

Heat Pumps for Water & Space Heating

From the Technical to Real World Experience

BayREN Codes & Standards Regional Forum

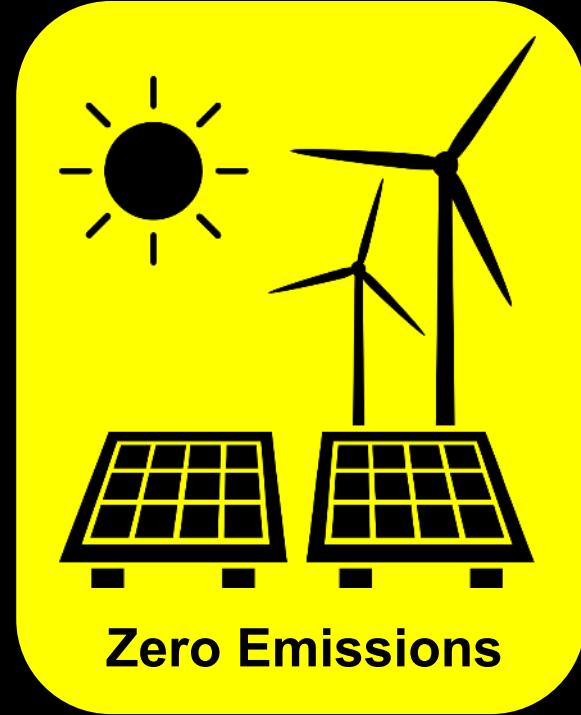
March 17, 2022

Why Heat Pumps?

How to Advocate for Market Transformation

Wei-Tai Kwok
City Council Member
City of Lafayette

Why Heat Pumps?



COP26: Adopted new “Global Methane Pledge”



COP26 methane pledge
is the first international agreement targeting
methane emissions.

111 countries pledged to cut methane
30% by 2030
compared to 2020 levels.

If successful, warming is projected to
decrease by **0.2°C by 2050.**

**What can Bay Area
communities do
to stop burning
methane
?**

2016 – Lafayette Votes to Join MCE (68% carbon-free)



Questions?
We want to hear from you!
1 (888) 632-3674

Residential ▾

Commercial ▾

Member Communities ▾

Energy Sources ▾

About Us ▾

FAQ

**YOUR LOCAL CLEAN
ELECTRICITY PROVIDER**
serving 36 communities
in 4 Bay Area counties.

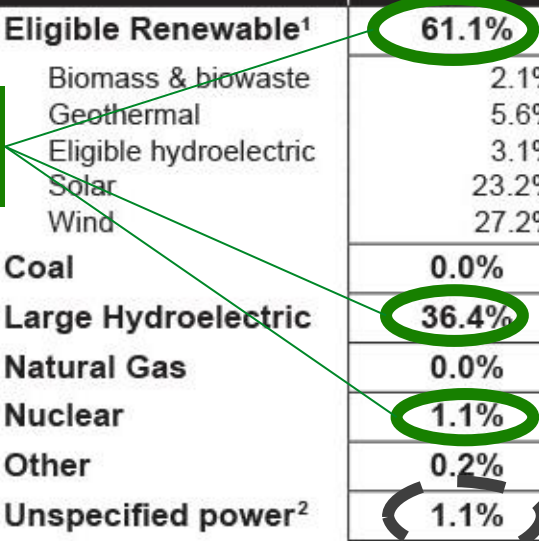
Learn about enrollment for
Pleasant Hill & Vallejo



2020: Most of Lafayette enjoys 98-100% clean energy

2020 POWER CONTENT LABEL				
MCE				
mceCleanEnergy.org/energy-sources				
Energy Resources	MCE Light Green	MCE Deep Green	MCE Local Sol	2020 CA Power Mix
Eligible Renewable¹	61.1%	100.0%	100.0%	33.1%
Biomass & biowaste	2.1%	0.0%	0.0%	2.5%
Geothermal	5.6%	0.0%	0.0%	4.9%
Eligible hydroelectric	3.1%	0.0%	0.0%	1.4%
Solar	23.2%	50.0%	100.0%	13.2%
Wind	27.2%	50.0%	0.0%	11.1%
Coal	0.0%	0.0%	0.0%	2.7%
Large Hydroelectric	36.4%	0.0%	0.0%	12.2%
Natural Gas	0.0%	0.0%	0.0%	37.1%
Nuclear	1.1%	0.0%	0.0%	9.3%
Other	0.2%	0.0%	0.0%	0.2%
Unspecified power²	1.1%	0.0%	0.0%	5.4%
TOTAL	100.0%	100.0%	100.0%	100.0%

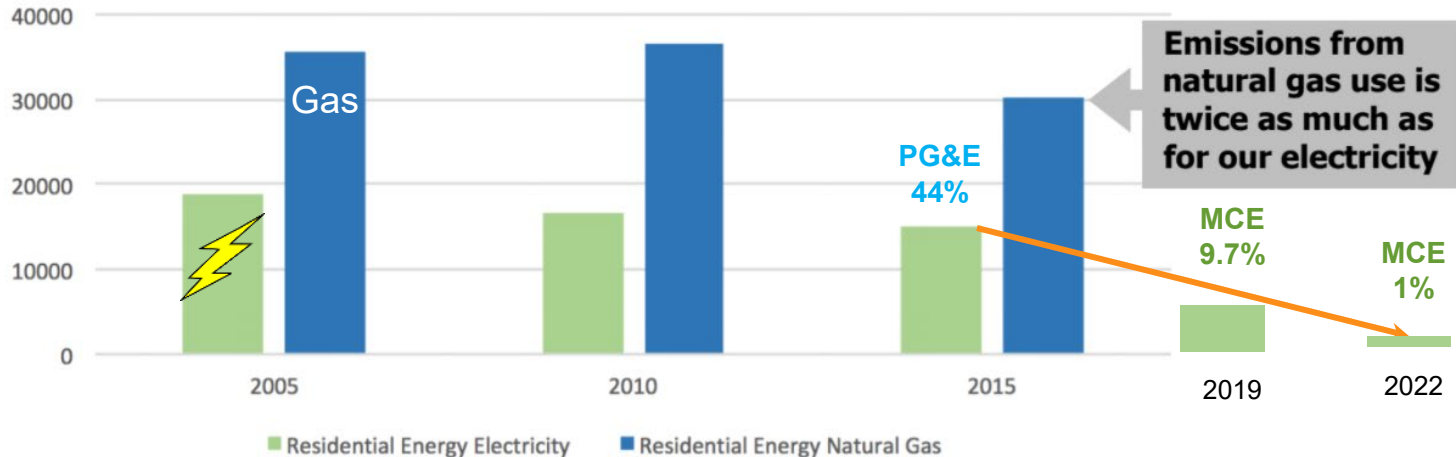
98.6%



Emissions from Electricity vs. Natural Gas?

Energy Sector

Residential GHG Emissions (MT CO₂e)



The residential sector made up 16% of overall greenhouse gas emissions in 2015. Since the baseline year (2005) greenhouse gas emissions resulting from electricity use have decreased by 21% and greenhouse gas emissions from natural gas consumption decreased by 15%.

*2005 electricity and natural gas figures have been adjusted from the baseline inventory to reflect the latest PG&E usage data and emissions figures for 2005.

Where do our homes burn natural gas?



How to Advocate for Market Transformation?

The New Mantra

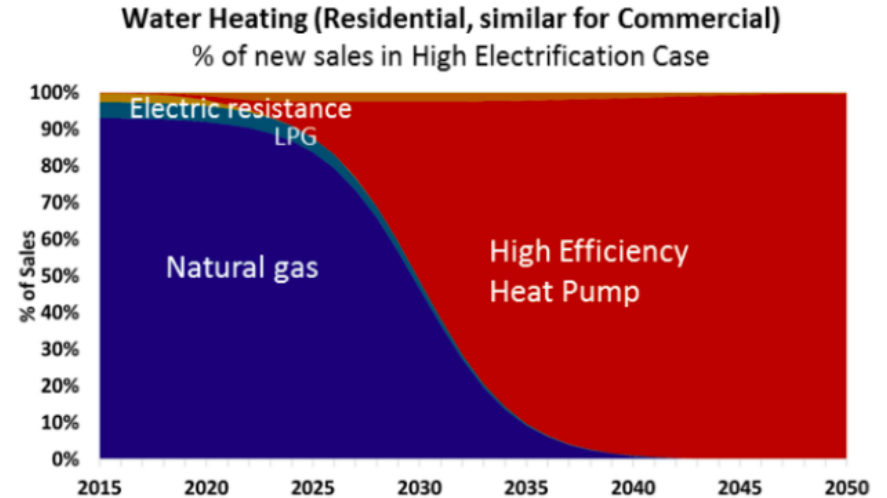
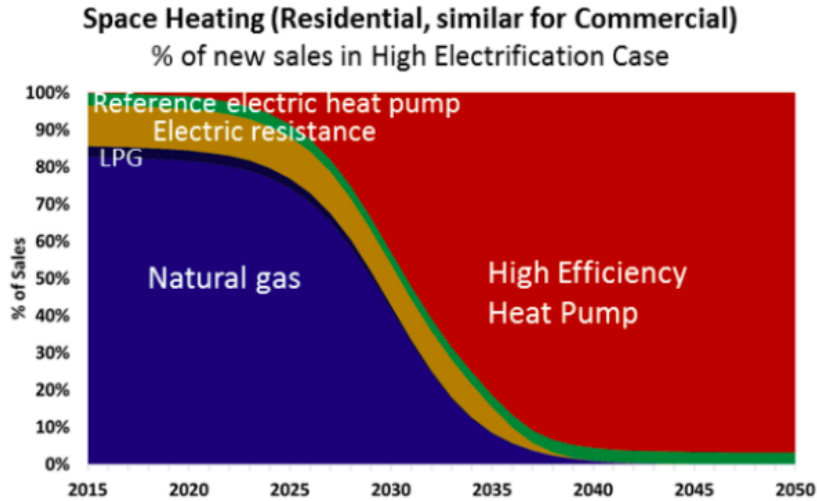
Electrify Everything



Cost Effective Solutions Exist



Unprecedented Heat Pump Adoption Rates Needed



Source: E3

Berkeley: 1st City in CA to ban gas in new buildings Passed Unanimously: 16 July 2019 Effective Date: 1 January 2020

CITY



By Emilie Raguso,
July 17, 2019, 4:19 a.m.

Berkeley first city in California to ban natural gas in new buildings

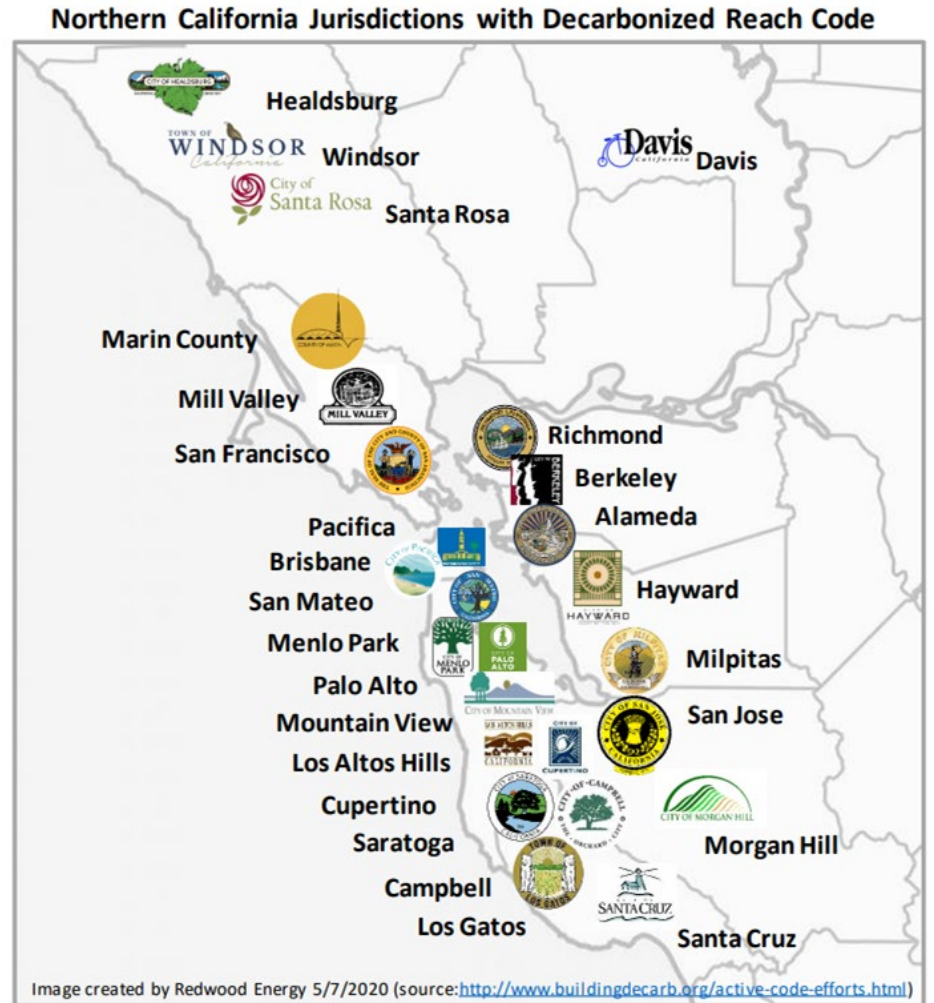
The city of Berkeley will no longer allow natural gas pipes in many new buildings starting Jan. 1, 2020. It's the first city in California to pass such a law, officials said.



Berkeley is leading the way again with a new law to ban natural gas infrastructure in new construction. Photo: Emilie Raguso

The city of Berkeley will no longer allow natural gas pipes in many new buildings starting

47 Cities in Nor Cal have adopted Electrification Ordinances



Why Heat Pumps?

- Highly energy efficient
- Can be powered by Zero Emission grid

How to Advocate for Market Transformation

- Electrify Everything
- Speak in support of All-Electric transition

Real World Experience with Heat Pump Space & Water Heating

Wei-Tai Kwok
Lafayette, CA