

To: Burlington Electric Department  
From: Meister Consultants Group, A Cadmus Company (MCG-C)  
Date: February 21, 2018  
Re: Summary of Burlington City-Industry Building Electrification Initiative Workshop

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## 1. OVERVIEW AND KEY FINDINGS

On Monday, February 12<sup>th</sup>, 2018, representatives from the Burlington Electric Department (BED), Mitsubishi Electric, Efficiency Vermont, and local HVAC and weatherization experts convened in Burlington to foster a public-private collaboration to implement that Carbon Neutral Cities Alliance (CNCA)-funded City-Industry Building Electrification Initiative. Key meeting goals and outcomes include:

- Refining the design for an electric heating and cooling and weatherization pilot program that will meet customer heating and cooling needs, save customers money, and further BED's net zero energy strategy.
- Gathering feedback from heat pump and weatherization experts on proposed program design, insights on successful elements of program design, and buy-in for program participation.
- Identifying new working relationships between local contractors, manufacturers and distributors, weatherization experts, and BED.
- Identifying opportunities for BED to leverage industry expertise and resources for pilot program implementation.

During the workshop, stakeholders discussed the specifics of the Burlington market and key program elements, working to refine the pilot program design. Key conclusions for designing and implementing a 2018 pilot program include:

- BED will review program options discussed and make program design decisions. As lead program implementer, BED will set direction of the campaign and have others collaborate accordingly. Stakeholders discussed the options available to BED for different elements of the program, leaving BED to review options and evaluate which fit best with existing regulations and strategic direction.
- Stakeholders reached agreement about key program themes. Nearly all stakeholders agreed that the program should be as simple as possible to encourage accessibility. Additionally, stakeholders supported the idea of meeting the customer wherever they are in the heating improvement process (i.e. heat pumps before weatherization), and supporting them to create a long-term plan for home efficiency. There was strong support for having a single-point-of-contact that can consult homeowners throughout this process.
- Education throughout the market is needed to expand heat pump installations and improve technology performance. Stakeholders broadly emphasized the need for education throughout the market, including distributors, contractors, maintenance/repair shops, landlords, rental managers,

heat pump owners. In particular, education for system owners and contractors about technology controls are needed to improve heat pump efficiency gains.

- Heat pump contractors provided insight into the Burlington market. Heat pump contractors said that numerous factors currently drive a homeowner to install a heat pump, including emissions reduction, home comfort, economics, solar compatibility and more (see pg. 6 for more information). According to contractors, this decision is driven by non-economic factors for most homeowners. Additionally, contractors are seeing an increase in total installation size, a trend some expect to continue.

To further refine campaign design, BED will review the program options discussed and make decisions regarding the key program elements summarized below:

Program Element	Options
Target audience. What is the target audience(s) of the program?	<p>Unregulated fuel customers: BED targets the 1,200 single family oil and propane customers with an education and marketing campaign.</p> <p>Broader customer segment: BED expands program to a greater customer segment (e.g. all single-family residential homes) for an educational campaign (maybe a marketing campaign depending on incentive eligibility – see below).</p> <p>Mix: BED targets the 1,200 customers with educational/marketing campaign and the broader customer segment with an educational campaign.</p>
Incentive eligibility. Who is eligible for the CNCA-funded incentives?	<p>Unregulated fuel customers: Only customers who can save money with a heat pump are eligible for incentive funds.</p> <p>Broader segment: BED expands eligibility to either a larger subset of customers or all customers.</p>
Incentive structure and recipient. How will heat pump and weatherization incentives be structured?	<p>Flat structure: Incentives for heat pump and weatherization are independent from one another.</p> <p>Tiered/bundled structure: Incentives for heat pump and weatherization are bundled such that customers benefit most from doing the upgrades together (this idea had support from many stakeholders).</p> <p>Incentive recipient: Will the homeowner or contractor receive the incentive?</p>
Marketing resources. Who will contribute resources to marketing campaign?	<p>BED: Marketing team can distribute e-mailings, direct mailings, content creation, etc. to customer base.</p> <p>Mitsubishi: Contributes online awareness and lead generation marketing and “Diamond Dealer” joint marketing budget. Can also contribute templates for educational/awareness materials for BED to adapt to meet needs.</p> <p>Efficiency Vermont: Contributes joint marketing budget for “Efficiency Experts”</p>
Roles and responsibilities. What role will each	<p>Option one: BED distributes educational materials; Mitsubishi distributes awareness/educational materials and marketing materials. Messages of materials are aligned (to the extent possible given format).</p>

<p>organization play in campaign?</p>	<p>Option two: Same as option one except that BED distributes both educational and marketing materials.</p>
<p>Marketing messages. What will be the core message(s) of the campaign?</p>	<p>Several marketing messages/themes were discussed by stakeholders, and can be implemented independently or in combination with one another. Options include:</p> <p>Educational: Information about how heat pumps work, cost, pros and cons of technology, available incentives, etc.</p> <p>Get off fossil fuel: Campaign around getting off fossil fuels for heating, with heat pumps as an option. This could be combined with a four-step home electrification initiative similar to the Radiant roadmap (solar, heat pump, electric vehicle, and efficiency).</p> <p>All-electric heating: Campaign around an all-electric heating system, with heat pumps as primary heating source and electric resistance as the backup.</p> <p>Early retirement program: Encourage early retirement of current heating systems and transition to heat pumps. (This addresses the urgent/emergency replacement challenge identified by stakeholders).</p> <p>Other: Review list of key selling points identified by contractors (see notes below) and customize marketing messages to fit current market drivers.</p>
<p>Lead management. Where will BED direct leads gained through campaign?</p>	<p>BED:</p> <ul style="list-style-type: none"> <li>● Efficiency Vermont list: BED uses pre-vetted contractor list of Efficiency Vermont "Efficiency Experts" serving Burlington area.</li> <li>● Other: BED independently builds a list of qualified contractors for heat pump installations and weatherization.</li> </ul> <p>Mitsubishi: Mitsubishi directs campaign leads to Diamond Dealers servicing Burlington area.</p> <p>Efficiency Vermont: Efficiency Vermont directs campaign leads to "Efficiency Experts" servicing Burlington area.</p>
<p>Timeline. When will partners collaborate to launch campaign?</p>	<p>Spring campaign: BED launches a spring cooling campaign in concert with Mitsubishi and Efficiency Vermont that launches in May (home improvement month).</p> <p>Fall campaign: BED waits until the fall to launch a heating campaign and uses the additional time to prepare program specifics and potentially expand home energy advisor concept. Mitsubishi may or may not launch spring campaign.</p> <p>Spring and fall campaigns: BED uses lessons from smaller spring campaign to inform larger fall campaign.</p>
<p>Training and education. How will stakeholders collaborate to educate the market?</p>	<ul style="list-style-type: none"> <li>● Stakeholders supported BED's concept of a home energy advisor/single-point-of contact to support decision-making</li> <li>● Additional planning needed to leverage education resources of Mitsubishi (particularly with contractor training) and Efficiency Vermont</li> </ul>

Financing and audit. BED must address the following contractor questions.	<ul style="list-style-type: none"> <li>○ How will BED’s financing package be structured?</li> <li>○ How will credit for audit be given? Direct to homeowner or to contractor?</li> <li>○ Who will conduct the audit? BED or contractor?</li> <li>○ Will audit only be free if customer moves ahead with heat pump or weatherization?</li> <li>○ Will homes be prioritized for auditing? (e.g. high-intensity homes)</li> </ul>
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At the workshop conclusion, stakeholders agreed on the following key next steps for program implementation:

- MCG-C summarizes notes and key program decision points for BED
- BED meets internally to refine program design, resolve key program design questions, and create draft program plan
- Following program revision, BED and Mitsubishi meet to discuss partnership opportunities

The following sections provide a summary of the workshop discussion. These notes are supplemented by Appendix A: Workshop Agenda, and Appendix B: Workshop Attendees.

## 2. SUMMARY OF WORKSHOP DISCUSSION

### 2.1 CONTRACTOR SESSION SUMMARY

#### 2.1.1 BED Program Introduction

*BED introduced the Burlington’s heating market and program concept to all attendees. The table below is intended to supplement BED’s presentation.*

Topic Area	BED Presentation & Program Proposal
Burlington context and market condition. BED summarized the unique conditions of Burlington’s market that need to be managed for in a pilot program.	<ul style="list-style-type: none"> <li>○ Small city of only 42,500 residents has little room for large-scale market growth</li> <li>○ Old housing stock – many homes require weatherization for a heat pump to be the sole source of heating</li> <li>○ High penetration of natural gas (about 90% in residential market and 99% in commercial market) makes ASHP not economically beneficial for most buildings</li> <li>○ 60% of residents are renters, leading to split incentives (and there are low vacancy rates, so little incentive for landlords to improve properties)</li> <li>○ There is a high rental turnover rate of 35% each year (largely due to UVM students), reducing the number of long-term renters</li> <li>○ There are a few large rental property owners of ~100 homes, but rented homes are mostly owned by people who live in and around Burlington</li> <li>○ BED has a low number of cooling hours, as &lt;5% of homes have central A/C (a greater percentage have window units)</li> <li>○ 12-15% of BED customers are low to middle-income</li> </ul>

	<ul style="list-style-type: none"> <li>⦿ BED is restricted by regulatory mandate as an investor-owned utility, so must act in the best interest of rate-payers (including the cost-savings test)</li> </ul>
Program goals and benefits.	<ul style="list-style-type: none"> <li>⦿ Advance BED net-zero energy strategy</li> <li>⦿ Test/pilot a strategic electrification strategy</li> <li>⦿ Decrease use of fossil fuels</li> <li>⦿ Deliver value to BED customers</li> <li>⦿ Refine message for larger campaign</li> </ul>
Program target. BED's proposed target population for pilot program.	<ul style="list-style-type: none"> <li>⦿ Focus on 1,200 single-family residential buildings that use high-cost unregulated fuels (i.e. oil and propane) for heating; only these customers will be eligible for weatherization and heat pump incentives</li> </ul>
Program strategy.	<ul style="list-style-type: none"> <li>⦿ Start with a displacement strategy targeting 60-70% of building heating load.</li> <li>⦿ Encourage weatherization but do not require it for heat pump installations.</li> <li>⦿ Work toward providing property energy plans that help customers get on a pathway for continuous home improvement.</li> </ul>
Incentives, home audit and financing.	<ul style="list-style-type: none"> <li>⦿ Proposed heat pump incentive: \$975 for single zone system and \$1250 for multi-zone system (BED plus Efficiency VT incentives).</li> <li>⦿ Heat pump incentive available only to those on unregulated fuels or electrical resistance.</li> <li>⦿ For weatherization, BED plans to offer free audit and cover one third of the cost (owner-occupied) and one half of the cost for rental properties.</li> <li>⦿ Potentially tier/bundle incentives to encourage simultaneous weatherization and heat pumps.</li> <li>⦿ BED will offer financing offers similar to the Heat Saver Loan Structure.</li> </ul>
Customer education.	<ul style="list-style-type: none"> <li>⦿ Heat pump education is important to drive installations, and are interested in supporting education efforts</li> <li>⦿ Interested in energy improvement program that provides a homeowner with a single point of contact/advisor to support long-term, continuous improvement</li> </ul>

### 2.1.2 Contractor Discussion

MCG facilitated a discussion with the heat pump and weatherization contractors in the room to receive feedback on key program elements. The table below summarizes input from this conversation:

Topic Area	Discussion
Heat pump installation drivers. This list of drivers is a starting point for BED and Mitsubishi	<ul style="list-style-type: none"> <li>⦿ Contractors listed a variety of reasons why customers choose to install heat pumps, but agreed that economics are rarely, if ever, the primary driver. Key drivers include: <ul style="list-style-type: none"> <li>• Environmental concerns and emissions reduction</li> <li>• Home comfort and room temperature control</li> <li>• Efficient cooling</li> <li>• Savings and economics</li> </ul> </li> </ul>

to refine key selling points	<ul style="list-style-type: none"> <li>• Dependability</li> <li>• Solar compatibility (some solar installers recommend heat pumps as a pairing technology)</li> <li>• Energy efficiency</li> <li>⦿ Contractors also noted that there are different drivers for different customer segments (e.g. young versus old, solar owner versus others, etc.)</li> </ul>
Current heat pump market. Contractor's summary of recent installations	<ul style="list-style-type: none"> <li>⦿ Primarily single-zone systems with wall mounts</li> <li>⦿ Some two- and three-zone systems with wall mounts</li> <li>⦿ Market has been moving toward larger heat pump installations (\$15,000 – 20,000) in the past year, and some expect that trend to continue</li> <li>⦿ Primarily installed for heating (many customers are not even aware of cooling ability)</li> </ul>
Program goals and benefits. In addition to those identified by BED	<ul style="list-style-type: none"> <li>⦿ Test various strategies and learn lessons for future campaigns (in Burlington and elsewhere)</li> <li>⦿ Possibility to reduce summer peak electricity demand for BED?</li> </ul>
Program target	<p>Stakeholders had extensive discussion about whether the program target should be expanded:</p> <p><i>Broaden scope of program:</i></p> <ul style="list-style-type: none"> <li>⦿ Stakeholder emphasized that it is a lot of time and money to invest in a very small target audience; if BED has larger-scale program in mind it would benefit from spreading (at least) the education materials more widely than the 1,200 high-potential customers</li> <li>⦿ Some stakeholders also suggested that incentives should be expanded beyond unregulated fuels and electric resistance customers; this would allow customers to make their own heating decisions (balancing economics, environmental values, comfort, etc.); BED described that it is restrained by cost-effectiveness screening.</li> </ul> <p><i>Offer weatherization incentive to all customers:</i></p> <ul style="list-style-type: none"> <li>⦿ Some stakeholders suggested that BED should expand weatherization availability; BED noted that Vermont Gas has a successful weatherization program that services the remainder of the market</li> </ul> <p><i>Rental properties:</i></p> <ul style="list-style-type: none"> <li>⦿ Stakeholders were interested if the rental market could be explored through the pilot, referencing that heat pumps can help landlords divide utility bills between different tenants, potentially helping to navigate the split incentive</li> <li>⦿ BED said that most landlords are not incentivized to invest in their property, that 90% of rental homes are natural gas already, and that few are centrally heated; BED inclined to skip the rental market for the pilot program</li> </ul>
Early retirement campaign	<ul style="list-style-type: none"> <li>⦿ Several stakeholders (led by Mitsubishi representatives and supported by contractors) emphasized that homeowners typically only replace their heating system when it fails (i.e. emergency or urgent replacement). In these circumstances, it is difficult to</li> </ul>

	<p>convince them to convert to a new technology. To support heat pump conversion, these stakeholders suggested launching an “early retirement” program/marketing campaign to convince homeowners to proactively install a heat pump system</p> <ul style="list-style-type: none"> <li>⦿ Other stakeholders questioned whether heat pumps can serve as the sole heating source and, if not, the viability of convincing homeowners to install two new systems in a short period</li> </ul>
All-electric campaign	<ul style="list-style-type: none"> <li>⦿ Some stakeholders suggested launching a complete electrification initiative (i.e. installing electric resistance as the back-up for heat pumps)</li> <li>⦿ BED and others suggested that this program would likely need to be combined with weatherization to be feasible for most households</li> </ul>
Incentives, home audit, and financing	<ul style="list-style-type: none"> <li>⦿ Contractors supported home energy audit and emphasized importance of seeing what works for the specific house. They were interested in how the home energy audit will be structured, including:             <ul style="list-style-type: none"> <li>• Who will do the audit? (BED or contractor) – contractors prefer to do the audit</li> <li>• How will audit be financed? Direct to homeowner or contractor reimbursed</li> <li>• Is audit free or only free if homeowner moves forward with weatherization/heat pump?</li> <li>• How/if homes be prioritized for energy audit (e.g. high-intensity given preference?)</li> </ul> </li> <li>⦿ Contractors generally supported the concept of an incentive structure that encourages weatherization but nearly all agreed that weatherization should not be required.</li> <li>⦿ Contractors were interested in how incentives will be delivered (to customer, to contractor, etc.)</li> <li>⦿ Contractors suggested that incentives should be offered on <i>time-limited basis</i>, to encourage customers to act</li> </ul>
Education on heat pumps	<ul style="list-style-type: none"> <li>⦿ Stakeholders repeatedly emphasized the need for education of all parties on heat pumps, including customers, contractors, landlords, rental property managers, existing heat pump owners</li> <li>⦿ Existing owners need to be educated on how to efficiently use the technology (i.e. control best practices) so that heat pumps achieve efficiency savings</li> <li>⦿ Strong support for a single point of contact that can provide education and consultation on options to customer</li> </ul>
Other	<ul style="list-style-type: none"> <li>⦿ Mitsubishi stakeholder asked if BED would consider offering a heat pump electricity rate to make the technology more competitive – BED said that any such rate must be in the best interest of rate payers to be approved.</li> <li>⦿ Contractor described the need for increased repair/servicing capacity in the Burlington market</li> <li>⦿ One stakeholder interested in having a demonstration project for air to water heat pump system</li> </ul>

## 2.2 PROGRAM PLANNING SESSION

### 2.2.1 Introductions

Stakeholders from the program planning session reintroduced themselves, describing goals, concerns, and competencies to contribute to program.

Stakeholder Group	Goals, Concerns, Core Competencies and Other Notes
BED	<ul style="list-style-type: none"> <li>Goal to remain trusted advisor to customers – concerned about overselling or overpromising on new technology</li> <li>Concerned about aligning regulatory framework with organizational strategic direction</li> <li>Need for customer education on how to operation the technology (recent evaluation did not have good results for heat pumps, but that may be education-related)</li> <li>Excited to have people in room to create program skeleton</li> </ul>
Mitsubishi	<ul style="list-style-type: none"> <li>Mitsubishi can offer marketing support – both online and direct to contractors – and extensive contractor training and coaching</li> <li>Concerned about high natural gas penetration in market and how to make heat pumps competitive</li> <li>Excited to work toward implementation of spring campaign</li> </ul>
Efficiency Vermont	<ul style="list-style-type: none"> <li>Long-term experience in HVAC for residential and commercial</li> <li>Interested in building a simple program that is sustainable over the long-term</li> <li>Concerned that the program will try to solve complex problems with money, but that is not the solution</li> </ul>
VCSEU	<ul style="list-style-type: none"> <li>Interested in partnering to design a simple program that meets member fiduciary responsibility</li> <li>Thinks weatherization will be important, but also need to meet customer where they enter the process</li> </ul>
Energy Co-Op of Vermont	<ul style="list-style-type: none"> <li>Organization is member-owned and works to help members reduce energy consumption</li> <li>Likely has about 200 of 1,200 oil and propane customers in Burlington</li> </ul>

### 2.2.2 Mitsubishi Presentations

The table below summarizes the four presentations given by Mitsubishi representatives.

Topic Area	Discussion
Market context	<ul style="list-style-type: none"> <li>Vermont heat pump market is estimated at \$13-17 million and is expected to grow 20% in 2018</li> <li>Mitsubishi has 39% market share in state and is growing faster than competitors in the northeast market</li> </ul>



	<ul style="list-style-type: none"> <li>Efficiency Vermont rebates increased 90% last year, driven partially by partnerships with solar installers and simplicity of rebate</li> <li>Mitsubishi has ten Diamond Contractors that serve the Burlington area (and others that sell its products) and four points of distribution in the area</li> </ul>
Contractor training	<ul style="list-style-type: none"> <li>Mitsubishi consistently working to grow contractor network by cultivating existing network and developing new contractors</li> <li>Host two-day classes training contractors on proper installation and proper service</li> <li>Looking to expand events, mobile events, and e-learning offerings</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>Mitsubishi proposes to support pilot through two-stage campaign:             <ul style="list-style-type: none"> <li>Brand Awareness Advertising (March-June): focus on customer education and technology awareness</li> <li>Lead Generation Advertising (April-June): direct to micro-site that will make customer a lead</li> </ul> </li> <li>Focus for spring-summer season will be on cooling, followed up by a fall campaign focused on heating</li> <li>Planning to track sales per lead for different methods and then refine strategy accordingly for fall campaign</li> <li>Mitsubishi takes a generational approach to marketing by identifying the interests and habits of different customer segments: Millennials, Gen X, and Baby Boomers</li> <li>Strategy is to focus both on current homeowners and the homeowners ahead and the challenge that awaits</li> </ul>
Technology future	<ul style="list-style-type: none"> <li>Mitsubishi is about to release the Kumo station, which automates controls for heat pump and backup system to help heat pump work at highest efficiency</li> <li>Increasing focus on multi-room solutions and development of apps that support deployment (oriented toward either customers or contractors)</li> <li>As northeast becomes bigger market, Mitsubishi working to design lower-temperature models</li> <li>No current plans to use alternative refrigerants</li> </ul>

### 2.2.3 Program Design

MCG facilitated a conversation with stakeholders on key program topics. Input is summarized in the table below:

Topic Area	Discussion
Program structure/themes. These are points of agreement from the morning conversation that can be used as a starting point for the	<ul style="list-style-type: none"> <li>Running a pilot program that can scale to larger initiative (and learn lessons from pilot program that will support larger initiative)</li> <li>Decrease fossil fuel usage/decarbonize the residential sector (and then the commercial sector)</li> <li>Keep the program details simple to increase accessibility</li> <li>Start a conversation with customer on their heating and cooling options and the cost of each option</li> </ul>

afternoon conversation.	<ul style="list-style-type: none"> <li>Meet the customer wherever they come into the home energy improvement process, and help them along in this process (e.g. encourage home weatherization, but do not require that each customer start with weatherization)</li> </ul>
Target audience.	<ul style="list-style-type: none"> <li><i>Option One:</i> 1,200 unregulated fuel oil customers previously identified by BED</li> <li><i>Option Two:</i> Greater segment of BED's customers TBD (e.g. single-family residential customers of all fuel types)</li> <li><i>Option Three:</i> Mixture of options one and two – unregulated fuel customers are eligible for the incentive, but all customers are targeted for marketing and education materials</li> <li>To achieve decarbonization goals, over the long-term BED will need to include natural gas customers in discussion and programming</li> </ul>
Marketing resources and strategy	<p><i>BED</i></p> <ul style="list-style-type: none"> <li>Considered a trusted advisor by customers</li> <li>Response rates that are much higher than industry average (10% for a typical program and 30% for highest program)</li> <li>Best-suited for impartial educational materials to customers</li> </ul> <p><i>Mitsubishi</i></p> <ul style="list-style-type: none"> <li>Experience designing and implementing campaigns</li> <li>Resources to deliver to online brand awareness and marketing campaign</li> <li>Cooperative marketing budget for Diamond Contractors</li> <li>Best-suited for brand awareness and lead-generating campaign</li> </ul> <p><i>Efficiency Vermont</i></p> <ul style="list-style-type: none"> <li>Cooperative marketing budget for Efficiency Experts</li> </ul>
Marketing messages	<ul style="list-style-type: none"> <li>Agreement that all entities should be aligned on message to maximize the impact of campaign</li> <li>Simple educational materials about heat pumps that are impartial (e.g. describe pros and cons of technology) – BED can be transparent that heat pumps will not necessarily reduce heating costs, but will deliver other benefits</li> <li>Get off fossil fuels campaign – use customer motivation to drive improvement process</li> <li>Include heat pumps as part of a four-step home electrification process similar to the Radiant Labs Model (includes solar, efficiency, heat pumps, and electric vehicles)</li> <li>Some stakeholders suggested that a cooling campaign could be effective; however, others noted that heat pumps are a very expensive alternative to window shakers</li> <li>Cost of ownership message?</li> <li>Also refer to market drivers identified by contractors in the morning conversation</li> </ul>
Marketing roles	<ul style="list-style-type: none"> <li>BED: educational materials as trusted advisor; potentially include as part of a "Renewable Living" campaign; spread message to all customers and potentially target 1,200 unregulated fuel customers with mailings</li> <li>Mitsubishi: brand awareness and lead generation campaign; working directly with Diamond Contractors to develop leads</li> <li>Efficiency Vermont: cooperative marketing budget with Efficiency Experts</li> </ul>

Incentive	<ul style="list-style-type: none"> <li>⦿ BED to decide if incentive will only be available to unregulated fuel customers or if they will open to more customers (e.g. tie incentive to doing both heat pump and weatherization)</li> </ul>
Lead management	<ul style="list-style-type: none"> <li>⦿ BED: educational materials will create a customer contact and potentially an energy audit, which leads to a home visit – who will BED refer homeowners to for the service? Potential to use Efficiency Vermont list</li> <li>⦿ Mitsubishi: leads through campaign will go to Diamond Dealers servicing Burlington area</li> <li>⦿ Efficiency Vermont: leads generated will go to Efficiency Experts list</li> </ul>
Outcomes of marketing. How to measure success?	<ul style="list-style-type: none"> <li>⦿ Educational campaign: will need to create a metric for brand awareness</li> <li>⦿ Marketing campaign: number of leads generated</li> </ul>
Timeline	<ul style="list-style-type: none"> <li>⦿ Mitsubishi potentially to launch awareness campaign from March-June and lead generation campaign from April – June</li> <li>⦿ BED could align campaign with home improvement month in May</li> <li>⦿ Potential to wait until Fall to launch a heating campaign</li> </ul>
Training and education	<ul style="list-style-type: none"> <li>⦿ Stakeholders did not discuss specifics, but broadly agreed that market education is a key need</li> <li>⦿ Support for a BED program that would provide homeowners with a single-point-of contact to guide a home improvement process</li> </ul>
Lingering challenges and concerns	<ul style="list-style-type: none"> <li>⦿ Regulatory framework remains a challenge, specifically cost-benefit analysis tests for BED</li> <li>⦿ Recent study diminished the amount of fossil fuel savings that BED can claim for ASHP</li> <li>⦿ Potential to use CNCA funds/tier three funds to incentivize outside of CBA</li> <li>⦿ Concerned about messiness of the regulatory environment and the arbitrary boundaries for incentive eligibility</li> <li>⦿ Concerns about the need to develop a broad and more coherent building energy strategy or for BED to develop net-zero/strategic electrification strategy</li> </ul>

# APPENDIX A: WORKSHOP AGENDA

## City-Industry Building Strategic Electrification Initiative | Burlington Workshop

Monday, February 12, 2018 | 8:30 am – 4:30 pm  
Burlington Electric Department Auditorium

### Meeting Goals & Outcomes

- Refine the design for an electric heating and cooling and weatherization pilot program that will meet customer heating and cooling needs, save customers money, and further BED's net zero energy strategy
- Gather feedback from heat pump and weatherization experts on proposed program design, insights on successful elements of program design, and buy-in for program participation
- Identify new working relationships between local contractors, manufacturers and distributors, weatherization experts, and BED
- Identify opportunities for BED to leverage industry expertise and resources for pilot program implementation
- Foster new connections, gain valuable perspectives from attendees, and have fun!

### Participants

Participants includes representatives from:

- Local heat pump installers and weatherization experts
- Burlington Electrical Department
- Mitsubishi Electric
- Meister Consultants Group, A Cadmus Company

### Agenda:

#### Part 1: Contractor Workshop

<b>8:00 am to 8:30 am</b>	<b>Breakfast and Networking</b> Participants arrive for the event, enjoy breakfast, and network.
<b>8:30 am to 8:35 am</b>	<b>Welcome and Vision</b> Darren Springer and Chris Burns, BED
<b>8:35 am to 8:50 am</b>	<b>Introductions and Morning Session Summary</b> Neil Veilleux, MCG Introduction from all participants: <ul style="list-style-type: none"><li>• What is your name, organization, and role at the organization?</li><li>• What is your experience in the heating and cooling field, esp. related to weatherization and/or ASHPs?</li></ul>
<b>8:50 am to 9:20 am</b>	<b>Pilot Program Background and Overview</b> Chris Burns and Jennifer Green, BED

BED presents on:

- Program background and market context
- Pilot program concept and framework

**9:20 am to 10:20 am**

**Contractor Reactions and Discussion**

MCG (facilitation)  
Industry experts discuss

**10:20 am to 10:30 am**

**Conversation Close and Next Steps**

Neil Veilleux, MCG  
Chris Burns, BED

**Part 2: Detailed Program Design Planning**

**10:40 am to 11:10 am**

**Workshop Reset, Agenda Overview, and Reintroductions**

Neil Veilleux, MCG

Reintroduction from all participants:

- What is your role and responsibilities at your organization?
- What are your core competencies that you can contribute to this program?
- What are you excited about and what are you concerned about?

**11:10 am to 12:00 pm**

**Mitsubishi Presentations**

Mitsubishi presents on:

- State of the Market
- HVAC Marketing
- Contractor Development
- Future of Cold Climate Technology

**12:00 pm to 1:00 pm**

**Working Lunch: Review of Contractor Conversation**

MCG (facilitation)

**1:00 pm to 3:45 pm**

**Program Implementation Collaboration**

MCG (facilitation)

All discussion

Conversation topics:

- 1) Marketing and Outreach
- 2) Contractor engagement and training
- 3) Financial support

15-minute break during this extended conversation

**3:45 pm to 3:50 pm**

**BREAK**

All take 5-minute break.

**3:50 pm to 4:30 pm**

**Review and Next Steps**

Neil Veilleux, MCG (review)

Chris Burns, BED (workshop close)

# APPENDIX B: WORKSHOP ATTENDEES

Organization	Name and Title	Contact Information
<i>All-Day Participants</i>		
Burlington Electric Department	Chris Burns, Director of Energy Services	<a href="mailto:cburns@burlingtonelectric.com">cburns@burlingtonelectric.com</a>
	Jennifer Green, Sustainability Coordinator	<a href="mailto:jgreen@burlingtonelectric.com">jgreen@burlingtonelectric.com</a>
	Bryan Reilly, Residential Energy Services Specialist	<a href="mailto:breilly@burlingtonelectric.com">breilly@burlingtonelectric.com</a>
	RATES	
	Desire? Marketing	
Mitsubishi Electric	Eric Dubin, Sr. Director Utilities and Performance Construction	<a href="mailto:edubin@hvac.me.com">edubin@hvac.me.com</a>
	Patty Gillette, Senior Marketing Manager	<a href="mailto:pgillette@hvac.me.com">pgillette@hvac.me.com</a>
	Carney Daley, Marketing Manager	<a href="mailto:Cdaley@hvac.me.com">Cdaley@hvac.me.com</a>
	Dave Hazell, Business Unit Sales Manager	<a href="mailto:dhazel@hvac.me.com">dhazel@hvac.me.com</a>
	Mike Gamberoni, Residential Area Manager	<a href="mailto:mgamberoni@hvac.me.com">mgamberoni@hvac.me.com</a>
	Rick Nortz, Area Manager	<a href="mailto:rnortz@hvac.me.com">rnortz@hvac.me.com</a>
Efficiency Vermont/VEIC	Jake Marin, HVAC Program Manager	
Energy Coop of Vermont	Brian Gray	
Vermont State Employees Credit Union (VCSEU)	Laurie Fielder	
Meister Consultants Group, A Cadmus Company	Neil Veilleux, Principal (lead facilitator)	<a href="mailto:neil.veilleux@mc-group.com">neil.veilleux@mc-group.com</a>
	Jamie Daudon, Research Analyst	<a href="mailto:james.daudon@mc-group.com">james.daudon@mc-group.com</a>
<i>Contractor Session Participants</i>		
Vermont Energy	Mark Stevens	
Building Energy	Nick Ponzio	
Chuck's Heating and Air Conditioning	Brad Brewster	
Supply...	Esther Heady	
	Paul Sheckl	
Champlain...	Brian Coster	
Vermont Heat Pump	Pat Perry	
Building Energy	Russ Flanigan	

	Mike Giffort	
Vermont Gas		