

Fundamentals of Decarbonization

Dave Boettcher
Carlisle Earth Day 2021



Path to Decarbonization



Image courtesy of California PATHWAYS Model

Weatherize Your Home *THIS* Summer

- ❑ Save money
- ❑ Reduce carbon
- ❑ Improve comfort, year round
- ❑ Improve home's durability and safety
- ❑ Improves "newer" homes
- ❑ It is heavily subsidized
 - ❑ 75-100% off for Carlisle residents



Air Seal

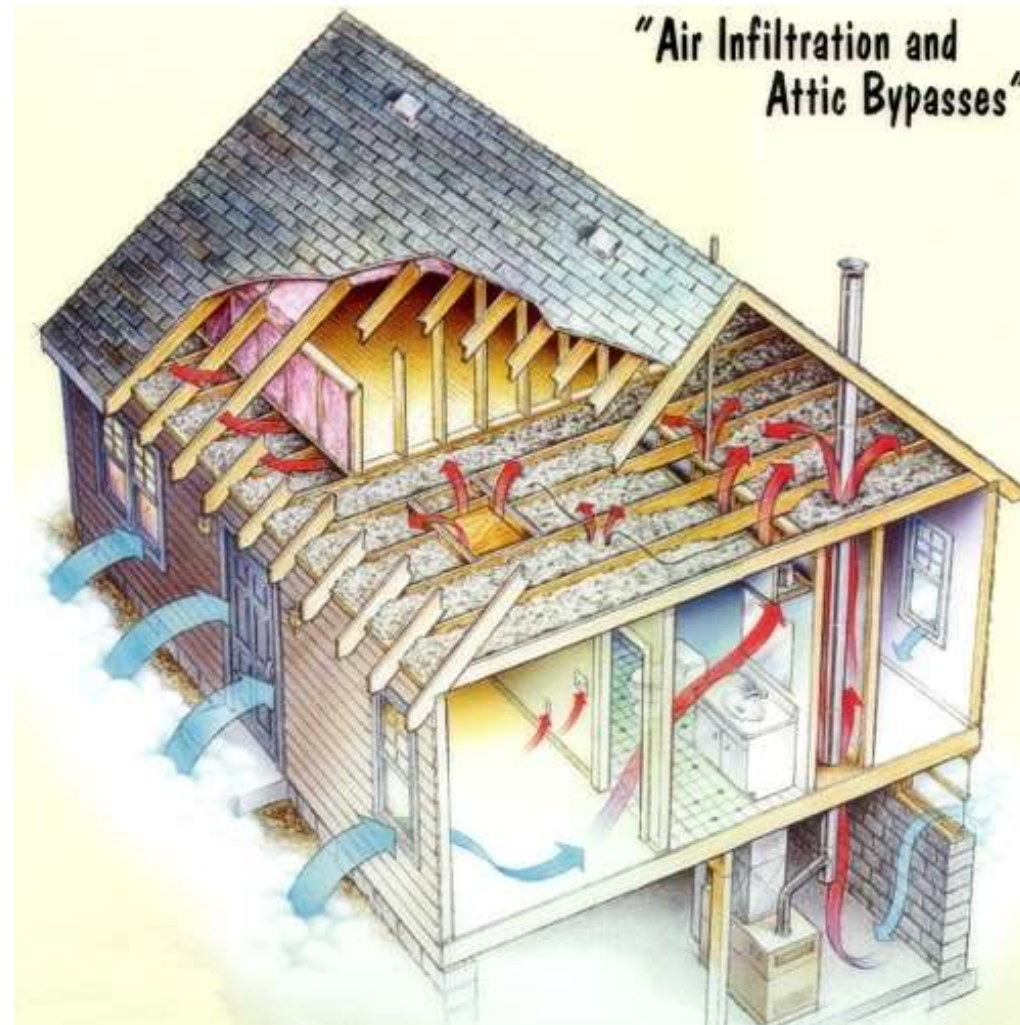
Insulate



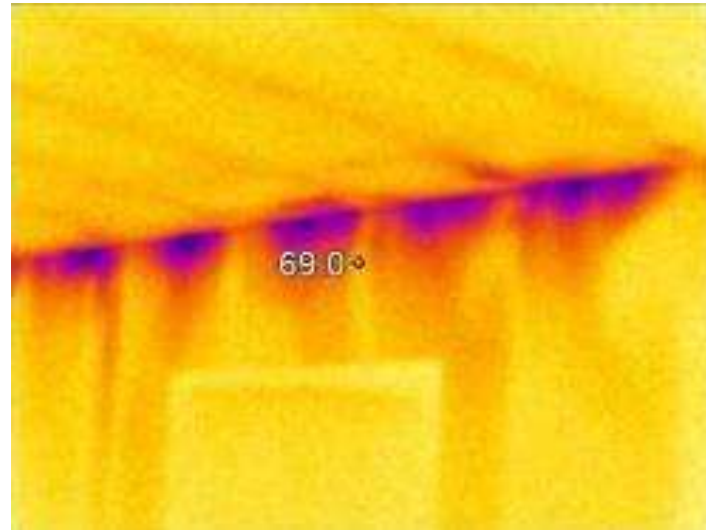
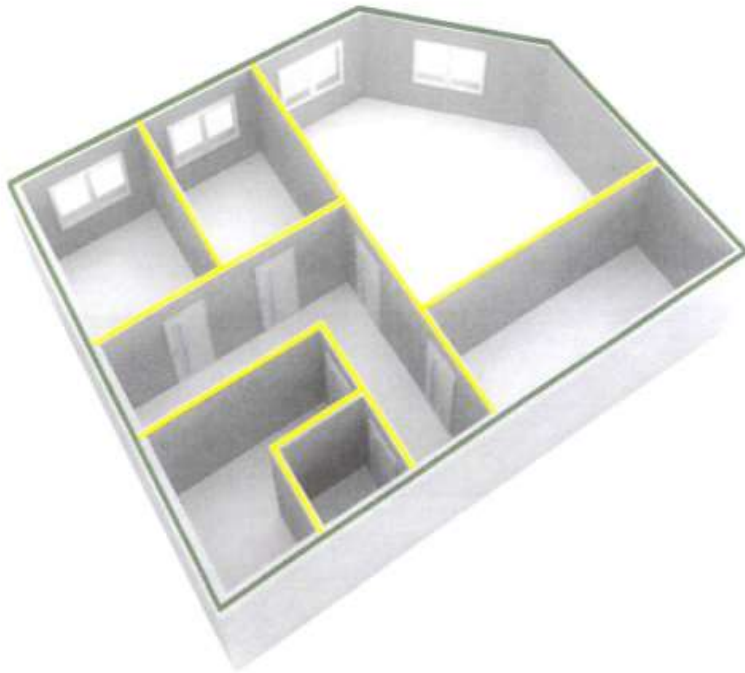
Why Tighten Homes Up?

- ❑ Warm air rises
- ❑ Cold air replaces it

You want to keep warm air in your house



Top Plates



Chimneys, Plumbing Walls, Pipes, etc.



You Need to Air Seal AND Insulate

- ❑ Air sealing is a **windbreaker**
 - ❑ Does not stop the cold



- ❑ Insulation is a **sweater**
 - ❑ Does not stop the wind



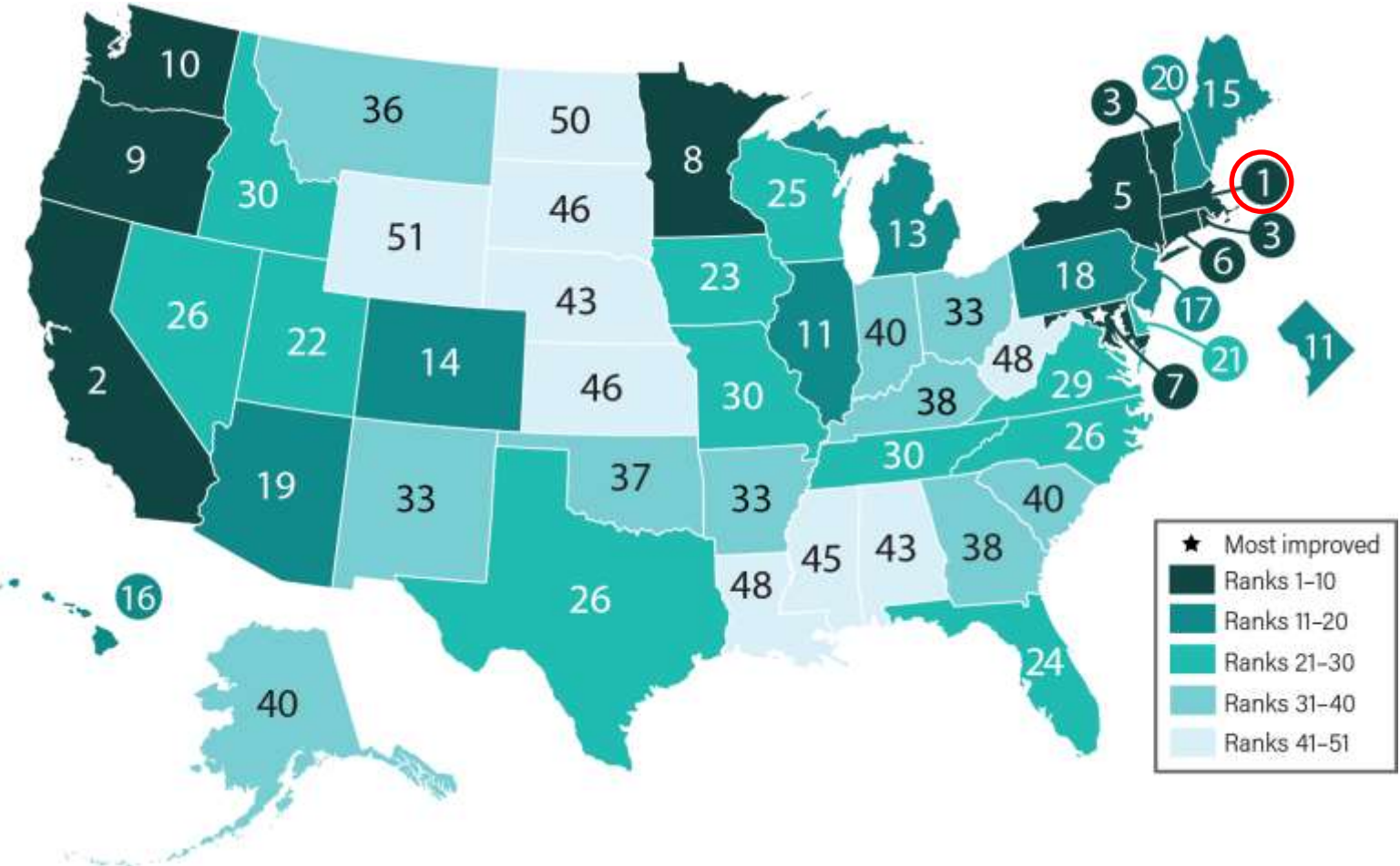
Sweater + Windbreaker = True Warmth



Insulate Foundations, Walls, Attics, and Slopes



We're Fortunate to Live in Massachusetts



Graphic courtesy of ACEE

mass save
Savings through energy efficiency

Save ▾ Shop Learn ▾ Search 🔍

Massachusetts ranked number one in energy efficiency for ninth consecutive year

October 01, 2019



Take Advantage of the Mass Save Program

- ❑ 100% off targeted air sealing
- ❑ 75% or more off approved insulation improvements
- ❑ Rebates of up to \$2,750 on qualifying energy-efficient heating, cooling, and water heating equipment.
- ❑ The opportunity to apply for 0% HEAT Loan financing for eligible upgrades.

Annual Energy Savings:

6,281 kWh

Annual Cost Savings:

\$486

Total Project Cost:

\$2,508

Eversource Incentive:

\$2,062

Net Cost to the Customer:

\$446

Value of Energy-Efficient Products:

\$303



Weatherize → Electrify → Clean Electricity



Massachusetts Joint Statewide Electric and Gas

Three-Year Energy Efficiency Plan

2019–2021

~44,000 heat pumps installed
~300,000 electric vehicles



Everyone's Doing it – or they should be

Berkeley first city in California to ban natural gas in new buildings



<https://www.berkeleyside.com/2019/07/17/natural-gas-pipes-now-banned-in-new-berkeley-buildings-with-some-exceptions>

<https://www.wbur.org/news/2018/12/09/watertown-commercial-buildings-solar-panels>

Watertown Becomes 1st Town In New England To Require Solar Panels On New Commercial Constructions



Go Take Action Today (or tomorrow, more likely)



Schedule a Home Energy Assessment

Choose How You Want to Participate

**Option 1: Lead Vendor + Independent
Installation Contractor (IIC)***

Your no-cost Home Energy Assessment is completed by an Energy Specialist from one of our Lead Vendors - CET, CLEAResult or RISE. Insulation and air sealing work is then completed by participating Independent Installation Contractor (IIC).

Your Next Steps:

1. Call [1-866-527-SAVE \(7283\)](tel:1-866-527-SAVE) to schedule your assessment.
2. Afterwards, the Energy Specialist will be able to coordinate insulation and air sealing services with an Independent Installation Contractor (IIC), or you can select your own IIC by using our [Find a Contractor](#) tool.

**Option 2: Home Performance
Contractor (HPC)**** ←

Your no-cost Home Energy Assessment is completed by a participating Home Performance Contractor (HPC). The same contractor also does the insulation and air sealing work.

Your Next Step:

1. Schedule an assessment with a participating Home Performance Contractor of your choice. Use our [Find a Contractor tool](#).