating them and provide a range of projections for the fiscal impact of implementing the programs in Lebanon, New Hampshire. We also describe possible barriers and challenges to implementation.

2. PROPERTY TAX EXEMPTIONS

2.1 Background

Residential property tax exemptions allow homeowners to permanently deduct the value of specified improvements to their homes from their home's assessed value. The exemption would not lower an owner's property tax bill; it would simply prevent the owner's property tax bill from rising on account of the increased value of the home due to the installation. According to Eric Steltzer, an Energy Policy Analyst at the New Hampshire Office of Energy and Planning (NH OEP), properly applied property tax exemptions should never cause a household's total property tax bill to fall, even if the renewable energy installation replaces a taxable energy system.¹ However, many municipalities have implemented the exemptions incorrectly causing some confusion.

As of March 2011, 34 states and Puerto Rico offer property tax exemptions for renewable energy installations.² Four states, including New Hampshire, have legislation authorizing municipalities to offer the exemptions. An additional five offer a state exemption coupled with the option for a local exemption. The remainder offer state exemptions only.

New Hampshire first authorized property tax exemptions for solar energy systems in 1975, for wind-powered energy systems in 1977, and for woodheating energy systems in 1979. All of the exemption authorizations were amended in 2003.³ Every municipality has the option to include a cap on the value of the exemption that may be claimed.⁴ Definitions of each type of energy system are contained in Appendix A. Different types of renewable energy systems can provide electricity or heat (see table).

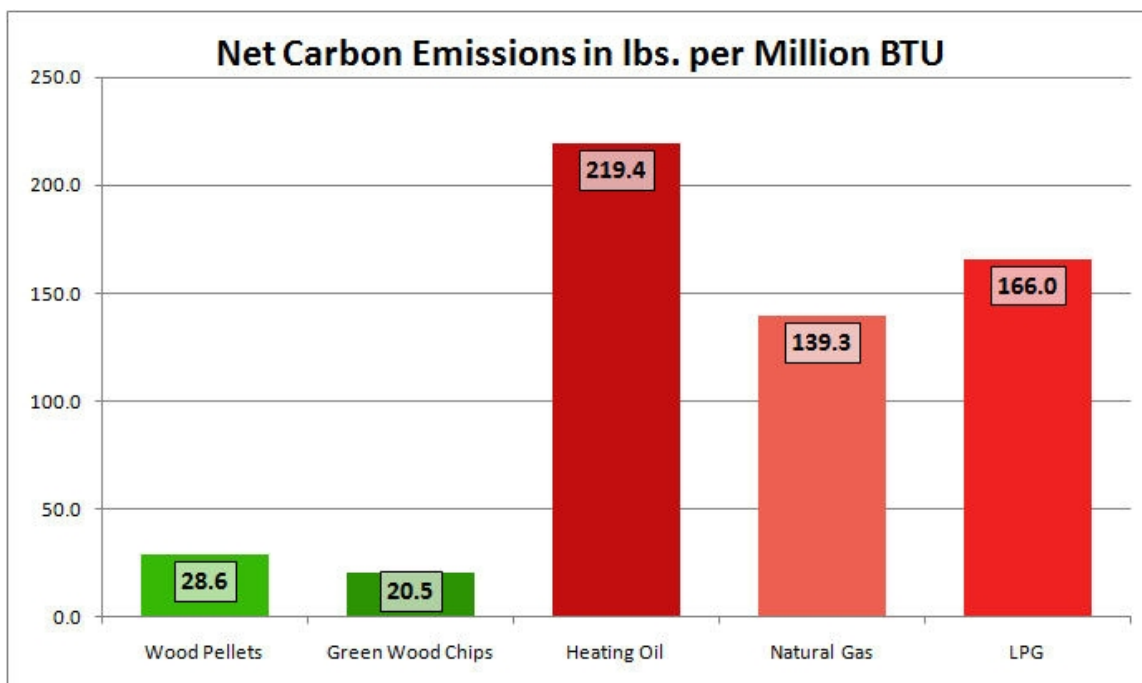
Type	Space Heating	Water Heating	Electricity
Solar	Yes	Yes	Yes
Wind	No	No	Yes
Wood	Yes	No	No



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An average American household is responsible for 7.4 metric tons of carbon dioxide (CO₂) emissions per year through its electricity usage.⁵ Photovoltaic solar panels and wind turbines produce no CO₂ emissions, so the extent to which they replace electricity from the grid directly reduces carbon dioxide emissions. If they are wired to sell excess power back to the grid, they can even make the household carbon negative.

Eighty-five percent of the energy consumed by households in the Northeast is used to heat air or water.⁶ The EPA considers the burning of wood pellets to be carbon neutral because the pellets emit CO₂ previously absorbed from the atmosphere.⁷ Therefore, the total carbon footprint of woodburning heating systems is much smaller than heating systems powered by fuel oil or natural gas (see chart).⁸



Source: Maine Energy Systems

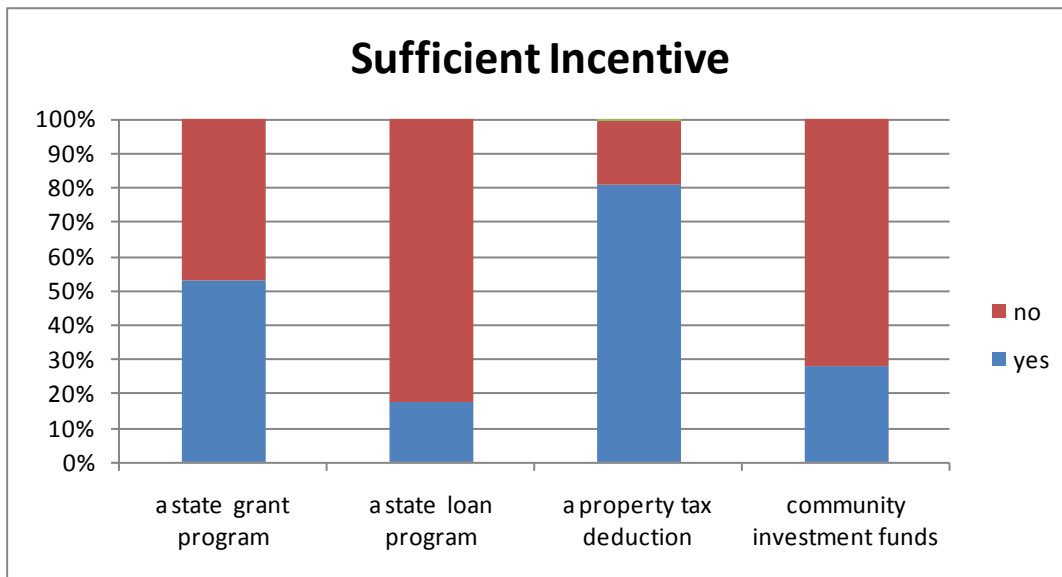
A New Hampshire household using 900 gallons of #2 fuel oil annually would produce 10 tons of CO₂, while an equivalent household using a wood pellet heating system would produce less than 2 tons of CO₂.⁹ Wood pellets are also less expensive than #2 fuel oil: A gallon of #2 fuel oil in Maine in February 2011 cost \$3.52, while a quantity of wood pellets producing the same amount of heat cost only \$1.96.¹⁰ However, a pellet boiler costs between \$15,000 and \$20,000, significantly more than an oil boiler.¹¹

In a 2010 survey of 400 New Hampshire residents, the Policy Research Shop found that 81 percent of respondents would be willing to undertake an energy efficiency project for a property tax deduction.¹² This figure is much higher than the percent of respondents



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who would undertake such a project for other incentives and is fairly consistent across income levels (see chart).



Source: PRS 2010 NH State of the State poll data

An important caveat is that the survey asked respondents about a property tax deduction, not a property tax exemption. Though an exemption is functionally identical to a deduction, the question wording may have led respondents to believe that their property taxes would decrease under the proposed scenario. Additionally, the survey asked about energy efficiency projects, using weatherization as an example.¹³ Respondents may have answered differently if they were specifically asked about a renewable energy system, which typically costs several thousand dollars. This survey result suggests that the psychological value of a tax exemption may motivate homeowners more than the actual financial benefit of the exemption. The financial benefit of an exemption, however, may be significant. For example, at Lebanon's current mill rate of 23.82, an exemption for a \$10,000 solar energy system would be worth around \$240 per year. This is small relative to the upfront cost of the installation, but large relative to the expected savings in electricity costs. Assuming that the system can replace half of a household's \$100 monthly electricity consumption, it would save the homeowner \$600 per year. The system would pay for itself in 17 years. If a property tax were levied on the improvement, however, the total yearly savings would be only \$360, and the project would take 28 years to pay for itself. According to this model, by forgoing \$240 of revenue a year, the city would increase the annual financial benefit of a renewable energy system to a homeowner by 60 percent.

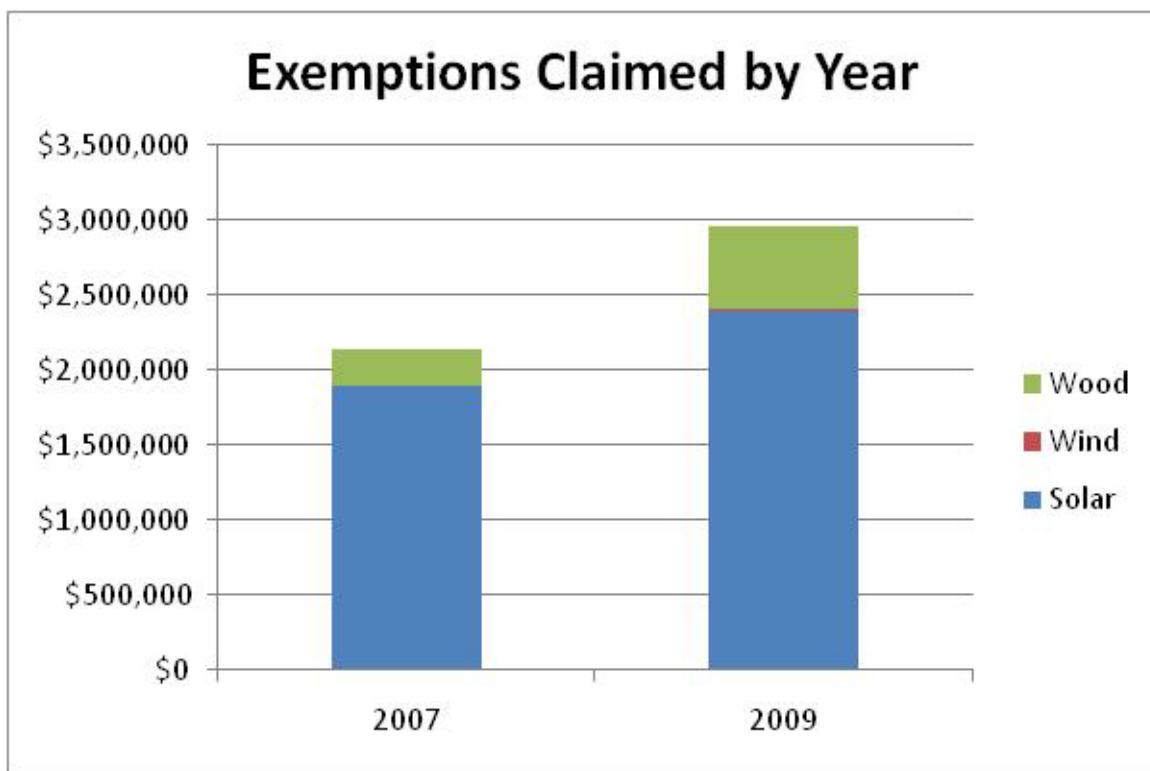


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2.2 Adoption and Fiscal Impact

According to the NH OEP, 83 cities and towns have adopted one or more of the renewable energy property tax exemptions pursuant to NH RSA 72:61-72.¹⁴ Eighty-one municipalities offer exemptions for solar energy systems, 45 municipalities offer exemptions for wind-powered energy systems, and 31 municipalities offer exemptions for woodheating energy systems. The maps in Appendix B illustrate which municipalities offer exemptions for each type of system and whether any homeowners claimed the exemptions in 2007 or 2009. Citizens in 61 municipalities claimed exemptions for solar energy systems, citizens in two municipalities claimed exemptions for wind-powered energy systems, and citizens in 19 municipalities claimed exemptions for woodheating energy systems.

The following graph presents the total amount of exemptions claimed by New Hampshire citizens in 2007 and 2009, disaggregated by category. Over four-fifths of total exemptions are claimed for solar installations; most of the remaining exemptions are claimed for woodheating systems. There were no claims for wind installations in 2007, and only \$11,500 worth of exemptions claimed for wind installations in 2009.

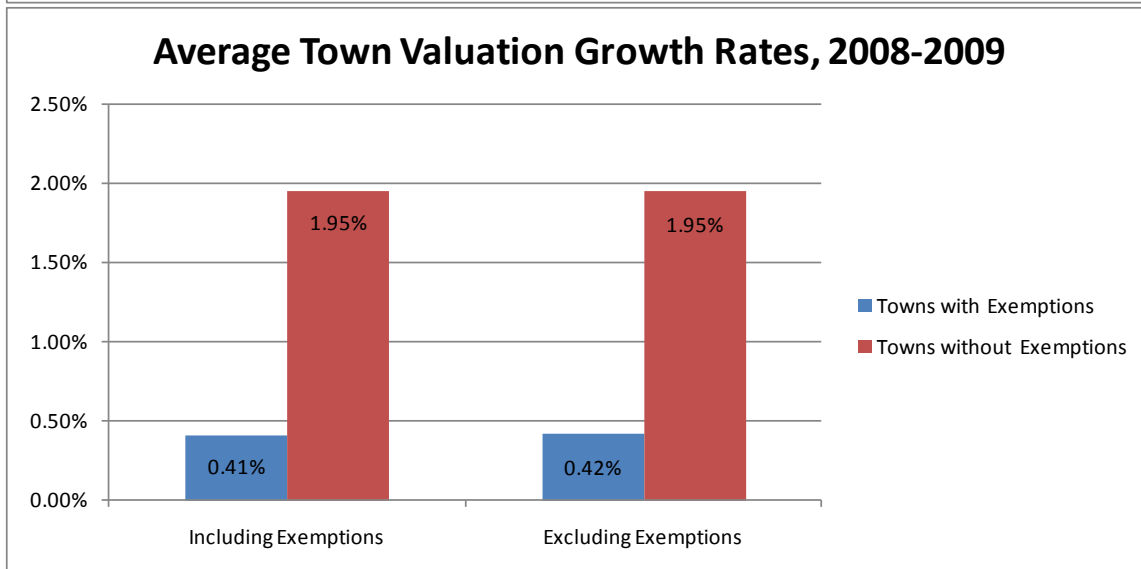
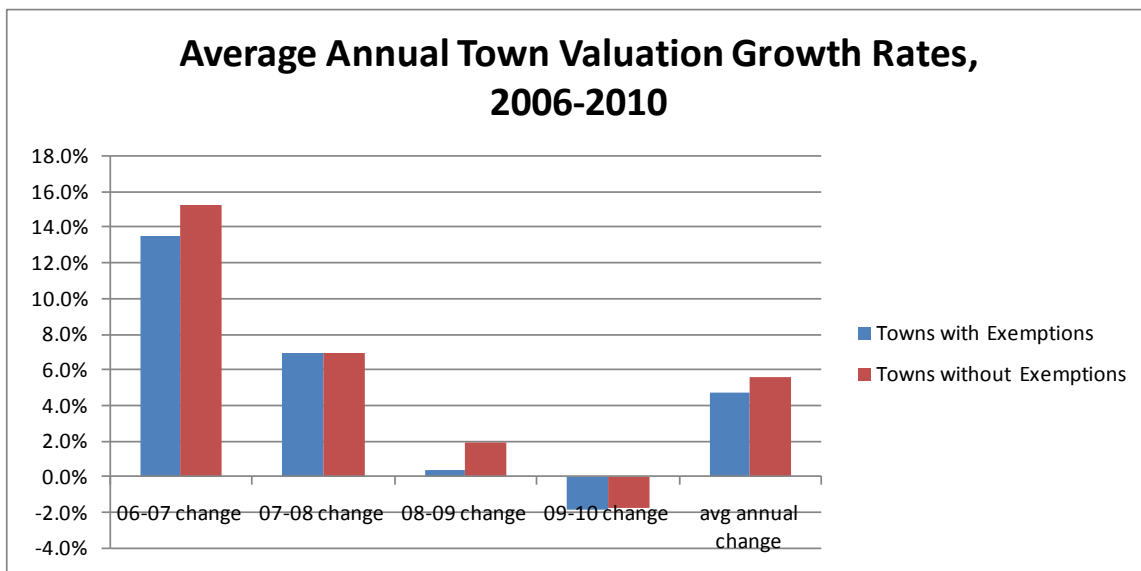


Overall valuation growth for municipalities that have adopted renewable energy exemptions has differed from overall valuation growth for municipalities that have not



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offered exemptions (see first chart). However, since the value of the exemptions in each municipality is very small relative to total valuation growth (see second chart), there must be another variable that is causing the observed difference.



2.3 Barriers and Challenges

Assessing the impact of incentive programs on the installation of renewable energy systems is difficult because information is not available on the number of systems installed in the absence of incentive programs. If homeowners claim exemptions for systems they would have installed anyway, the town forgoes revenue for no marginal environmental benefit.



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To claim an exemption for a qualifying renewable energy installation, a homeowner must file a Form PA-29 (Permanent Application for Property Tax Credit/Exemptions) with the New Hampshire Department of Revenue Administration before April 15.¹⁵ The homeowner must only list the total cost of the installation. The Department will notify the homeowner before July 1 whether the exemption has been granted or denied.

The process for applying for an exemption is fairly straightforward, but it may be difficult for homeowners to find the relevant form. Information on applying for an exemption and a link to Form PA-29 is included on the NH OEP webpage for Renewable Energy Incentives.¹⁶ However, few town websites clearly explained that the exemptions were available, and even fewer gave directions about how to claim it. In a random sample of twelve municipalities offering exemptions, five did not mention the existence of the exemptions on a page other than the town meeting minutes in which the exemptions were passed, and only two linked to the PA-29 form. Of the five towns that do not mention the exemptions, only one saw any exemptions claimed in 2009 (See Appendix C for details).

2.4 Projected Fiscal Impact on Lebanon

There are a few ways we can make rough estimates of the cost that Lebanon would incur by establishing renewable energy property tax exemptions. First, we can get a broad estimate on an absolute upper bound of the cost by examining what would happen if all of Lebanon's 5,400 households install a \$10,000 renewable energy system in the absence of the property tax exemption.¹⁷ This is an extreme assumption, as no municipality has more than a handful of applications for the renewable energy exemption every year. Without the financial inducement of the exemption, it seems unlikely that many residents would make such a costly investment. Under this scenario, Lebanon would forgo taxes from \$54 million in increased property values. Using Lebanon's 2009 mill rate of 23.82,¹⁸ and the total 2009 home valuation of almost \$2 billion,¹⁹ Lebanon would forgo around \$1.3 million in revenue every year, which is a less than 3 percent of its approximately \$47 million in total property tax revenues.

Another way of estimating an upper bound on the costs is by evaluating what would happen if Lebanon matched the maximum amount that any town gave in exemptions. In 2009, no municipality saw more than \$120,000 in claims for the wood-heating exemption, more than \$250,000 in claims for the solar energy systems exemption, or more than \$10,000 in claims on the wind energy exemption. If Lebanon matched the most claims from each category, it would lose \$380,000 in its property tax base, or, using the 23.82 mill rate, around \$9,000 in revenues.

One caveat for the above calculation is that only two of the ten largest municipalities in New Hampshire, Nashua and Londonderry, offered any exemptions at all, each for solar. Thus, the true upper bound may be higher than \$380,000. This could affect Lebanon since it is relatively large, ranking as the 21st largest municipality in 2009.



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Finally, we can estimate the costs of establishing the incentives by calculating the average amount of exemptions claimed in the municipalities that currently offer them. Even though Lebanon is larger than most New Hampshire municipalities, total exemptions claimed do not appear to be related to population. In 2009, the average municipality saw \$34,000 in exemptions. At a mill rate of 23.82, this means around \$800 in forgone revenue.

Thus, using 2009 data, we estimate that the absolute worst-case-scenario upper bound of the cost to Lebanon is around \$1.3 million in forgone revenue per year, a more realistic upper bound is about \$9,000 in forgone revenue per year, and a rough estimate of the projected cost to Lebanon is \$800 in forgone revenue. All of these amounts are miniscule relative to Lebanon's total property tax revenues and assume that all of the installations would have been built in the absence of the exemptions.

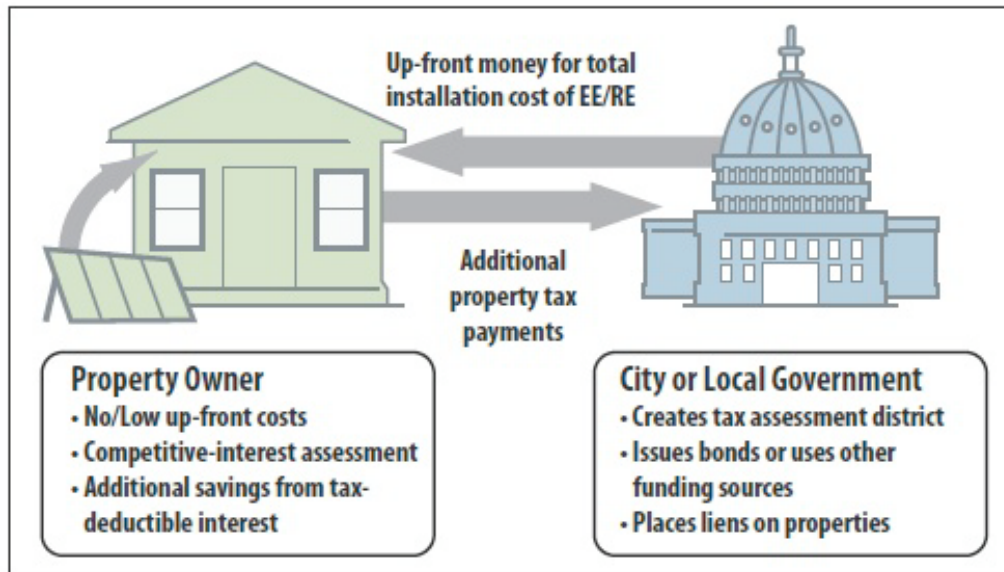
3. PROPERTY ASSESSED CLEAN ENERGY (PACE)

3.1 Background

Property Assessed Clean Energy (PACE) is a local government initiative signed into law in August of 2008 under the House Bill 1554 that allows property owners to finance energy efficiency and renewable energy projects for their properties at a discounted loan to be repaid within 20 years via property tax assessments.²⁰ This local government initiative provides a secure incentive for local property owners to make property energy improvements without typical barriers to implementation such as expensive start up costs and extensive maintenance costs. Other positive by-products of the PACE program are increased property values for properties that implement the energy improvements and lower collective costs for energy maintenance within municipalities that attract more individual properties to the program. The financial structure of the program depends on local governments' ability to maintain a consistent funding stream of bonds and other sources of capital. The graphic on the next page demonstrates how PACE works and the benefits to the homeowner and municipality.



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<http://financere.nrel.gov/finance/content/funding-sources-property-assessed-clean-energy-pace-programs>

As previously mentioned, the financing structure of the PACE program depends on the availability of local bonds and other sources of capital. Several states use different methods of securing these streams of capital. Four of the most popular and effective methods are depicted in Appendix D. Once the funding streams are in place, districts are able to approve proposals for implementing PACE energy resources to local resident and commercial spaces.

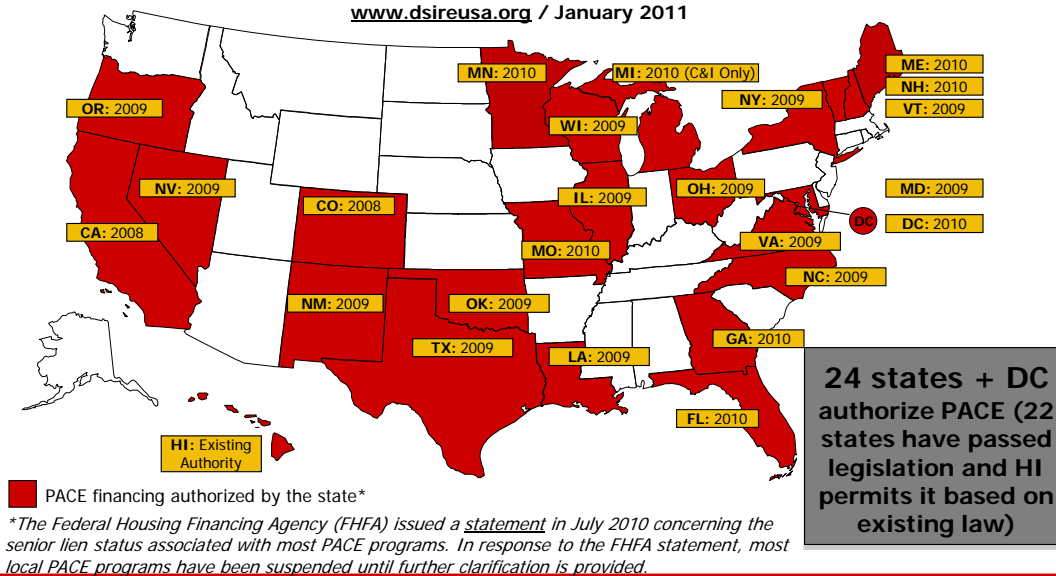
Before municipalities can enact special districts to offer the PACE Program, the home state must enact it into legislation or have it written into earlier law codes. Berkeley California was the pilot program for the implementation of PACE in 2008. As of 2009 only 16 states (California, Colorado, Illinois, Louisiana, Maryland, Nevada, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Texas, Vermont, Virginia, and Wisconsin) have implemented the program. By 2011, PACE was enacted in 24 states, including New Hampshire, despite financial and legal hurdles that began to surface in the early half of 2010 (see map on page 10).

When New Hampshire enacted the legislation in June 2010 under article HB 1554, it gave cities, villages and towns the authority to create energy districts to implement PACE. Municipalities must evaluate the costs and benefits of implementing PACE in their local community and then begin the process. New Hampshire's eligibility requirements demand that property owners "(1) are current on their property taxes and other assessments for a minimum of three years, (2) do not have involuntary liens on the property, and (3) are current on mortgage payment."²¹ Finance limits for New Hampshire municipalities are \$5,000 to \$35,000 for single family properties and \$5,000 to \$60,000 for multifamily or commercial properties.



Property Assessed Clean Energy (PACE)

www.dsireusa.org / January 2011



<http://www.dsireusa.org/solar/solarpolicyguide/?id=26>

3.2 Barriers and Challenges

PACE faces national legal challenges over the seniority of its claim on housing collateral. In New Hampshire, PACE has been attacked for shifting risk onto municipalities already struggling under fiscal pressures.

3.2.1 National Battles over PACE

According to the US Department of Energy, PACE will have to face future financial sustainability hurdles since major financial regulators are expressing concerns about the risks associated with the program. Fannie Mae and Freddie Mac (FHFA) disclosed a letter on May 5, 2010 stating that they would not approve future loans with PACE requests on them, and soon released a public report of their concerns on July 6, 2010. This is very detrimental to the sustainability of the PACE program since some local municipalities need the FHFA financing to secure low interest loans for residential properties.

Some of the concerns associated with PACE tie to fears of loan defaults. As designed, loan payments are tied to the property since the owner is benefitting from the lower energy bills. In May, FHFA said that this structure is problematic because it makes PACE



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assessments senior to mortgages. In other words, in the event of default, they are paid before the mortgage.²² Furthermore the fact that the financing is secured only with a lien on the property means that in foreclosures, the energy financier is paid before others. Furthermore if the “house is sold before the end of the repayment period, the new owner inherits both the remaining repayment obligation and the financed energy improvements.”²³ This financial structure is very fragile and with other home related financial concerns hitting the media since 2007, financial regulators do not want PACE to be another headline story of poor financial regulation.

The Department of Energy approached FHFA immediately regarding their concerns with PACE but the FHFA still stands firm. The Department of Energy soon expressed concerns on May 7, 2010 regarding the same risks but will still approve PACE proposals, under more intense regulations.

As a result of these public announcements several states with approved PACE legislation are suspending the right of local municipalities to implement it. Municipalities are retaliating with heavy lawsuits as evident in the Western Riverside Council of Governments lawsuit against the California Energy Commission in June 2010. The Western Riverside Council of Governments filed the lawsuit for a claim of \$20 million dollars of the \$30 million rejected PACE proposal they requested in previous weeks. Aside from the 16 southern California cities represented within this council, 23 other counties across the state are experiencing delayed PACE programs as a result of the lawsuit. Furthermore, the indirect impact of this lawsuit regardless of the outcome is important for both current and future PACE programs. California has been a PACE leader and two thirds of the state’s municipalities are scheduled to have programs by the end of the year.²⁴

3.2.2 New Hampshire Battles over PACE

Aside from national setbacks, state and local jurisdictions are also attacking the financial structure of PACE programs. In February 2011, months before the FHFA disclosure, the political backlash for PACE intensified in New Hampshire. “The Municipal & County Government Committee held an executive session to consider a bill (HB 144) sponsored by Rep. Carol McGuire (R-Epsom) to repeal the PACE enabling law.²⁵ Like the concerns expressed by the FHFA, McGuire is concerned about the financial risks municipalities will be taking to finance PACE in an economy that is already trying to rebound from poor financial regulations.

Furthermore, McGuire argued that with all the public and private energy financing programs available to home owners, PACE should not be another addition to the exhaustive list. “We already have a lot of things. The banks and utilities have programs. The state does energy audits and has a subsidized weather program. This program benefits the few at the expense of everybody else.” Opposition to the bill comes mainly



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from local nonprofit organizations that argue in favor of giving municipalities the discretion to make the cost benefit analysis of implementing PACE. Dick Henry, president of a Concord environmental nonprofit, feels that PACE will save New Hampshire money by reducing dependence on costly petroleum based energy resources that is currently one of New Hampshire's main energy source. He stated that PACE is a "conservative, New Hampshire" solution of local control, [that allows] communities to voluntarily assist their taxpayers in cutting their energy and heating costs. "It's giving local control to individual communities. It escapes me why it is necessary to intervene and take away local control," he says.²⁶

3.3 Case Studies

To evaluate the potential effects of PACE in Lebanon, New Hampshire, an overview of how the program works and the legal challenges it faces is not enough. We can use some of the 24 different models in place as of January 2011 as informative case studies. The only difficulty with this approach is that PACE has one to three years of tenure for the 24 states using it and comprehensive statistical records of its impact on the cities that have implemented it are either not available or are not easily accessible. Nevertheless, we can discuss our research into three municipalities that are informative models for Lebanon.

In selecting comparisons for Lebanon, we focused on Berkeley, CA, four cities in Vermont, and Durham, NH. Berkeley, California is the original and pilot model that has the longest timeline of PACE implementation. The four cities in Vermont are chosen for their geographical and property demographic similarity to Lebanon. Finally, Durham is the first municipality within New Hampshire to enact the legislation.

3.3.1 Berkeley, California

Berkeley California's Financing Initiative for Renewable and Solar Technology (Berkeley First) was the pilot program enacted in 2008 to serve as the first model for PACE. As the first municipality in the United States to enact PACE, Berkeley has become the leading case study for municipalities which want to implement the program. As a charter city, Berkeley had the legislative powers to implement PACE prior to state approval and turned to the City's Sustainable Energy Financing District for financing and the Renewable Funding LLC Company for administrative purposes. The successful implementation of PACE in Berkeley has been a contributed to the program's spread to other municipalities.

To assess the success of PACE in Berkeley we must understand what expectations Berkeley had for the program. Aside from reducing energy costs within the state one community at a time, PACE was another part of state and federal attempts to reduce carbon footprints. Enhancing the fuel efficiency of transportation vehicles has always been a great start for lowering carbon emission rates, but residential and commercial



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spaces are also heavy users of carbon. In the United States they account for approximately 70 percent of electricity use and 40 percent of greenhouse gas emissions.²⁷ To reach strategic goals for more eco-friendly land use spaces, Berkeley has been pushing for energy efficient construction and system updates for existing infrastructure. In November 2006, 81 percent of Berkeley voters endorsed ballot Measure G, which established an 80 percent greenhouse gas (GHG) reduction target by 2050. As part of this effort, Berkeley developed the Berkeley Financing Initiative for Renewable and Solar Technology (FIRST) program which provided inexpensive financing for building energy improvements.²⁸

Quantifying PACE's contributions to energy reduction is difficult since the program's impacts are lumped together with other energy programs in the state. Nevertheless, Berkeley has announced several carbon emission improvements since the year PACE was implemented. Residential electricity use decreased by 8 percent and natural gas use decreased by 15 percent between 2000 and 2008. Commercial property electricity use decreased by 4 percent and natural gas use by 2 percent over the same period. Furthermore, approximately 700 solar photovoltaic systems and 80 solar thermal hot water systems have been installed as of 2009 and "certified green businesses" have increased from 8 in 2000 to 166 in 2010.²⁹

Unfortunately these data span a larger time than PACE's existence, making any strong inferences impossible. Additionally, records of the direct emissions and financial impact of PACE projects are still not readily available. However one might think the program is making a positive impact since Berkeley has filed a lawsuit against the state for suspending PACE financing mechanisms that hundreds of municipalities have already began using since 2008.

3.3.2 Vermont Cities

Vermont joined the PACE Energy initiative in May 2009 under Act 45. The municipality is the sole administrator of PACE and must have a reserve fund for default mortgages under the program. The only state restriction is that eligible projects must seek approval by the Efficiency Vermont and Burlington Electric Department and accept the provision that the implementation of energy improvements under this program is permanently attached to the property. In addition eligible property owners must sign a contract with the municipality's Clean Energy Assessment District. In March 2010, four towns, Middlesex, Putney, Thetford, and Waitsfield, received grants from the Clean Energy Development Fund to implement PACE in their respective municipalities.³⁰

More municipalities expressed interests in PACE but were deterred by national setbacks with the program. "Recent actions by federal regulators have left Vermont and other states uncertain about whether the programs go forward," Vermont Senator Bernie Sanders recently said. "I think the regulators should reconsider." Sanders and his



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colleagues have asked Vice President Joe Biden to step in and clarify the situation in a way that allows for the continued use of the PACE program without having a detrimental effects on mortgages.³¹ Despite a lack of qualitative evidence for the success of PACE within Vermont, Energy finance and development manager at the Vermont Energy Investment Corporation Peter Adamczyk believes that the program is a necessary initiative for Vermont energy plans and should be given the chance to prove itself. “A lot of their fears are overblown,” Adamczyk said about the federal tie-up of the energy efficiency program. “We will continue working with towns that have been thinking about this.”³²

As of March 2011, several more towns adopted PACE despite the federal issues with the program. In a statement to Clean Energy Authority this spring Peter Adamczyk announced that “there were about 13 or 14 towns participating” which represented “20 percent of the state’s population.”³³ That percentage of participants will be a useful data pool of information for a future cost benefit analysis on the impact of the program. More information on PACE and its impacts will be monitored in the next couple of years if the program still stands.

3.3.3 Durham, New Hampshire

In November 9, 2010, Durham became the first city in New Hampshire to adopt PACE. The PACE proposal was brought up to the Durham Town Council in October by Durham Energy Committee Chair Kevin Gardner.

Aside from sharing the same state laws as Lebanon, the unique aspect about the implementation of PACE in Durham is that it was implemented after the FHFA announcements of concerns with the program. In local newspaper reports, town officials are disclosing reasons for pushing through with PACE despite the national and legal setbacks. About 70 property owners are interested in PACE loans in Durham. Town councilor Robin Mower says they’re making it clear to interested property owners that they must get their mortgage lenders approval. “We basically think it’s an important move for the town to take no matter how many people are going to participate, if it’s only a small handful and we build on that success that would be a great step for us.”³⁴

As the debate continues over the sustainability of PACE at the national and local level, supporters of the bill in Durham are holding town meetings to present the direct financial impact of the program for local property owners. To help property owners understand just how much more efficient implementing PACE will be for individual home energy projects, town representative Todd Selig gave scenario highlighting the savings. He used a homeowner receiving PACE funding for a solar photovoltaic installation. For a typical 3 kW system the net cost would be around \$8,400 (assuming \$6/watt installed, a \$6,000 rebate from NH, and a 30 percent tax incentive from the federal government). This



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system would be expected to produce approximately 4,800 kW-h, \$720 worth of electricity, per year. The 20 loan repayment would come to about \$610 per year, depending on interest rates. “According to this scenario, a property owner could be saving at least \$100 per year and that is just one small improvement.”³⁵

Durham will be another municipality to watch as a model for Lebanon. As officials start recording the impacts of PACE in regional towns we will hopefully be able to evaluate the financial effects of the program.

4. CONCLUSION

The two renewable energy incentive programs investigated in this report differ significantly. Property tax exemptions have been around for decades and are geographically widespread, but appear to have had a minimal fiscal impact, at least in New Hampshire. This may stem from the high upfront cost of a renewable energy installation and the paucity of information available regarding the exemptions on municipality websites. The PACE program, on the other hand, has only been around for a few years and has been implemented in only a handful of municipalities. Though some PACE programs face legal challenges to their financing structures, the case of Durham shows that a New Hampshire city can begin implementing the program in a way that avoids the legal dispute.



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APPENDICES

Appendix A. Definitions of Renewable Energy Systems

NH RSA Title V: Taxation

Chapter 72: Persons and Property Liable to Taxation

72:61 Definition of Solar Energy Systems. – In this subdivision "solar energy system" means a system which utilizes solar energy to heat or cool the interior of a building or to heat water for use in a building and which includes one or more collectors and a storage container. "Solar energy system" also means a system which provides electricity for a building by the use of photovoltaic panels.

Source. 1975, 391:1. 1993, 93:1, eff. April 1, 1993.

72:65 Definition of Wind-Powered Energy Systems. – In this subdivision "wind-powered energy system" means any wind-powered devices which supplement or replace electrical power supplied to households or businesses at the immediate site.

Source. 1977, 185:1, eff. Aug. 13, 1977.

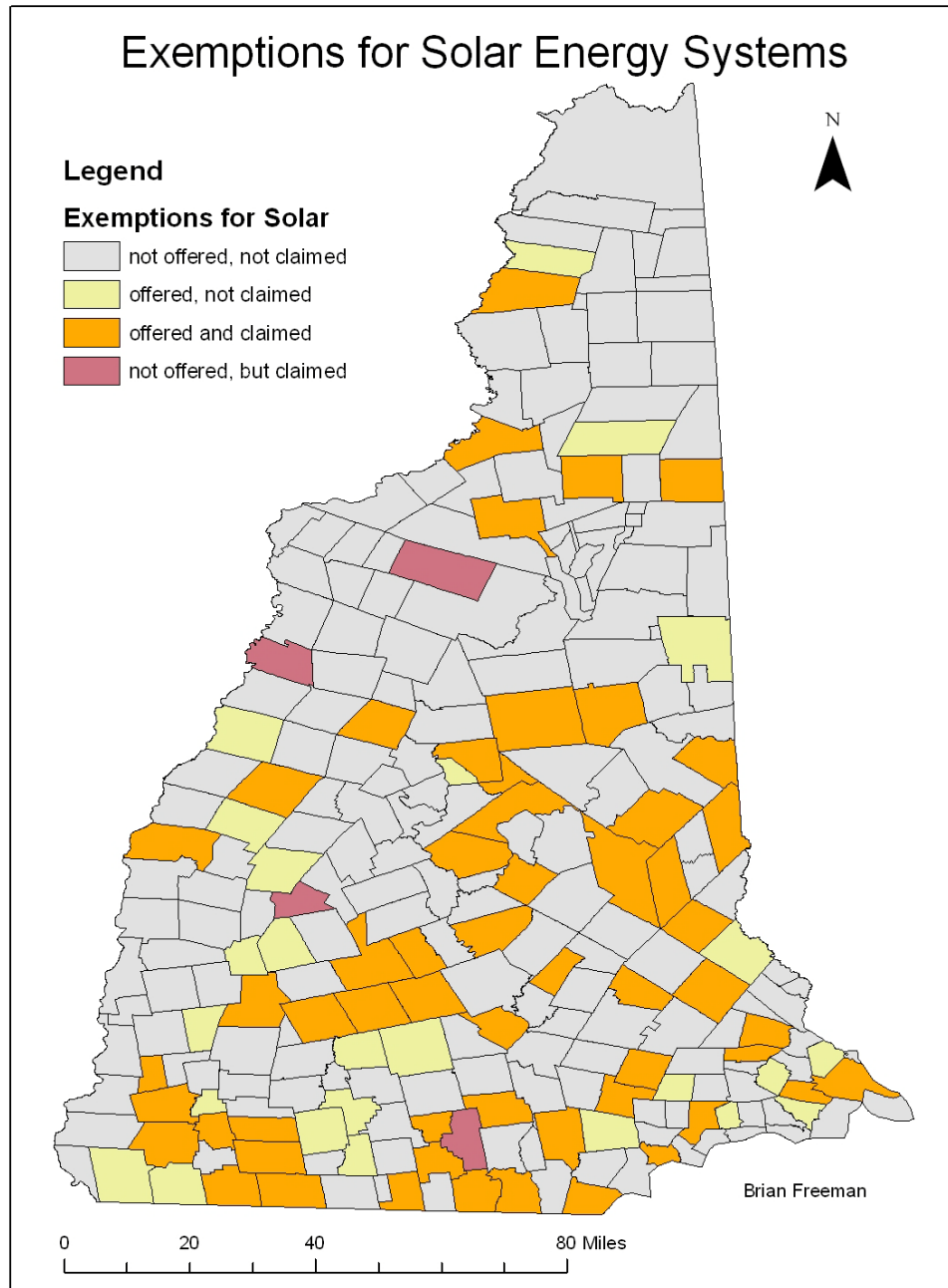
72:69 Definition of Woodheating Energy System. – In this subdivision "woodheating energy system" means a wood burning appliance designed to operate as a central heating system to heat the interior of a building. The appliance may burn wood solely or burn wood in combination with another fuel. A central heating system shall include a central appliance to distribute heat by a series of pipes, ducts or similar distribution system throughout a single building or group of buildings. A wood burning appliance shall not include a fireplace, meaning a hearth, fire chamber or similarly prepared place with a chimney intended to be usable in an open configuration whether or not it may also be closed and operated closed; or a wood stove meaning a wood burning appliance designed for space heating purposes which does not operate as a central heating system or as a sole source of heat.

Source. 1979, 280:1, eff. Aug. 20, 1979.



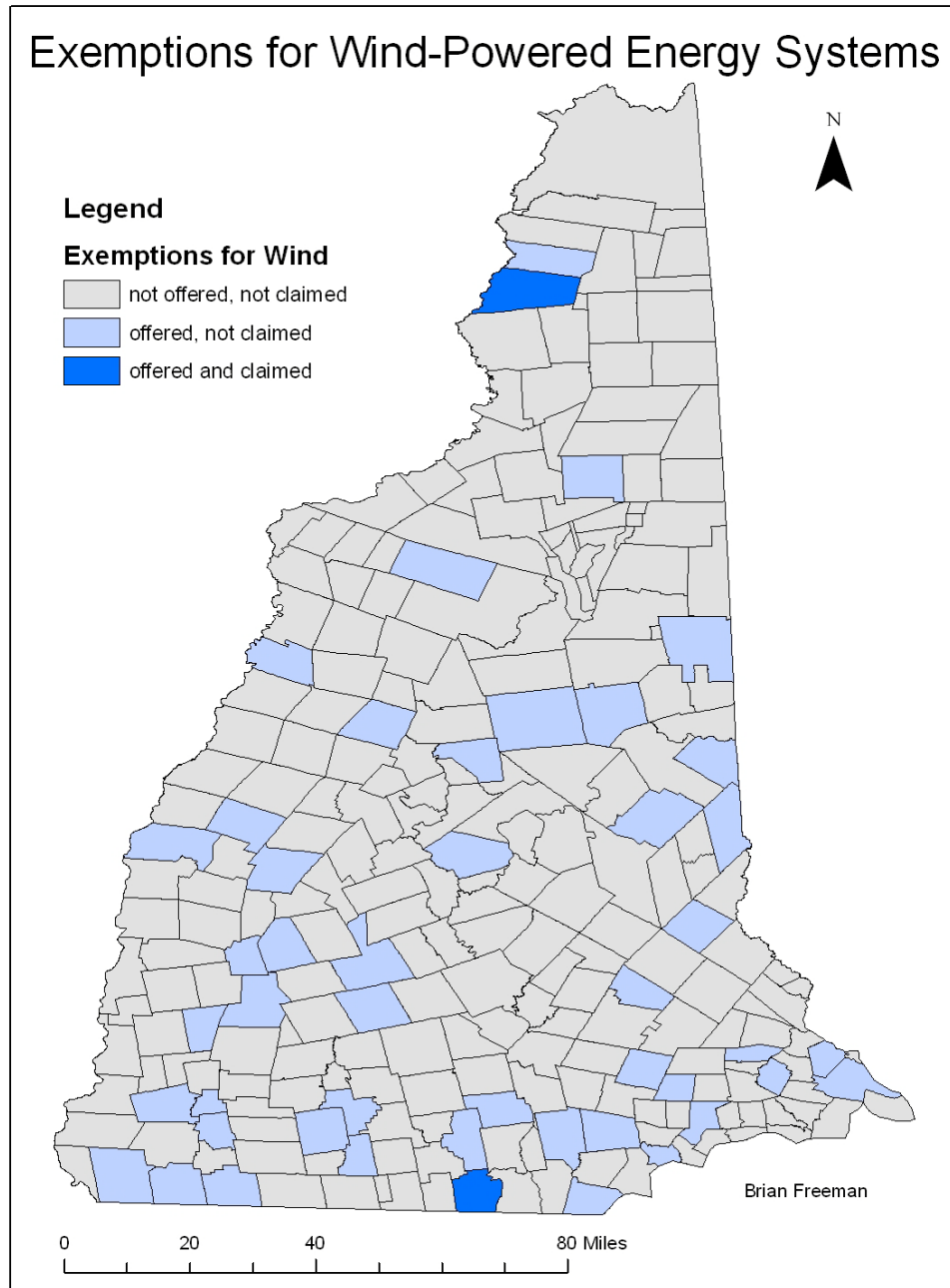
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Appendix B. Property Tax Exemption Maps



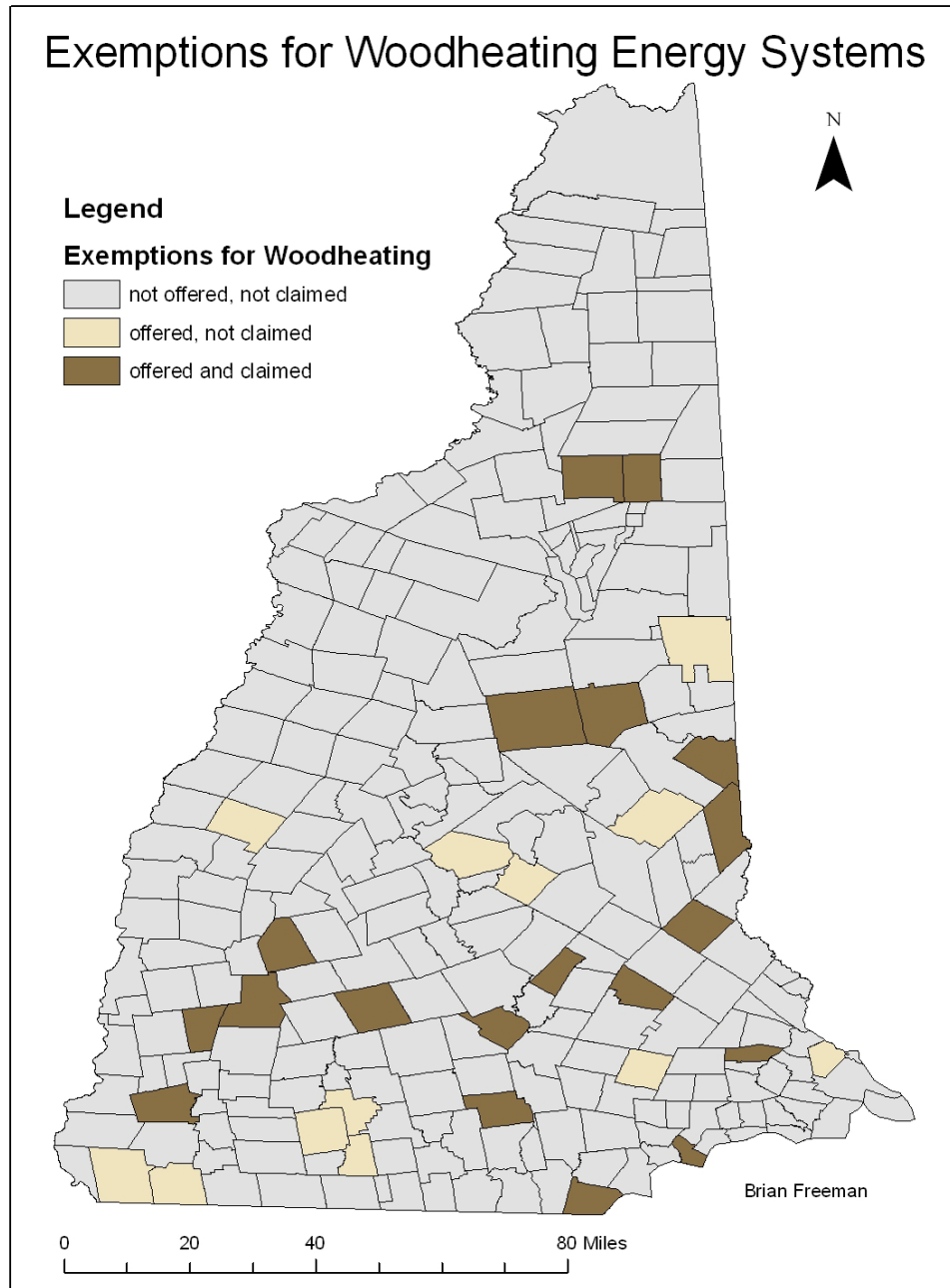


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Appendix C. Exemption Information Online

The following 12 municipalities were chosen randomly from the 83 municipalities that offered any of the three exemptions.

Municipality	Exemptions Offered	Total Population, 2009	Total Exemptions Claimed, 2009	Information Available Online?	Explanation	Linked to PA-29
Henniker	Solar, Wind, Wood	4,896	\$136,362	Yes	Listed on Assessor's page	No
Pelham	Solar, Wind, Wood	12,550	\$108,800	Yes	Listed on Assessor's page	Yes
Kingston	Solar, Wind	6,163	\$85,000	Yes	Listed under Town Rules	No
Hopkinton	Solar	5,606	\$80,700	Yes	Listed on Assessor's page	Yes
Milford	Solar	15,045	\$26,400	Yes	Listed on Assessor's page	No
Webster	Solar	1,808	\$5,000	Yes	Listed on Assessor's page	No
Rye	Solar, Wind	5,151	\$2,500	Yes	Listed on Assessor's page	No
Meredith	Solar	6,480	\$128,961	No	Only in meeting minutes	No
Roxbury	Solar, Wind	246	\$0	No	No Website	No
Richmond	Solar, Wind, Wood	1,154	\$0	No	Nowhere on site	No
Enfield	Solar, Wind, Wood	4,884	\$0	No	Only in meeting minutes	No
Deering	Solar	2,072	\$0	No	Only in meeting minutes	No



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Appendix D. Benefits and Challenges of Various Funding Sources for PACE Programs

Funding Source	Public Bond Offering	Micro Bonds	Bank Loans	General Funds	Municipal CO2 Waste Revolving Fund
Program Example	Boulder County, CO	Berkeley, CA	Annapolis, MD, Phase II (program pending)	Sonoma County, CA	Town of Babylon, NY (only EE)
Initial Funding Amount	Issued \$9.76M - authorized \$40M	\$1.5M for the pilot phase	\$1.5M	\$28.28M	\$3.19M
Interest Rate	5.2% (income-qualified), 6.68% (open assessment category)	7.75%	Unknown	7%	3%



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- ⁸ http://www.maineenergysystems.com/Carbon_Footprints.htm
- ⁹ http://www.maineenergysystems.com/Carbon_Calculator.htm
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- ¹² PRS 2010 State of the State poll data. Find our full analysis of the poll here:
http://rockefeller.dartmouth.edu/shop/state_of_the_state_poll_final_analysis_2010.pdf
- ¹³ Question wording: "Many citizens are becoming more concerned with energy efficiency in their own homes. If you were to consider making your home more energy efficient, such as undertaking a weatherization project, what incentives might be provided to facilitate your efforts at becoming more energy efficient? Please state whether each of the options given would provide you with enough incentive to take on such projects: a state grant program, a state loan program, a property tax deduction, community investment funds."
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³² *ibid.*

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