



# Clean Heat Standards: New Tools for Thermal Savings

**Maryland Commission on Climate Change  
Mitigation Working Group  
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# Fossil Heat/Cooling May Be Our Toughest Climate Challenge

- 16% of MD's climate emissions
  - Primarily space heating/cooling, but also hot water, industrial processes, other uses
  - Electricity provides high percentage of cooling load
- Large reductions are required from 2006 levels
  - 60% by 2031
  - Net zero by 2045
- Need to address equity issues
  - Disadvantaged communities disproportionately have substandard housing with inefficient shells and expensive heating sources = highest energy burdens
- Buildings are “hard” and “slow”



# Thermal Fossil Fuel Emissions in MD

## Of Note:

68% pipeline gas

Sector totals

42% Residential

39% Commercial

20% Industrial

Electricity use

25% of GHG

		MA	MD
		2018 emissions	2020 emissions
		MMT CO2e	MMT CO2e
Residential	Natural Gas	7.1	4.3
Commercial	Natural Gas	6.5	3.9
Industrial	Natural Gas	2.5	0.9
Residential	Delivered Fuels	6.1	1.3
Commercial	Delivered Fuels	1.4	1.3
Industrial	Delivered Fuels	0.9	0.9
Industrial	Coal	0.01	0.86
	Total	24.63	13.42
	natural gas	65.6%	67.7%

Source – MassDEP GHG inventory and MD GHG inventory



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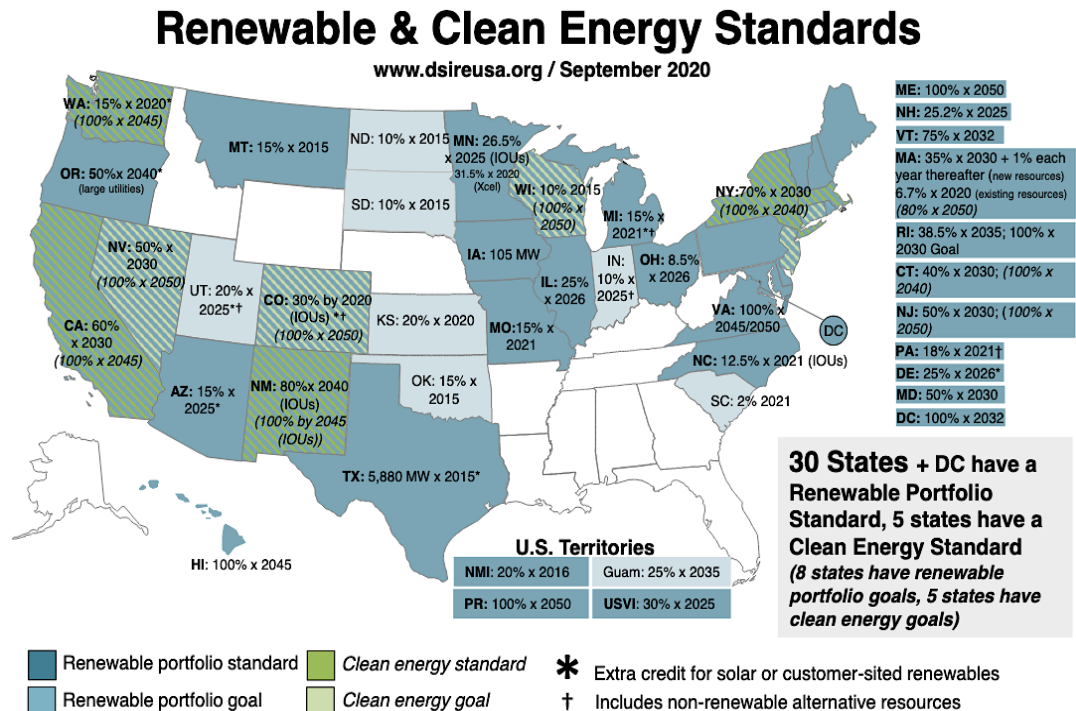
# Basic Concept of a Clean Heat Standard (CHS)

*The CHS is a **performance standard**, requiring heat providers to deliver a gradually-increasing percentage of low-emission heating services to customers.*

- Similar to the renewable portfolio standard
  - Increasing annual requirements pegged to GHG goals
  - Measured by delivery at the customer level
- Clean heat choices: Weatherization, electric heat pumps, low-emission fuels
- Obligated parties can deliver efficiency and clean fuels, help convert heat systems, or purchase credits from others

# Energy Performance Standards

- 30 states have renewable portfolio standards
- 25 states have EE performance standards
- Low-carbon fuel standards (transportation only) in CA, WA, OR
- Fuel oil standards in NY, CT, RI
- Clean Heat Standard in the Vermont Climate Plan
- CO Clean Heat Plan (pipeline gas utilities only)



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# CHS Proposals: Vermont and Massachusetts

- Vermont Climate Council proposed CHS
- Passed by Legislature, but vetoed by Governor
- Revised bill (S.5) now in Vermont Senate
  
- Massachusetts Climate Plan for 2025-2030 included CHS as an option
- MA Commission on Clean Heat recommended establishing a MA Clean Heat Standard



# RAP's CHS work for MDE



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# Nature of the Obligation

- Focus: reducing **GHG emissions** in the thermal sector to meet state climate mandates
- **VT Obligated parties: all fossil heat providers**
  - Vermont Gas (utility) and delivered fuel dealers
  - In proportion to their fossil fuel sales
- **MA:** considering obligation on electric utilities too
- Credits are earned by **actions at customer locations that reduce emissions**, measured in tons of CO<sub>2</sub>e





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# MDE Report Topics

1. What is the regulatory requirement & metric?
2. Who are the obligated parties?
3. How to promote equity?
4. What actions or fuels earn credits?
5. Are certain heat choices excluded or promoted?
6. Illustrative pathways – what mixes might work?
7. Administration – e.g., credit accounting, lifecycle analysis, trading, enforcement
8. Examples from other states

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# MDE project timeline and tasks

- **Draft report May 2023**
  - Regulatory Design and Implementation issues
  - Possible input for the 2031 Climate Plan
- **Final report in August 2023** will add:
  - Illustrative compliance pathways (resource mixes)
  - Recommendations for macro-economic analysis
  - Emission accounting, lifecycle analysis (LCA), including experience in other states and programs
- **Presentations, consultations** – your input and stakeholder suggestions requested

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# Why a Clean Heat Standard ?

- We need a **policy driver** to deliver large **GHG** savings
  - Incentives alone - are not strong enough
  - Public funds and taxes – not reliable enough
  - Building codes and bans – not fast enough
  - Businesses need a predictable path
- CHS supports **diverse heating solutions**
- CHS allows **multiple delivery pathways**
- **Customer choice** will be important
- **Performance standards work**

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# Resources

- Regulatory Assistance Project, “[A Clean Heat Standard for Massachusetts,](#)” Appendix B to the *Massachusetts Clean Energy and Climate Plan for 2025 and 2030*. (June 2022)
- Vermont General Assembly, H.715 (2022), “An act relating to the Clean Heat Standard” as passed by House and Senate, and Vermont Senate Bill S.5 (2023), the “Affordable Heat Act,” can be found at <https://legislature.vermont.gov/> \*
- Richard Cowart and Chris Neme, “[The Vermont Clean Heat Standard](#)” (December 2021), a Vermont Energy Action Network whitepaper
  
- \*Note: as H.715 was vetoed at the end of the 2022 legislative session, and S.5 is pending, the CHS has not yet been enacted in Vermont. However, both bills provide an excellent overview of issues and structural elements for those considering a CHS.

# About RAP

The Regulatory Assistance Project (RAP)<sup>®</sup> is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at [raponline.org](https://raponline.org)



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# What Actions Earn Credits?

Many possibilities:

- Weatherization
- Heat pumps and heat pump water heaters
- Certain biofuels and renewable gases
- Low-carbon district heating
- Solar thermal and advanced wood heating
- Renewable hydrogen
- Customer choice is key to acceptance
- Key feature: Anyone can earn credits

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# Guardrails:

- Progressive inclusion mandate -- to deliver clean heat solutions to **low- and moderate-income households**
- Credits measured on a **net lifecycle basis** and only if delivered in state. (i.e., no offsets)
- Policies to support **installed measures** (Wx, HPs)
- **Limits** on biofuels, RNG, and woody biomass – if eligible, on what basis?
- **Cost-containment** / “safety valve” provisions