



EEB Residential Committee Meeting
Wednesday, January 12, 2022 10AM - 12PM (Webinar Only)

Meeting Materials: <https://app.box.com/s/n1ozf4d8gb5kaukzp3w1h6bnnus7807t>

Minutes

1. Welcome – Amy McLean
 - a. Roll Call of Committee Members

Board members: Amy McLean, Brenda Watson, Kate Donatelli, Ron Araujo, Donald Mauritz
Other attendees: Alycia Jenkins, Bernard Pelletier, Blaine Fox, Dana Forrester, Devan Willemssen, Diane Del Rosso, Emily Rice, Giulia Bambara, Meghan O'Connor, Mike Uhl, Richard Faesy, Romilee Emerick, Carl R. Watts, Amanda Stevens, Amber McDonnell, Anne Hulick, Brendan Thomas, Damaris Velez, Dana Forrester, Emily Basham, Enoch Lenge, Glenn Reed, Jeff Howard, Joseph Roy, Joyce Chai, Julia Dumaine, Kathy Fay, Larry Rush, Leticia Colon de Mejias, Kara Marshall, Michael Cresta, Patrice Gillespie, Tasha Perreault, Pete Carlson, Richard Olisky, Rose Croog, Shubha Jaishankar, Stacy Sherwood, Stephanie Weiner, Tammy Wilson, Tanya Mulholland, Tim Fabuien, Violette Radomski, William Wesson
 - b. Meeting procedures and process update

Ms. Amy McLean reviewed the meeting procedures and process. These can be found in the [materials folder](#).
2. Approve 12/8/2021 Residential Committee Meeting Minutes

Ms. Brenda Watson motioned to approve and seconded the motion. There was no discussion. The motion to approve the December 8 Minutes was approved 2-0.
3. Public Input/Comments

Mr. Mike Uhl asked when attendees would hear from newly appointed Board members and whether they had been appointed yet. Ms. Amy McLean noted that decisions have been made and they will be announced later today. Mr. Richard Faesy indicated they would be announced at the EEB meeting later in the day.
4. Case Studies and Technologies
 - a. ComEd Heat Pump Pilot Case Study - CMC Energy Services

Mr. Richard Faesy introduced Mr. Blaine Fox, Vice President of Business Development for CMC. As we look towards decarbonization and other innovative technologies going forward, the Consultants and Board Leadership thought it would be helpful to get feedback, input, lessons learned from those in the field. These case studies will be presented regularly.

Mr. Fox introduced CMC. CMC employs 350 people serving eight states. CMC conducts 45,000 energy assessments a year. CMC has been a woman-owned business since the 70s. Mr. Fox's presentation centered on electrification, which has been a strategic initiative of CMC's for the past 3-4 years. The ComEd Heat Pump Pilot was conducted 2018-2019 and has since evolved into a full-scale program (2022-2026 of Douglas Heat Pumps). Additionally, Ameren Illinois will be facilitating 7,500 heat pumps. CMC is performing market research for NYSERDA around HVAC contracting and distribution value mapping.

The ComEd Heat Pump Pilot focused on the installation of Mitsubishi Hyper Heat ductless heat pump systems in multifamily properties. Target areas were rental or income-eligible neighborhoods. Eligible participants had electric resistance heat as primary heating source. Many customers were paying up to \$500 per month to heat their homes in cold months. The Pilot sought to determine how much better cold climate heat pumps would perform and if they

would displace electric resistance heat. Some other research questions included whether a full-scale program would be cost-effective, what the efficiency of heat pumps would be in real-world conditions, and how accepting of the technology property owners/managers would be. ComEd estimates that 50,000 customers meet the Pilot program's eligibility requirements (heating source, energy-burdened, etc.) and ultimately wanted to determine if a full-scale heat pump program would be feasible and effective.

The program was sponsored by ComEd's Emerging Technologies group and CMC was the primary contractor, but Franklin, Mad Dash and other contractors were employed to carry out the program. Systems were installed at the end of 2018 and measured throughout 2019 so AMI meter data could be compared to 2018. Mr. Fox shared the comments, summary, and executive report but offered the full report, including 102 pages of data, for those that are interested. These materials can be found in the [materials folder](#).

Program implementers provided education for the end users, as the controls and equipment looked quite different than existing systems. Ecobee4 thermostats and submetering were used so program implementers could access via a web portal to collect data anonymously on set points, indoor temperature, humidity, etc. Twenty of the 80 systems had a lock out control to inhibit electric resistance heat under certain circumstances.

In comparing data, CMC reviewed energy impacts, coefficient of performance (efficiency metric for heat pumps), and Seasonal Energy Efficiency Ratio. Additionally, CMC compared the actual results with the prescribed savings dictated by the Technical Reference Manual. ComEd wanted to determine how [Connecticut uses a Program Savings Document (PSD), which is similar. Both documents establish standardized energy efficiency calculations and savings for energy efficiency measures, and can be modified to fit the needs of a particular region, utility, etc. Oftentimes they are developed and driven by a regulatory process.]

During the program, the Polar Vortex brought extreme low temperatures to participants. Many of the homes targeted were cost-prohibitive during winter which caused high turnover and discomfort for occupants that couldn't afford to adequately heat their homes. Pilot participants, which included both property owners/managers and tenants, reported increased comfort with the new systems, lower energy bills (25% on average), improved vacancy rates.

Even though participation was free, it still took a bit of selling to convince property managers or owners to participate. Smaller property owners versus larger real estate management firms were more receptive of the program. A full-scale program will require a co-pay of 10%-25%, which could make the "sell" more challenging.

Mr. Fox shared some lessons learned. CMC learned that the installer selected is just as significant as the equipment itself. Also, given that the products contain valuable elements like copper and aluminum and outdoor units are relatively lightweight, so they chose to install security enclosures to protect from theft. Low-rise and mid-rise properties are ideal. A few apartments had two indoor units, which demonstrated less energy savings than apartments with one heat pump head. COPs were found to be lower than rated.

Ultimately CMC was impressed with the winter performance of the units. On the cooling side, energy costs increased in many cases because cooling capacity in the apartments was improved or added where it may not have been present before the heat pump was installed.

Ms. Brenda Watson asked what kind of training was needed for end users to operate the units. Mr. Fox said participants received a personal visit by an Energy Advisor that would review consumer materials and operational instructions. A hotline was provided to answer questions directly and a Program Manager was available as well. Maintenance staff and property owners/managers received tailored training as well so they knew what to expect, what was normal, etc.

Ms. McLean stated that this presentation was helpful. Mr. Fox shared that the summary includes design recommendations based on lessons learned; from selecting contractors to eligibility requirements. Mr. Ron Araujo asked if any units had air conditioning prior to

installing heat pumps. Mr. Fox said that a majority of units had air conditioning but the condition of the equipment varied. In many cases the air conditioning was not functioning or was poorly functioning. Mr. Araujo asked if the building envelope was evaluated and/or improved prior to installation. Mr. Fox said that the program focused on properties that had received weatherization measures like insulation and air sealing already. Mr. Fox also noted that the full-scale program requires that properties be weatherized and insulated prior to installation of the cold climate heat pump.

An anonymous attendee asked if the results presented were actual or theoretical. Mr. Fox reiterated that the results were of actual, measured AMI data over 12 months. Another anonymous attendee asked how CMC got participants to agree to data monitoring. Mr. Fox noted that the approach was “we are here to help” and reduce electric usage. CMC leveraged the trusted advisor role of the property manager or maintenance staff as a conduit for messaging. If customers pushed back, the property wasn’t selected. ComEd also has high cyber security requirements. Ms. Kate Donatelli asked if the customers have access to the web portal to understand their knowledge. Mr. Fox indicated that it was a portal for the program implementers, not end users. Mr. Fox offered hosting a Zoom meeting to answer any more questions.

DEEP asked about the rated efficiency from the heat pumps at low temps, did the equipment meet NEEP’s cold climate specifications? Mr. Fox referred to the full report for those details, but added that one of the recommendations for the full-scale program was to only include systems rated by NEEP at 5 degree outdoor temperature. An anonymous attendee asked if Mr. Fox could comment on any resistance from the property owner regarding maintenance issues. CMC emphasized to the owners that they would own the equipment at the end of the Pilot, but they would be responsible for maintenance going-forward. The HVAC contractor provided a 12-18 month warranty and the program offered training on maintenance, which includes cleaning of outdoor units and routinely changing filters. Property owners accepted those conditions given they were receiving a free capital improvement.

5. HES and HES-IE (One to Four Units) Participation Study – Eversource

Ms. Meghan O’Connor provided an overview of participation trends for Eversource electric’s single-family and 1-4 unit properties. Ms. O’Connor provided a map of customers Eversource serves, noted a majority are most everywhere except in UI’s territory along the LI Sound. Ms. O’Connor shared a map of DECD distressed municipalities Eversource serves. Eversource uses the distressed census tracts and the distressed municipalities list as a stand-in for environmental justice (EJ) communities. Ms. O’Connor acknowledged that some work is underway to define EJ communities for Connecticut. Ms. O’Connor shared a map of customer participation by area, highlighting that Hartford has the highest percentage.

Ms. O’Connor shared income distribution in Eversource territory. In the past, Eversource has considered moderate income as being 61 to 100% of state median income, and it was decided this past year to limit that to 61 to 80% of the state median income, which accounts for 6.3% of all Eversource customers and 7.2% of single-family customers.

Ms. O’Connor shared a graph of participation per year, by income-level for single-family customers. Participation waned in 2020 compared to 2019 but recovered in 2021. In distressed municipalities, Eversource wanted to better understand the participation by income-level. For example, 29.1% of income-eligible customers live in a distressed municipality while 38.6% of all participants live in a distressed municipality. Moderate and income-eligible customers are participating at higher rates in the distressed municipalities. Renters and owners also participate at higher levels in distressed municipalities.

In looking at fuel type participation, Eversource has some electric customers that are not gas customers. Because it cannot determine what the other fuel is, they are grouped as fossil fuel customers. Other fuel type refers to solar, wood, etc. and are a small percentage of customers. Regardless of fuel, participation is higher in distressed municipalities. Participation is greater for delivered fuel, moderate-to-high income customers. Ms. O’Connor noted this may be due to house location.

Eversource collected Experion data on spoken languages of participants, English versus non-English. The data doesn’t provide information on English fluency in non-English speaking homes. Regardless of

spoken language, participation was higher in distressed municipalities. Ms. O'Connor shared the top 10 most popular language (Spanish, Italian, French, Polish, Portuguese, Chinese, Vietnamese, German, Russian, and Urdu) and a map of locations where these languages are most common.

Ms. O'Connor compared Eversource participants with United Illuminating participants, noting that the distribution of housing size and age is similar in both territories. 1-3,000 square feet is the largest group for both utilities. 1950s to 1980s are the predominant age for both territories. In comparing heating fuel types, Eversource participants are predominately delivered fuel while United Illuminating is predominantly gas.

Ms. O'Connor shared more trends on housing stock, income distribution, and more. Her full presentation can be found in the [materials folder](#).

Mr. Faesy asked what the takeaways will be and how Eversource might make adjustments on program outreach and engagement with customers. Ms. O'Connor shared that Eversource has targeted outreach to distressed municipalities and that has been effective at driving participation. Ms. O'Connor added that Eversource is considering how to expand that targeting and who the targets should be. Ms. Diane Del Rosso indicated Eversource has been directly marketing to low-income customers for the last couple of years. Given some of the Compliance orders, that effort has increased. Ms. Del Rosso believes the new DEI Consultant can offer insight.

An anonymous attendee asked if low and moderate income participation is higher than other groups. Ms. O'Connor clarified that low and moderate income customers are participating at a higher rate than they are represented in the community. In other words, at a higher percentage than they are in that community. Another anonymous attendee asked how much of Eversource customers remain unaudited given this focused on participants. Ms. O'Connor said about 80% of customers remain unaudited.

6. Community Partnership Initiative – Companies

Ms. Devan Willemsen shared that Round 1 applications closed October 1 and 10 applications were received from project teams across the state. Projects focus on outreach efforts to increase participation in home energy solutions, income-eligible home energy solutions, residential rebates, installation, and heat pumps. Projects are in nine municipalities: Hamden, Middletown, West Hartford, Hartford, Branford, London, Bethel, Waterbury, and Wilton.

The Memorandum of Understanding (MOU) process is underway for all 10 proposed projects; 5 have been signed and returned so far. Orientations are in the process of scheduling as MOUs get signed. Companies will announce locations in a joint press release after MOUs have been signed and returned.

In considering Phase 2, the Companies will seek input from the DEI Consultant.

Ms. McLean asked if the projects have to be completed by a certain time. Ms. Willemsen said that the projects should be completed within a year. Ms. McLean asked if process delays would be a consideration in the next round. Ms. Willemsen said the Companies want to ensure that project teams are getting the most benefit in terms of time and resources in order to complete projects. Ms. McLean asked if there would be a progress report to the EEB or what kind of progress check-ins would be facilitated. Ms. Willemsen indicated that monthly SWOT analysis would be provided by teams and Ms. Willemsen should be able to provide updates anecdotally to the Board and Committee.

7. DEEP Legislative and Regulatory Updates:

a. 2022-2024 Plan

- Requests for Information
- Determination and Conditions of Approval

Ms. Giulia Bambara shared that DEEP is in the process of reviewing the proposed Plan. RFIs were sent to Companies before and after the Technical Meetings in November. The RFIs can be found on DEEPs [Filing page](#). DEEP issued an interim decision on December 22 approving the Budget of the proposed Plan. The interim decision does not cover the Text of the proposed Plan. The full Text of the Plan will be addressed in a future DEEP Determination that may be subject to Compliance Conditions.

The Draft Determination will be available for public comment before it is finalized.

b. Comprehensive Energy Strategy Scoping Notice

Ms. Giulia Bambara announced that DEEP issued the CES scoping notice for 2022. The scoping process was launched on January 6 of this year. The 2022 CES will build on and modify previous CES (the most recent 2018) as well as explore emerging issues. In the [Notice of proceeding](#), details for a Public Input Session on February 17 at 9AM and how to register can be found. Public comments will be accepted through March 3.

Ms. McLean asked for clarification of what DEEP is looking for from the public at the Public Input Session. The Notice solicits both oral and written comments. Ms. Kate Donatelli said she would check with her colleagues for more details, but did refer to the prompts in the Notice that outline the areas of focus DEEP is looking for input.

Ms. Brenda Watson asked if there would be coordination around the GC-3 Phase 1 Proceeding. Ms. Donatelli indicated that the Notice references other relevant state policy documents that will be considered.

Ms. McLean said this process is important for the Board and its work. The CES can impact the Board's work. Ms. McLean suggested that the Board should look at these different documents holistically.

c. Weatherization/Health & Safety Barriers Remediation RFP & Plans

Ms. Giulia Bambara shared that the RFP closed January 4 and proposals are currently under review. DEEP will provide updates when it can, but OPM rules restrict DEEP from sharing details until the process is complete.

d. CTAC

Ms. Giulia Bambara announced that the next meeting will be January 26 at 1PM. The meeting will focus on insulation and insulation guidelines. A contractor requested to review insulation guidelines, which are currently on pause due to this request. DEEP asked the Companies to review the guidelines.

e. WAP

Ms. Giulia Bambara shared that from July to November 2021 the Program has completed 55 units and there were \$748,000 in expenses. Production continues to be impacted by COVID, including delays or deferrals. DEEP is in the process of drafting an RFP for WAP providers and has started work on the 2022 program year form for funding application. DEEP is still waiting on guidance from DOE on the Infrastructure Investment and Jobs Act funding for WAP, which will inform how DEEP proceeds. Guidance has not been released by DOE yet.

Ms. Brenda Watson asked if Ms. Bambara had more details on the 55 units; multifamily or single family, were there remediation issues, etc. Ms. Bambara said she can get specific details from the WAP Lead Kyle Ellsworth.

8. Water Utility Coordination - Brenda Watson

Ms. Brenda Watson announced that a kickoff meeting was held with key players from the Water Planning Council, EEB Consultants, DPH representatives, Ms. McLean, and Ms. Watson. Discussion centered around existing barriers and potential goals of what an energy efficiency and water efficiency program would look like. Where funding would come from, how many households the program would serve, will there be a pilot first, and how will savings be tracked are a few details that were discussed. Next steps are to decide what other stakeholders should be engaged. Ms. McLean had suggested DEEP be included and the group agreed that water utility company representatives be included.

Ms. Watson indicated that a water-energy program would benefit homeowners and the entire state. Educating people on how to reduce water usage and how to address issues around health and safety barriers will be a useful function of a water-energy program.

Mr. Ron Araujo stated that it would be great to include the Companies on energy and energy improvement tracking. Mr. Araujo asked if the program would be statewide, given that water companies don't serve the entire state. Mr. Araujo asked how customers using well water would be handled. Mr.

Araujo commented that there are mechanisms in place for the electric and gas utilities, such as the conservation and adjustment mechanism (“CAM”), for the collection of the funds to implement these efficiency measures. Mr. Araujo commented on the decoupling issue of revenue loss associated with any type of savings. Mr. Araujo asked if the group was considering the items he shared. Ms. Watson said that the group is talking about the potential of coordinating some of these water utility companies. Ms. Watson suggested that some smaller companies be purchased by larger companies to improve coordination.

Regarding the well water homes, Ms. Watson shared that engaging these consumers is a challenge given that they do not have a water bill. For now, the group’s focus will be on customers connected to city or privately-owned water utilities. Ms. Watson said there is an opportunity to co-ordinate with the Water Planning Council on receiving federal funds dollars that can help offset some of these costs.

Mr. Araujo said the well water issue is analogous to the electric and gas companies engaging oil and propane customers on energy efficiency. There was no funding mechanism and the Companies utilized RGGI funds for that. Ms. Araujo commented that not all water companies are regulated either. Mr. Araujo said he would be happy to participate in the discussions. Ms. Watson appreciated Mr. Araujo’s comments.

Ms. Watson commented that the response may not be as equitable as desired in the beginning, but this is a starting point. Ms. Watson shared that the Green Bank has an environmental focus and could provide an opportunity for well water customers to receive low-interest financing to convert to city of private water.

Ms. McLean added that this issue is complicated, given the number of players. Ms. McLean noted that the DPH representative had years of experience and has been focused on water quality, which adds another element to this discussion. For example, some bacteria thrive under certain temperatures like legionnaires’ disease caused by Legionella bacteria. Ms. Watson added that education is needed across the board regarding this issue as many advocates want lower water temperatures for safety in the home, but this can increase their risk of contracting legionnaires’ disease. Due to a lack of co-ordination among the water utilities in the state and a lack of education and awareness on water use, how to reduce your water, and safe temperatures, there is a need for improvement.

Ms. Donatelli said that DEEP is happy to be involved and that there are some synergies between this area and weatherization barriers or New Portable Housing Retrofit programs. Ms. Watson thanked the Consultants, Ms. Donatelli, and Ms. McLean for their support.

9. Agenda items for future Residential Committee meetings

- a. End of Year/Q4 Report & Home Energy Score Deep Dive (February) - Companies
- b. HVAC Contractor Training and Certification Plans - Companies
- c. Low Income Deep Dive (WAP and HES-IE Coordination) – (DEEP)
- d. Program QA/QC Processes and Results (HES, HES-IE, HVAC, MF) (March) - Companies
- e. Concierge Services Offering - Companies
- f. DEI Consultant Engagement and Recommendations
- g. Defining “Weatherization” for Connecticut
- h. Case Studies and Technologies Topic Ideas
 - Water heating in multifamily buildings and homes (February)
 - Maine heat pump experience and insights
 - Heat Pump Standards – NEEP, ENERGY STAR, 47/17 Ratio
 - ENERGY STAR Home Upgrade
 - Zero Energy Now program
 - Passive House/All-Electric New Construction
 - Aligning programs with state goals

Ms. Diane Del Rosso shared that the Companies will be doing the end of year Q4 Report which includes a quarterly update on the home energy score activity in February. DEEP has asked the Companies to include details of the history of the home energy score in the quarterly report. Ms. Del Rosso proposed that we have a second topic that goes through the historical update of the home energy score. Mr. Faesy clarified that Ms. Del Rosso is suggesting having a report out for activities that happened last year,

separate from a Deep Dive into the home energy score, and some backgrounds. Mr. Faesy said the Committee can certainly do that.

Mr. Bernard Pelletier asked if the heat pump topic could include sizing, selecting heat pumps. Mr. Pelletier also suggested that a definition for weatherization is needed in the state.

10. Public Comments

Ms. Alycia Jenkins, Sierra Club, shared a [study conducted](#) with Trinity College around energy burdened areas. The project documented how energy burden is affecting people through words and photos. The project humanized a topic that is typically reduced to data and numbers. Students interviewed experts and residents. Ms. Watson said the work is compelling and she looks forward to learning more. Ms. McLean suggested a presentation on the project at a future Committee meeting and possibly EEB meeting.

11. Adjourn

Ms. Watson motioned to adjourn; Ms. McLean seconded the motion. The meeting was adjourned.