

# Vermont Climate Council

Building the Climate  
Action Plan

Initial Suite of Actions

Cross-Sector Mitigation  
Subcommittee

Buildings/Thermal  
Discussion Leads

Christine Donovan and  
David Farnsworth

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# Subcommittee Members and Staff Support

1. Christine Donovan  
CT Donovan Associates, Inc.
2. David Farnsworth  
Regulatory Assistance Project
3. Brian Woods  
Air Quality and Climate Division, DEC



# Process to Date

1. Reviewed prior Climate Action Reports  
– VT and elsewhere
2. Obtained input from experts in thermal energy use in buildings:

AIA-VT Policy Committee

Efficiency Vermont

Weatherization Providers

Weatherization at Scale Working Group

Clean Heat Standard Action Team

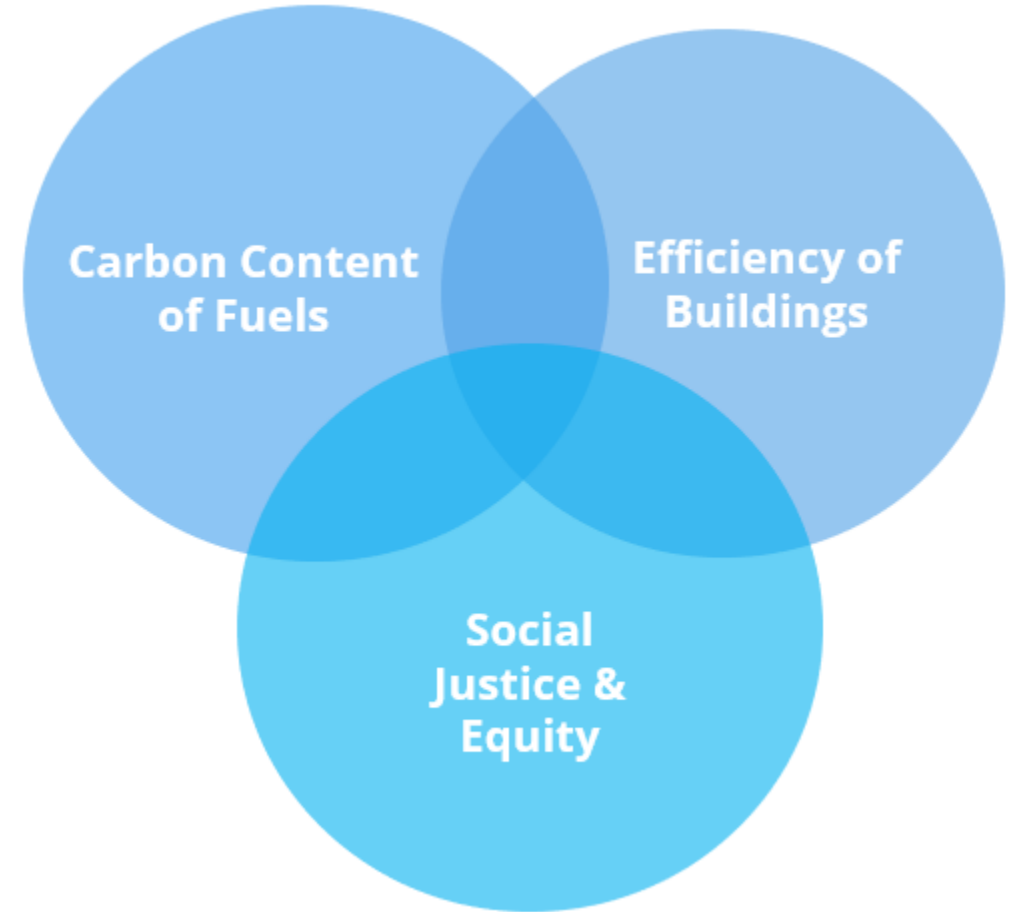
CEP – CAP Technical Workshop

And more ...





# Climate Action Plan Recommendations



# Climate Action Plan

## Building Pathways



Pathway 1 –

Equitably reduce building-related carbon emissions by **improving** building energy **efficiency**

Pathway 2 –

Equitably reduce building-related carbon emissions by **reducing** the **carbon content** of the **fuel** that buildings use

# PATHWAY 1

## Improve building energy efficiency



## Strategies:

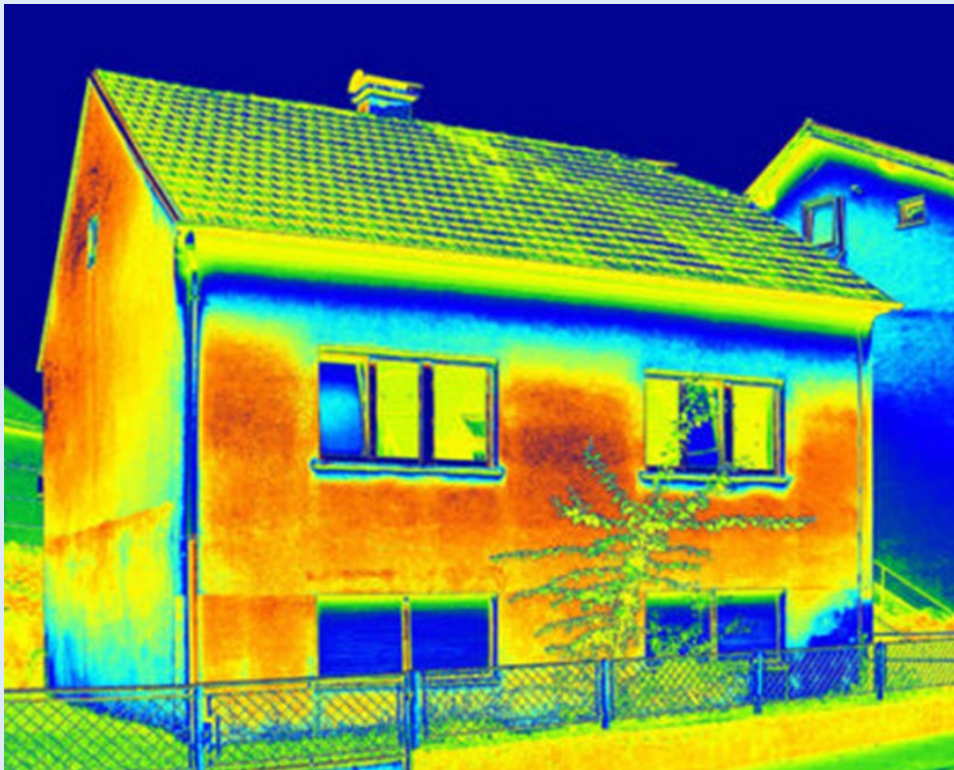
1. Develop and implement a multi-year statewide “**Weatherization-at-Scale**” initiative
2. Institute a new **rental property efficiency standard** (RPES)
3. Improve the energy performance of all new buildings in Vermont



# PATHWAY 1

## STRATEGY 1

### Weatherization-at-Scale



brighter colors (red, orange, and yellow) indicate warmer temperatures (more heat and infrared radiation emitted)

Actions:

1. **Adopt** legislative or administrative **recommendations** of Weatherization-at-Scale Working Group to Wx 120,000 homes by 2030
2. Legislature **authorizes Administration to coordinate** implementation of working group **recommendations** into the Climate Action Plan:
  1. Funding
  2. Workforce Development
  3. Financial Counseling
  4. Tariff On-Bill Financing

# Weatherization at Scale

<b>What are keys to success?</b>	<ul style="list-style-type: none"><li>• Wx at Scale <b>builds on VT's technical expertise</b> in delivering Wx</li><li>• IDs feasible <b>strategies to capitalize Wx investment</b> to fund home retrofits for housing- and energy-burdened households</li><li>• Establishes <b>innovative funding partnerships</b>, considers non-traditional revenue sources, and <b>alternative repayment models</b></li></ul>
<b>What are the equity considerations?</b>	<ul style="list-style-type: none"><li>• Adopt a <b>partnership model</b> for fuel dealers, community action agencies, efficiency and distribution utils., Wx contractors, and private construction <b>to speed up Wx work</b></li><li>• Supporting Workgroup recommendations to <b>coordinate and enhance workforce development</b>, and <b>counseling services</b> for <b>energy- and housing-burdened Vermonters</b> in consultation with the OEO, Efficiency VT, Neighborworks of Western VT, and CAPs.</li></ul>



# PATHWAY 1 STRATEGY 2

## Rental Property Efficiency Standard

### Actions:

1. Authorize the adoption of efficiency standards for existing rental properties.



# Rental Property Efficiency Standard

<b>What are keys to success?</b>	<ul style="list-style-type: none"><li>• Long <b>implementation timeframe/modest standards</b></li><li>• Encouraging <b>early action</b>, financial support &amp; training for landlords:<ul style="list-style-type: none"><li>• Rebates, low-cost energy assessments, and tech assist.</li></ul></li><li>• <b>Articulating program scope:</b><ul style="list-style-type: none"><li>• <b>Prioritize the worst</b> performing rentals</li><li>• <b>Focus</b> is <u>not</u> on, e.g., retirees renting an extra room but instead <b>on sophisticated businesses</b></li></ul></li><li>• Ability to <b>participate</b> in <i>Clean Heat Standard allowance market</i></li></ul>
<b>What are the equity considerations?</b>	<ul style="list-style-type: none"><li>• Ensuring the <b>improved efficiency of housing</b> benefits <b>all occupants</b>, but especially housing- and energy-burdened ones.</li><li>• Financial <b>support</b> for landlord could be <b>conditioned</b> on not changing rents for, e.g., 5 years.</li></ul>



## PATHWAY 2

Reduce building-related carbon emissions by reducing the carbon content of the fuel they use

## Strategies:

1. Implement a Clean Heat Standard
2. Adopt appliance standards for water heaters based on their ability to be "located" on the grid and "controlled"



# PATHWAY 2 STRATEGY 1

## Clean Heat Standard

Action:

1. Adopt legislation authorizing the PUC to administer a Clean Heat Standard





# Clean Heat Standard

<b>What are keys to success?</b>	<ul style="list-style-type: none"><li>• As a <b>performance standard</b>, a CHS allows suppliers to <b>choose how they transition</b> from current carbon-intensive practices.</li><li>• <b>Provides</b> VT's energy <b>users</b> with the <b>ability to exercise choices</b> in how they transition to less carbon-intensive ways of heating and to better afford those decisions.</li><li>• VT <b>PUC</b> could <b>administer</b> the <b>CHS</b>, establishing growing annual obligations of sufficient magnitude <b>to achieve the thermal</b> portion of <b>VT's GHG</b> emission <b>reduction goals</b>.</li></ul>
<b>What are the equity considerations?</b>	<ul style="list-style-type: none"><li>• CHS should <b>incorporate policies to minimize</b> the potential for <b>adverse effects on energy- and housing-burdened Vermonters</b>.</li><li>• <b>Coordinate w/existing</b> fuel assistance and housing <b>programs</b>.</li><li>• Because the CHS provides a path for fuel deliverers to comply and transition into the provision of lower-carbon energy services, the <b>CHS design is fair to fuel suppliers and their employees</b>.</li></ul>

## PATHWAY 2 STRATEGY 2

### Appliance Standards

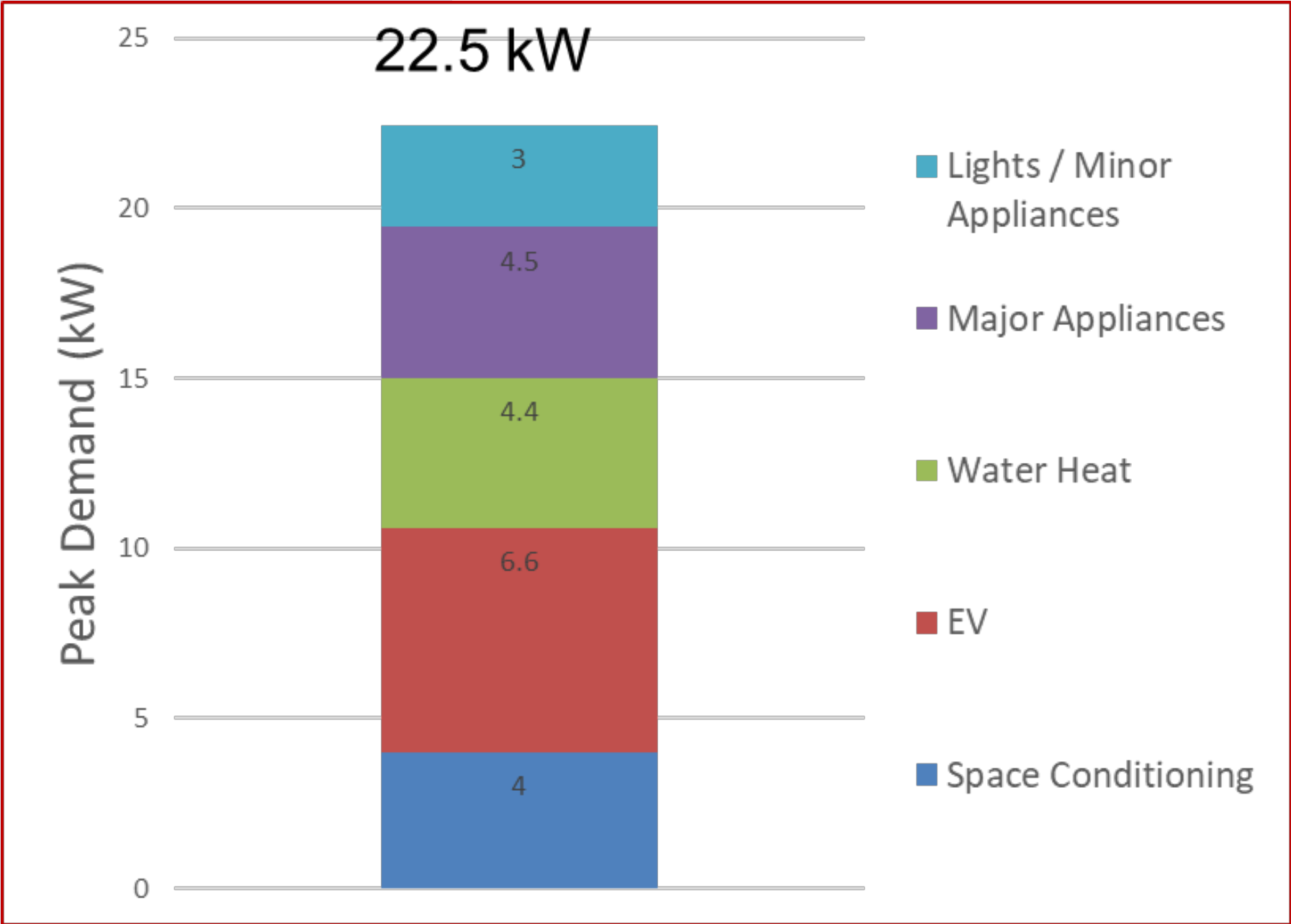
#### Action:

1. Authorize the Department of Public Service to engage with neighboring states and stakeholders to adopt appliance standards for Vermont and the region that require electric storage water heaters for sale in Vermont to have a modular demand response communications port that complies with the ANSI/CTA-2045-A or an equivalent communication interface standard



Why Have  
Appliance  
Standards?

Uncontrolled  
Loads Add Up



# OR & WA Control their Water Heaters

- The CTA 2045 socket enables any control network to connect to any new water heater.



# Appliance Standards

<b>What are keys to success?</b>	<ul style="list-style-type: none"><li>• <b>Managing</b> the electricity use of the roughly 25,000 water heaters that VT households replace each year <b>to less expensive</b>, and potentially <b>less carbon intensive times of the day</b>.</li><li>• <b>Directing VT utilities to exploit</b> the <b>demand response</b> and system <b>resiliency opportunities</b> associated w/<b>water heater load</b>.</li><li>• <b>Encouraging neighboring states</b> (especially those with recent experience in passing their own appliance standards) <b>to adopt a similar standard</b>, creating a regional push to <b>transform</b> the <b>water heater appliance market</b>.</li></ul>
<b>What are the equity considerations?</b>	<ul style="list-style-type: none"><li>• <b>Avoiding unnecessary</b> electrification <b>costs</b> that could disproportionately affect housing- and energy-burdened Vermont households</li><li>• <b>Improving power grid management</b> practices to<ul style="list-style-type: none"><li>• <b>Enable further adoption</b> of lower-cost and non-polluting <b>renewable</b> resources;</li><li>• Improve <b>power system resilience</b></li><li>• <b>Transform</b> the water heater <b>market</b></li></ul></li></ul>



# Recommendations

- Engage in Weatherization-at-Scale
- Adopt a Rental Property Efficiency Standard
- Improve the Energy Performance of New Buildings
- Adopt a Clean Heat Standard
- Adopt a controllable Water Heater Appliance Standard

# Equitable Climate Solutions Require

- Modernizing Vermont's old buildings (i.e., improving their comfort and efficiency), and
- Making available clean fuel choices to Vermont suppliers and consumers.

# Thank You

