Better Buildings®
U.S. DEPARTMENT OF ENERGY

Better Buildings Residential Network
Peer Exchange Call Series

Understanding Clean Heat Standards – What Is the Lay of the Land?

July 28, 2022

U.S. DEPARTMENT OF ENERGY

Agenda and Ground Rules

- Agenda Review and Ground Rules
- Opening Poll
- Residential Network Overview and Upcoming Call Schedule
- Featured Speakers
  - **Erin Cosgrove**, Northeast Energy Efficiency Partnerships
  - **Richard Cowart**, The Regulatory Assistance Project
  - **Keith Hay**, Colorado Energy Office
- Open Discussion
- Closing Poll and Announcements

Ground Rules:

1. **Sales of services and commercial messages are not appropriate** during Peer Exchange Calls.
2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.

Join the Network

Member Benefits:

- Recognition in media, social media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year, or equivalent.

Upcoming Calls (2nd & 4th Thursdays):

- *8/11: What Are Best Practices in Behavior Change for Energy Efficiency and Carbon Reduction*

Peer Exchange Call summaries are posted on the Better Buildings website a few weeks after the call

For more information or to join, for no cost, email bbresidentialnetwork@ee.doe.gov, or go to energy.gov/eere/bbrn & click Join

Erin Cosgrove

Northeast Energy Efficiency Partnerships

U.S. DEPARTMENT OF ENERGY

Policy Impacts of a Clean Heat Standard

Erin Cosgrove
Public Policy Manager
Northeast Energy Efficiency Partnerships

About NEEP

A Regional Energy Efficiency Organization

One of six REEOs funded in-part by U.S. DOE to support state and local efficiency policies and programs.

Northeast Energy Efficiency Partnerships

"Assist the Northeast and Mid-Atlantic region to reduce building sector energy consumption 3% per year and carbon emissions 40% by 2030 (relative to 2001)"

Mission

We seek to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities.

Vision

We envision the region's homes, buildings, and communities transformed into efficient, affordable, low-carbon, resilient places to live, work, and play.

Approach

Drive market transformation regionally by fostering collaboration and innovation, developing tools, and disseminating knowledge

Why Implement A Clean Heat Standard

Ambitious Climate Goals

Buildings Present a Unique Challenge

Gaps in Current Efforts

Why Implement A Clean Heat Standard

Gaps in Current Efforts

Carbon Taxes and Cap-and-Trade

Rely on pricing to encourage changes in the market.

Renewable Energy Portfolio Standards

Decarbonizes the grid but not the buildings.

Energy Efficiency Programs

Only regulates electric and natural gas and relies on customers to encourage changes in the market.

Benefits of a Clean Heat Standard

Action From Building Owners

Transition in Fossil Fuel Workforce

Adoption of Clean Energy Technologies

Centers Equity Considerations

What is a Clean Heat Standard

Progressive Performance Standard

What Can a Clean Heat Standard Achieve

Decarbonization Goals

Compliments other Decarbonization Policies

Provides Certainty in the Market

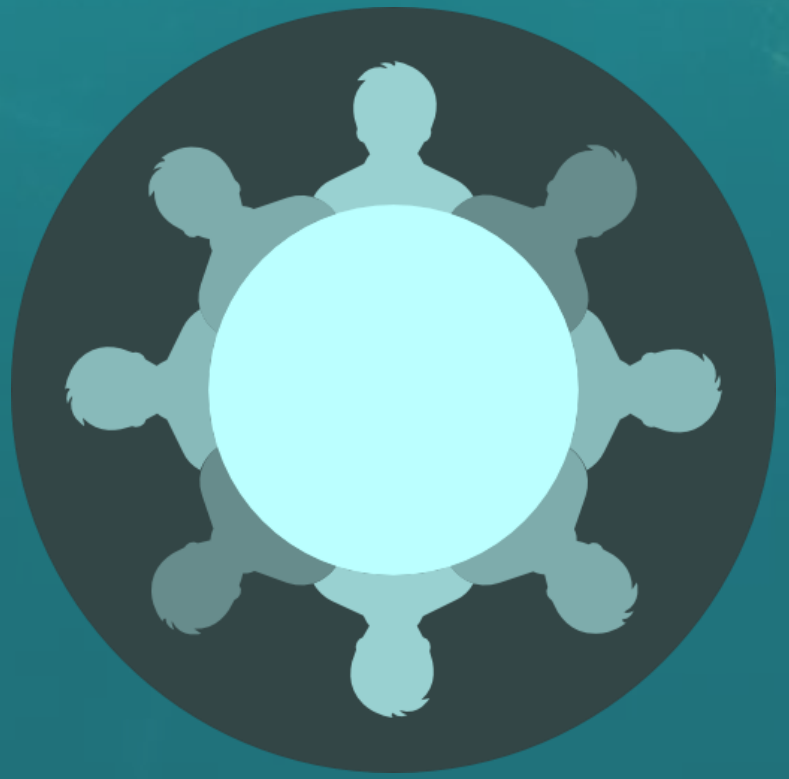
Allows for Customer Choice

Targets Previously Unregulated Industry

Why Implement A Clean Heat Standard

Equity Goals

- Designed through Stakeholder Engagement
- Provide Equitable Access to Benefits
- Invest in Community Based Workforce and Businesses



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Richard Cowart

The Regulatory Assistance Project

Clean Heat Standards:
New Tools for Thermal Savings

Richard Cowart, Principal

US DOE Better Buildings Residential Network

July 28, 2022

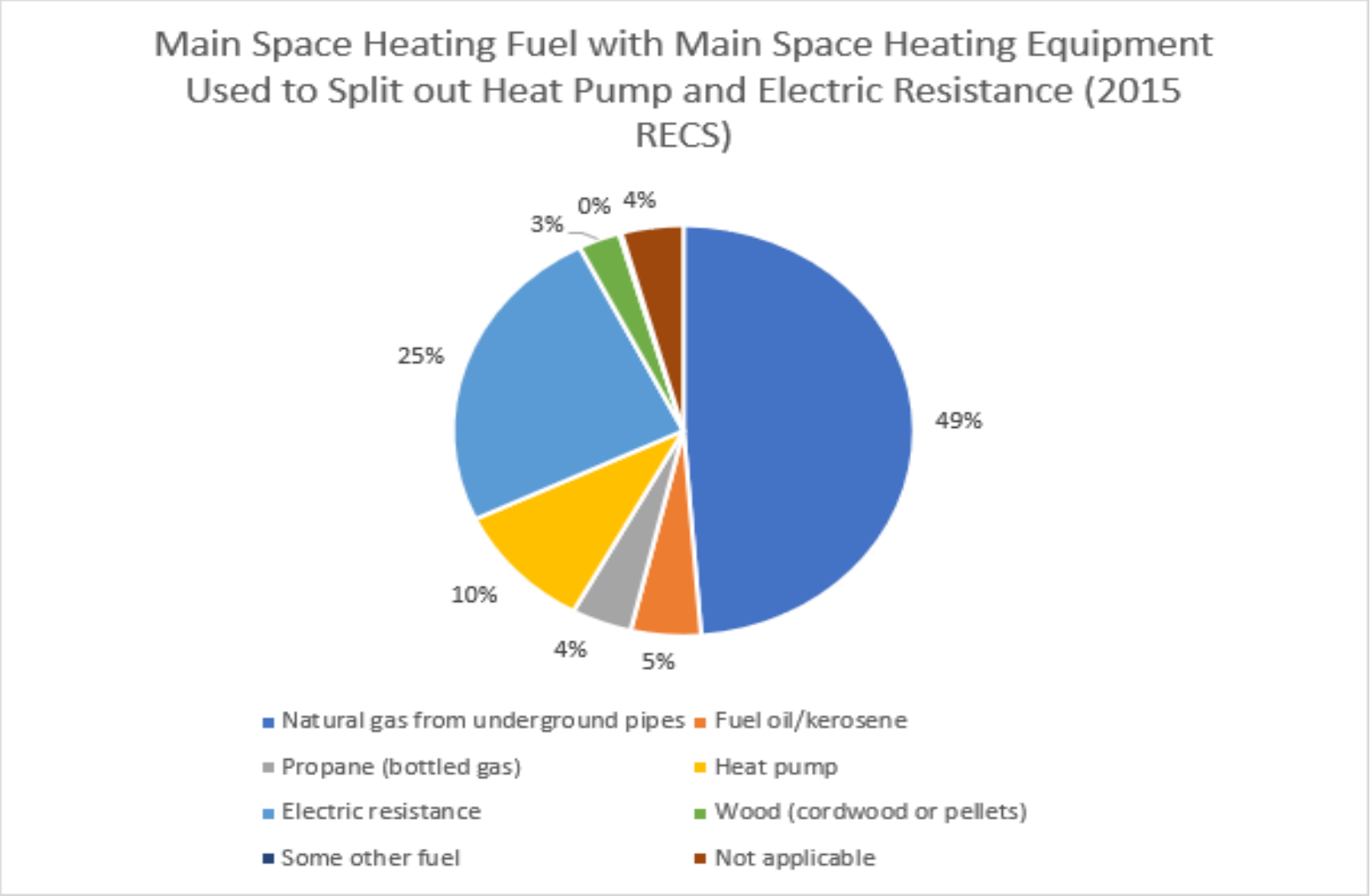
Richard Cowart, Principal
rcowart@raponline.org

The Regulatory Assistance Project (RAP)®

Fossil Heat May Be Our Toughest Climate Challenge

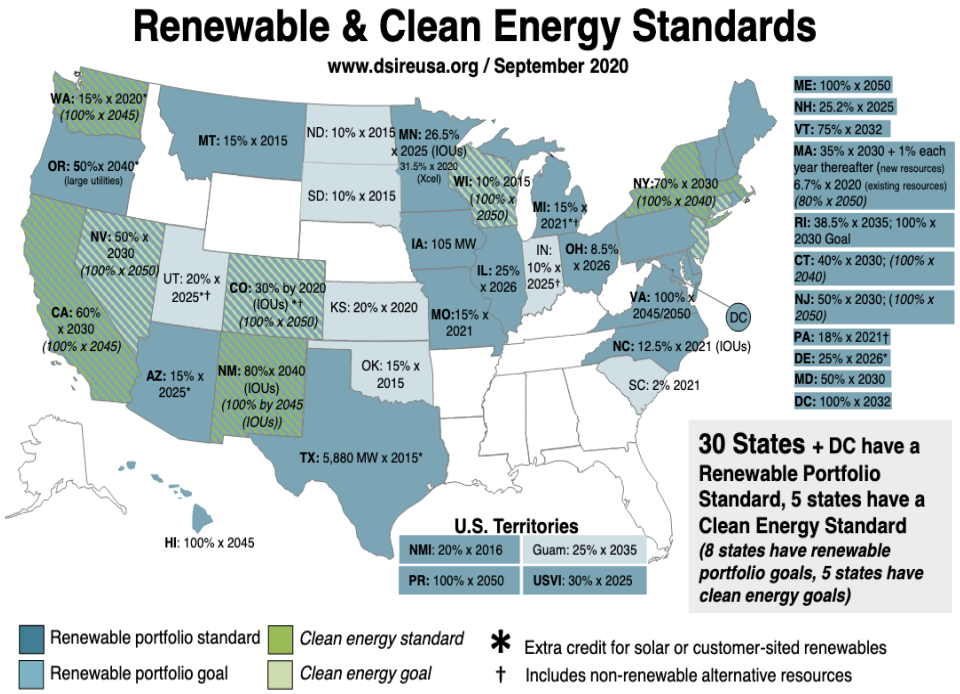
- Heat in buildings = 10% of US climate emissions
  - Primarily space heating, but also hot water, cooking
  - [plus industrial process heat & other uses]
- Large reductions are required from 1990 levels
  - Around 40% by 2030
  - 85% to 90% by 2050
- Equity focus
  - Lower income HH have higher energy burdens, less efficient housing and expensive heating sources
- Buildings are “hard” and “slow”

Heat in the US is 58% fossil, 49% gas)



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
- Clean Heat Standard in the Vermont Climate Plan
- CO Clean Heat Plan (pipeline gas utilities only)



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 cleaner fuels, help convert heat systems, or purchase credits from others

Architecture of a CHS

1. What is the obligation?
2. Who are the obligated parties?
3. Obligation pathway – how fast, how far in total?
4. How to promote equity?
5. What actions or fuels earn credits?
6. Are certain heat choices excluded or promoted?
7. Credit accounting, trading, enforcement

Vermont and Massachusetts CHS Proposals -- Selected Elements

CHS Proposals: Vermont and Massachusetts

- Vermont Climate Council proposed CHS
- Passed by Legislature, but vetoed by Governor
- Administration will study CHS costs, benefits

- Massachusetts Climate Plan for 2025-2030 examined CHS as an option
- CHS now under review by MA Commission on Clean Heat and Executive Office of EEA

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 CO2e

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

More on credits:

- VT and MA would require delivery of 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)
- Important to support installed measures (Wx, HPs)
- Controversy on biofuels, RNG, and woody biomass – if eligible, on what basis?

Why a Clean Heat Standard ?

- **We need a policy driver to deliver large GHG savings**
  - Incentives alone - are not enough
  - Public funds and taxes – not reliable enough
  - Businesses need a predictable path
- **CHS supports diverse heating solutions**
  - Wx and efficiency count but just 25% of the answer
  - Can we “electrify everything” fast enough?
  - Hydrogen? RNG? Biofuels? -- ”OK, Prove it ”
- **Customer choice**
- **Performance standards work**

Resources

- Vermont General Assembly, H.715 (2022), “An act relating to the Clean Heat Standard” as passed by House and Senate, found at *https://legislature.vermont.gov/* *
- 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)*
- Richard Cowart and Chris Neme, “The Vermont Clean Heat Standard” (December 2021), a Vermont Energy Action Network whitepaper, found at *https://www.eanvt.org/chs-whitepaper/*
- *Note: as H.715 was vetoed at the end of the 2022 legislative session, the CHS has not yet been enacted in Vermont. However, the bill provides an excellent overview of issues and structural elements for those considering a CHS.

About RAP

The Regulatory Assistance Project (RAP)® 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

Richard Cowart
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Keith Hay

Colorado Energy Office

U.S. DEPARTMENT OF ENERGY

Clean Heat Planning in Colorado

July, 2022

Key Colorado Climate Legislation

- Reduce economy-wide GHG emissions 26% by 2025, 50% by 2030 and 90% by 2050
- Grant broad authority to air regulators to address GHG emissions
- PUC pathway for electric utilities to meet/exceed 80% GHG reduction by 2030
- Require 60% reduction from oil/gas and 20% from industry by 2030
- Require gas utilities to achieve 22% reduction by 2020 through clean heat plans

Colorado GHG Emissions Sources

2005 Largest Emission Sources:

1. Electric power
2. Transportation
3. Oil & Gas
4. Industry
5. Buildings

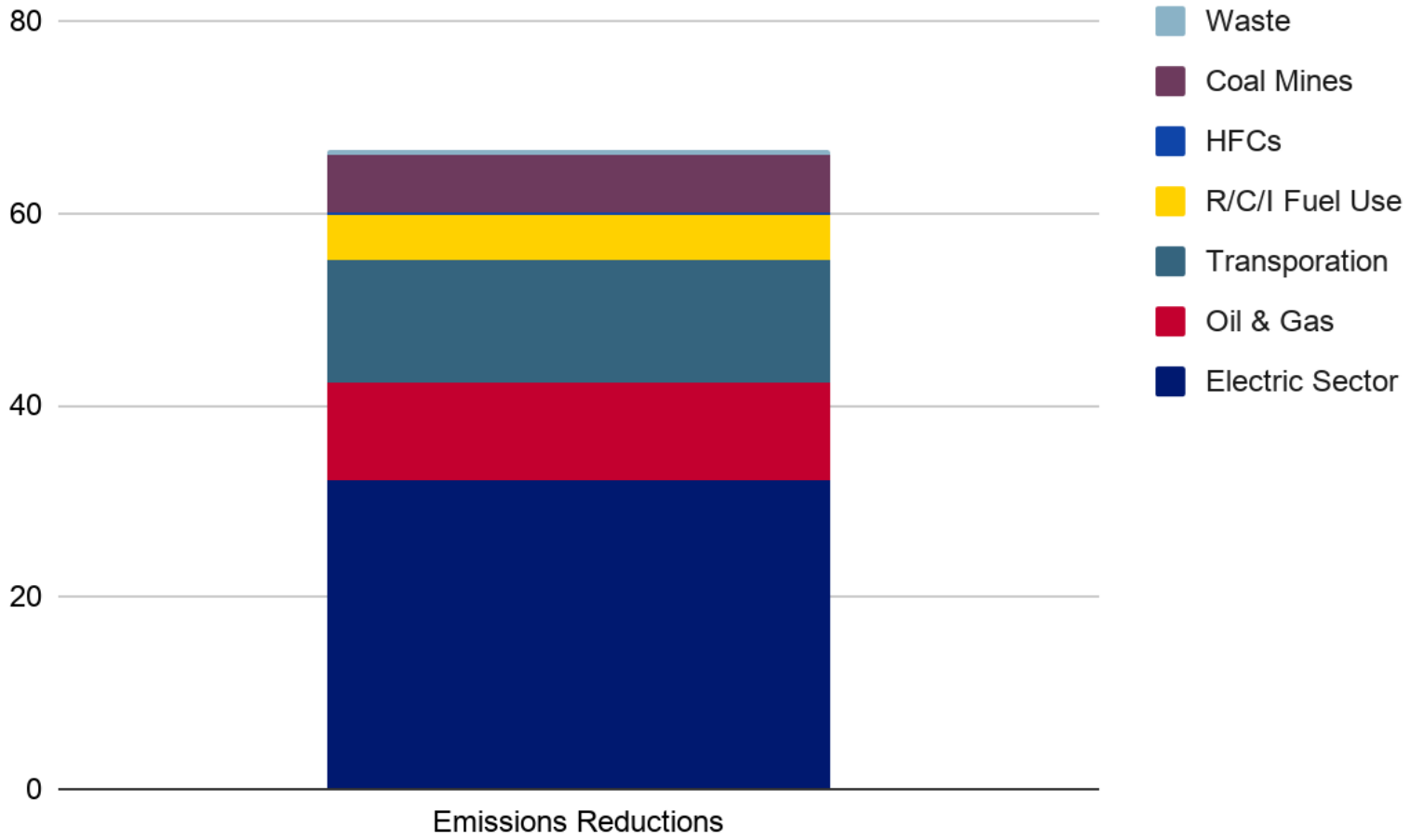
2020 Largest Emissions Sources:

1. Transportation
2. Electric power
3. Oil & Gas
4. Industry
5. Buildings

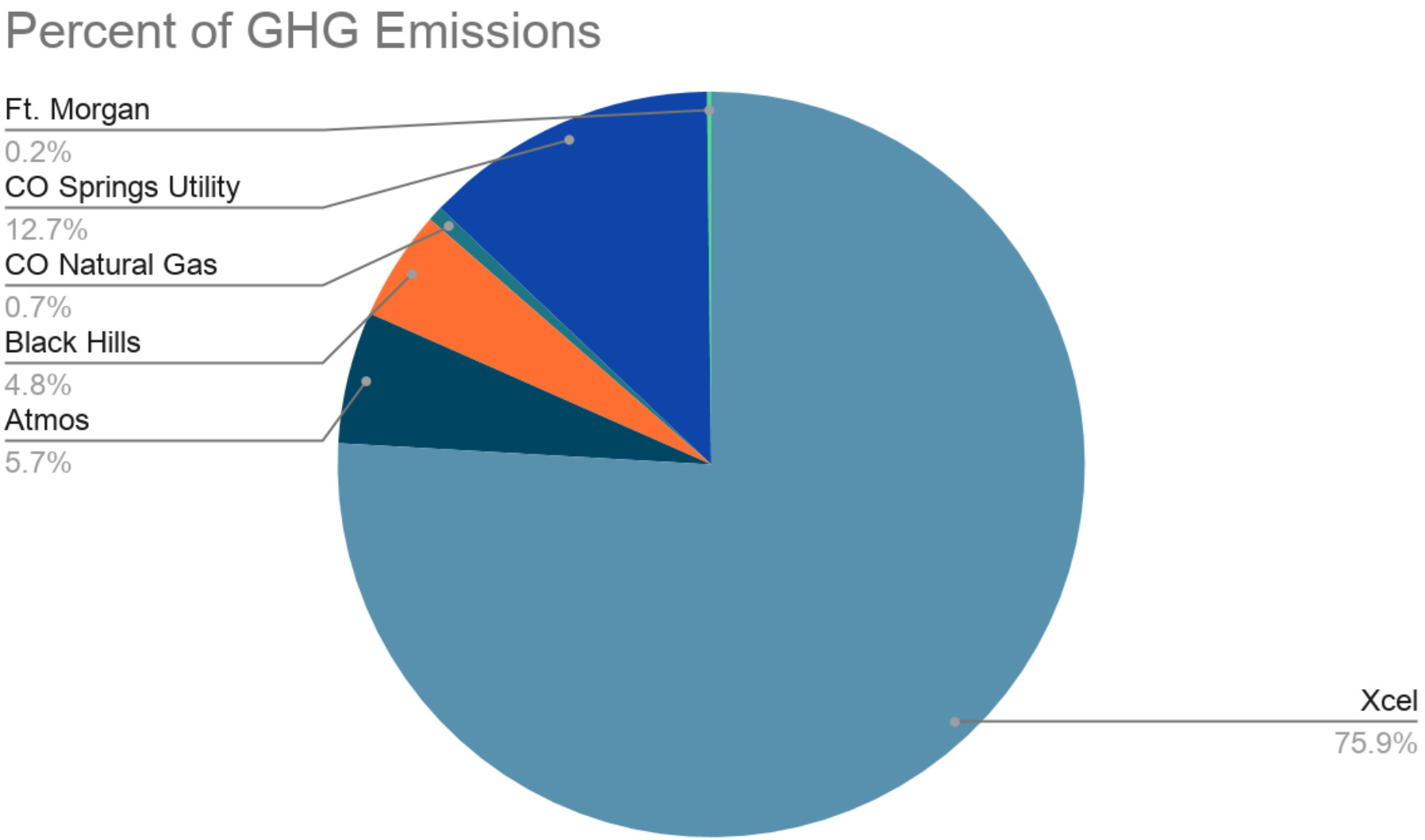
Key Findings through 2030

ACHIEVING THE GOALS WILL RELY ON:

- Continuing the swift transition away from coal and towards renewables
- Achieving deep reductions in methane emissions from the oil and gas industry
- Accelerating the transition to electric cars, trucks and buses
- Changing transportation planning and infrastructure to reduce driving
- Industrial decarbonization
- **Increasing building efficiency and electrification**
- Reducing methane emissions from coal mines, landfills,waste water, and agriculture
- Address equity issues in designing policy in each sector



Colorado Gas Utility Emissions



Clean Heat Standards & Plans (SB 21-264)

- Colorado gas utilities with more than 90,000 retail customers
- Gas utility GHG target by 4 percent by 2025 and 22 percent by 2030 from 2015 baseline
- Technology-neutral and outcome based
- Recovered methane protocols
- State regulators will post 2030 targets
- December 1, 2022 statutory deadline.

What is a clean heat plan

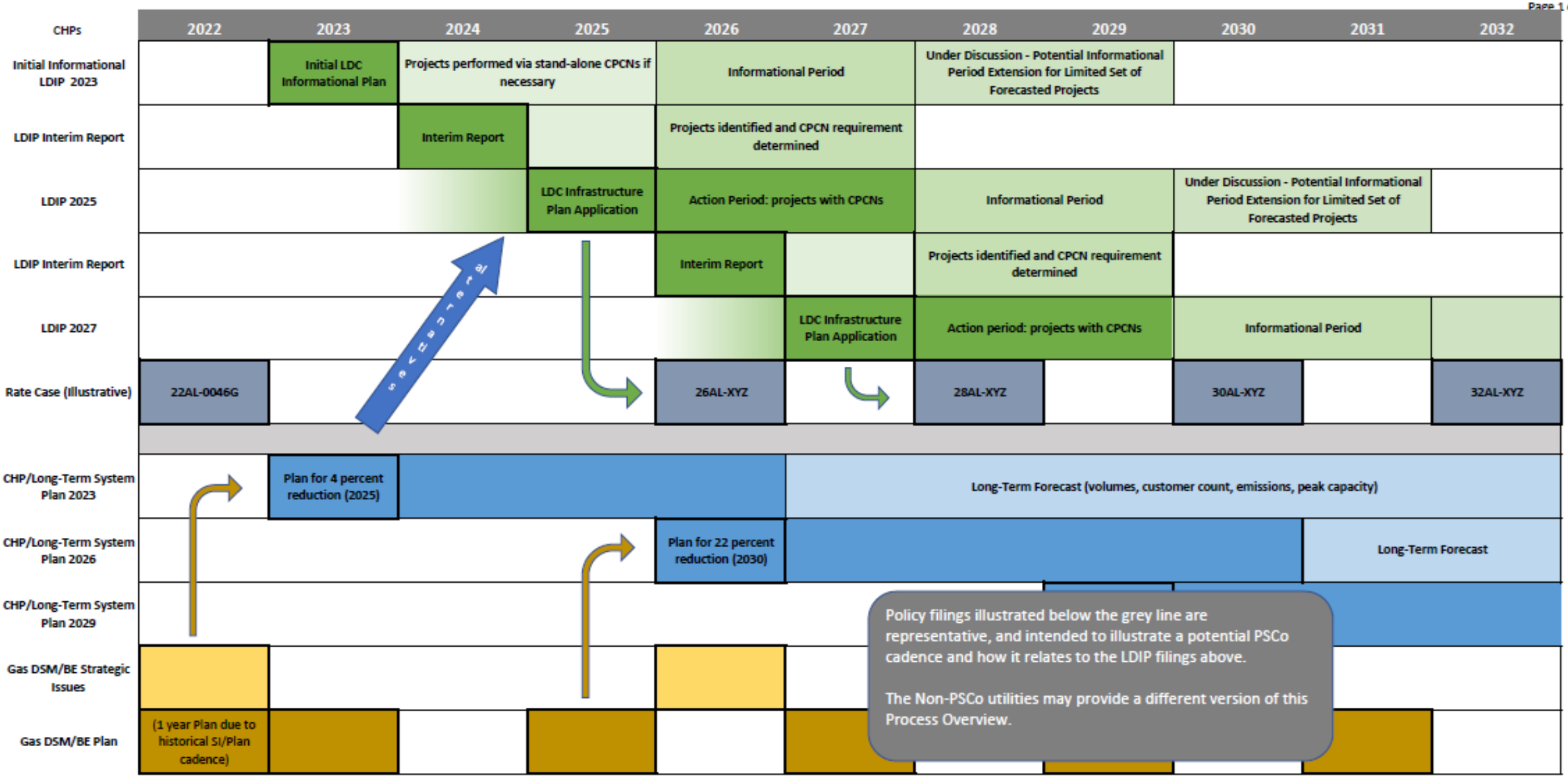
A “Clean Heat Plan” is submitted by a utility to meet methane and carbon dioxide reduction targets at the lowest reasonable cost and may include:

- Gas demand-side management programs
- Recovered methane (e.g., from solid waste in a landfill)
- Green hydrogen (e.g., electrolysis of water molecule using renewable electricity)
- Beneficial electrification
- Pyrolysis of tires in certain situations
- Other technologies using a recovered methane protocol approved by AQCC Clean Heat Plans could result in changes to how gas is transported and/or programs offered to customers to reduce gas usage

Lowest Reasonable Cost

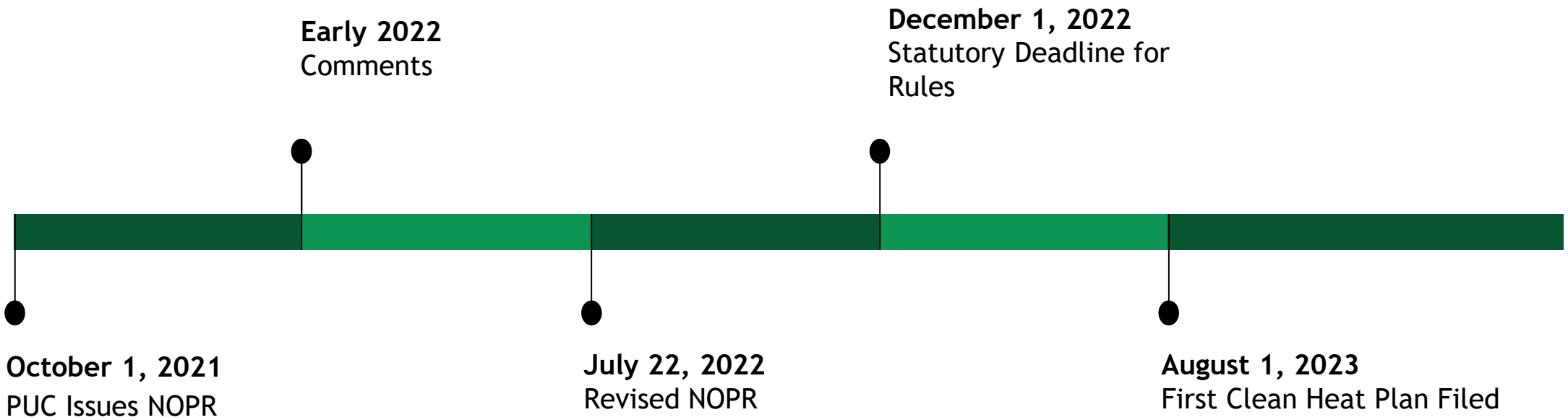
"Lowest Reasonable Cost" means a reasonable-cost mix of clean heat resources that meet the clean heat targets as determined through a detailed analysis of available technologies and includes:

- Resource costs
- Market volatility risks
- Risks to ratepayers
- System operations costs
- Infrastructure costs
- Environmental justice goals
- Social cost of carbon and methane in comparing alternatives
- Other costs and benefits as determined by the Commission See § 40-3.2-108(2)(k), C.R.S.



Notes:
LDIPs would occur every two years on an ongoing basis. 2029 and 2031 LDIPs are not shown for ease of viewing.

PUC Clean Heat Timeline



Explore the Residential Program Solution Center

Resources to help improve your program and reach energy efficiency targets:

- Handbooks - explain *why* and *how* to implement specific stages of a program.
- Quick Answers - provide answers and resources for common questions.
- Proven Practices posts - include lessons learned, examples, and helpful tips from successful programs.
- Technology Solutions NEW! - present resources on advanced technologies, **HVAC** & **Heat Pump Water Heaters**, including installation guidance, marketing strategies, & potential savings.
- Health + Home Performance Infographic NEW! – spark homeowner conversations.

https://rpsc.energy.gov

New Health + Home Performance Infographic

DOE's new Health + Home Performance Infographic reveals the link between efficiency and health – something everyone cares about. Efficiency programs and contractors can use the question-and-answer format to discover a homeowner's needs.

The infographic is ideal for the "kitchen table" conversations where people decide what to do – and who they want to do it. It also has links for homeowners to find a qualified contractor if they do not already have one.

Download this infographic from DOE's Better Buildings Residential Network.

Thank You!

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or future call topic ideas to:
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