

# NEEP 2015 QUARTERLY REPORT ANNUAL SUMMARY

## **Executive Summary**

Energy efficiency has often been referred to as the least-cost, first-order resource for achieving reduced energy use and improving air quality. In 2015, NEEP continued to play its role—bringing stakeholders together to find solutions for the climate and economic challenges we face today. In this report, NEEP shares highlights of our 2015 achievements toward the goals in our annual <u>Business Plan</u>. With the support of our sponsors, partners, and funders from across the region and nation, NEEP continues to keep the region a national efficiency leader by advancing innovation and best practices, supporting leading-edge policies, programs, and strategies, and collaborating on development of strategies that accelerate energy efficiency on a regional scale. Highlights of our work this year include:

#### **NEEP MISSION**

Accelerate energy efficiency in homes, buildings & industry in the Northeast – Mid-Atlantic region.

## Make Energy Efficiency Visible

- Planning began for the 2016 Northeast Energy Efficiency Summit and NEEP's 20th Anniversary Celebration: The 2016 event will take place at the Omni Mt. Washington Resort on June 13-14. We are excited to bring the Summit to the Granite State for the first time and look forward to sharing New Hampshire's natural beauty and vision for a clean energy future with Summit attendees. The Summit and 20th Anniversary Celebration offers an opportunity to reflect on the past two decades of energy efficiency in the Northeast and Mid-Atlantic and look ahead to what the next generation of efficiency will bring. The Summit will play host to panel discussions featuring energy efficiency leaders from around the region, topical workshops, recognition of the 2016 Northeast Business Leaders for Energy Efficiency, a tour of a high performance school, exhibits of the latest and greatest in efficiency technologies and services, and a few special surprises.
- NEEP Sponsors provided critical support to accelerate energy efficiency across the region: NEEP secured <u>23 Sponsors</u>, representing efficiency program administrators from across the region. Their strong commitment to energy efficiency as a critical clean energy, environmental, and economic solution complements our goal to keep the region a national leader in energy efficiency policies and programs. Throughout the year, we focused on engagement of our Sponsors in NEEP projects, and were thrilled to partner with them to highlight the <u>2015 Business Leaders for Energy Efficiency</u>.
- Northeast Business Leaders for Energy Efficiency Program is a unique opportunity for energy efficiency program administrators (sponsors of NEEP) to profile a customer who demonstrates exceptional leadership and best practices in energy efficiency in the operations and maintenance of their business. These leaders provide important examples of the economic and environmental benefits of energy efficiency. NEEP announced the 2015 Business Leaders for Energy Efficiency and State Champions in May; the 14 Business Leaders were later honored at NEEP's Industrial Efficiency Workshop in November. This year's strong sample of regional business voices in support of energy efficiency highlighted a variety of projects and commitments to doing more with less energy.



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• NEEP's Strategic Marketing & Communications (SMC) team created valuable content and engaged audiences through various media: NEEP's SMC team shared information and resources via <a href="https://www.neep.org">www.neep.org</a>, e-mail marketing, blog posts, and social media to highlight NEEP and our partners' thought leadership. NEEP aimed to communicate the Northeast and Mid-Atlantic's role as an influential national leader and innovator of efficiency programs and policies, and highlight energy efficiency's role as the least-cost energy resource. Over the course of the year NEEP shared news both proactively and reactively, working on national issues like the Environmental Protection Agency's proposed power plant rules and regional issues like the high cost of heating a home or business in the winter months. NEEP undertook a strategic planning process that brought to light the organization's value among stakeholders, its opportunities for future growth, and the ways NEEP may function in the energy industry of the future. As a result, NEEP and the SMC team will focus on the topic of Next Generation Energy Efficiency in 2016.

## Reduce Building Energy Use

- Developed regional energy code field guides, including custom Delaware version, to promote adoption of and compliance with 2015 IECC: With nearly all of our states having adopted or proposing to adopt the newest energy code, NEEP led development of a pair of residential construction field guides based on the 2015 IECC and customized for the Northeast and Mid-Atlantic region. The guides provide simple, streamlined guidance for meeting the code and recommended practices for achieving additional energy savings. They are organized by inspection stage (for code officials) and by trade (for builders/contractors) and feature checklists and pictures for easy use on site while also including sufficient depth for use as the basis of formal training. They are available in print, and sections of the guides are available online. NEEP created a customized version of these guides for Delaware based on the state's 2012 IECC adoption with the support of the Delaware Energy Code Collaborative, which disseminates this resource to local building professionals.
- Provided regional collaboration and resources to support home energy labeling: With interest in home energy labeling as a market-driven strategy for reducing energy consumption at an all-time high, NEEP supported development of large-scale regional policies and programs. First, we convened 44 leading stakeholders to share lessons learned, establish future priorities, and identify opportunities for inter-state collaboration. We also signed on to participate in DOE's Home Energy Information Accelerator, which selected five leading cities/areas in which to expand the use of this information in real estate transactions. Additionally, we developed tools to help make energy efficiency visible in real estate transactions. The new Checklist for Real Estate Professionals and Renter's Guide were disseminated via our website, in-person presentations, and a webinar on The Value of Energy Efficiency in the Real Estate Market, which was cited in a DOE report released in November. Lastly, we engaged a green realtor to disseminate these resources to over 700 workshop participants throughout the year.
- Advanced Zero Energy Buildings in the Region: NEEP developed and finalized an update to the 2012 publication Roadmap to Zero Net Energy Public Buildings Recommended steps for the Northeast & Mid-Atlantic. The update seeks to reduce confusion associated with the term "Zero Net Energy" by replacing it with "Zero Energy," as the term has been simplified over the years to lead to a greater understanding amongst those not in the building sciences field. The update looks at each state in the region and their progress toward completion of the "Critical Next Steps" identified in the report.



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In addition to the state-by-state analysis, the update contains recommendations on topics including building codes, financing, utility regulation, resiliency, and more. Currently under peer review, the report is slated for release in early 2016. This update allows states to assess their current progress towards zero energy public buildings and provides guidance to make incremental yet aggressive improvements on the path to a zero energy building stock.

## Speed Adoption of High Efficiency Products

- Completed several impactful retail consumer products reports: NEEP published several reports in 2015 to support advances in the energy efficiency of consumer products, including: 1) the <a href="Home Energy Management Systems Research Report">Home Energy Management Systems Research Report</a>, which includes a <a href="downloadable technology assessment">downloadable technology assessment</a>, M&V potential of HEMS, assessment of program activity, efficiency program opportunities, areas for further study, and policy recommendations; 2) the "<a href="State of our Sockets">State of our Sockets</a>," which looks at the big picture of the residential lighting market, market transformation, and the appropriate role for efficiency programs; 3) the <a href="2015-2016 Residential Lighting Strategy (RLS)">2015-2016 Residential Lighting Strategy (RLS)</a> Update, which includes lighting baseline guidance, a summary of smart lighting options and controls, information on lighting market transformation, and updates on key residential lighting activities throughout the region; and 4) <a href="Exploring the Nexus of E-commerce and Energy Efficiency">Energy Efficiency</a>, in which existing trends and strategies for online efficiency programs are discussed.
- 2015 was a year of significant development for the DesignLights Consortium™: The program continued to grow and evolve to serve member and stakeholder needs to support the accelerated adoption of quality, efficient commercial-sector LED lighting products. The DLC's Solid State Lighting Qualified Product List grew to include 150,527 products from 1,450 manufacturers by year end, a 90.9% increase in listings from 2014. The program was referenced by 82 energy efficiency program members in North America, including six new members. In an effort to increase transparency and further the mission and strategic direction of the DLC, an Industry Advisory Committee (IAC) was formed, comprised of representatives from different sectors of the lighting industry, including the top six original equipment manufacturers found on the QPL. To meet this growth, the DLC announced late in the year that the program will transition from NEEP in mid-2016 to stand as its own non-profit organization.
- Maintained the Cold-Climate Air Source Heat Pump (ccASHP) specification: With the publication of the ccASHP specification, regional stakeholders now have a model equipment and performance requirement specification. The specification and its associated metrics were developed to help stakeholders better identify ASHP products that perform under low temperatures. By the end of 2015, 108 units from seven manufacturers were included. NEEP works with efficiency programs that promote ASHPs. These programs would require manufacturers to meet the ccASHP specification and include their products in the listing to receive incentive rebates. In addition to program support, the specification has been widely adopted in the heat pump field. Using NEEP's resource, Lawrence Berkley National Laboratory was able to reassess their modeling assumptions of heat pump performance curves used as part of their Home Energy Scores. And a NESEA course that teaches how to size heat pumps in cold temperatures directly mentions the ccASHP specification and listing.
- Completed first draft of a networked lighting control system specification: This effort of the <u>Commercial Advanced Lighting Controls (CALC)</u> project began in May with a full-day specification workshop held at LightFair International attended by subject matter experts from across North



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America. By September, NEEP and the DLC had written the first draft specification and issued for stakeholder review and comment. The lighting industry has been heavily engaged in the specification calling it "a very important project for our industry." The specification and resulting qualified products list will be a cornerstone of the CALC project and utility and lighting industry efforts to advanced adoption of Advanced Lighting Control systems into the future.

- Progress toward development of a regional Advanced Roof-Top Unit Market Assessment & Strategy: NEEP launched the Advanced Roof-Top Unit (ARTU) project in early 2015. The initiative will advance stakeholder understanding and support for a strategy to accelerate market deployment and adoption of RTUs in the region. NEEP made significant progress toward completion of the regional market assessment and strategy, which is expected to be finalized in early 2016. The report includes a survey of the current market, market barriers, and saving opportunities associated with the adoption of RTUs in the Northeast. NEEP held interviews with industry stakeholders to gain further insight into the market. The report will recommend regional strategies to accelerate the adoption of high-efficiency RTUs and ARTUs.
- Completed draft Industrial Energy Efficiency Market Assessment and Regional Strategy Recommendation: The Market Assessment is the foundation and prime deliverable for NEEP's Industrial Energy Efficiency (IEE) initiative, funded by the U.S. Department of Energy (US DOE). In it, NEEP provides an industry overview, quantification of industrial energy use, and a summary of tools and resources available from US DOE as well as from regional utility and state programs. It also serves as a reference for concepts and terminology in industry and IEE. NEEP gathered valuable information from regional stakeholders in development of the assessment. NEEP's recommended strategy for how to move IEE forward in the region will be finalized in early 2016.
- Engagement in key federal appliance standards rulemakings: NEEP led regional engagement of three important rulemakings conducted by the US DOE, including residential gas furnaces, residential boilers, and general service lamps in order to achieve strong final results. NEEP conducted research and gathered input from regional stakeholders to inform a comment letter submitted to DOE regarding the residential gas furnace standards rulemaking process. NEEP also submitted joint comments to the DOE in response to their proposal for updated efficiency standards for residential boilers. Here, we urged the DOE to consider new technology options that should drive costs of higher efficiency levels down and improve the analytical results for condensing level standards. Lastly, we contributed to a joint comment letter submitted to the DOE as part of the general service lamp technical support document phase. We used our knowledge from NEEP's Residential Lighting Strategy as well as understanding of efficiency programs to ensure that the comments encouraged pushing efficiency forward for the Northeast and Mid-Atlantic region.

## **Advance Knowledge & Best Practices**

• Regional Evaluation, Measurement and Verification (EM&V) Forum developed its 2016-18 Strategic Plan: The plan was informed by NEEP's broader strategic plan and based on independent research including input from the Forum Steering Committee and members. Two core aspects of the 2016-18 Strategic Plan build on key accomplishments from 2015: 1) building understanding and transparency in EM&V practices and sharing information on cutting-edge topics to the regulatory audience in the region; and 2) informing national EM&V developments. In 2015, for example, NEEP piloted the standardized EM&V Methods forms in Mass., conducted research on the Changing



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EM&V Paradigm, leading to national visibility, and issued guidance on geo-targeting to Forum members. NEEP also led a nationally coordinated effort to develop joint comments on EPA's Clean Power Plan draft EM&V guidance, as well as facilitated and managed stakeholder development of evaluation certification options. The Strategic Plan then helped inform the Forum's 2016 Project Plan and new funding structure for state participation, with the agenda focusing on key forward-looking 'next generation energy efficiency' EM&V issues and topics relevant to the region. The Forum's 2016 agenda and budget were adopted by the Forum Steering Committee in December.

NEEP continued to take a leading role on a number of key state and regional fronts: Across the region, 2015 was a year of significant movement to transform utility models, steady progress in treating efficiency as a first-order resource in emerging efficiency states, and political challenges in some states that have been historic leaders. NEEP actively engaged with policymakers and partners to promote or defend our states' efficiency programs and policies, and to advise and support innovative ideas to capture even more of the efficiency resource. Staff participated in proceedings in states throughout our territory, including efficiency plan oversight through stakeholder boards, regulatory proceedings, and tracking legislative action in all states. Perhaps most significantly, NEEP played an integral role in New Hampshire's proceeding on the creation of an Energy Efficiency Resource Standard. Under docket 15-137, NEEP was invited to serve as a non-intervening technical expert in this collaborative process. NEEP participated in discussions, detailed subject matter in memo format, made presentations, and drafted topical resources for a series of technical sessions hosted by the Public Utility Commission (PUC). NEEP worked directly in support of PUC staff, highlighting US DOE SEE Action resources, communicating with utility representatives and other state agencies and stakeholders, and sharing best practices from our region and beyond. With parties submitting plans in late 2015, a final PUC ruling on the EERS is expected in April 2016.





## **NEEP 2015 STRATEGIES AND PROJECTS**

Keep the region a national efficiency leader by advancing innovation and best practices, and leading-edge policies, programs and strategies that deepen, broaden and accelerate energy efficiency on a regional scale.

STRATEGIES	OUTCOMES	PROJECTS
VISIBILITY	<ul> <li>Increased media coverage and public understanding and support of energy efficiency as a critical energy resource</li> <li>Northeast &amp; Mid-Atlantic region widely recognized as national energy efficiency leader</li> <li>Visible business leadership for energy efficiency policies and programs</li> <li>NEEP Sponsors &amp; Partners support and actively engage in regional collaboration to scale up efficiency</li> </ul>	<ol> <li>Northeast Energy Efficiency Summit</li> <li>Northeast Business Leaders Recognition Program</li> <li>NEEP Sponsorship &amp; Partners Program</li> <li>NEEP Strategic Marketing &amp; Communications</li> </ol>
BUILDINGS	<ul> <li>The region leads the nation in adoption of, and compliance with, progressive building energy codes</li> <li>Markets value high efficiency homes, buildings</li> <li>States, municipalities commit to maintaining, building high performance schools, public buildings</li> <li>Model programs and resources address market barriers to energy efficiency retrofits in key market segments</li> </ul>	<ol> <li>Building Energy Regulation</li> <li>Market Valuation of Building Energy Performance</li> <li>Building Energy Best Practices</li> </ol>
PRODUCTS	<ul> <li>Northeast leads in penetration of high efficiency products</li> <li>Higher baselines through appliance standards lock in market gains</li> <li>Regulatory policy supports new technologies and strategies to advance high efficiency options</li> </ul>	<ol> <li>High Efficiency Retail Consumer Products</li> <li>DesignLights Consortium™ SSL Qualified Products List</li> <li>High Efficiency Air Source Heat Pumps</li> <li>Commercial Advanced Lighting Controls</li> <li>High Efficiency Consumer Packaged HVAC</li> <li>Industrial Energy Efficiency</li> <li>Appliance Efficiency Standards</li> </ol>
KNOWLEDGE	<ul> <li>The region leads the nation in transparent and publicly accessible EM&amp;V and reporting practices that support energy efficiency as a public policy priority</li> <li>States and local government commit to and implement energy efficiency as a top energy priority</li> </ul>	Regional Evaluation, Measurement &     Verification Forum     Public Policy Outreach & Analysis



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Position the Northeast and Mid-Atlantic region as the national leader for efficiency as a critical and tangible energy resource to support environmental sustainability, a robust economy, and a reliable and affordable energy system.

## Northeast Energy Efficiency Summit

Save the Date for the 2016 NEEP Summit & 20<sup>th</sup> Anniversary Celebration: The 2016 Northeast
 Energy Efficiency Summit
 will be hosted on June 13-14, 2016 at the Omni Mt. Washington Resort in Bretton Woods, New Hampshire. Stay tuned for more details.

## **NEEP Sponsorship & Partners Program**

- NEEP Sponsors provided critical support to accelerate energy efficiency across the region: NEEP secured <u>23 Sponsors</u>, representing efficiency program administrators from across the region. Their strong commitment to energy efficiency as a critical clean energy, environmental, and economic solution complements our goal to keep the region a national leader in energy efficiency policy and programs. Throughout the year, we focused on engagement of our Sponsors in NEEP projects, and were thrilled to partner with them to highlight the <u>2015 Business Leaders for Energy Efficiency</u>.
- NEEP's Partners Program engaged leadership from across the nation: Twelve organizations joined
  the NEEP Partners Program, a program in place since 2009 that brings together leadership from
  around the nation that supports NEEP and is committed to accelerating energy efficiency by
  encouraging new technologies and services and supporting a stable policy environment for
  efficiency programs and investments. Many Partners were also actively engaged in NEEP's 2014
  projects and workshops.

## Northeast Business Leaders for Energy Efficiency

- Northeast Business Leaders for Energy Efficiency shared their story: The 14 2015 Northeast
  Business Leaders for Energy Efficiency were honored at NEEP's Industrial Efficiency Workshop in
  November at the Omni Mt. Washington Resort in Bretton Woods, N.H. for their commitment to
  accelerating energy efficiency. Take some time to watch the inspiring State Champion videos and
  read the case studies for each of our Business Leaders <a href="here">here</a>.
- Northeast Business Leaders for Energy Efficiency honored at NEEP's Industrial Efficiency
  Workshop: In conjunction with NEEP's Northeast Industrial Efficiency Summit at the Omni Mt.
  Washington Hotel, the 2015 Northeast Business Leaders were honored at a recognition reception
  and dinner. This special ceremony recognized our 2015 Business Leader honorees and their program
  administrator sponsors, and also featured a 20-minute video highlighting Business Leaders and
  integrating their efforts into the workshop topics and themes.
- Success stories of Northeast Business Leaders for Energy Efficiency gained momentum in media: Several Business Leaders were the topic of conversation in media coverage throughout the year. The lion's share of coverage came during the second quarter, but trickled in throughout 2015. These articles and blogs show the value that strategic partnerships between businesses and ratepayer-



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funded efficiency programs bring to accelerating all cost-effective energy efficiency in businesses across the Northeast and Mid-Atlantic. They communicate the importance of efficiency programs to help businesses thrive, succeed, and grow while contributing to state clean energy goals. Here is a sampling of stories that appeared on some Business Leaders:

- o Central Vermont Medical Center <a href="here">here</a> and <a href="here">here</a> and <a href="here">here</a>
- o <u>Mashpee Wampanoag Tribe</u>
- o Concord Hospital
- o National Housing Trust-Enterprise Preservation Corp.
- New England Clean Energy Council (NECEC) blog
- Extended visibility campaign featuring business leader case studies: Throughout the third and
  fourth quarters, NEEP highlighted the 2015 winners in a coordinated and collaborative outreach
  campaign that emphasized one business per week. NEEP worked with the Business Leaders and
  their NEEP Sponsors to bring attention to case studies via social media, the NEEP website, and
  partner channels.
- Kicked off the 2016 Northeast Business Leaders for Energy Efficiency Recognition Program: NEEP began the 2016 Recognition Program with an informal invitation prior to the holiday break. The program will begin, in earnest, during the first quarter of 2016.

## **NEEP Strategic Marketing & Communications**

- Targeted outreach highlighted Business Leaders in effort to create drum beat of business support for efficiency: NEEP executed a four-month outreach schedule with a plan to highlight each Business Leader for one week, supporting the outreach with social media and blog activity. NEEP engaged Business Leaders, and the <u>NEEP Sponsors</u> who nominated them, to promote Business Leaders achievements, provide the case for the importance of efficiency as a valuable energy resource and economic development strategy, and enhance the region's collaborative effort to provide visibility for business efficiency. NEEP published two blog posts (<u>part one</u> and <u>part two</u>) as part of a series on the 2015 Business Leaders. Over the course of the campaign, Business Leaders content drew over 1,000 people to the NEEP website, including almost 100 readers of the NEEP blog.
- Shared NEEP's story with local, regional, and national media outlets: NEEP's Strategic Marketing & Communications (SMC) team worked across the organization to issue five press releases to highlight our work and other important events and milestones.
  - o February 11: NEEP hires Tina Halfpenny to lead DesignLights Consortium
  - o April 6: EPA recognizes NEEP initiative with ENERGY STAR Partner of the Year award
  - May 28: NEEP joins Home Energy Information Accelerator
  - o June 22: NEEP names 2015 Northeast Business Leaders for Energy Efficiency
  - o <u>December 16</u>: NEEP and ACEEE issue joint papers on EM&V of the future
- Gained attention through collaborative efforts to position the Northeast and Mid-Atlantic region
  as a national efficiency leader: NEEP appeared in several media stories that brought attention to
  the region as a national energy efficiency leader, while also demonstrating the value of efficiency as



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a critical energy resource. Through our work and the work of our partners, NEEP provided reliable and credible information to media through several placements over the year. Some highlights are:

- <u>February 12</u>: Boston Globe Former Patrick administration officials land in energy industry
- April 6: Foreign Affairs EPA honors New England's 2015 ENERGY STAR Partners of the Year
- May 15: Energy-in-Demand International A Changing Landscape: Characterizing energy efficiency as a resource, not a cost (blog repost)
- May 16: Eagle Tribune Street lights save money, energy (LTE)
- o <u>June 22</u>: Cape Cod Times Tribe gets award for energy efficiency
- o June 26: Rutland Herald UVM Health Network honored
- June 28: Energy Efficiency Markets Quick Energy Efficiency News/Northeast Energy Efficiency Leaders
- July 3: The Housing Scene (syndicated column) Guide for energy efficient buyers
- July 15: MacArthur Foundation Business Leader highlight
- o <u>July 17</u>: New England Clean Energy Council (NECEC) blog Business Leaders
- o July 23: Consulting-Specifying Engineer Magazine Defining net zero energy
- o <u>September 18</u>: Rutland Herald Vermont hospitals recognized
- November 1: APS Rebates Northeastern University honored by NEEP
- <u>December 16</u>: Greentech Media Energy efficiency organizations outline next generation of measurement tools
- NEEP's website is a resource for visitors from around the country: Over the course of the year www.neep.org attracted nearly 42,000 visitors, including 16,000 in the fourth quarter which is traditionally a slow time for website traffic. Almost 90 percent of those visitors come from the United States and Canada, with most of them centered in the Northeast and Mid-Atlantic region. From Vermont to the District of Columbia, stakeholders visited our website to get information about cold climate air source heat pumps, residential lighting and the Regional Energy Efficiency Database among many other efficiency topics.
- NEEP engaged audiences on efficiency topics using multiple communications channels: NEEP's
  SMC team worked with program staff to use e-mail marketing, blog posts, and social media to
  spread the word and engage audiences about NEEP's products and thought leadership.
  - Advance Knowledge and Best Practices
    - A look at why MA sits atop the ACEEE Scorecard
    - Commercial refrigeration
    - Next Generation Energy Efficiency
    - What Con Edison's BQDM Project Reveals About Geo-targeting and Utility Incentives
    - A Call for Compliance: Energy Efficiency's Role in the Clean Power Plan
    - Energy Efficiency Policy Tracker a final look at 2015

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- o Reduce Building Energy Use
  - Insider Insight Walking the Corridors of a High Performance School
- Speed Adoption of High Efficiency Products
  - What Heat Pump are YOU Buying?
  - The State of our Sockets: A Regional Analysis of the Residential Lighting Market
  - Game Changer: HEMS Are Crucial to Capturing Next Generation of Energy Savings
  - Crucial steps to transform the residential lighting market
- o The Business Case for Energy Efficiency
  - A Diverse Cohort of Businesses Dedicated to a Single Cause: Saving Energy
  - The Secret Weapon All Businesses Share: Energy Efficiency
  - Don't Wait to Innovate: Industry Ramps up Efficiency

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Make possible a future in which all homes and buildings are zero net energy, through incremental yet aggressive improvements to building energy policies and programs.

## **Building Energy Regulation**

- Led Code Compliance Collaboratives in Pennsylvania and Vermont: <u>State Energy Code</u>
   <u>Collaboratives</u> are effective vehicles for bringing together diverse stakeholders to promote transparency and dialogue concerning energy code adoption and compliance.
  - O In the summer of 2015, NEEP was selected to assume leadership of the Pennsylvania Energy Code Collaborative, in which we have participated since its inception in 2013. This Collaborative focuses on improving energy code compliance in the Commonwealth through education and outreach strategies. After assisting the group to assemble information and resources earlier in the year, NEEP led the creation of a roadmap of Collaborative initiatives and organized a meeting in December where the group agreed to start two new initiatives.
  - In the spring of 2015, NEEP launched the new <u>Vermont Code Collaborative</u> and has encouraged growth of the group. NEEP organized an in-person kick-off meeting (May), a virtual meeting (July), and third in-person meeting (October) during which we led the Collaborative through discussions on enacting strategies from the state's <u>Code Compliance Plan</u>. The Collaborative will meet in January to set the 2016 agenda and form sub-committee working groups.
- Facilitated Energy Code Collaboratives in Delaware and New Hampshire: In addition to leading the Pennsylvania and Vermont Collaboratives, NEEP has played an active role in Delaware and New Hampshire's Energy Code Collaboratives since their inceptions in 2011 and 2012, respectively.
  - NEEP worked with Delaware's Energy Code Coalition to finalize state-specific Residential Field Guides and a <u>Code FAQs</u> document. NEEP also helped to inform code trainings held throughout the year and worked with the state's Department of Natural Resources and Environmental Control (DNREC) and US DOE's Pacific Northwest National Laboratory (PNNL) to arrange a webinar training on ASHRAE 90.1-2010 in October.
  - O NEEP provided technical guidance to the New Hampshire Building Energy Code Compliance Collaborative, which convenes about bi-monthly to advance strategies set in the state's <a href="Code Compliance Roadmap">Code Compliance Roadmap</a>. NEEP served on the group's 2015 IECC Adoption Subcommittee and helped the group to contribute to a successful defense against attempts to weaken the state's current energy code. NEEP also led the Collaborative as it completed its recommendations for a state home energy labeling program.
- Developed and disseminated a report analyzing codes and construction trends in the region: NEEP released a new white paper entitled "Construction Codes in the Northeast: Myths and Realities of Energy Code Adoption and the Economic Effects." The paper provides an analysis of the economic effects of energy code implementation in the region in order to address concerns over the upfront costs of codes on builders. NEEP found no connection in the commercial or residential sectors



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between code implementation and levels of construction activity. Granular construction data from the residential and commercial sectors is included as a resource for targeted code trainings to increase compliance rates. The projections for energy cost and carbon savings can be used by states in the region to predict the savings potential of switching to the latest energy codes. NEEP shared the results of this study in a webinar presentation to 33 members of our Regional Building Energy Codes Leadership Group.

#### Provided direct support to state efforts to adopt and implement the 2015 IECC:

- Maine: NEEP serves on the state Energy Technical Advisory Group (TAG) to help develop the state's code update. In 2015, we provided regional and national resources to counter potential amendments that would weaken the proposed code update. In the fall, we were identified specifically by the Maine Uniform Building and Energy Code (MUBEC) board as a resource for further information on cost effectiveness.
- Vermont: In the winter of 2014, NEEP provided technical review of Vermont's new code, which became effective in March 2015. We also provided comments on the state's 2015 Residential Building Energy Standard (RBES) Handbook and 2015 Commercial Building Energy Standard (CBES) draft Stretch Code.
- New Hampshire: NEEP provided both oral and written technical assistance to the state Building Code Review Board, detailing the energy and cost savings the proposed 2015 IECC adoption would afford the state and home buyers, which assisted their decision to approve adoption of the unamended 2015 IECC.
- New Jersey: NEEP filed <u>comments</u> in support of the state's proposed code adoption, which has since been adopted with few weakening amendments.
- New York: NEEP provided both oral and written technical assistance to the <u>State Division</u> of <u>Building Standards and Codes</u> at two public hearings and directly to Division staff, assisting the state's decision in the fall to propose adopting the code without weakening amendments in 2016.
- Massachusetts: NEEP provided the state Department of Energy Resources (DOER) with data to support the feasibility of new provisions of the state's proposed 2015 IECC-based code.

## Supported cutting-edge code compliance enhancement efforts:

- Rhode Island: National Grid, in partnership with the state Building Code Commission and NEEP, administers training programs—the savings from which it is allowed to claim as part of its regulatory proceedings—through its <u>Code Compliance Enhancement Initiative</u>. In 2015, the initiative delivered 25 classroom trainings (350 attendees), 14 on-site trainings (175 attendees), and a circuit rider service (35 calls and nine site visits).
  - NEEP assessed and helped adjust the training and outreach activities the program
    delivers by providing local insight and regional updates to help improve the
    programs, preparing a <u>case study on green building workforce development</u>, and
    delivering resources to help the state prepare for its 2015 IECC adoption in 2016.
  - NEEP also supported the evaluation of the program to guide attribution of energy savings by participating in group meetings and discussing how to incorporate the results of the state's code compliance assessment.



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 Maryland and Pennsylvania: NEEP continued to support the two federally-funded residential code compliance field studies awarded to states in our region.

- NEEP diagnosed potential causes for compliance gaps and identified opportunities to solve them at Maryland's stakeholder kick-off meeting in the spring.
- NEEP provided administrative, contractual, and technical support to the program contractor and helped to disseminate initial data and forthcoming education opportunities through the Pennsylvania Energy Code Collaborative.
- Extended knowledge and resources through NEEP's Codes Leadership Group: NEEP continued to facilitate our Regional Building Energy Codes Leadership Group, a forum for information dissemination and exchange between building energy code stakeholders throughout the region, to accelerate adoption of and compliance with increasingly efficient energy codes. In October, NEEP organized and delivered the group's annual full-day meeting in Providence, R.I., which was attended by over 50 individuals (21 in person, 32 virtually). The meeting consisted of presentations and discussion focused on: 1) open discussion of code compliance issues; 2) successful utility claimed savings models; 3) new federal code resources from PNNL; and 4) the latest outlook on future code provisions. Earlier in the year, we organized and delivered two webinars (recordings: 1, 2), with over 30 group members attending each. In addition, NEEP provided relevant and timely state, regional, and national updates throughout the year.
- Provided technical guidance in defense of building energy codes:
  - Maine: Three major code rollback bills introduced in the legislature had aims ranging from limiting the number of municipalities where the Maine Uniform Building and Energy Code is effective to repealing it entirely. In response, NEEP partnered with a coalition to develop strategies to educate stakeholders and provided oral technical guidance and written comments. These efforts helped to defeat all three of these bills.
  - Maryland: NEEP prepared <u>comments</u> in opposition to Senate Bill 262, which would have enabled the use of unrestricted equipment tradeoffs and created a patchwork of unharmonious energy codes across counties. While this bill was eventually passed, it was amended to grant oversight of the determination of code equivalency to the state's Department of Housing and Community Development, which identified NEEP as an advisor.
  - New Hampshire: NEEP provided oral technical guidance and written comments on House Bill 288, which would give any community or individual the right to refuse the enforcement of the energy code. This bill was narrowly defeated, though it has been retained for further study and will be heard again in early 2016.
- Supported new and existing stretch energy codes in the region:
  - o **NEEP Model Stretch Code**: In the fall, NEEP developed model <u>residential</u> and <u>commercial</u> stretch codes that can be used by the entire region. These models are designed for use with the 2015 IECC/ASHRAE 90.1-2013 and provide code provisions which can be selected for incorporation into a jurisdiction's stretch code. Spurred by an inquiry from East Hampton, New York, NEEP adapted an early version of its model residential stretch code specifically for use in Climate Zone 4.



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Massachusetts: The state's Stretch Energy Code was designed in 2009 as an overlay code which yields additional building energy savings, but it remains without update nearly two code adoption cycles later. NEEP supplied technical guidance to a coalition of stakeholders promoting a more efficient stretch energy code than the one currently proposed for adoption, which leaves many buildings without any additional requirements.

- Maintained national network of energy code allies: NEEP engaged with our national and regional
  codes counterparts, providing updates from our region through monthly teleconferences with the
  Responsible Energy Codes Alliance (RECA), National Association of State Energy Officials (NASEO),
  Building Codes Awareness Project (BCAP), and the Northeast HERS Alliance. NEEP also participated
  in meetings with the National Energy Codes Collaborative, a joint partnership of the US DOE, PNNL,
  BCAP, NASEO, and the other regional energy efficiency organizations (REEOs).
- Maintained and updated online codes resource center: NEEP maintained and regularly updated its
   <u>Building Energy Codes Homepage</u>, <u>News Bulletin Board</u>, <u>Codes Tracker</u>, and <u>Resources</u> pages to
   feature the latest news, events, and resources on code adoption and compliance throughout the
   region.
- Disseminated code adoption and compliance resources:
  - Codes and Construction Trends Paper New
  - o 2015 IECC Residential Field Guides New
  - o Delaware 2012 IECC Field Guide New
  - o Code Adoption and Compliance Toolkits Updated

## Market Valuation of Building Energy Performance

- Led ground-breaking Home Energy Labeling connection efforts throughout in the Northeast: Reacting to the pursuit of home energy labeling policies or programs by all of the Northeast states, NEEP proposed a project in 2015 to solve a regional need for consistent streamlined transmission of data generated by US DOE's Home Energy Score (HES) tool. This project was selected for funding this fall and kicks off in January 2016. The main objective of this three-year project is the creation of a Home Energy Labeling Information Exchange (HELIX), a highly accessible database for DOE HES information for the Northeast states which will enable automatic transfer of this information into local Multiple Listing Services (MLS). NEEP has spent much time interfacing with various market actors to prepare for this project. In December, we presented on the HELIX concept to the Council of Multiple Listing Services. And at the Vermont Realtors Association's Green Real Estate Symposium itself a first-of-its-kind event—the HELIX project was cited by several presenters as an important and exciting component in the effort to transform the real estate market.
- Presented leading building energy rating strategies to several key market actors:
  - Women's Council of Realtors: NEEP participated in a panel discussion on the value of high performance homes and home energy rating before the Women's Council of REALTORS.
  - NEHERS Alliance: NEEP led a <u>webinar</u> on home energy labeling for the Northeast HERS
     Alliance, which serves as a forum for information dissemination across the HERS rater
     community for most of NEEP's region. To provide raters with an overview of home energy
     labeling and an understanding of the opportunity to translate these developments into



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- expansion of their businesses, NEEP presented on types of ratings and metrics, existing tools and systems in place to support these ratings, and the latest updates and future outlook for statewide policy and program efforts.
- ACI Mid-Atlantic: NEEP <u>presented</u> on home energy labeling programs and policies and the HELIX project at the Affordable Comfort Institute's Mid-Atlantic Regional Home Performance Conference in Cherry Hill, New Jersey.
- USGBC: NEEP moderated a <u>presentation</u> at USGBC's 2015 Greenbuild Conference in Washington, D.C. on the potential of commercial asset ratings to motivate investments in energy retrofits by highlighting results from two programs (DOE's Commercial Asset Score tool and Massachusetts's Building Asset Rating pilot).
- Advanced efforts to develop a nationally recognized commercial building energy label: NEEP supported The New York State Energy Research and Development Authority (NYSERDA) in the initial meetings of the National Building Rating Working Group and the technical subcommittee. This group aims to build on existing rating systems and develop a consumer-facing label that provides insight into the energy usage of multifamily or commercial buildings. NEEP worked with members of the technical committee to determine the existing rating systems commonly used in the market and provided feedback on the committee's plan to develop a label that will effectively drive energy efficiency retrofits and high performance building construction.

#### • Supported Rhode Island's building energy rating efforts:

- NEEP provided technical assistance to the Rhode Island Commercial Building Rating working group. This group of stakeholders aims to increase the visibility of building energy performance through rating systems. NEEP provided research and guidance on the creation of a program that seeks to include the US DOE's Commercial Asset Score into existing utility-sponsored commercial building energy audits in order to quantify the effects on implementation rates of energy savings projects. This project could potentially lead to widespread adoption of program administrators including asset scores as part of their efficiency programs and higher rates of implementation of energy efficiency projects.
- NEEP also played a major role in propelling the state's Residential Building Rating working group toward a statewide labeling program. After presenting to the group on existing asset rating metrics, tools, and label options, as well as the general status of home energy labeling throughout the region, NEEP helped to lead the discussion and selection of MMBtu/yr and the DOE HES tool as the primary metric and tool for a proposed statewide label. NEEP provided technical assistance as the team coordinated with National Grid as it prepares to incorporate energy labeling into its home performance program in early 2016.

#### • Supported Massachusetts commercial and residential building asset rating activities:

NEEP and the DOER began the third phase of the <u>Massachusetts Raising the BAR (Building Asset Rating) Pilot</u>, an exploration of the potential to develop and scale up innovative commercial building energy modeling methodologies. Phase 3 focuses on distilling lessons learned from the previous testing phases of the pilot and extending the program in the state and beyond. NEEP and DOER also drafted the BAR Pilot Phase 2 Final Report.



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NEEP provided oral and written technical guidance in support of Massachusetts Senate Bill 1761, which would require home sellers to complete an energy audit prior to listing their home for sale to disclose the home's energy performance to potential homebuyers through a state-developed energy label. NEEP continues to provide guidance to supporters of this bill, which would create the region's first statewide energy labelling requirement if passed.

- Provided technical guidance to New Hampshire residential labeling efforts: After leading establishment of a Residential Labeling Subcommittee of the New Hampshire Energy Code Collaborative last year, NEEP continued to lead development of recommendations for a statewide home energy labeling program by helping to refine the Subcommittee's final recommendations for a statewide home energy labeling program, which were unanimously accepted by the Collaborative. The recommendations incorporate both new and existing homes and were submitted to the federally funded Vermont-New Hampshire "REVEAL" energy rating project, in which NEEP was selected to participate. At the project's kick-off meeting in December, NEEP provided stakeholders with information on energy rating and residential energy data transmission.
- Supported building asset rating activities in several other states:
  - Pennsylvania: NEEP joined and participated heavily in a new stakeholder group this year
    to accelerate the uptake of DOE HES in greater Pittsburgh. NEEP presented this Western
    Pennsylvania HES working group with lessons from states such as Connecticut and
    Vermont to help shape the group's effort to grow the stock of assessed homes and assist
    the effort to engage the real estate community and add green fields to the West Penn.
    MLS.
  - Connecticut: NEEP presented on the Massachusetts Building Asset Rating (BAR) and the DOE's Commercial Asset Score programs to the Commercial & Industrial Committee of the Connecticut Energy Efficiency Board, which had interest in incorporating commercial asset rating into the state's upcoming three-year energy plan. NEEP also presented to the board on the HELIX project.
  - Delaware: NEEP provided DNREC with information on RESNET and ENERGY STAR's home energy rating programs and how the state can facilitate training resources for developers and builders.
  - New York: NEEP continued to support the Tompkins County Home Energy Rating Disclosure pilot.
- Completed and released Benchmarking and Data Access Paper for peer review: In partnership with the US DOE, NEEP focused on the issue of addressing the barriers to energy data access and management. Months of research, interviews, and synthesis led to the creation of a best practices report, Public Sector Building Energy Benchmarking: Utility Data Access Options and Opportunities. Input was provided by stakeholders at the U.S. Environmental Protection Agency (US EPA), the US DOE, the Maryland Energy Administration, the Massachusetts DOER, the Midwest Energy Efficiency Alliance, the Southcentral Partnership for Energy Efficiency as a Resource, the Institute for Market Transformation, the Eastern Connecticut State University Institute for Sustainable Energy, the Weidt Group, and the University of Rhode Island. While this resource is still in the final review process,



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NEEP spread the best practices to stakeholders across the region in written comments, in-person presentations, and technical guidance.

- Maintained regional and national network of energy rating allies: NEEP shared information on regional building energy rating activities through our Building Energy Codes and Public Buildings Leadership Groups. We continued to engage with our national and regional codes counterparts, most notably by providing updates through coordination with allies such as the Institute for Market Transformation (IMT) and NASEO.
- Maintained and updated online rating resource center: NEEP maintained and regularly updated our Building Energy Rating Homepage and Resources webpages to feature the latest news, events, and resources on commercial energy benchmarking and home energy labeling. Early in the year, we updated our summary of city, county, and state benchmarking programs in the region. And in the fall, we created a new Green Real Estate Resources webpage dedicated to providing real estate professionals with the latest information and practical tools to help drive real estate market transformation.

## **Building Energy Best Practices**

- Provided technical assistance and guidance to advance zero net energy Buildings (ZNEBs) in the region and beyond:
  - NEEP's Senior Program Manager for High Performance Buildings, Carolyn Sarno Goldthwaite, served as an advisor and co-chair of the policy track for the 2<sup>nd</sup> annual Getting to Zero Forum hosted by NBI, NASEO, and the Roxy Mountain Institute. In addition, she moderated a session on best practices from leading states striving for ZNE.
  - Provided <u>written technical guidance</u> at a public hearing in support of Mass. Senate Bill 1771, which would require a ZNEB standard be created for residential and commercial buildings that incrementally increases from 30 percent better than code to net zero.
  - Partnered with ARUP, an engineering firm in Cambridge, Mass., to co-write an <u>article</u> for *Consulting Specifying Engineer* featuring the John Olver Transit Center in Greenfield, Mass. and NEEP's <u>ZNE Roadmap</u>.
  - o Participated in a Cambridge, Mass. Forum on their proposed Net Zero Energy Action Plan, which was adopted in June by City Council.
  - Presented at the Mass. Green Building Council stakeholder meeting on pathways forward for the Commonwealth including providing an overview of efforts from around the region and of the Massachusetts Zero Net Energy Council in which NEEP staff participates.
  - At the invitation of National Grid and the Rhode Island Office of Energy Resources, participated in the R.I. Zero Net Energy Council, which is working to create a ZNE roadmap for the state. NEEP presented at a June meeting on the recommendations from our <u>ZNE</u> Roadmap.
  - Provided comments on the US DOE's proposed definition of commercial zero energy buildings. The Building Technologies Office of Commercial Buildings Integration issued a request for comments on a proposed definition of "Zero Energy Buildings." NEEP commented that the definitions and explanatory language were a good starting point for



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continued refinement. In September 2015, <u>DOE released a Common Definition for Zero Energy Buildings</u>, Campuses and Communities.

- Released Street Lighting Assessment and Strategies for the Northeast and Mid-Atlantic: NEEP published a report detailing the current status of and existing opportunities associated with LED street lighting in the region. LED Street Lighting Assessment and Strategies for the Northeast and Mid-Atlantic uses quantitative analysis to estimate street light inventories in the region and qualitative analysis to identify barriers that municipalities are faced with when seeking to upgrade to LEDs. The report also highlights exemplary strategies that cities and towns around the region have utilized to implement LED fixtures. The report provides great context to communities seeking to understand the true value of unlocking the potential of LED street lighting. NEEP provided technical guidance on this report to three interested parties including the City of Newark, N.J., Scarsdale, N.Y., and Tioga County, N.Y. Through these engagements, NEEP is supporting the region to be a leader in high performance communities. A blog post summarizing the report can be found here.
- Supported the Massachusetts School Building Authority's (MSBA) adoption of the Northeast
  Collaborative for High Performance Schools' (CHPS) latest criteria: The MSBA, with the assistance
  of NEEP, decided to offer NE-CHPS 3.0 as pathway to satisfy their Sustainable Building Design
  Guidelines. Effective July 29, 2015, MSBA now allows for new construction and major renovation
  projects to adhere to LEED for Schools V4 of NE-CHPS 3.0. The requirements and incentives are
  stated below:

#### **Minimum Requirements Additional Reimbursement** Using LEED-S V4, for no additional Using LEED-S V4, for 2% additional reimbursement, achieve a minimum of reimbursement points, achieve a minimum of "Certified" (40 points), including a minimum of 3 "Silver" (50 points), including a minimum of 6 points in EA Credit "Optimize Energy points in EA Credit "Optimize Energy Performance." OR; Using NE-CHPS 3.0, for no Performance." OR; Using NE-CHPS 3.0, for 2% additional reimbursement, achieve a minimum of additional reimbursement, achieve a minimum of "Verified" (110 points for new construction or 85 "Verified" (110 points for new construction or 85 points for addition / renovation), including 6 points for addition / renovation), including a points in EE Prerequisite #1.0. minimum of 9 points in EE Credit #1.1.

In conjunction with CHPS and MSBA, NEEP organized and participated in a webinar to broadcast these changes in MSBA's Green School Guidelines. The purpose of this webinar, "Back in Mass: New CHPS Criteria for Massachusetts," was to demonstrate how NE-CHPS 3.0 differed from earlier versions that were available in Massachusetts. The webinar also highlighted MSBA's new Green School Guidelines and provided a comparison of LEED for Schools V4 to NE-CHPS 3.0. NEEP's efforts to bring CHPS back to Massachusetts ensures that the state is committed to being a national leader in the development of high performance schools.

- **Developed exemplars for high performance schools in the region:** NEEP highlighted exemplary public schools by developing case studies of the following CHPS schools:
  - o Monomoy Regional High School, Harwich, Mass.
  - o <u>Thompson Elementary School</u>, Arlington, Mass.



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In addition to the two case studies above, Carolyn Sarno Goldthwaite participated in a <u>video case study</u> of Southeastern Regional Vocational Technical High School, a CHPS Verified School in South Eason, Mass. The video highlights some of the unique features of the high performance school. A blog post on the case study can be found here.

Disseminated best practice resources at conferences, webinars, and other events: Throughout the
year, NEEP staff disseminated best practice materials and reports such as <u>NE-CHPS 3.1 Criteria</u>,
<u>Roadmap to Zero Net Energy Public Buildings</u>, <u>Operations and Maintenance Guide for Public
Buildings</u>, <u>Street Lighting Assessment and Strategies for the Northeast</u> at local and regional
conferences or meetings, as described below:

NEEP Buildings 2015 "Best Practice" Dissemination		
Venue	Attendees	
Architecture 2030	50	
<u>Facilities Masters Conference</u>	80	
Regional High Performance Schools In-Person Meeting	40	
Back in Mass: New CHPS Criteria for Massachusetts Webinar	30	
Massachusetts Facilities Administrators Association Annual Conference	200	
Regional High Performance Schools Exchange Webinar	20	
New England Clean, Green and Healthy Schools Partnership Webinar	30	
RI Zero Net Energy Council	20	
NBI Getting to Zero Forum	40	
Total:	510	

- Advanced best practices and reduced energy consumption in multifamily buildings: NEEP partnered with four other Regional Energy Efficiency Organizations (REEOs), the Midwest Energy Efficiency Alliance (MEEA), the Southeast Energy Efficiency Alliance (SEEA), the South-Central Partnership for Energy Efficiency as a Resource (SPEER), and the Southwest Energy Efficiency Project (SWEEP) in a project aimed at accelerating multifamily efficiency retrofit projects in their respective regions. This project is funded by the Macarthur Foundation and includes collaboration with other national organizations engaged in retrofitting this underserved market. Kicking off in the last quarter of 2015, NEEP worked with SWEEP to draft the outline for a national report and narrowed the scope of the project with the other REEOs. NEEP engaged organizations at conferences, in-person meetings, and webinars to get feedback to better serve the needs of those working to advance retrofit projects. Continuing into 2016, the REEOs involved in this project will serve selected multifamily efforts in their regions and contribute to a public-facing national best practices report with case-studies to accelerate efficiency retrofits across the country to achieve 20% energy savings or more in these buildings.
- Facilitated local and regional dialogue for high performance schools:
  - On August 13, 2015, NEEP hosted its annual Regional High Performance Schools Working Group in-person meeting. Stakeholders from around the region gathered at the Thompson Elementary School in Arlington, Mass. to share best practices and create a vision for the future of the high performance schools in the region. The group was comprised of state energy officials, facility and energy managers, utility program



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- administrators, health advocates, and more. In December, NEEP hosted <u>a webinar</u> with the regional working group that featured two presentations highlighting successful high performance school campaigns in Vermont and Pennsylvania.
- Additionally, NEEP convened the <u>Rhode Island High Performance Schools</u> Working Group on a regular basis to support their efforts in providing their students with high quality learning environments. The group also began coordinating efforts for a schools event in 2016. In conjunction with National Grid and the Rhode Island Department of Education, NEEP is spearheading this effort to create an event tailored to the needs of Rhode Island stakeholders.
- Lastly, NEEP staff met with the New Hampshire Department of Education to begin the formation of a N.H. High Performance Schools Working Group. The group will meet for the first time in January 2016 to create a vision for N.H. schools for the next five years and begin planning for a schools event later in the year.
- Engaged and collaborated with regional and national stakeholders to advance energy efficiency and health in the built environment: NEEP staff participated in the New England Clean, Green and Healthy Schools quarterly teleconferences. This group is a comprised mainly of public health officials throughout EPA's Region 1. NEEP's High Performance Buildings Associate, John Balfe, presented to the group on October 28 regarding the connection between energy efficiency, positive occupant health, and student performance in schools. NEEP also participated in two New Hampshire groups—the New Hampshire Partners for Healthy Schools and the New Hampshire Local Energy Solutions Group—to engage with stakeholders and share best practice resources to advance high performance schools throughout the region.
- Advanced the skillset of the regional facilities workforce at the Massachusetts Facilities Administrators Association (MFAA) Annual Conference & Expo: The MFAA held its annual regional conference from September 29 - October 1 in Hyannis, Mass. At this event, NEEP disseminated resources such as Operations and Maintenance Guides, NE-CHPS information sheets, and other best practices. NEEP was also responsible for organizing the energy track at this event. Attendees of this track learned about the benefits of benchmarking, positive health attributes of high performance schools, utility program incentives, and more. Carolyn Sarno Goldthwaite and John Balfe <u>presented</u> alongside US EPA's Linda Darveau.
- Maintained and updated online schools and public buildings resource center: NEEP updated and
  maintained our <u>Bulletin Board</u>, <u>High Performance Schools Pages</u>, <u>High Performance Public Buildings</u>
  <u>Page</u>, and <u>blog</u> throughout the year. These pages feature the latest news, events, exemplars and
  resources regarding high performance schools and public buildings in the region.
- **NEEP's leadership for high performance schools:** NEEP's Carolyn Sarno Goldthwaite was appointed as Chair of the Board of Directors for the CHPS, a nonprofit and the first green building rating program in the country especially designed for K-12 schools. Carolyn's election represents a milestone for CHPS as she is the first Chair elected from outside California. Carolyn joined the Board of Directors as it became a national organization in 2008 and has been a Co-Vice Chair since 2009.
- Convened regional and national multifamily efficiency stakeholders to overcome obstacles in the market: NEEP held three Regional Multifamily Leadership Group webinars in 2015 to address multifamily efficiency programs. These webinars included a diverse group of presenters including



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the District of Columbia Sustainable Energy Utility, Pacific Gas and Electric, MaGrann Associates, The New Buildings Institute, and one of NEEP's selected Business Leaders, the National Housing Trust. Presentations focused on strategies to overcome barriers, unique case studies, efforts to revise energy codes to advance efficiency in multifamily buildings, and program designs to advance efficiency retrofits in this underserved market.

• Led the development of a national energy efficiency leadership agenda for state and local governments: Carolyn Sarno Goldthwaite Co-Chairs the SEE Action Existing Commercial Building Working group. The agenda, which will be released in late January 2016, will establish a national benchmark for state and local government leadership on energy efficiency by defining a suite of bold-yet-practical solutions they can take over the next five years. Throughout the year Carolyn facilitated a national working group which helped to refine and review the agenda.

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Identify and accelerate the adoption of high-efficiency residential and commercial lighting and consumer products through education, incentive programs and public policies.

## **High Efficiency Retail Consumer Products**

- Convened a Residential Lighting Workshop and regular meetings: NEEP led several meetings of our Residential Lighting Leadership Advisory Committee, whose goal was to guide the development of the 2015 Residential Lighting Strategy (RLS) Update. These meetings focused on discussing progress on the RLS as well as planning for the 2015 Northeast Residential Lighting Workshop, held on October 1 at Osram Sylvania's Lightpoint facility in Danvers, Mass. At this workshop, NEEP staff and presenters discussed market transformation, smart lighting products, and new LED products entering the market. The workshop was well attended and well received.
- Developed tools to help NEEP Sponsors expand Home Energy Management System (HEMS) promotions: NEEP leads a HEMS Working Group, whose goal is to advance HEMS promotions in the region. The Working Group held six well-attended webinars in 2015. Additionally, an informal inperson meeting was held at the ACEEE Intelligent Efficiency Conference. In addition to providing an opportunity for HEMS stakeholders to share updates and build relationships, these meetings helped to finalize the HEMS Common Understanding document that seeks to align efficiency programs and HEMS vendors on expectations. NEEP also held three meetings to develop the Home Energy Management Systems Research Report to develop the research project scope, check in on progress, review deliverables, and solicit feedback on drafts.
- Hosted two HEMS workshops: NEEP co-convened two in-person HEMS workshops in 2015. The first
  was co-facilitated by the Home Performance Coalition and took place in conjunction with ACI'S
  National Conference in New Orleans on May 4. Discussions ranged from new products to programs
  and evaluations. The second in-person HEMS Workshop was a major stepping stone for the HEMS
  Research Project, and was held at Schneider Electric on June 15. There, attendees participated in a
  targeted discussion of interim findings for the HEMS research report, key barriers and opportunities,
  and additional insights from key stakeholder discussions.
- NEEP Sponsors highly satisfied with Retail Products Initiative: In order to help NEEP Sponsors'
  Retail Products programs achieve significant energy savings, NEEP held three Retail Products
  Working Group meetings to discuss regional program strategies. At the fall meeting, with 10
  program administrators in attendance, the question, "Would you participate in these meetings if
  they continued in 2016?" resulted in 100% in the affirmative. In addition to compiling program
  summaries on Lighting, Electronics, and Appliances, NEEP provided a monthly update newsletter to
  members of its Retail Products Working Group and averaged a strong 34.9% open rate, which is
  compared to the average non-profit open rate for membership organizations of 11.66%.
- **Provided input to federal and state Regulatory/Policy/EM&V activities:** NEEP regularly submits written comments to ENERGY STAR when updating relevant specifications.
  - Luminaires: NEEP, along with the Cape Light Compact, submitted comments on <u>Luminaires V2.0 Specification, Draft 1</u>. Then, along with the Cape Light Compact, the District of Columbia Sustainable Energy Utility (DC SEU), Efficiency Vermont, and National



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Grid we submitted comments concerning <u>Luminaires V2.0 Specification</u>, <u>Draft 2</u>. Lastly, along with the Cape Light Compact and Efficiency Vermont, we submitted comments concerning <u>Luminaires V2.0 Specification</u>, Final Draft.

- Lamps: Along with the Cape Light Compact, Eversource MA, Liberty Utilities NH, and Efficiency Vermont, we submitted comments concerning Lamps V2.0 Specification, Draft 1. Then, along with the Cape Light Compact, DC SEU, Efficiency Vermont, Liberty Utilities NH, and the New York State Energy Research and Development Authority (NYSERDA), we submitted comments concerning the Lamp V2.0 Specification, Draft 2. Along with the Cape Light Compact, DC SEU, Efficiency Vermont, Liberty Utilities NH, and Eversource MA, we submitted comments concerning Lamp V2.0 Specification, Draft 3. We submitted alone comments concerning Lamp V2.0 Specification, Interim Proposal. Lastly, along with DC SEU and United Illuminating, we submitted comments concerning Lamp V2.0 Specification, Final Draft.
- Most Efficient: NEEP, along with PSEG Long Island and Efficiency Vermont, submitted comments to ENERGY STAR concerning the 2016 Most Efficient Criteria.
- Connected Thermostats: NEEP, along with Vermont Energy Investment Corporation, submitted comments concerning <u>Connected Thermostats V1.0 Specification</u>, <u>Draft 1</u>.
   Then, along with United Illuminating, we submitted comments concerning Connected Thermostats V1.0 Specification, Draft 2.
- Efficiency State Plans: To assist in the long-term planning for efficiency programs, NEEP contributed retail products specific comments to relevant planning processes. This included providing written and verbal input to Massachusetts program administrators on their draft three-year plan.
- Participated in the ENERGY STAR Retail Products Platform (RPP): NEEP participated in the RPP process throughout 2015, including attended monthly teleconferences of the RPP EM&V and RPP Products task forces and bi-weekly teleconferences for the larger RPP organizers concerning the implementation of a nation-wide pilot of the RPP. NEEP provided comments on EPA's Guidance on Evaluation of the RPP as well as their draft Product Guidance document. NEEP also reached out to our Sponsors to answer questions and build a connection to the RPP. Additionally, NEEP worked with members of NEEP's Regional Evaluation, Measurement and Verification (EM&V) Forum to host an "EM&V of the RPP" webinar in January to help connect Northeast evaluators with resources to participate in the RPP.
- Updated NEEP's web-based resource center and blogged on retail products happenings:
   Throughout 2015 we tracked web-traffic analytics and found that the retail products webpages were visited often. Yearly page views for the Advanced Power Strips (APS) landing page were 399; HEMS were 483; and Residential Lighting were 377. We also had a significant year in terms of blogging activity, with retail products posts including: "Signs of Things to Come: Residential Lighting Programs Escalate Focus on LEDS;" "Transformation Tactics: How is EISA Impacting Residential Lighting?;" "What's on the Horizon for Home Energy Management Systems?;" "The State of our Sockets: A Regional Analysis of the Residential Lighting Market;" "Game Changer: HEMS are Crucial to Capturing Next Generation of Energy Savings;" "The 3 Forces Bringing Ecommerce into the Energy Efficiency World;" and "7 Crucial Steps to Transform the Residential Lighting Market."



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Disseminated information through participation in regional and national meetings: NEEP staff
presented at the ACEEE Market Transformation Symposium, where Market Strategies Program
Manager Claire Miziolek moderated a panel concerning the rapidly changing lighting market and
Market Strategies Director David Lis moderated a panel on emerging technologies. Staff attended
the CEE Summer Study, the CEE Industry Partners Meeting, AESP/NEEC, the ENERGY STAR Partner
Meeting (where we presented on residential lighting), the E Source Forum (where we presented on
HEMS), the Smart Homes Summit (where we presented on HEMS), and the ACEEE Intelligent
Efficiency Conference (where we presented on HEMS).

- NEEP Sponsors' Retail Products programs recognized for achieving significant energy savings: NEEP
  Sponsors were recognized as winners of the <u>2015 ENERGY STAR Partner of the Year-Sustained</u>
  <u>Excellence Award for Qualifying Products Award</u>. The award was presented to NEEP on behalf of the
  Sponsors at a ceremony on April 20.
- Published an Advanced Power Strips case study: While NEEP did not convene a formal APS Working
  Group in 2015, in an effort to help NEEP Sponsors' Retail Products programs achieve significant
  energy savings, we published a <u>Case Study on Tier 2 APS products in Efficiency Programs</u>. The case
  study highlights several examples of successfully integrating Tier 2 APS's into programs and touches
  on some of the research and analysis that exists on Tier 2 APS products to date.

## DesignLights Consortium™ Solid State Lighting Qualified Products List

Maintained DesignLights Consortium (DLC) resources: The DLC served its members by maintaining
the <u>DesignLights Consortium™ Solid State Lighting Qualified Products List</u> (DLC SSL QPL) via a
publicly available, searchable, and comprehensive web-based listing of qualifying SSL products. The

QPL and its technical requirements are the backbone of the DLC SSL project that members rely on to promote high efficiency lighting products and achieve energy efficiency program savings goals. The DLC QPL grew by 90.9% in 2015, leaving the product count at an impressive 150,527 products at the end of the year. This represents products from 1,450 different luminaire manufacturers.



• Improved web-based list functionality: Early in 2015 the online DLC member portal was enabled. This password-protected portal allows DLC members to store member-confidential information, including customized qualified product lists as well as meeting materials and announcements. Members are also able to access saved search results from the QPL database and track applications



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under review. This allows member programs to plan ahead and evaluate whether products have been submitted and when they might be qualified. Additionally, the DLC website functionality was updated in accordance with the new Technical Requirements. Users are able to search the DLC QPL by the five new main categories and their respective sub-categories, Primary Use Designation, Specialty Use, as well as the DLC Standard and DLC Premium classifications, creating a more user friendly and streamlined approach to the database.

- Increased web traffic: Over the course of the year, the DLC website received 1,771,352 page views by 156,790 users, 28.7% of which were new users. About 70% of the total sessions came from the U.S., while roughly 13% came from China, and approximately 10% from Canada. The rest of the visits were made up from countries including Taiwan, South Korea, India, Hong Kong, United Kingdom, and Mexico. This shows the diverse and wide use of the DLC QPL as well as its continued relevance in the lighting market as more and more users make their way to the resources online.
- Developed new QPL policies: To keep the DLC QPL on the leading edge of SSL product introduction
  and provide DLC members with enhanced technical information to support and inform their
  efficiency programs, the DLC worked with its members and invited stakeholders to inform new
  policies.
  - Requirements Table was released at the end of the second quarter. The new table reflects months of discussion and feedback from members and stakeholders. The modified structure of the requirements includes three key elements: 1) an alternate structure for the categorization of products; 2) a "Specialty" Primary Use designation; and 3) DLC Premium classification.
  - O DLC Premium classification: As part of the restructuring effort, the DLC introduced a classification for higher-performing luminaires and retrofit kits. Products submitted to the DLC Premium classification must meet higher efficacy and lumen maintenance requirements outlined in the <a href="Technical Requirements Table">Technical Requirements Table</a> and must also provide a driver ISTMT and information about integral controls, in addition to meeting all of the base requirements. If a manufacturer seeks qualification of its products to the DLC Premium classification, they must provide all the necessary testing to demonstrate the products meet the higher classification's additional requirements. The DLC Premium classification enables DLC members to create additional incentive structures to reward products that have proven to perform better and save more energy.
  - The DLC released several draft policy proposals for stakeholder comment, including revisions to the <u>Retrofit Kit Policy</u>, and <u>Family Grouping Policy</u>.
  - Additionally, the DLC is actively considering policies regarding color-tunable LED products, LED drive current testing, safety certification, and additional provisions for allowable variations within family groups. These policies will be distributed for stakeholder comment as proposals are developed.
- Maintained the integrity of the DLC brand: The DLC has two main registered logo trademarks ("DLC Logos"). DLC also uses and protects the trademark "DesignLights Consortium." The DLC Logos, as well as the trademark "DesignLights Consortium," are all either pending applications or registered with the US Patent and Trademark Office.



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Improved DLC trademark and logo compliance: In 2015, the DLC implemented a more well defined and actionable DLC Logo Compliance Process. This involved working with a legal team to support the process of bringing third parties into compliance with the logo guidelines. Furthermore, approximately 1,220 products were removed from the QPL due to product misrepresentation. Manufacturers of these products faced a two-month suspension from submitting new applications, and any applications open at the onset of the suspension were also put on hold.

- Developed and implemented a new DLC brand strategy: A new brand architecture, branding elements, and messaging were developed and implemented to increase consistency, brand recognition, and impact in the market and among potential new partners.
- Surveillance testing: A process for targeted random sampling of the QPL was developed and will be launched in the first quarter of 2016. The program represents an effort by DLC to monitor the validity of data submitted to the DLC SSL QPL pre- and post-qualification. In order to maximize the use of limited resources, surveillance will focus on identifying products with higher than average risk of non-compliance.
- Meetings and communications with DLC Members and stakeholders: The DLC held regular Member meetings and Technical Committee meetings. We also regularly distributed updates to DLC members and industry including program updates, general information, and announcements through the DLC Member Update, the DLC Industry Update, and Stakeholder Meeting e-blasts. In addition, the DLC hosted its Annual Stakeholder Meeting on August 3-6 in Washington, D.C. Attendance increased by 15% from last year to 215. The meeting attracted stakeholders from across the industry and engaged a robust dialogue about important issues such as DLC Category and Policy Development, Color Tuning, and Commercial Advanced Lighting Controls. It also included discussion sessions—a new format that allowed attendees to discuss specific topics in small groups and allowed DLC to collect focused feedback.
- Increased Membership by six programs: The DLC gained six new members in 2015—MidAmerican Energy, Orlando Utilities Commission, Public Service Company of Oklahoma, Public Service Company of New Mexico, the Independent Electricity System Operator, and Alliant Energy—bringing the member count to 82.
- **Grew our social media presence**: DLC's Twitter account, <u>@DesignLightsSSL</u>, gained approximately 200 new followers in 2015 as a result of tweets about industry news, conference outcomes and observations, and general updates from DLC.
- Attended and presented at dozens of conferences and workshops: Throughout 2015, the DLC team
  attended a total of 26 conferences and workshops, providing presentations on the DLC at many and
  broadening the reach of and interest in the program. Below is a summary of the most notable
  experiences.
  - On February 10-12, DLC Marketing Associate Fritzi Pieper attended the Annual AESP Conference in Orlando, Fla., and on February 13 she presented on the DLC program to new DLC member the Orlando Utilities Commission in Orlando, Fla.
  - o On March 31, DLC Director Tina Halfpenny attended the DOE Controls Workshop in Golden, Colo.



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- On May 4-7, the DLC team exhibited at LightFair International in New York, N.Y.
- On May 21-22, DLC Program Managers Irina Rasputnis and Gabe Arnold attended the Eastern Lighting Peer Exchange in Montreal, Canada.
- On July 29-30, Irina Rasputnis attended the American Society of Agricultural and Biological Engineers (ASABE) committee meeting on horticultural lighting in New Orleans, La.
- On August 3-6, the DLC hosted the fourth annual DLC Stakeholder Meeting in Washington,
   D.C.
- On September 16-18, Irina Rasputnis and Tina Halfpenny attended the West Coast Utility Lighting Team Meeting in Portland, Ore. Irina presented updates on various DLC developments including the Commercial Advanced Lighting Controls (CALC) project.
- On September 22-25, Tina Halfpenny and Gabe Arnold visited the Atlanta area to meet with lighting manufacturers.
- On October 27, the DLC held the Advanced Lighting Controls Summit in Berlin, Conn. where important industry players gathered to discuss the approach to controls specifications.
- On November 16-18, the DLC team attended DOE's SSL Technology Development Workshop in Portland, Ore.
- Prepared for the future: 2015 was a strategic planning year for the DLC. A three-year business strategy and implementation plan was developed, which includes several major developments. In 2016, the Commercial Advanced Lighting Controls (CALC) initiative will be housed under the DLC and become an integral part of its program and resource offerings. Additionally, the DLC will transition from NEEP in mid-2016 to stand as its own non-profit organization. The spin-off of the DLC and timeline were approved by the NEEP Board in November.

#### **High Efficiency Air Source Heat Pumps**

- Hosted a Regional Air Source Heat Pump Workshop: NEEP held a workshop on September 6-7 to
  engage energy efficiency program administrators and industry representatives involved in the Air
  Source Heat Pump (ASHP) market. Participants included program administrators, manufacturers,
  field implementers, and contractors. The first day centered on lessoned learned from the field,
  research, and efficiency programs. On the second day, seven ASHP manufactures participated in a
  round-robin to present their products and plans for the future.
- Facilitated regional ASHP Working Group meetings: NEEP leads an ASHP Working Group and
  associated sub-committees, with the goal to effectively implement the strategies included in NEEP's
  2014 Northeast/Mid-Atlantic Air-Source Heat Pump Market Strategies Report. The Working Group
  held quarterly meetings in March, June, and December, with 30-40 attendees at each. The subcommittees meet several times, including meetings of the Workshop, Policy, and Cold-Climate subcommittees.
- Provided regulatory/policy comments and guidance: To assist in the long-term planning for
  efficiency programs, NEEP contributed technology-specific comments to relevant planning
  processes. NEEP provided written comment to the Vermont Public Service on their 2015
   Comprehensive Energy Plan and advised them on opportunities associated with efficient cold-



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climate ASHPs. NEEP provided written comment to Cadmus, in support of ENERGY STAR, concerning ENERGY STAR's webpage on ductless heating and cooling. We also held an advisory meeting for the Massachusetts Clean Energy Center as they considered updating their cold-climate heat pump requirements. Lastly, we provided input and guidance to the development of the lowa Statewide Technical Reference Manual.

- Cold-Climate ASHP (ccASHP) Specification draws interest from the market: In 2015, NEEP's specification webpage garnered 6,074 page views and was the second most viewed page. The specification document was downloaded 855 unique times and was ranked number-one for document downloads on the NEEP website.
- Maintained the ASHP and HPWH web-based resource centers: The ASHP landing page houses NEEPs cold-climate ASHP page with the listing and specification, while the HPWH page is educational. ASHP-based blogs continuously receive over 100 page-views and are among the top ranking of NEEP's blogs. Some highlights include: "Looking for Winter-Proof Heat Pumps?," "What Heat Pump Are You Buying?," and "Heat Pumps for the Holidays."
- Delivered presentations on the ccASHP Specification: One of the recommended strategies from the NEEP's ASHP strategy report is to educate a wide range of industry stakeholders on ASHPs and our cold-climate specification. At Efficiency Vermont's Better Buildings by Design Conference on February 4, Market Strategies Director Dave Lis presented to contractors, a stakeholder group identified for increased ASHP education. At the ACEEE MT Symposium on April 21, Dave Lis presented at a session covering how to support the successful market introduction and long-term success of Super-Efficient products. NEEP staff attended the CEE Summer Study to engage with fellow efficiency stakeholders, and presented as part of an Association of Home Appliance Manufacturers meeting in December. Additionally, Dave Lis attended the Air Conditioning Association of New England to engage with HVAC distributors in December.

## **Commercial Advanced Lighting Controls**

- Collaboration with regional and national stakeholders: Stakeholder collaboration is essential to the success of NEEP's initiatives and has been a hallmark of the Commercial Advanced Lighting Controls (CALC) project since its inception. In 2015, six stakeholder committees were formed to guide the development of all CALC project activities. These committees include diverse representation from the lighting industry, utilities, national laboratories, and others. In addition to these committees, NEEP, with the DesignLights Consortium, hosted the DLC Stakeholder Meeting in August 2015 and a full-day Advanced Lighting Control Summit in October 2015 that were well attended by stakeholders from across the industry. These meetings provided a forum for high-value discussions with North American stakeholders to inform the current and future activities of the CALC project.
- Completed development of BETA Version of Advanced Lighting Control System (ALCS) Energy
  Estimator Tool: Working with technical contractor TRC Energy Services and a stakeholder advisory
  committee, NEEP completed the BETA version of the new ALCS Energy Estimator Tool. In September
  2015, an initial round of BETA testing with project sponsors was completed. The tool is now being
  revised based on BETA testing results.
- Hosted the second Advanced Lighting Control Summit: On October 27, 2015, NEEP hosted the second Advanced Lighting Control Summit in Hartford, Conn. to discuss the CALC project with



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manufacturers and energy efficiency programs. The event reached maximum capacity with over 100 industry and energy efficiency program stakeholders attending and providing valuable feedback on and input to the CALC project. Based on the success of the event, going forward it will be held annually and allow for greater audience attendance.

- Received 'Green' project health indicators from funder US DOE: NEEP continued to make progress
  on DOE-funded activities of the CALC project including the Demonstration Projects, Training
  Resources, and a nationally-adopted incentive strategy to support the technology. Each quarter in
  2015, DOE assigned a 'Green' overall project health indicator, meaning that DOE believes the project
  is generally on track, there are no major concerns, and the project continues to hold strong promise.
- Significant progress on demonstration projects: In 2015, NEEP began work to select 10 Advanced Lighting Control technologies and sites for demonstrations. These demonstration projects will be used as deployment tools for DLC member utilities and provide valuable experience and content to inform the CALC project training programs and other activities. By the end of 2015, the first five technologies and sites had been identified, two had been installed, with the remaining three slated to begin installation early in 2016. Selection of an additional five project will also commence in 2016.
- Completed training plan and framework: Informed by input from DOE, DLC Members, lighting and control manufacturers, and designers and specifiers, NEEP submitted a final draft detailed Training Framework and Curricula recommendations document to DOE in September 2015. We then formed subcommittees composed of DLC Members, manufacturers, and industry experts to build out the curriculum and develop the training implementation plan for distribution to DLC membership for implementation in 2016. These training programs are an important component of the CALC project to educate the market and address barriers to technology adoption.
- Progress on incentive strategies: A key component of the CALC project is to develop more effective energy efficiency program approaches and incentive strategies to support Advanced Lighting Control Systems that can be adopted across North America. Development of these strategies is a key component to improve leveraging and partnership with industry to accelerate adoption. In 2015, we formed a subcommittee composed of representatives from six geographically diverse DLC Members with experience in program planning to determine an approach suitable to a wide variety of program types. The working group developed the recommended program approach, and is now obtaining commitment from DLC member utilities or energy efficiency programs to implement the recommended approach.

## Advanced Commercial HVAC Roof-Top Units

- Hosted a Regional Roof-Top Unit (RTU) Workshop: <u>NEEP held a workshop</u> on <u>June 15</u> to engage participation from stakeholders concerned with the RTU market and barriers. Amongst the 26 participants were energy efficiency program administrators, efficiency advocates, industry representatives, and state agency staff. After a brief presentation by NEEP's former technical advisor Jon Linn and a panel on new RTU program strategies, two break-out sessions were held.
- Facilitated regional Working Group meeting: NEEP held a Working Group meeting on March 10 to engage stakeholder participation from across the region. There were 17 participants, including energy efficiency program administrators, efficiency advocates, and state agency staff interested in the deployment of high performance RTUs.



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Maintained the RTU web-based resource center: NEEP added a distinct "Advanced Rooftop Unit"
page to our website in 2015. The <u>ARTU Landing Page</u> is educational until the research report and
additional resources are completed. Additionally, we contributed a post to NEEP's blog entitled
"Advanced Rooftop Units Are Keeping It Cool."

- Participated in national and regional meetings: NEEP attended the CEE Industry Partners Meeting
  to engage with fellow efficiency stakeholders. Discussions with conference attendees provided
  constructive input toward development of NEEP's RTU strategy report. At DOE's Better Buildings
  Summit held in Washington, D.C. on May 28-29, NEEP staff exchanged best practices, highlighted
  demonstrated market solutions, and discussed future opportunities to advance energy efficiency.
  Additionally, NEEP attended the CEE Summer Study to engage with fellow efficiency stakeholders.
- Provided regulatory/policy comments and guidance: To assist in the long-term planning for
  efficiency programs, NEEP contributed technology-specific comments to relevant planning
  processes. At the Connecticut Energy Efficiency Board's May 12 meeting, Jon Linn provided public
  comment to help advise their commercial and industrial initiatives for their upcoming three-year
  plan including opportunities associated with efficient RTUs.

## **Industrial Energy Efficiency**

- Hosted an Industrial Energy Efficiency Summit: NEEP hosted the Northeast Industrial Energy
   <u>Efficiency Summit</u> on November 12-13 in Bretton Woods, N.H. NEEP worked in coordination with
   trainers from DOE to prepare for the day-long training from DOE on Strategic Energy Management
   (SEM), as well as the second day, which helped to shape the forthcoming Industrial Energy Efficiency
   Market Assessment and Regional Strategy Recommendation. Attendance was approximately 80
   overall; 25 attended the DOE training and 23 attended the workshop, including DOE representatives.
- Co-hosted regional Working Group meeting: In partnership with Efficiency Vermont, NEEP helped
  organize and host a Regional Industrial Energy Efficiency teleconference on October 6. NEEP
  presented on a number of important topics including an update on the development of the regional
  market assessment, a sneak peak of the SEM Training agenda that DOE was preparing to deliver at
  the Northeast Industrial Efficiency Summit, and an update on NYSERDA's Expert Directory.
- Regional and national coordination: Dave Lis attended and participated in the 2015 ACEEE Summer Study for Industry on August 4-6 in Buffalo, N.Y. NEEP also joined a meeting hosted by DOE with other REEOs to share activities and learn more about DOE resources related to industrial efficiency.

## **Appliance Efficiency Standards**

• Developed the annual Appliance Standards Project Strategy: NEEP led development of the Northeast and Mid-Atlantic Appliance Standards Project's Regional Strategy Memorandum for 2015, outlining the project's key directions and strategies for the year. The identified strategies were developed based on an assessment of current opportunities associated with appliance standards, and involved input from all project stakeholders. As the project is comprised of stakeholders from a number of organizations—state energy offices, efficiency program administrators, efficiency advocates, state regulatory offices, etc.—the memo lays the foundation for regional work by aligning the efforts of the various players with a common plan and goals.



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Convened Appliance Standards Working Group via webinar: To facilitate regional stakeholder input
and share information and best practices, NEEP convened a series of quarterly meetings via webinar
in March, June, September, and December to discuss the ongoing federal rulemakings processes,
active and future state standards activities, and prepare for upcoming appliance standards
opportunities. This engagement promotes understanding and awareness of appliance standards as a
valuable policy mechanism to achieve cost-effective energy savings.

- Engaged US DOE and The CSA Group to improve Heat Pump Test Procedure and Standard: Current test procedures for air-source heat pumps do not accurately reflect a heat pump's ability to perform at low temperatures (below 17F). NEEP engaged two different processes seeking to influence their ultimate results and achieve necessary changes to the test procedure.
  - DOE opened a regulated negotiation for the next update for central air-conditioner and heat pump test procedures and standards in July. The process involves a broad range of stakeholders to negotiate a recommendation to DOE. While NEEP was not an official party to the negotiations, we attended a number of public sessions and caucused with other efficiency advocates.
  - The CSA Group in Canada launched a process to develop a new test procedure and performance metric for variable speed heat pumps. NEEP was invited to participate in the process and attended a teleconference meeting on September 15.

#### • Supported state-level appliance standards activities:

- o **Rhode Island:** NEEP engaged deeply with National Grid staff involved in their codes and standards initiative. We provided guidance on the mechanics of administration of state standards as they discussed with the Office of Energy Resources (OER). Rhode Island is a leader in the region when it comes to allowing their program administrators to conduct activities related to appliance standards and the mechanisms to achieve savings from those activities. NEEP met with their staff of National Grid and the OER. NEEP also provided guidance to Rep. Arthur Handy in the development and promotion of Bill <u>H 5670</u>.
- Massachusetts: NEEP was active in supporting the staff of the lead sponsor (Rep. Frank Smizik) of <u>H. 755</u> on technical questions regarding the efficiency product standards within the bill.
- New York: NEEP provided direct support to NYSERDA staff involved with charting the Authority's work on state standards for the near- and long-term, sharing information to help prioritize activities.
- California: NEEP re-engaged with the California state appliance standards rulemaking process in preparation for further regional action once California adopted new standards for a range of products in 2015. To this end, NEEP <u>submitted comments</u> concerning California's standards for computers, monitors, and displays. We pushed for a strong California standard so our region might be able to leverage these standards, as well as potentially model them for federal standards in the future.
- Developed a state-level model standards package: NEEP worked with the Appliance Standards
   Awareness Project (ASAP) to develop a draft list of products to include in the 2016 model package of
   state-level standards. The model package will be provided to states interested in adopting state
   appliance standards.



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Engaged LED test procedure rulemaking: NEEP participated in an effort led by ASAP to review and
provide comment to the DOE regarding their new test procedure for LED lighting. NEEP signed onto
joint comments submitted to DOE in August.

#### • Setting the stage for improved dryer standards:

- Actively supported the Super-Efficient Dryer Initiative (SEDI): NEEP provided financial support and strategic direction to the Initiative. SEDI brings together energy efficiency program providers, manufacturers, government agencies, and appliance retailers in support of a North American market for new, energy efficient, advanced clothes dryers. Advancements in dryer technology today will enable strong standards to be set during the next rulemaking which was recently launched.
- o Engaged DOE on clothes dryers: NEEP submitted <u>comments</u> in response to DOE's Request for Information regarding clothes dryers. The comments included a report from a research project NEEP led through its Regional EM&V Forum, <u>Residential Electric Clothes Dryers Baseline Study</u>. The report provides real world performance information to DOE as they assess the opportunities of revising minimum efficiency standards for clothes dryers.



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Promote knowledge and the use of best practices that support the expansion, implementation and evaluation of policies and programs to increase and accelerate energy efficiency.

## Regional Evaluation, Measurement & Verification Forum

- The Forum completed a pilot of its <u>Standardized EM&V Methods Reporting Forms</u>: The forms were tested in Massachusetts in the late summer through early fall of 2015. The final deliverable was an issuing of a results and recommendations report in October. The Forum is currently in talks with New Hampshire to test the forms there in late winter and hopes to expand testing beyond N.H.
- Facilitated nationwide discussion on US EPA's Draft Clean Power Plan 111(d) Model Rule and EM&V Guidance to inform comments to EPA: NEEP with ACEEE drafted comments for stakeholder review, and NEEP convened and facilitated national stakeholder teleconferences to review draft comments and build consensus on key issues before submitting comments to EPA. NEEP also brought together EM&V Forum members to provide an overview of the EPA's Final CPP, the proposed Federal Plan (and Model Trading Rule), and draft EM&V guidance. Stakeholders included ACEEE, NRDC, NASEO, other REEOs, NWPCC, Regulatory Assistance Project, and others.
- Explored the emergence of EM&V 2.0: This new generation of energy efficiency is characterized by big data, utilizing new data analytic tools, and the role of Software as a Service (SaaS) providers in helping streamline and enhance current EM&V practices. The final report, entitled <a href="the Changing EM&V Paradigm">the Changing EM&V Paradigm</a>, was issued in December in conjunction with a release from <a href="ACEEE">ACEEE</a>. Both reports reviewed key trends and new industry developments, and their implications on current and future EM&V practices. The report provided recommendations for regulators and program administrators on how EM&V 2.0 can support their needs and practices.
- Completed research projects to promote collaboration and information sharing across the region on a variety of topics, including:
  - Residential Electric Clothes Dryer Baseline Study Report: This report presents the research results from a study to determine baseline assumptions and provide potential programmatic support for advanced clothes dryer technologies for the residential market. The residential clothes dryer study metered 23 existing residential electric clothes dryers in single household homes in Vermont, New Hampshire, Maine, and Massachusetts. In addition, targeted secondary research of other studies that focused on the energy consumption and usage patterns of electric clothes dryers was performed.
  - This report focused on the role efficiency can play in deferring utility transmission and distribution (T&D) system investments. In particular, it addressed the role that intentional targeting of efficiency programs to specific constrained geographies—either by itself or in concert with demand response, distributed generation and/or other "non-wires alternatives" (NWAs)—can play in deferring such investments. The report also includes an explicit set of policy recommendations or "guidelines" to address the interests of the Regional EM&V Forum project funders.



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 Commercial Refrigeration Loadshape Research Report: This report produced savings loadshapes and several key parameters that can be used to update Technical Reference Manual entries regarding: ECM Motors, ECM Motor Controls, and Antisweat Door Heater Controls.

- <u>Early Replacement Measures Phase II Study</u>: This report investigated approaches to estimation of measure persistence in retrofit and early replacement residential HVAC programs in the region. The study demonstrated that program administrators have the opportunity to increase the accuracy of estimates of remaining useful life (RUL) of furnaces, boilers, and ACs being replaced early by use of survival curves and dual baselines. It further demonstrated opportunities to increase the accuracy of incremental costs estimates relative to methods that are currently used in the region in early replacement programs.
- Mid-Atlantic Technical Reference Manual Version 5.0: The Technical Reference Manual is the outcome of a project conducted for the Forum sponsored by Maryland, Delaware, and the District of Columbia. NEEP coordinated directly with the evaluation teams of sponsoring jurisdictions to ensure that the most up-to-date evaluation results were included in the resource, and that the resource was made available in time for evaluation plans.
- Incremental Cost Study Phase 4 Final Report: The purpose of this report is to investigate
  and update incremental costs for a number of common measures employed in energy
  efficiency programs. Phase 4 examined six additional measures.
- Opportunities for Home Energy Management Systems (HEMS) in Advancing Residential <u>Energy Efficiency Programs</u>: This report demonstrates the potential for HEMS as an evolving strategy for residential savings by using big data and new analytical tools, including to support EM&V of HEMS programs.
- 2016 Agenda & Budget adopted by Steering Committee: The Forum's Steering Committee, represented by energy regulatory commissioners from six states and air regulatory representation, adopted a 2016 Agenda & Budget in December 2015. The agenda and budget were informed by Forum members, and includes a mix of EM&V protocol and research & evaluation projects. It also features a new scope, revenue structure, and processes that were informed by feedback from stakeholders obtained through NEEP's strategic review of its range of work.
- Facilitated a summer workshop on HEMS: NEEP hosted a <u>day-long workshop</u> on June 15 in Andover, Mass. at Schneider Electric to discuss the hidden potential of HEMS with a focus on NEEP's HEMS research project. NEEP staff and project contractors CLEAResult, along with 20 key stakeholders, attended. Through breakout sessions, the attendees discussed efficiency program opportunities with HEMS and key metrics and requirements to legitimize and uncover their potential.
- Held Annual Public Meeting in Baltimore, Maryland: Nearly 100 evaluators, regulators, program
  administrators, and other interested stakeholders from across the NEEP region gathered for the 6<sup>th</sup>
  Regional EM&V Forum Annual Public Meeting (APM). The event brought together stakeholders from
  across the Mid-Atlantic and New England regions to discuss implications of Clean Air Act 111(d)
  EM&V requirements and recently completed Forum projects on geo-targeting, and cost-



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effectiveness. A group of around twenty industry experts gathered the day before the APM for a training workshop on <u>Standardized EM&V Methods Reporting Forms</u>.

- Data and research from the Regional Energy Efficiency Database (REED) inform "deeper dive" into residential lighting: NEEP posted Program Year 2013 data on the <u>REED website</u> in early 2015, where REED now includes 2011-2013 data (2014 data to be posted in early 2016). REED data also helped inform analysis for NEEP's <u>2015 Regional Roundup</u> and was used to help inform a newly released <u>Residential Lighting Deep Dive Brief</u>, which looks at cost of saved energy data from REED and builds a better understanding of range in values by comparing key savings assumptions from TRMs.
- Expanded Forum outreach on regional EM&V issues via webinars, conference presentations, and blogs: Throughout 2015, the Forum worked internally and with external stakeholders to increase opportunities and the audience for information sharing. These efforts include the annual state studies webinar that exchanges information on state EM&V activities, as well as multiple blogs, webinars, and presentations at IEPEC, the conference on Energy Efficiency as a Resource, hosted by ACEEE, and the AESP annual conference.
- Launched research on evaluator certification: NEEP is serving as facilitator in a study supported by the US DOE that is investigating the feasibility and possible models for establishment of evaluator certification. Evaluator certification is a strategy that could help increase the credibility of EM&V results and may have relevance to the future success of energy efficiency in implementation of the Clean Power Plan. Research was kicked off late in 2015 and results and the final report are expected in June 2016.

## **Public Policy Outreach and Analysis**

- Provided education and thought leadership: Early in the year, NEEP released <u>A Changing Landscape: the Regional Roundup of Energy Efficiency Policy in the Northeast and Mid-Atlantic States</u>, where we provided our annual overview of the major successes and challenges in energy efficiency policy through data and narrative. The *Roundup* was accompanied by a series of blogs throughout the year. Tracking trends in state energy efficiency investment and savings remains a mainstay of our work, as do our electronic communication resources including the <u>NEEP blog</u>, <u>Twitter</u>, <u>Highlights</u>, and the <u>Policy Snapshot</u>.
- Shared information and best practices: NEEP staff played important roles at the national conference on Energy Efficiency as a Resource, hosted by ACEEE in Little Rock on September 20-22. Director of Public Policy Jim O'Reilly provided the Northeast roundup of developments in the states, Senior Program Manager Natalie Treat moderated a panel on regulatory mechanisms to advance efficiency, and Policy Analyst Brian Buckley presented on street lighting tariffs. Brian Buckley has been sought out on the topic of tariffs and street lighting by the US DOE and state regulators, and presented at the Climate Group's <a href="Utility Roundtable">Utility Roundtable</a> on September 24. In April, Jim O'Reilly facilitated a panel discussion on <a href="regional progress and challenges">regional progress and challenges</a> at the Energy Foundation's annual conference in Chicago, Illinois.
- Provided thought leadership, technical expertise, and coordination to advance energy efficiency
  as a resource: NEEP delivered a number of public comments in nearly every jurisdiction in our
  region. All of these comments and other resources can be found on the <a href="State Pages">State Pages</a> of our website.
  In March, NEEP filed <a href="comments">comments</a> regarding an unprecedented joint request for proposals issued by



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Massachusetts, Rhode Island, and Connecticut for "clean energy resources" and transmission, including procurement of new natural gas capacity into the region. NEEP's comments focused on the need for the states to consider non-transmission alternatives, such as energy efficiency on a regional scale, before committing to new transmission infrastructure, such as gas pipelines, that would be paid for by a tariff on electric ratepayers.

- Nurtured relationships with policymakers: We are proud that many of the region's policymakers
  turn to NEEP as trusted experts and a gateway to information, contacts, and best practices in
  efficiency across the region. For example, in January, Natalie Treat gave a briefing on energy
  efficiency to new members of the New Hampshire House Science, Technology and Energy
  Committee. Staff also presented a special briefing on energy efficiency for new Mass. Department of
  Public Utilities Commissioner Robert Hayden, highlighting what has made Massachusetts a leader in
  energy efficiency policy and what must happen to keep the state in that position.
- Data tracking and analysis: A hallmark of NEEP's work is tracking regulatory and legislative
  proceedings as well as state savings goals and investment levels. We work closely with the EM&V
  Forum and the Regional Energy Efficiency Database (REED) to make relevant information available
  across NEEP as well as to external partners and stakeholders. One example is NEEP's Policy Tracker,
  which identifies current or recently pending legislation within our jurisdiction and is updated
  regularly.
- Provided support for emerging states: NEEP continued to serve as an expert resource and sounding board for policymakers and in-state advocates in Delaware, Pennsylvania, the District of Columbia, and New Hampshire.
  - Delaware: NEEP continued to serve as a resource and point of contact for the state as it works to set a framework for its efficiency programs—including efficiency savings targets, programs and evaluation, measurement and verification protocols—frequently communicating with staff and stakeholders from both entities on best practices. NEEP prepared a <a href="memo">memo</a> on best practices for shared program administration in terms of market development and resource acquisition, and how the state might consider evolving roles for the current program administrators. We also created a <a href="mesource sheet">resource sheet</a> on SEE Action guidance materials most applicable to Delaware.
  - Pennsylvania: NEEP submitted <u>comments</u> and <u>reply comments</u> on the Pennsylvania Public Utility Commission (PA PUC)'s <u>tentative order</u> regarding implementation of the third phase of the state's <u>Act 129 Energy Efficiency and Conservation</u> programs. NEEP also facilitated input on the latest iteration of the state's <u>Technical Reference Manual</u>.
  - District of Columbia and New Hampshire: In addition to our extensive presence in the New Hampshire EERS proceeding referenced above, NEEP provided <u>guidance comments</u> on a scoping solicitation regarding grid modernization in the District of Columbia, and shared insights and best practices with local environmental organizations. Similar guidance was <u>provided to New Hampshire</u> in their own grid modernization proceeding.



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Pushing the envelope with established states: NEEP monitored and was involved with efficiency
developments across the region, including in Connecticut, New York, Maryland, Massachusetts, and
Vermont.

- Connecticut: NEEP advised the planning of implementation of Connecticut's Energy Efficiency Programs through written <u>comments</u> on the state's Draft 2014 Integrated Resource Plan in February, as well in-person and written <u>comments</u> on the 2016-18 Conservation & Load Management plans in November. Staff also participated in the December meeting of the Residential Committee of the Energy Efficiency Board, sharing an array of NEEP's new <u>green real estate resources</u>, as well as highlights from a recent SEE Action paper on <u>Scaling up Home Energy Upgrades</u>.
- New York: NEEP contributed in several ways as New York continued its proceeding on Reforming the Energy Vision (REV), and the development of an accompanying Clean Energy Fund (CEF) proposal for energy efficiency programs. In early March, NEEP traveled to Albany for a meeting with NYSERDA staff to discuss the CEF proposal and the programs that will accompany it. To help stakeholders better understand the impact of these proceedings, NEEP released a six-page summary of the 126-page State Energy Plan and an eight-page summary of the 130-page Order Adopting Regulatory Policy Framework and Implementation plan. In addition, NEEP continued its role as part of the Clean Energy Organizations Collaborative (CEOC), a group of NGOs dedicated to accelerating clean energy via the REV proceeding. In June, NEEP and other members of the CEOC met with Public Service Commission Chair Audrey Zibelman on a range of issues concerning the state's overall goals and efficiency program implementation. In addition, we provided comments on the following proceedings:
  - NYSERDA Clean Energy Fund Information Supplement
  - Staff Benefit Cost Analysis Whitepaper
  - New York Utility ETIPS and LED Street Lighting
  - REV Track, II Ratemaking & Utility Business Models
- Maryland: NEEP staff played a significant role in working with the Maryland Energy Administration (MEA) and other key stakeholders to provide comment on the state's 2015-2017 energy efficiency plans. In January, NEEP joined with a coalition of clean energy advocates in submitting comments in opposition to a legislative proposal in Maryland to repeal the state's EmPOWER Maryland energy efficiency programs, which was ultimately defeated. Staff supported MEA and a coalition of advocacy groups on joint comments aimed at strengthening the state's energy efficiency programs. Staff also worked to secure foundation funding of technical resources available to MEA and PSC through the Regulatory Assistance Project (RAP).
- Massachusetts: NEEP provided comments on the state's draft three-year efficiency plans, in which we called for program administrators to continue building on their successes, and keep to ambitious savings goals across the portfolio. We later provided <a href="mailto:specific guidance">specific guidance</a> on the savings potential associated with LED lighting, street lighting, and advancing building codes. We <a href="mailto:provided technical assistance">provided technical assistance</a> to the legislature's Joint Committee on Revenue on several efficiency-related titles. NEEP participated in a workshop on energy storage convened by the Dept. of Public Utilities together with sister agencies. See our



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- blog on the event <u>here</u>. We are also closely following utility Grid Modernization Plans (submitted in August), seeking to understand the role that efficiency will play in this evolving paradigm.
- Vermont: NEEP traveled to Montpelier, Vt. in June to participate in a stakeholder meeting on Vermont's Comprehensive Energy Plan. We provided <u>preliminary input</u> to the Public Service Department—encouraging adopting a regionally-developed cold-climate air source heat pump standard, continued focus on multifamily housing, and permitting attribution of savings from building code enhancements—and <u>final input</u> to support existing strong industrial efficiency programs as well as efforts towards strategic electrification.
- Participated in stakeholder advisory meetings: Throughout the year, staff participated in monthly
  meetings of the Mass. Energy Efficiency Advisory Council (EEAC), the Rhode Island Energy Efficiency
  and Resource Management Council (EERMC), Delaware Energy Efficiency Advisory Council (EEAC),
  N.H. Energy Efficiency and Sustainable Energy Board (EESE Board), Connecticut Energy Efficiency
  Board (EEB), Maryland EmPOWER Planning Group, and New York proceedings.
- Collaborated with partner advocates: NEEP collaborated with numerous allies, including the Acadia Center, Conservation Law Foundation, Natural Resources Defense Council, the Pace Energy and Climate Center, E4TheFuture, National Consumer Law Center, Interfaith Power and Light, Massachusetts Climate Action Network, Chesapeake Climate Action Network, Sierra Club, New York Clean Energy Organizations Coalition, and many others on policy developments in states across the region. NEEP sits on the policy committee of the Northeast Clean Energy Council's Grid Modernization Working Group, and the Massachusetts Global Warming Solutions Project.
- Advanced best practices for Commercial & Industrial (C&I) programs: NEEP has worked to understand and share best practices in policy and program design for large C&I users as a way to ensure that these customers see the value in efficiency programs. Disseminating SEE Action resources has been central to that effort, as we have done directly to state energy offices and program administrators (including Mass.) and in this recent blog. With the introduction of legislation that would permit large customer opt-out of Act 129 programs in Pennsylvania, NEEP provided informative resources that in-state allies shared in their outreach efforts. In October, we participated in a national strategy meeting aimed at keeping strong industrial efficiency programs and participation that was convened by the Energy Foundation in Washington, D.C.
- Ensured a strong role for energy efficiency in the Clean Power Plan: NEEP's Policy team continued to work closely with EM&V Forum staff and our advocacy allies around the country—particularly the other REEOs—to ensure that efficiency plays an important role as the US EPA finalizes guidelines for states as part of its Clean Power Plan under Section 111(d) of the Clean Air Act. NEEP is also active in discussions around the Regional Greenhouse Gas Initiative's 2016 Program Review process, which holds the potential to catalyze efficiency program implementation goals that reach beyond the EPA's Clean Power Plan.





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## **2015 NEEP SUPPORTERS**

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