



Dear Colorado Energy and Environment House Committee:

I am writing to ask for your support of HB 24-1352. Heat pump adoption is going at a snail's pace and we need to adopt this technology now instead of retrofitting tens of thousands of homes in the near future. I fully support environmental justice and retraining of workers, but the consumer is being left out of the decision making. We were building highly efficient heat pump homes 8 years ago in Fort Collins and all the data supports the technology and economics. I tried to build a townhome in Denver and even though the HVAC contractor was all for switching from gas appliances and AC to heat pumps, the builder would not until the code required it.

As you know, policy drives markets. This legislation will drive the market more efficiently for consumers, contractors and builders by giving a clear vision of our non-carbon future.

Please vote for HB24-1352.

Sincerely,

A handwritten signature in black ink that reads "Susan McFaddin". The signature is written in a cursive, flowing style. The signature is placed on a light-colored, textured background that appears to be a scan of a document or a piece of paper.

Susan McFaddin, PhD, CEM, LEED-AP



March 21, 2024

TO: House Energy and Environment Committee Cathy Kipp, Jenny Willford
Scott Bottoms, Ken DeGraaf, Gabe Evans, Meg Froelich, Junie Joseph, Manny Rutinel, Brianna
Titone, Alex Valdez, Elizabeth Velasco, Stephanie Vigil, Ty Winter

TO: Bill Sponsors: Froelich, Velasco, Cutter

RE: CRES Supports HB24-1352 | Appliance Requirements & Incentives - Concerning
measures to increase access to affordable appliances for a healthy community

CRES supports this bill and urges all House Energy and Environment Committee
Members to vote yes on the bill.

CRES is a nonpartisan, science-based nonprofit with a reach of thousands of Coloradans annually. The CRES Policy Committee brings together a broad range of energy policy and technology experts who review energy bills before the Colorado state legislature to provide our perspective.

The state's largest utility, Xcel, is rapidly decarbonizing its electric grid. It is on track to provide approximately 80% of its electricity from low-cost, carbon-free solar and wind electricity. To take advantage of this climate-friendly electricity, we need to rapidly decarbonize our transportation, buildings, and industry sectors. With the advent of cold-climate, air-to-air heat pumps and the experience gained in installing ground-coupled heat pump systems, we now have extremely efficient means for heating and cooling both existing and new buildings with carbon-free grid electricity. CRES strongly supports the primary thrust of this bill, namely the replacement of central air conditioners with high-performance electric heat pumps. CRES members who have installed high-performance heat pumps to replace gas furnaces have found that they heat their homes on the coldest days without needing electric resistance back-up. These members now have the benefit of living in homes that provide clean, non-polluting heating and cooling.

The bill uses a carrot-and-stick approach, and, while we believe the tax incentives (the carrot) and the stick (penalties for non-compliance) may both be necessary to achieve rapid building electrification, we suspect that some compromise on the penalties may be needed to achieve bill passage. We applaud the bill's provisions incentivizing cold-climate and ground-coupled heat pumps to replace end-of-life central air conditioners. Unlike common heat pumps, these high-performance units can completely eliminate the need for methane gas equipment and also eliminate the monthly gas hook-up charge. A simple auxiliary resistance heater can be installed to provide back-up heat if needed on extremely cold days (e.g., for outdoor temperatures below -15°F). Because installation cost is generally much higher than equipment cost, we believe the

additional equipment cost of cold-climate heat pumps over conventional heat pumps is worth it to completely eliminate the use of natural gas.

We are also glad to see that ground-coupled systems get a tax benefit of \$2,000 per ton vs. \$1,000 per ton for air-source heat pumps. Ground-coupled systems are more expensive than air-source heat pumps, but for large new buildings and new neighborhoods drilling rig cost can be spread out over many boreholes.

Ground-coupled heat pump systems provide higher performance than air-to-air heat pumps because the ground is warmer than outdoor air in the winter and cooler than outdoor air in the summer. In addition, the relatively constant temperature of the ground means that on very cold winter days, ground-coupled heat pumps will result in a much lower winter electric demand peak than air-to-air systems, thus minimizing the new electric generating capacity that the utility must build. They also reduce both the amount of electricity consumed and the peak demand for summer cooling compared to central air conditioners.

Thank you for considering our comments.

Sincerely,

Vincent Calvano
Chair, CRES Policy Committee