MASSACHUSETTS CLEAN HEAT STANDARD

TECHNICAL SESSION:
CALCULATION OF CREDITS BY TECHNOLOGY & HYBRID HEAT SYSTEM CREDITS

JULY 2023

CLEAN HEAT STANDARD TECHNICAL SESSIONS

Monday, July 24

- Compliance flexibility/banking
- Alternative Compliance Payment level

Tuesday, July 25

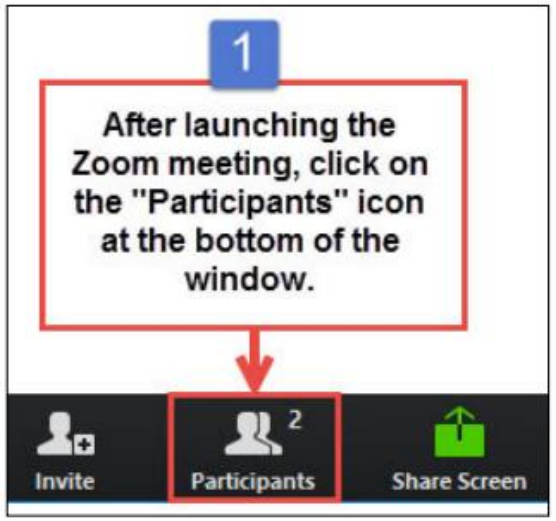
- Calculation of credits by technology
- Hybrid heat system credits

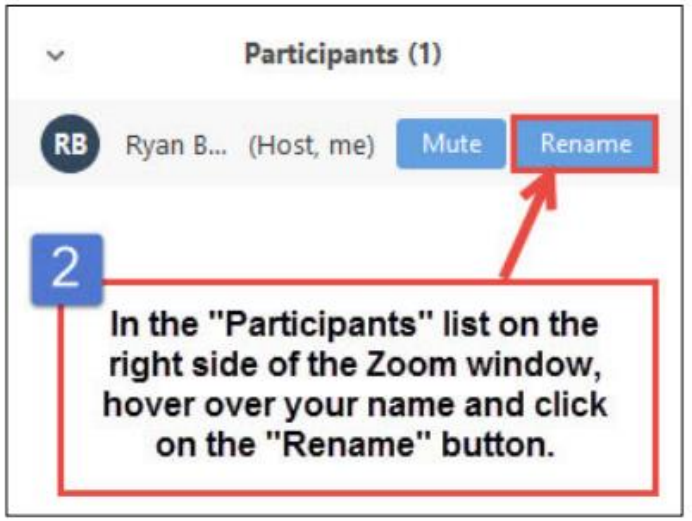
Wednesday, July 26

- Mass Save coordination
- Measure verification

ZOOM MEETING LOGISTICS

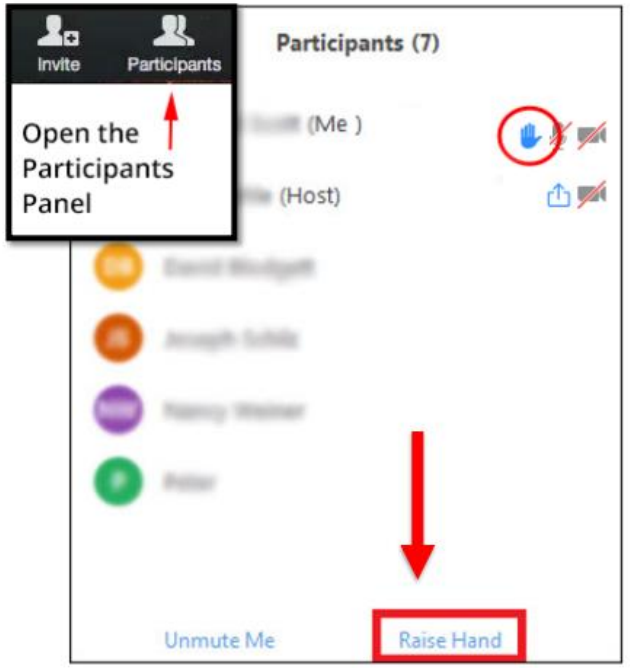
- This meeting is being recorded
- To minimize background noise, attendees are on mute
- Please enter your full name, and affiliation if relevant, in the Participants panel





HOW TO PARTICIPATE VIRTUALLY

- There will be opportunities for clarifying questions throughout the presentation and the latter half of the meeting will be dedicated to receiving substantive questions and comments
- To ask a question or provide a comment, raise your hand
- When it is your turn, we will:
  - Notify you by chat
  - Announce your name
  - Unmute you and lower your raised hand



AGENDA

Part I (approx. 60 min)

Calculation of credits by technology

- Background
- Summary of comments received
- Questions and Comments

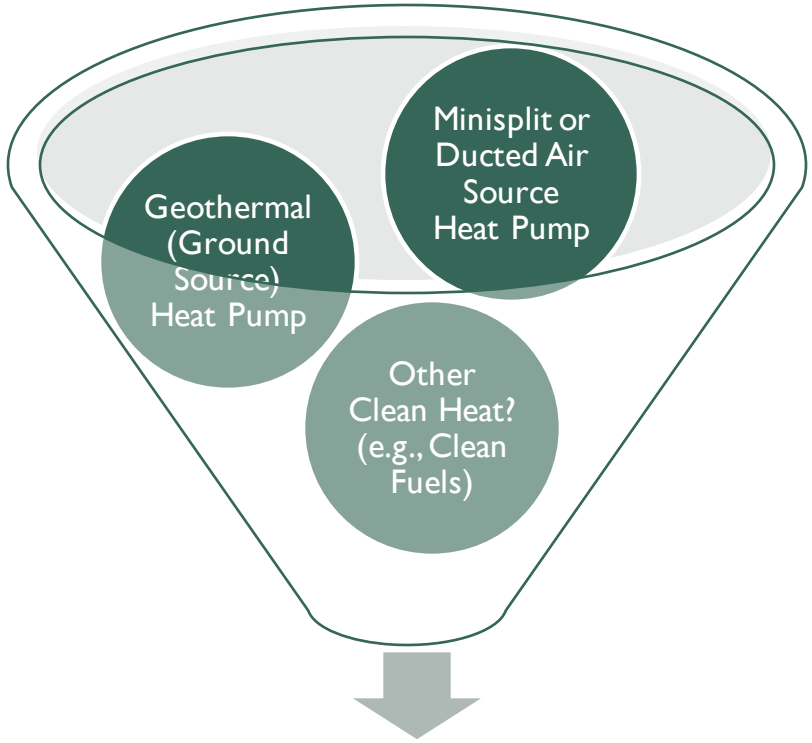
Part II (approx. 30 min)

Hybrid heat system credits

- Background
- Summary of comments received
- Questions and Comments

WHAT IS A CLEAN HEAT STANDARD?

- A Clean Heat Standard is a regulatory program that requires heating energy suppliers to reduce their GHG emissions over time by acquiring clean heat credits
- Regulated companies (suppliers) would include suppliers of heating oil, propane, natural gas, and possibly electricity
- Suppliers would demonstrate emissions reductions through clean heat credits
- Suppliers could implement clean heat themselves or purchase credits from third parties, such as heat pump installers
- Clean heat credits would be generated by implementing clean heat, such as electric heat pumps



Clean heat credits

MassDEP is evaluating and seeking stakeholder input on program design details

CALCULATION OF CREDITS BY TECHNOLOGY

- MassDEP needs to determine "the range of technologies that are eligible for crediting."
- "Once the list of creditable technologies is finalized, the more complex task of assigning the credit value to various creditable actions must be addressed."
- There are many possible approaches, including:
  - The LCFS approach: "assign every emission reduction 'pathway' a specific credit value, denominated in GHG emission reductions."
  - The "yardstick" approach: set "one credit equal to the average amount of emission reductions achieved through full electrification of one single family home."

From MassDEP Stakeholder Discussion Document

QUESTIONS TO STAKEHOLDERS

Which clean heat technologies should be eligible for crediting under the CHS?

When and how should new options, such as hydrogen and advanced biofuels, be evaluated?

How should the amount of credits be calculated for the eligible technologies?

What existing calculation methods could MassDEP consider, reference, or adopt?

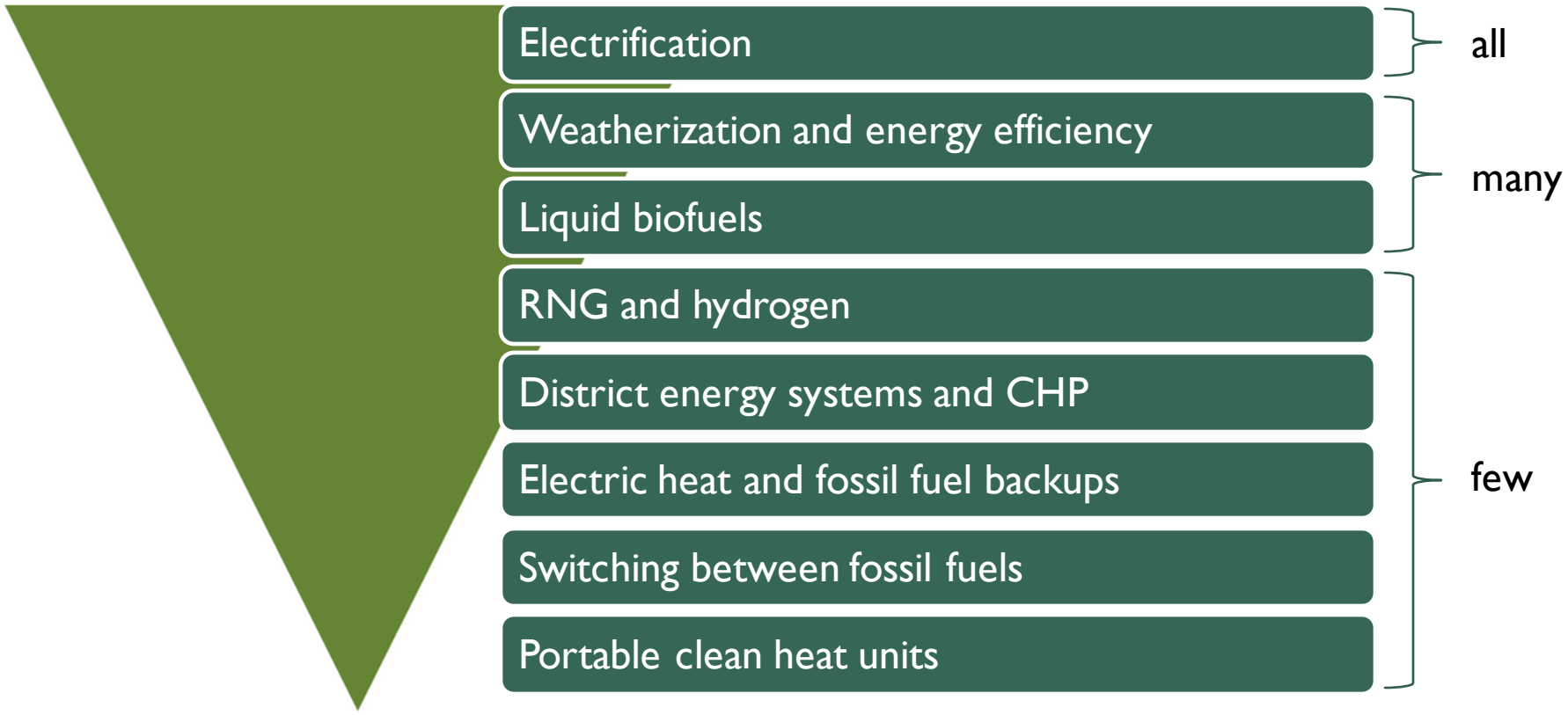
From MassDEP Stakeholder Discussion Document

SUMMARY OF STAKEHOLDER COMMENTS ON CALCULATION OF CREDITS BY TECHNOLOGY

- All commenters that addressed this topic agreed electrification should be eligible to receive credits.
- Commenters generally fell into two categories regarding eligible technologies. One group argued only **non-combustion technologies** compatible with Massachusetts' long-term net-zero goals should be eligible to generate clean heat credits and one group argued the CHS should be **'technology neutral'** and allow any activity that reduces emissions to generate clean heat credits.
- Commenters also identified a need for a methodology to qualify new technologies as they become commercially available.

From Clean Heat Standard 2023 Initial Stakeholder Comments Summary

Commenters that addressed these questions supported inclusion of:



SUMMARY OF COMMENTS

Technology and fuels supported

SUMMARY OF STAKEHOLDER COMMENTS ON CALCULATION OF CREDITS BY TECHNOLOGY

- "Many commenters suggested DEP should base credit calculations on pre-established methodologies such as the Mass Save programs, the federal GREET [GHG, Regulated Emissions, and Energy Use in Transportation] model, or a similar lifecycle analysis approach."
- Many commenters discussed "whether emissions from electricity generation should be included in calculations and if so, how those emissions should be quantified."

From Clean Heat Standard 2023 Initial Stakeholder Comments Summary

Electricity as zero-emissions for crediting purposes (*many*)

The GREET model (*several*)

Incorporation of emissions from electricity production (*several*)

Life-cycle analysis of fuel (*several*)

Life-cycle analysis of electricity equipment and generation (*several*)

Extra credits for geothermal heat pumps relative to air source (*few*)

ANY QUESTIONS OR COMMENTS
ON CALCULATION OF CREDITS BY TECHNOLOGY

QUESTIONS TO STAKEHOLDERS

Are there other existing calculation methods that MassDEP should consider, reference, or adopt?

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HYBRID HEAT SYSTEM CREDITS

- A hybrid heat system refers to "'partial' electrification" of a system, "where a fossil-fueled backup system is retained."

From MassDEP Stakeholder Discussion Document

- For example: "When installing a heat pump to provide air conditioning, homeowners can elect to install a unit sized for cooling needs or for heating needs ... a unit sized for cooling typically will only be able to meet 50-80% of a household's heating needs, with the remainder served by an existing heating system that is likely still fossil-fuel based."

From MA Clean Energy and Climate Plan for 2025 and 2030

HYBRID HEAT SYSTEM CREDITS

Commenters on hybrid heat system credits discussed:

Hybrid systems vary in technology and usage patterns (*many*)

Hybrid systems need specialized crediting, verification, and reporting (*many*)

Hybrid systems can make achieving net zero more challenging and expensive (*many*)

Hybrid systems can raise the cost of energy system maintenance (*few*)

Estimating GHG emissions from hybrid systems is more challenging (*many*)

Hybrid systems are good for customer choice (*few*)

ANY QUESTIONS OR COMMENTS ON HYBRID HEATING SYSTEMS?

QUESTIONS TO STAKEHOLDERS

How should hybrid heating systems be defined?

Should all hybrid heating systems be eligible for crediting under the CHS?

How should hybrid heating systems be evaluated and verified?

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GENERAL QUESTIONS AND COMMENTS

MassDEP CHS web page

Submit comments and questions to climate.strategies@mass.gov

Sign up for the CHS email list