



**Comments of Northeast Energy Efficiency Partnerships (NEEP)  
To Vermont Public Service Department  
Regarding 2015 Vermont Comprehensive Energy Plan Update  
July 24, 2015**

**ABOUT NEEP:**

On behalf of Northeast Energy Efficiency Partnerships (NEEP),<sup>1</sup> thank you for the opportunity to provide initial input on Vermont's 2015 Comprehensive Energy Plan Update. NEEP is a regional 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 is designated by the U.S. Department of Energy as the Regional Energy Efficiency Organization (REEO) serving the Northeast and Mid-Atlantic states.

The Public Service Department (PSD) has solicited initial input on several specific components of the pending 2015 State Energy Plan Update. Based on our technical understanding energy efficiency policy matters and best-practices from throughout the region, we offer our insights on the PSD's suggested components below.

**DISCUSSION:**

**Economic Impacts**

**Energy efficiency is a major driver of Vermont's economic engine.** According to a 2014 report by the Vermont Clean Energy Development Fund, energy efficiency is responsible for the full time employment of 7,800 workers in Vermont.<sup>2</sup> The money invested in this industry remains within the state, rather than being exported to out-of-state markets in exchange for traditional fuels.

**Other Impacts**

**Energy Efficiency can aid compliance with the Goals of the Clean Air Act.** Energy efficiency programs have been identified by the United States Environmental Protection Agency (US EPA) as a fundamental compliance strategy for Clean Air Act State Implementation Plans.<sup>3</sup> Others note that energy efficiency programs will be an essential component of the US EPA's forthcoming Clean Power Plan.<sup>4</sup>

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<sup>1</sup> These comments are offered by NEEP staff and do not necessarily represent the view of the NEEP Board of Directors, sponsors or partners.

<sup>2</sup> 2014 Vermont Clean Energy Industry Report. Available at: <http://publicservice.vermont.gov/sites/psd/files/Announcements/Vermont%20Clean%20Energy%20Industry%20Report%20FINAL.pdf>

<sup>3</sup> US Environmental Protection Agency. Roadmap for Incorporating Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans. Available at: <http://www.epa.gov/airquality/eere/pdfs/EEREmannual.pdf>

<sup>4</sup> National Association of State Energy Officials (NASEO). Incorporating Energy Efficiency and Renewable Energy Polices into Section 111(d) Greenhouse Gas Compliance Plans. Available at: <http://111d.naseo.org/Data/Sites/5/media/documents/2015-05-incorporatingeeandrepoliciesinto111dplans.pdf>



## Technology Options

**A Uniform Regional Cold-Climate Air Source Heat Pump Technology Standard.** Northeast Energy Efficiency Partnerships' (NEEP) Northeast/Mid-Atlantic Air Source Heat Pump Strategy Report acknowledges that substantial energy savings opportunities can be achieved through Air-Source Heat Pumps (ASHP).<sup>5</sup> When entire units are replaced, the annual ASHPs savings are around 3,000kWh (or \$459) as compared to electric resistant heaters and 6,200kWh (or \$948) as compared to oil systems. When displacing oil (i.e. the oil system remains, but operates less frequently), the average annual savings is near 3,000 kWh (or about \$300). Despite the savings potential, energy efficiency programs must clearly identify ASHP models that can operate in cold climates.

Energy efficiency stakeholders from the Northeast lack confidence that the existing performance metric - Heating Seasonal Performance Factor (HSPF), alone, provides the necessary information to adequately characterize performance at low temperatures. Additionally, the supplemental information provided by manufacturers to demonstrate cold temperature performance is not standardized. Lastly, HSPF does not include low temperature testing points below 17°F, assumes the use of electric resistance elements, and tests in steady-state operation. These deficiencies result in measurements that do not accurately reflect performance of ASHP that are designed and optimized to provide heat during cold conditions.

On behalf of energy efficiency stakeholders across the Northeast and Mid-Atlantic, NEEP currently manages the **Cold Climate Air-Source Heat Pump (ccASHP) Specification** and the list of units that meet the specification's requirements.<sup>6</sup> The NEEP ccASHP requirements include both specific performance levels and a series of reporting requirements. NEEP works in coordination with energy efficiency programs that promote and leverage the ccASHP specification for their offerings. These programs require manufacturers to both meet the ccASHP specification and list their products on the NEEP website in order to receive incentive rebates. By collaborating with program implementers, the listing to-date has registered 88 units and is represented by five different manufacturers.

Ultimately, the specification aims for regional consistency and uniformity across program requirements for efficient cold climate heat pumps. As is demonstrated in the NEEP-hosted incentive chart, there is currently a wide range of program offerings and requirements.<sup>7</sup> Vermont has established a singular *Cold Climate Specification* whose conditions differs from other states. There are opportunities to align the Vermont specification with the NEEP specification in an attempt to achieve regional uniformity. By utilizing the ccASHP NEEP specification, stakeholders can leverage the cumulative power of the region to lower energy, cost, and carbon for their customers.

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<sup>5</sup> NEEP. Northeast and Mid-Atlantic Air Source Heat Pump Strategy Report. (January 2014) Available at: <http://www.neep.org/northeastmid-atlantic-air-source-heat-pump-market-strategies-report-january-2014>

<sup>6</sup> NEEP. Cold Climate Air Source Heat Pump Specification. (2015) Available at: <http://www.neep.org/sites/default/files/resources/NEEP%20cold%20climate%20Air-Source%20Heat%20Pump%20Specification.pdf>

<sup>7</sup> NEEP. Northeast and Mid-Atlantic Air Source Heat Pump Incentives and Requirements Summary. (2015) Available at: [http://www.neep.org/sites/default/files/resources/Air-Source%20Heat%20Pump%20Incentive%20Summary\\_0.pdf](http://www.neep.org/sites/default/files/resources/Air-Source%20Heat%20Pump%20Incentive%20Summary_0.pdf)



## Building Energy Codes

### **Encourage Program Administrator Support for Building Energy Codes and Appliance Standards.**

Building energy codes are widely recognized as a key strategy for reducing total energy usage within a structure, presenting a comprehensive and cost-effective opportunity available during new construction and substantial building renovation. NEEP's 2013 report on "Attributing Building Energy Code Savings to Energy Efficiency Programs" provides a framework for how energy code training, education, and enforcement programs may be attributed to a utility program administrator's energy efficiency and conservation program.<sup>8</sup>

The report includes an inventory of efficiency programs across the country that support energy code-related activities; assessments of the evaluation and attribution methodologies for supporting code activities; and recommended pathways for PAs to pursue in order to claim savings from code support activities.

Shortly after the publication of this report, the state of Rhode Island ordered its program administrator, National Grid, to develop a methodology and plan for supporting both building energy code and appliance standards advancement activities in the state. That methodology and plan was approved by state regulators in 2013, and could be replicated by the State of Vermont.<sup>9</sup>

We suggest that the Vermont PSD consider encouraging utility program administrators to support building energy code compliance and appliance standards by attributing claimed savings for their work via the framework above.

## Thermal Efficiency

Continue Targeting the Hard-to-Serve Multifamily Market. Residential multifamily properties represent not only a significant portion of the housing stock in the Vermont 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 of Vermont policymakers consider setting 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. In Vermont there are over 15,000 small multifamily units; nearly half built between 1940 and 1963. Small multifamily units represent a third of all the

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<sup>8</sup> Northeast Energy Efficiency Partnerships (et.al.) Attributing Building Energy Savings to Energy Efficiency Programs. (February 2013) Available at: [http://www.neep.org/sites/default/files/resources/NEEP\\_IMT\\_IEE\\_Codes%20Attribution%20FINAL%20Report%2002\\_16\\_2013.pdf](http://www.neep.org/sites/default/files/resources/NEEP_IMT_IEE_Codes%20Attribution%20FINAL%20Report%2002_16_2013.pdf)

<sup>9</sup> Narragansett Electric Co. 2013 Energy Efficiency Program Plan for Settlement of the Parties. (Docket No. 4366) Attachment 2, Pages 21-26. Actual pages 168-173. Available at: [http://www.ripuc.org/eventsactions/docket/4366-NGrid-2013EEPP\(11-2-12\).pdf](http://www.ripuc.org/eventsactions/docket/4366-NGrid-2013EEPP(11-2-12).pdf)



multifamily buildings in the state. Twenty-six percent of Vermont’s multifamily stock is located in rural areas, the highest prevalence of rural units in the Northeast region.

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.

NEEP encourages the State of Vermont to consider weatherization and retrofit programs and policy opportunities for multifamily properties in the Vermont Energy Plan. More information on multifamily housing retrofit in the region and the State can be found in NEEP’s 2014 Report “Increasing Energy Efficiency in Small Multifamily Properties in the Northeast.”<sup>10</sup>

### **Energy Efficiency as a Resource**

**Energy Efficiency is the Least-Cost Resource.** We applaud Vermont’s nation-leading policies on energy efficiency as a first order resource and encourage a continuation of this support.<sup>11</sup> We also note that a number of leading economists continue to validate energy efficiency as the least-cost energy resource.<sup>12</sup>

### **CONCLUSION:**

We commend the PSD on their efforts to update Vermont’s Comprehensive Energy Plan, and thank the PSD for the opportunity to provide input at this early stage of the process.

Please accept these comments in the spirit they are intended: to aid the PSD, and, ultimately, the people of Vermont, in securing a more affordable, reliable, cleaner and sustainable energy future.

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<sup>10</sup> NEEP. Increasing Energy Efficiency in Small Multifamily Properties in the Northeast. Available at: <http://www.neep.org/sites/default/files/resources/NEEP%20Multifamily%20Report%20April%202014.pdf>

<sup>11</sup> ACEEE 2014 State Scorecard. Vermont. Available at: <http://database.aceee.org/state/vermont>

<sup>12</sup> Lazard. 2014 Levelized Cost of Energy Analysis. Available at: [http://www.lazard.com/media/1777/levelized\\_cost\\_of\\_energy\\_-\\_version\\_80.pdf](http://www.lazard.com/media/1777/levelized_cost_of_energy_-_version_80.pdf)