

January 26, 2021
Kansas Senate Utilities Committee
SB24 Energy Choice Act Testimony - Bryton Stoll

My name is Bryton Stoll, and I am an engineer and HERS Energy Rater with Clean Efficient Energy Company. We perform residential energy analysis and energy ratings primarily in the Kansas City area. I am against Senate Bill No. 24 as it will prevent municipalities from achieving climate goals and taking measures to protect citizens' health at the community level.

Energy efficiency, renewable generation, and electrification are the clear path forward for communities that want to take the necessary steps to avoid the worst impacts of climate change. Efficiency and electrification are the two items that can more easily be addressed through a municipality's building codes, but until recently they weren't feasible together. However, with recent advancements in technology, that has changed. Air source heat pumps can reach up to three times more efficient than natural gas and electric resistance heating¹ and geothermal heat pumps can reach up to four times more efficient², while still being effective in cold climates³. These technologies can be used for the most energy-intensive processes in the home: heating, cooling, and water heating, meaning that residential electrification is a viable, efficient, and potentially economical solution. As heat pump technology improves and cheap, renewable electricity becomes more widely available, the economics will also continue to improve. Preventing municipalities from making the choice to harness these benefits and avoid the installation of outdated infrastructure will hamper their ability to reach their local climate goals.

Electrification can also be an important choice for communities who want to protect the health of their citizens from harmful pollutants. Combustion of natural gas creates pollutants like carbon monoxide, nitrogen oxides, formaldehyde, and particulate matter. These pollutants can cause and aggravate respiratory issues like asthma, and can increase susceptibility to COVID-19⁴. If equipment is installed correctly, most of these pollutants will be vented outside the home where they can affect the population of a neighborhood, especially in denser, low-income areas. In other cases like cooking and poor equipment installation, the pollutants remain inside the home. This is a severe risk for indoor air quality, which has been amplified by the movement toward reducing air leakage in homes. Homes built today are now around two times tighter than homes built under the 2009 International Energy Conservation Code, which means that over the last ten years natural ventilation in the home has been cut in half⁵. This is

great for energy efficiency and the occupants' utility bills, but increases the risk from pollutants in the home, particularly if the home is not properly ventilated. In the past, eliminating pollutants produced during cooking would mean using an inefficient electric coil stove. However, similar to heat pumps, technology has progressed to make this no longer true. Electric induction cooktops are now the top option for efficiency and safety for cooking in the home⁶. The Energy Choice Act would eliminate local municipalities' ability to choose to take advantage of this development to protect their citizens.

As a building science professional, I am against Senate Bill No. 24 as it would prevent local communities from making choices that are right for them and are in the interest of their climate goals and the health of their citizens.

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Sources:

1. "Lennox XP25 Heat Pump." *Lennox*,
www.lennox.com/products/heating-cooling/heat-pumps/xp25.
2. "ENERGY STAR Most Efficient 2020 - Geothermal Heat Pumps." *Products | ENERGY STAR*, DOE,
www.energystar.gov/products/energy_star_most_efficient_2020/geothermal_heat_pumps.
3. Bliss, Steven. "Do Heat Pumps Work In Cold Climates?" *Building Advisor*, 7 Nov. 2019, buildingadvisor.com/do-heat-pumps-work-in-cold-climates/.
4. Delforge, Pierre, and Michele Knab Hasson. "Gas Appliances Pollute Indoor and Outdoor Air, Study Shows." *NRDC*, 15 May 2020,
www.nrdc.org/experts/pierre-delforge/gas-appliances-pollute-indoor-and-outdoor-air-study-shows.
5. "Air Leakage in Homes." *Atlanta Blower Door*, 24 Apr. 2014,
atlantablowerdoor.com/air-leakage-in-homes/.
6. Gallup-Roholt, Louise Gallup-Roholt. "Gas, Radiant or Induction Cooktop? What's the Best Choice for Your New Home?" *NewHomeSource*,
www.newhomesource.com/learn/gas-radiant-induction-cooktop/.