Code Change Proposal
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Fuel Type Bias Reduction ("Level Playing Field")

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- How does it solve it?
- Why should it be solved?
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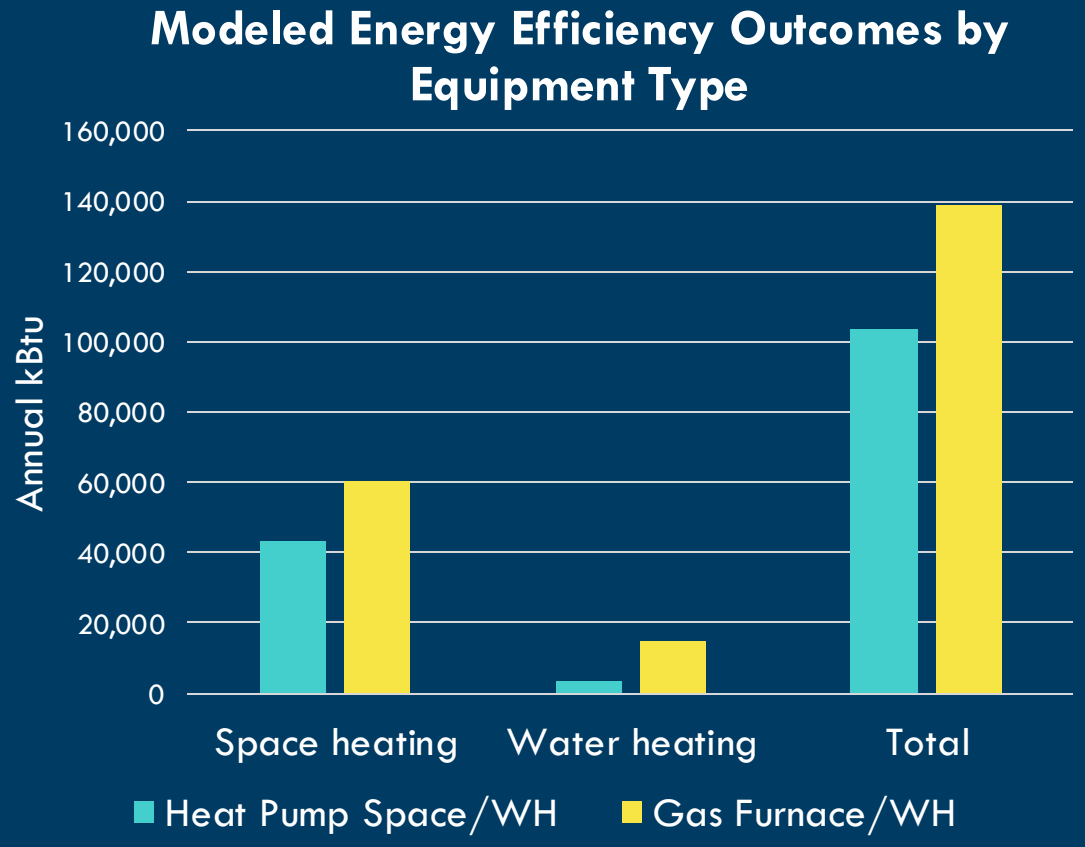
Model code sets different efficiency standards for mixed-fuel and electric buildings

- A building design is compared to a baseline model using the same type of equipment to determine compliance.
- All buildings are required to improve the same* percent over the baseline model.
- **Homes with heat pumps save 25%** compared with homes using gas combustion equipment complying with 2024 IECC-R in CZ 6A, according to PNNL estimates.

Source: https://www.energycodes.gov/prototype-building-models#Residential

*in 2024 IECC-R performance pathway, 5 percentage points' difference

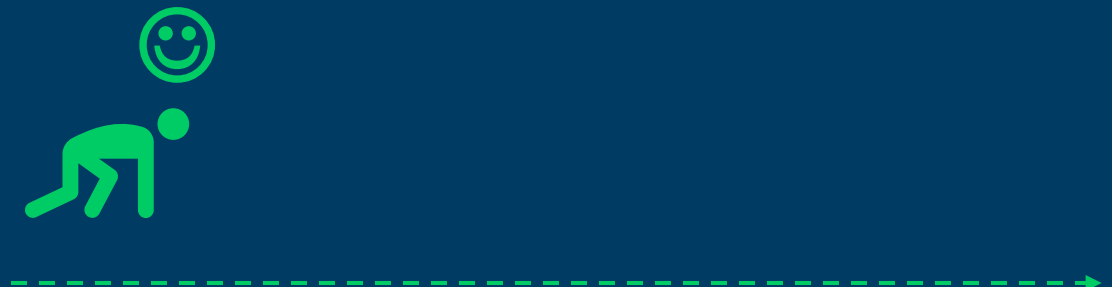


Home specifications: 2024 IECC-R compliant, CZ 6A (Rochester, MN), single-family home, heated basement

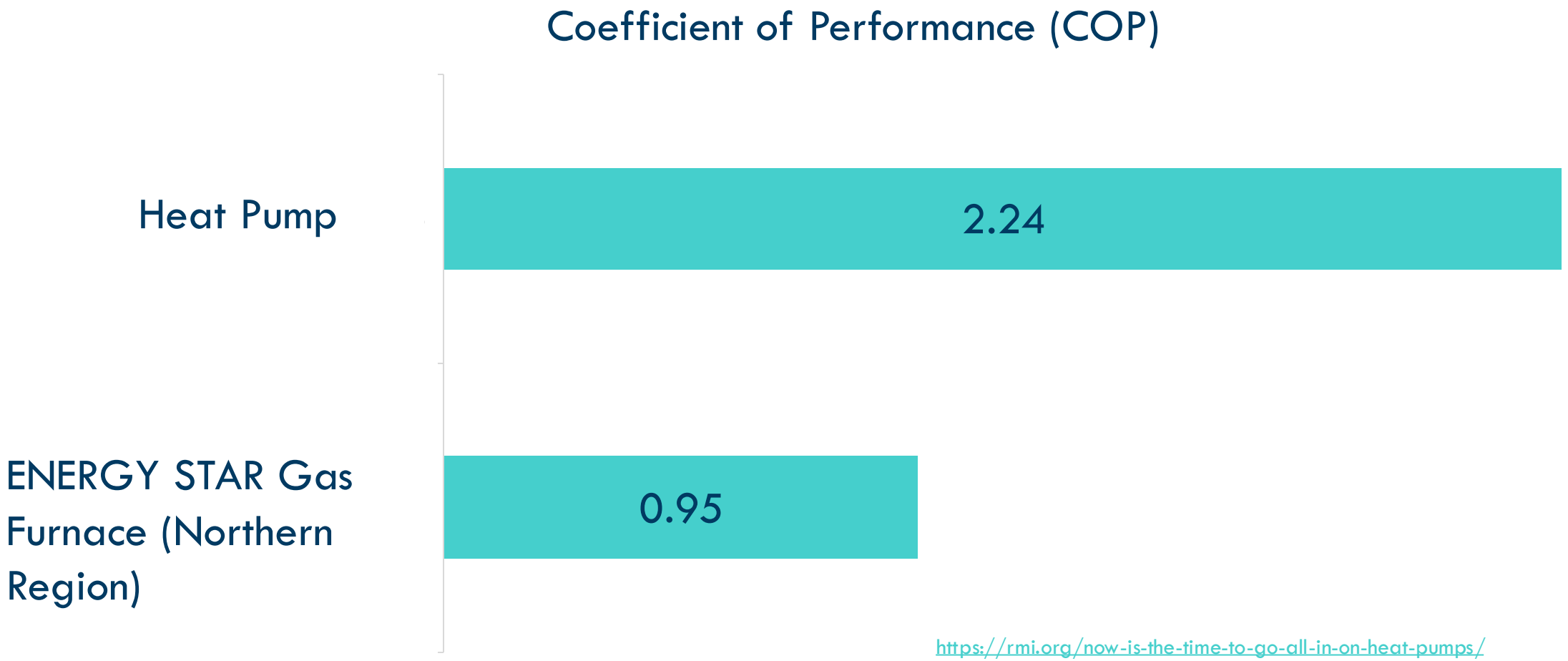
How does fuel type bias work?

Codes have “start lines” and “end lines.”

Electric buildings “start” ahead of mixed fuel because they’re more efficient.

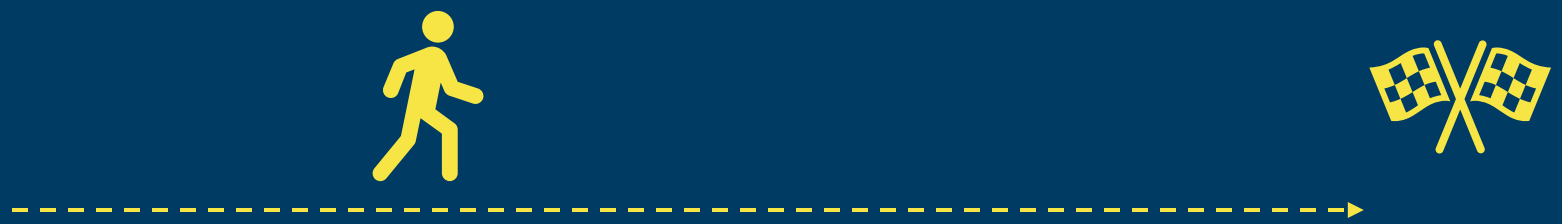


Heat pumps are 2.4x more efficient than ENERGY STAR gas furnaces in Minnesota



https://rmi.org/now-is-the-time-to-go-all-in-on-heat-pumps/

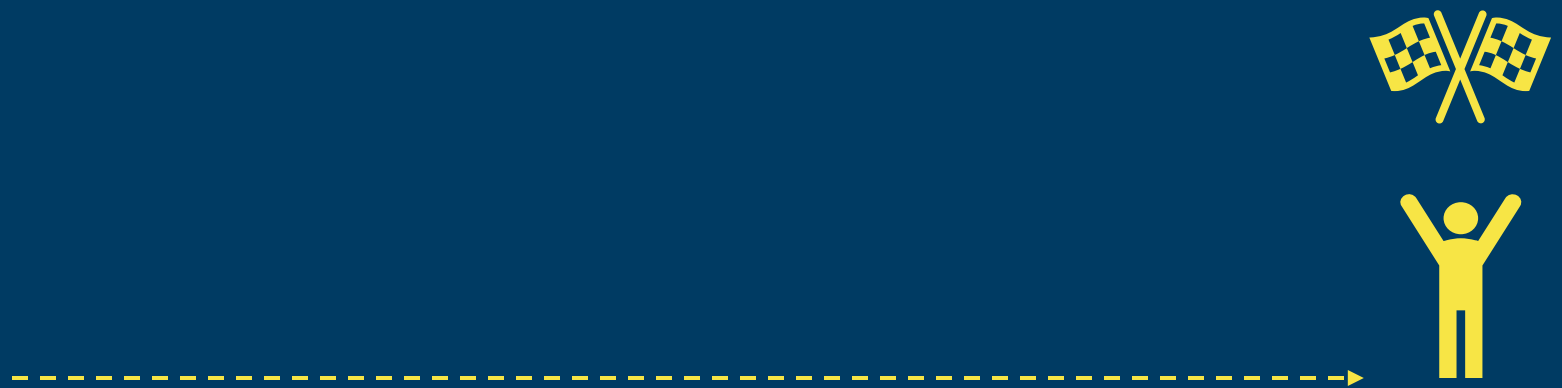
And while that should make electric buildings more appealing for builders…



Codes don't give electric heat pumps due credit for how much more efficient they are.

Mixed fuel buildings can be less efficient…

And electric buildings must be more efficient.



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This code change proposal would make precise changes that allow builders to count energy savings from efficient appliance types toward compliance.

It would *not* significantly change the processes of compliance or enforcement.

This CCP sets fair standards for all buildings, regardless of energy type.

This CCP would level the playing field:

1
Buildings are measured against the same baseline no matter what types of energy they use

2
Efficiency is measured based on energy used in the building

3
Electric heat pumps get due credit for how much less energy they use

4
Buildings must reach the same efficiency goal, no matter what types of energy they use

How the Code Change Proposal Works

Prescriptive pathway	Performance pathway	ERI pathway
Calculate N1108 credits with respect to the equal baseline and add credits for efficient system types	Systems that reduce model energy use earn due credit toward compliance	Maximum scores are adjusted for electricity-heated homes to result in equal site energy outcomes

10% higher energy efficiency (Appendix NG)

Equal baselines (Federal minimum efficiency gas equipment)

Metric: Site energy use intensity

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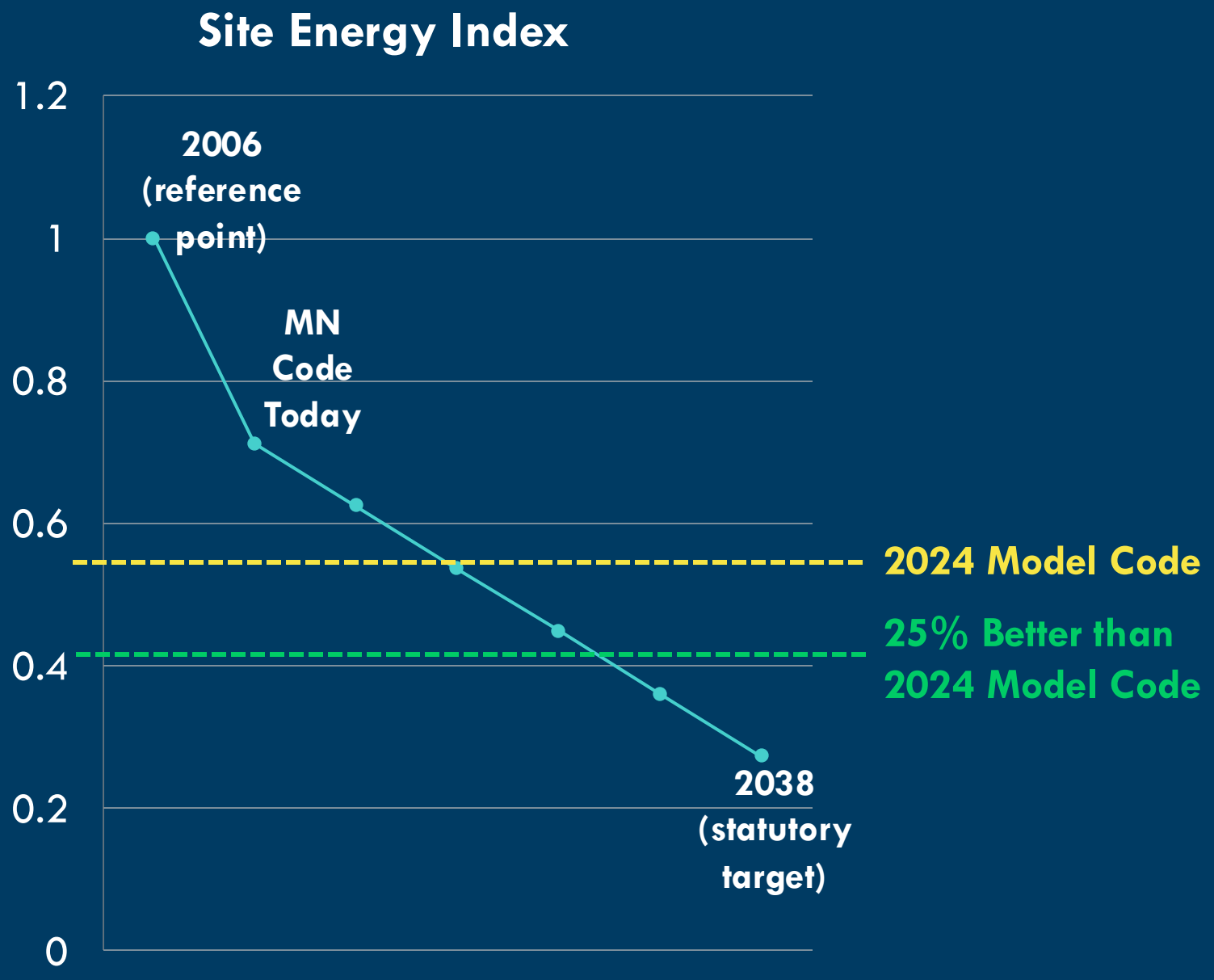
What does 25% energy savings compared to the 2024 IECC look like?

A huge leap toward the goal set in Minnesota Statute.

If builders *could not* count efficient equipment types, what would they need to do instead? What would it cost?



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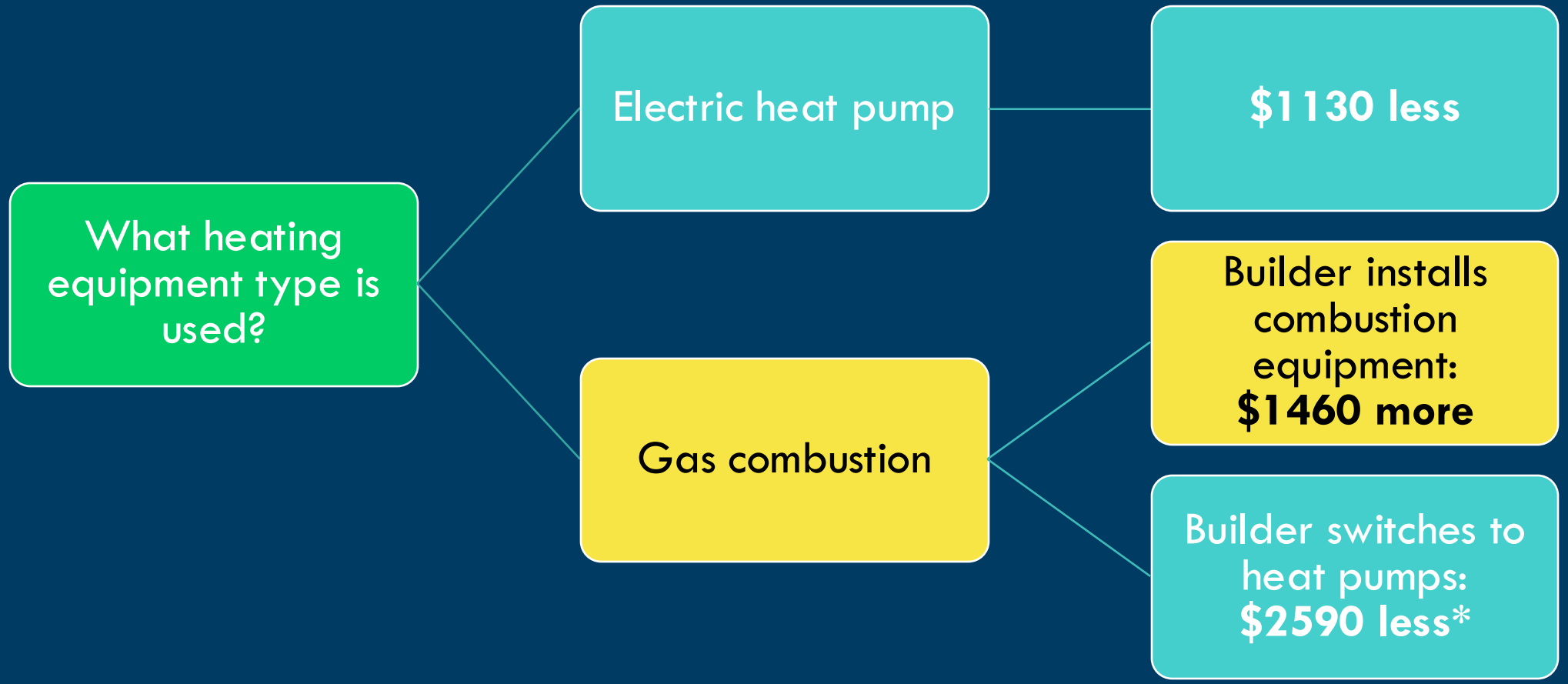
How do up-front costs change under this CCP?



*RMI analysis suggests that all-electric homes are less expensive than mixed fuel homes in Minnesota, so the savings may be even greater.

Thank you!

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