

CLIMATE CORNER

# PIEDMONT CLIMATE CHALLENGE

## Going electric on water and heating

By Kevin Jackson in collaboration with Piedmont Connect

Climate Corner is a new collaboration between the city of Piedmont and Piedmont Connect, a local environmental non-profit, to raise awareness about climate actions in the community and promote the Piedmont Climate Challenge ([www.piedmont-climatechallenge.org](http://www.piedmont-climatechallenge.org)).

After transportation, natural gas is the largest contributor to greenhouse gas emissions in Piedmont, representing 33% of the city's emissions. Replacing natural gas furnaces, water heaters and stoves is one of the most important personal steps that Piedmonters can take to address climate change.

Consequently, members of the city staff are starting to explore the idea of requiring residents to replace natural gas fixtures with electric systems during remodeling projects. The effort comes in response to a broader state initiative promoting "reach codes" – new building codes designed to increase energy efficiency and reduce emissions to address climate change. The city has been holding public meetings on reach codes to gather ideas and feedback.

So far, only a few Piedmont families have replaced their nat-



This small utility closet contains both the Griffiths' electric heat pump water heater (foreground) and their electric heat pump furnace's air handler (background).

ural gas appliances with electric heat pump systems. When Russ and Amy Griffith's natural gas-burning water heater started leaking on Christmas Eve in 2018, they quickly replaced it with an electric heat pump water heater. Since the technology worked so well and is so energy-efficient, they followed up in early 2019 by installing an electric heat pump combination furnace and air conditioning unit.

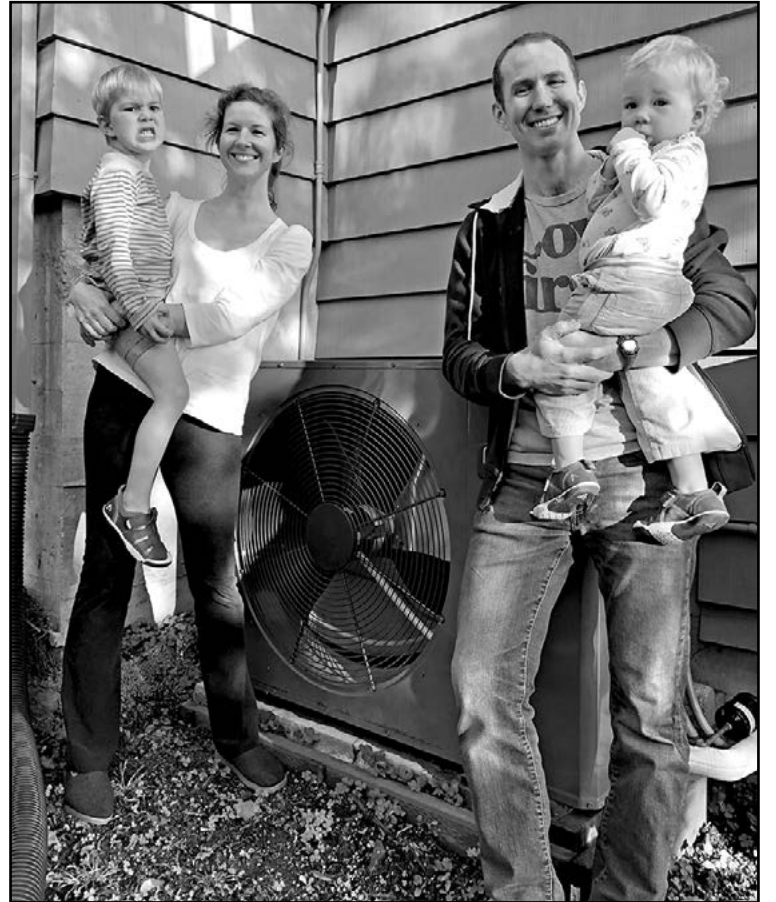
"I'd been thinking about replacing our furnace since 2017," Russ said. "Originally, I wanted to use a heat pump system just for heating, but after the summer heat waves of 2017 and 2018, I gave up on my desire to never have A/C, realizing air conditioning is helpful for the 10 to 20 days per year with extreme heat waves that we didn't have when I grew up here in the '80s and '90s."

Electric heat pumps work the same way as air conditioners and refrigerators. They move heat very efficiently from the outside air to inside the house or to a water tank. (Counterintuitively, there is even enough heat in the air in cold weather.)

Over its lifetime, an electric pump can reduce greenhouse gas emissions by 46 to 54 percent compared to natural gas alternatives, according to the Natural Resources Defense Council. This is because burning natural gas releases methane, which is 84 times more potent than carbon dioxide in the first two decades after its release, according to Environmental Defense Fund.

Russ first became passionate about reversing global warming in 2006, when he saw Al Gore's film *An Inconvenient Truth*. After graduating from the U.S. Naval Academy, he began his career as an engineer in the nuclear industry and shifted his focus to renewable energy while earning an MBA.

During that time, Russ was recruited into a leadership development program at PG&E. He accepted because he saw that



Jamie, Amy, Russ and Poppy Griffith (left to right) show off their electric heat pump furnace's exterior unit, which works with an indoor unit called an air handler.

working with California's largest utility was an opportunity to have "dramatic impact at scale" on the transition to renewable energy to address climate change. Russ and Amy, who both grew up in Piedmont, are also clearly big believers in the importance of using renewable energy at home. They love their Chevrolet Bolt EV, which is powered by their home's solar panels and battery storage system. Since electrifying their home's air and water

heating systems, their stove is the only appliance left that's using natural gas. They plan to install an electric induction stovetop as their next and final project to fully electrify their home.

Submit your suggestions for a Climate Corner article to Justin Szasz at [jszasz@piedmont.ca.gov](mailto:jszasz@piedmont.ca.gov).

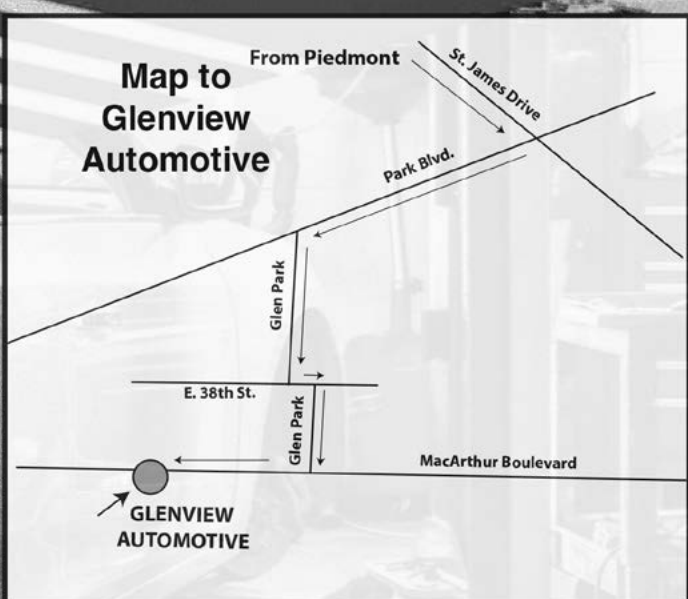
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