Sent: Saturday, July 18, 2020 2:31 PM

To: Clerk <clerk@cityofsanmateo.org>

Subject: Please enact strong REACH codes

Dear San Mateo City Council,

Please direct your staff to prepare very strong reach codes for the elimination of natural gas in new multi-family construction.

Natural gas is methane, a GreenHouse Gas 80 times more deadly than CO2. We have an opportunity to eliminate its use in new construction. We cannot delay making changes in new construction today. It will only get more expensive as time passes.

Thank you,

Kathy Battat

Sent: Saturday, July 18, 2020 7:04 PM **To:** Clerk <clerk@cityofsanmateo.org>

Subject: Fossil free reach codes

To the City Council:

Thank you for your attention to the subject of reach codes and building electrification.

It is easier to create a well functioning system now than to make future changes retroactively. Fossil gas (methane) has been found to be quite harmful to human health in the context of indoor cooking at home. Requiring new construction to avoid costly gas hookups is necessary to accomplish true greenhouse gas reductions and protect public safety.

As society continues to embrace cleaner and more sustainable forms of energy, methane will become a "stranded asset" of declining value and increasing societal burden. This transition is already underway and will likely accelerate in coming years.

Please don't weaken reach codes for new multi-family construction in San Mateo. We have good technologies to reduce our city's carbon footprint and go all-electric. Sound leadership is very much needed at this time. Please take this opportunity to show leadership on all-electric reach codes.

Thank you for your time.

Sincerely, Wendy Chou Resident of the City of San Mateo **Sent:** Saturday, July 18, 2020 8:39 AM **To:** Clerk <clerk@cityofsanmateo.org>

Subject: Updating codes for a healthy future

Dear City Council and Staff,

It is universally understood that our world has not sufficiently addressed the accelerating rate of a warming climate. We face extreme consequences if we do not act now. Much of the damage is due to our overconsumption of natural resources, namely fossil fuels for our energy production. While our nation's leaders should be taking stronger action, the true location of consumption is local. Our cars and our homes contribute the majority of the carbon emissions warming the globe and therefore it is incumbent upon local leaders to lead on this issue. Our buildings contribute 12-17% to the problem and this problem can be solved efficiently by requiring all buildings to eliminate natural gas and shift to electric. Buildings have a lifespan of 50-100 years so this is an obvious and critical place to start. Why install gas lines in buildings whether It be new construction or remodels at a time when we should be moving away from fossil fuels? It makes no sense. Yes, we will need to make some personal adjustments to accommodate this change but at this point we must if we are to enjoy clean air and water and protect our health and that of the planet for generations to come.

I urge you to do the right thing for our grandchildren and beyond by establishing strong reach codes.

Thank you for your leadership on this issue, joining the other communities in our County and state who are leading the way to a cleaner future for all.

Ellyn Dooley

"You might think of sustainability as extending the Golden Rule through time, so that you do unto future generations (as well as your present human beings) as you would have them do unto you."

- Robert Gilman, Director, Context Institute

Sent: Sunday, July 19, 2020 8:11 PM **To:** Clerk <clerk@cityofsanmateo.org>

Subject: Public Comment for the Council Meeting

Below are comments I would like sent to the members of Council as they consider the City's reach code.

Alan Mattlage

Last August I was proud that the Council was among the first in the region to pass a reach code. You were in the vanguard of the effort to reduce greenhouse gas emissions, but sometimes there is a cost to being an early adopter. San Mateo County and other municipalities had the advantage of time to hear additional arguments in favor of all-electric reach codes. They have since taken bolder steps toward a clean energy future. You are now in a position to amend your previous decision and join the most forward-thinking jurisdictions by adopting an all-electric reach code for all new construction.

I encourage you to amend our current code and require only the all-electric option for all new construction in San Mateo.

Our dire climate future needs no discussion, but it is worth remembering that we face a truly existential crisis which calls on all levels of government to adopt the most aggressive measure to decarbonize our economy. This means not expanding our fossil fuel infrastructure which, if built, would lock us into future greenhouse gas emissions. Instead, we must build the infrastructure of a clean electric economy.

Cost effectiveness studies are demonstrating the economic viability of clean electric power. It is even more cost effective if we consider the social cost of carbon. The Obama Administration estimated that the 2020 social cost of carbon would be \$42 per tonne of CO2. Since then, economic models show far higher costs -- as high as \$417 per tonne (see notes 1, 2, 3, & 4) -- and costs are projected to rise in subsequent years. If the social cost of carbon is included in cost-benefit calculations, the balance tips sharply in favor of all-electric construction.

This is a moral issue. Ignoring the social cost of carbon harms people who have no say in our decisions. I urge you to adopt an all-electric reach code for all new construction in San Mateo.

One caveat: financing for affordable housing is limited. In the immediate and near-term, all-electric construction might pose a challenge for affordable housing construction. Affordable housing is essential to reducing transportation emissions and to supporting the essential workers in our community. I strongly encourage the Council to find ways to expand affordable housing in San Mateo.

Notes:

- 1. The 2016 update to the Interagency Working Group's assessment of the social cost of carbon can be found at https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/sc co2 tsd august 2016.pdf.
- 2. Pei Wang, Xiangzheng Deng, Huimin Zhou, Shangkun Yu. Estimates of the social cost of carbon: A review based on meta-analysis. *Journal of Cleaner Production*. 209, 1494-1507 (1 February 2019) examined 578 estimates of the social cost of carbon in 58 studies and found a mean value of \$200.57/tonne of carbon and \$112.86/tonne in peer reviewed studies using a 3% discount rate.
- 3. Pindyke, Robert S. The social cost of carbon revisited. *Journal of Environmental Economics and Management*. 94, 140-160 (March 2019) estimated the mean social cost of carbon at \$200/tonne, but ignoring outliers and focusing on experts who expressed a high degree of confidence in their answers yielded a lower cost range of \$80 to \$100/tonne.
- 4. Ricke, K., Drouet, L., Caldeira, K. et al. Country-level social cost of carbon. *Nature Climate Change* 8, 895–900 (2018). https://doi.org/10.1038/s41558-018-0282-y concludes the social cost of carbon is \$417.

Sent: Monday, July 20, 2020 10:01 AM

To: City Council (San Mateo) < CityCouncil@cityofsanmateo.org>

Subject: Electric reach code

Dear city council members,

I'm writing in support of a strong all electric reach code. Our 70 person architecture firm has designed many all electric buildings and found all-electric to be robust effective solutions for our clients. They have proven cost effective both in first cost and operational cost. I have asked many of the top engineering firms in the Bay Area about this and they all said that the industry was ready to move to all electric. I have been collecting examples in the attached slide deck, and you can see that there are many projects of all sizes and budgets. California has legislated targets for reducing carbon emissions with zero emissions by 2045. By the time a code is adopted and buildings are constructed, there will be only around 20 years left to reach that target. We are very concerned that continuing to build projects with gas is just creating more and more projects that will have to be retrofit within that 20 years. That is a short time relative to a building's lifespan, and is not a cost effective solution for those building owners and tenants. We strongly recommend that we go ahead and recognize this is a transition that has to be made, and it is more affordable to do so now rather than push the retrofit cost onto future owners.

As an avid home cook, I know many people love there gas stoves. But they will also love electric induction stoves once they give them a try. SMUD did extensive consumer outreach and round that most people were skeptical of induction until they tried it, and then 91% of people liked them.

Some people will bring up amenities such as fireplaces or firepits. There are now very good options for these that are all electric.

Sincerely,
Scott Shell, FAIA
Scott Shell FAIA, LEED® AP BD+C, CPHC®
Principal

Pier 1 The Embarcadero, Bay 2 San Francisco, CA 94111 +1 415-214-7277





Multi-Family Housing

Edwina Benner Plaza, Sunnyvale

Affordable – 66 Units, Occupied



MidPen Housing, David Baker Architects, Emerald City Engineers, Association for Energy Affordability Central Heat Pump Water Heating





UC Irvine Student Housing West

1,441 beds



P3, Developer is American Campus Communities, KTGY Architects



UC Davis Student Housing, Webster Hall Replacement 371 beds,



Design/Build, DPR GC, HKS Architects, Interface Engineering Central Heat Pump Water Heating



UC San Francisco Minnesota Street Housing595 Units



Skanska is GC, Kieran Timberlake Architects, Point Energy Innovations Nyle Central Heat Pump Water Heating



Alameda Point Development

1,700+ Residential Units



Multiple projects including City Ventures Mulberry, Everett Commons, Alamda Landing Residential, etc



California projects

Redwood Energy, Sean Armstrong



Spring Lake in Woodland, by Mutual Housing



King's Station in King City, by King City Pacific Valley Glen in Dixon, by Dixon Pacific





Lakeport Senior Apartments in Lakeport, by Lakeport Pacific



Colonial House Apartments, in Oxnard, by Oxnard Pacific



Plaza Point in Arcata by Danco Communities



California projects

Redwood Energy, Sean Armstrong



Heritage Square in Pasadena by BRIDGE Housing



Cloverdale, by Corporation for Better Housing



Atascadero, Corporation for Better Housing



Castroville, by Corporation for Better Housing



Quetzal Gardens in San Jose by RCD Housing



Quetzal Gardens, San Jose



Valley Glen, Dixon



Plaza Point, Arcata

Sean Armstrong, Redwood Energy

Redwood Energy Foremost Zero Net Energy Specialists in Multifamily Housing

All-electric construction consistently reduces construction costs and ongoing utility bills.

It saves between \$2,500 and \$5,000 per residence for the developer to not plumb gas. When infrastructure and appliance costs are added up, a recent study done by Rocky Mountain Institute found a median increased cost of \$8,800 more per house for gas infrastructure, piping, purchasing appliances and venting

Developers have been choosing all electric construction because it cost less to build and that trend has been going on for 24 years now.

All Electric Construction Guides:



https://www.redwoodenergy.tech/research/



Depot Station Townhomes, Morgan Hill

29 Units



City Ventures, Hunt Hale Jones Architects



2437 Eagle Ave, Alameda

Affordable – 20 Units, Occupied



Housing Authority of the City of Alameda, Anne Philips Architecture, Fard Engineers, Association for Energy Affordability



Casa Adelante, 2060 Folsom, San Francisco

127 Units, under construction



Mithun: "We have found first costs to be neutral going all electric"

Developers: TNDC/CCDC, Architect: Mithun & YA Studio, Association for Energy Affordability Central Heat Pump Water Heating



Casa Adelante, 2060 Folsom, San Francisco



Maceo May Veterans Apartments, Treasure Island



Balboa Upper Yard Family Apts, San Francisco

Malcolm Harris, Principal

MITHUN

We have a number of all-electric multifamily projects and I'm a huge, huge fan of this change to all-electric multifamily housing.

It is better in every way, a great simplification of the system. Less expensive, higher performance, less maintenance, more sustainable.

At Maceo May we saw big savings from eliminating gas fired hydronic heating, the gas connection, and the solar thermal which paid for continuous exterior insulation, energy recovery ventilators (eliminating Zducts), electric resistance heat, and PVs. With these upgrades we are beating Title 24 by 20%, getting more Green Points, and lower GHGs on a grid that's getting cleaner.

The occupants get better indoor air quality benefits from the energy recovery ventilators.



Balboa Upper Yard Family Apts, San Francisco

120 units, in design development



Developer Mission Housing Development & Related California, Architect: Mithun Central Heat Pump Water Heating



Maceo May Veterans Apartments, Treasure Island

105 units, in permitting



Chinatown Community Development Center, Swords to Plowshares, Mithun, Association for Energy Affordability Central Heat Pump Water Heating



Hunters Point Shipyard Block 52, San Francisco

136 units total, in Design Development



Developer McCormack, Baron, Salazar, Architect: Mithun Central Heat Pump Water Heating



Hunters Point Shipyard Block 54, San Francisco

136 units total, in Design Development



Developer McCormack, Baron, Salazar, Architect: Mithun Central Heat Pump Water Heating



681 Florida, San Francisco

136 units total, In Design Development



Developers: TNDC & MEDA, Architect: Mithun Central Heat Pump Water Heating



Linda Vista, Mountain View

101 units, In bidding phase



Palo Alto Housing is Developer, architect is Van Meter Williams Pollack, Integral Group Central Heat Pump Water Heating



Coliseum Place, 905 72nd Ave, Oakland

59 units, In Construction Documents



DBA:

"Construction cost is not an issue IF you can help subcontractors understand what you are asking them to price"

Developer Resources for Community Development, David Baker Architects, Energy Modeling by Redwood Energy, MEP by EDesignC



Quetzal Gardens, San Jose

71 Units

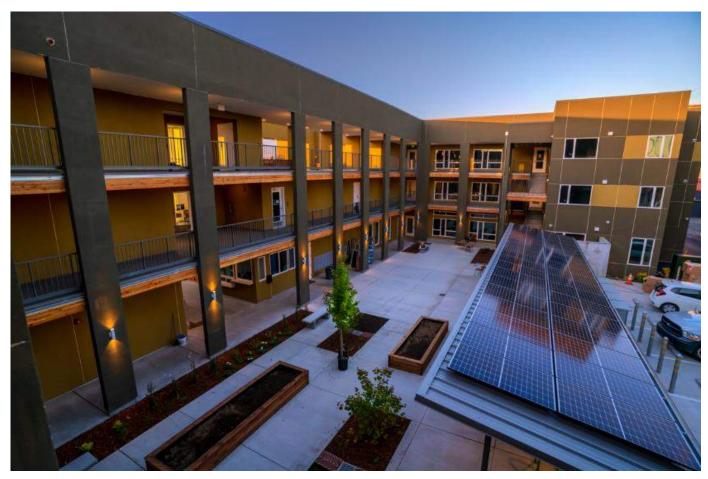


RCD Housing is Developer, SGPA Architects, Redwood Energy



Eureka Veterans Apartments, Eureka

51 Units



VHDC is Developer, Rowell Brokaw Architects, Redwood Energy



St. Paul's Commons, Walnut Creek

Affordable – 45 Units, Under construction



Pyatok:

"It is critical to share information about best practices and lessons learned"

RCD, Pyatok Architects, Fard Engineers, Association for Energy Affordability Central Heat Pump Water Heating



Altamira Family Apartments, Sonoma

Affordable, 48 units



Developer is SAHA, Pyatok Architects, Fard Engineers, Association for Energy Affordability



Stoddard Housing, Napa

Affordable – 50 Units, Under construction



Burbank Housing, Dahlin Group Architects, Emerald City Engineers, Association for Energy Affordability Central Heat Pump Water Heating



2437 Eagle Ave, Alameda

Affordable – 20 Units, Occupied



Housing Authority of the City of Alameda, Anne Philips Architecture, Fard Engineers, Association for Energy Affordability



Station House, Oakland

171 Units, phase I completed



Developer City Venture, Baran Studio Architect



Ice House, Oakland

Units?



Developer City Ventures



UC Santa Cruz Student Housing West

750,000 sf, 3,000 beds, under construction



P3, Capstone is Developer, Sundt is GC, HED Architects, Interface Engineering Central Heat Pump Water Heating



UC Riverside Dundee Residence Hall

600,000 sf, under construction



Interface:
"We design almost all of our projects as electric only unless a client requires otherwise"

American Campus Communities is Developer, SCB Architects, Interface Engineering







Cascade Apartments, Seattle

230 Units, 44 floors. At 95% Construction Docs.



Developer is Vulcan, Ankrom Mosian Architects, Engineering by Ecotope





4700 Brooklyn, Seattle 227 Units, 24 floors. Under Construction







1200 NE 45th Seattle

230 Units, 44 floors. At 50% Design Development



Developer is barrientos RYAN Runberg Architecture Group Engineering by Ecotope





Cascade Apartments, Seattle



4700 Brooklyn Ave NE, Seattle

Shawn Oram, Principal



Ecotope has completed 26 central heat pump water heating projects since 2008, mostly 100-500 unit projects. Partial list:

Mid Rise | 50-400 dwelling units

- Stream 134 units (2) 10T Colmac Air-Source HP in below-grade parking
- · Sunset Electric 92 units Colmac in below-grade parking
- Stackhouse 120 units Colmac in underground parking deck
- · Augusta Apartments 224 units Colmac in below-grade parking
- Batik Apartments 195 units Colmac in underground parking deck
- . Yesler 3 227 Colmac in underground parking deck
- Jackson Apartments 526 units Colmac in underground parking deck
- · Colina Apartments 131 units, Sanden Decentralized
- · The Vale Apartments 134 units Versati 2, Multi-Pass
- · Waterfront Place 137/135 units Versati 2, Multi-Pass
- · Hopeworks 67 units , Sanden CO2 Stacks

High Rise | 200-450 dwelling units

- · 4700 Brooklyn 284 units Colmac with VRF Temp Maintenance
- · Cascade 430 units Colmac with VRF Temp Maintenance
- 1200 45th -245 units In Design



Batik Apartments, Seattle



Jackson Apartments, Seattle



August Apartments, Seattle



1200 NE 45th, Seattle



1075 Nelson, Vancouver

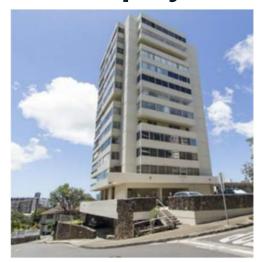
435 Units, 60 Stories, Design Development



Henson Development, Architect WKK and IBI Group, MEP Integral Group?? RDH All electric with possible exception of gas for cooking in penthouse units.



Hawaii projects



Maile Tower



Scenic Tower



Waikiki Skytower



Academy Towers



Florida projects







International projects

From Redwood Energy, Sean Armstrong



Rama Gardens Hotel Bangkok



AIA Kowloon Towers Hong Kong



Carlton Tower Hotel Dubai



Asiana Plaza Hotel, Vietnam



Amenities



Electric fireplaces



Ethanol fireplaces



Electric grills



Electric outdoor



Propane firepits





Resources

All Electric Multi-family Construction Guide: https://www.redwoodenergy.tech/research/

California Cities Lead the Way: https://www.sierraclub.org/articles/2020/03/californias-cities-lead-way-gas-free-future

The economics of electrifying buildings: https://rmi.org/insight/the-economics-of-electrifying-buildings/

Are we ready for all electric buildings?: https://tinyurl.com/y3unn3r4

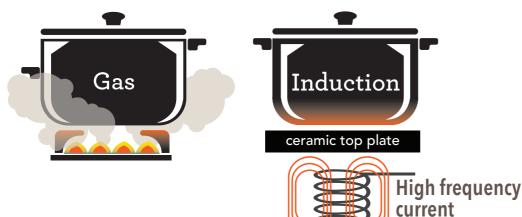
The smog in your kitchen: https://www.fresnobee.com/opinion/readers-opinion/article222726175.html



Induction: SMUD's cooking now

Why is SMUD doing this? Integrated Resource Plan – Net Zero Carbon by 2040







Surface remains cool until it comes in contact with ferrous metal.



Boils water 2X FASTER







Low consistent heat







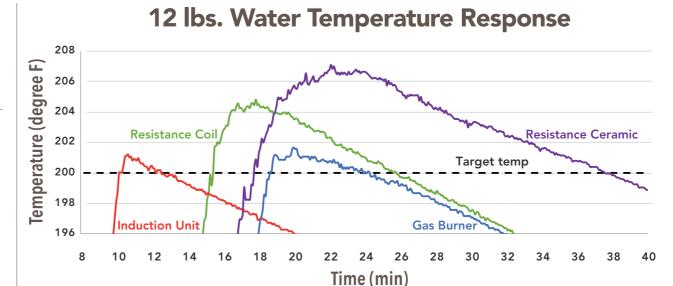






You're in control

Precise, digital controls take the guesswork out of cooking.





Better 4 your health



Better for the environment Reduces your CO₂ footprint



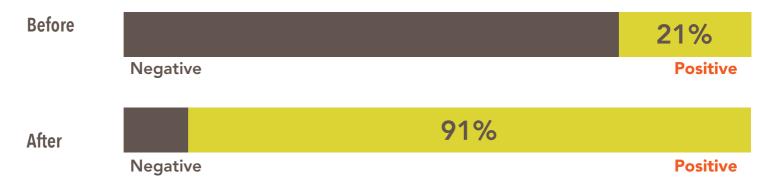


Induction: SMUD's cooking now



Customer research

SMUD customer panel: How would you rate your impression of induction cooking before and after trying the induction cooktop?





Testimonials



SMUD's Plan





Printed materials:

flyers | magnets | brochures







Library lending





SOCIAL

July 20, 2020

To: Mayor Joe Goethals and City Council, c/o clerk@cityof sanmateo.org

Re: Agenda Item 28 on New Multifamily Construction Building Electrification Policy Options

Dear Mayor Goethals and Council Members:

Congratulations again on the City of San Mateo's recent Reach Code Award for being the first out of the gate in our county to adopt a reach code that encourages building electrification, solar installation and electric vehicle readiness! Other cities on the Peninsula soon followed your lead.

Now the tables have turned, and other local cities have adopted stronger reach codes that include multifamily building electrification. They are doing so because it's less expensive, safer and cleaner. Also, PG&E recently urged the California Energy Commission to support a faster transition to all-electric new construction, noting that the state's goal of attaining zero net energy by 2045 requires utilities to drastically reduce their reliance on natural gas.

Ted Tiffany of Guttmann & Blaevoet Consulting Engineers, explains why: "PG&E has explicitly stated that exempting the small appliance load (gas cooking, laundry and fireplaces) is the absolute NIGHTMARE scenario for them. They have to put in all the same infrastructure and with that small supply there is NO WAY to ever recover the investment from that small commodity. That places the entire cost of that new infrastructure on the remaining gas ratepayers for the full 50-year depreciation schedule (remember we only have half that time to get off gas to 2045). Remember the gas infrastructure cost to the developer or builder is only 50% of the total cost, the rest is supported by the gas ratepayers. If the full cost of the gas infrastructure was put on the developer, the cost effectiveness discussion is thrown out the window. With the full cost of the gas infrastructure accounted for, it's almost always a cost savings to go to high performance electric technologies." (Ted can be reached at TTiffany@gb-eng.com, direct: 707-523-3010, ext. 302)

Bottom line: You will not be doing developers and homeowners a favor by allowing them to construct new homes with natural gas lines. It's more expensive, more hazardous and detrimental to people's health. Natural gas lines will become stranded assets as fewer homes require natural gas, and those depending on it will have to pay more for it. (See the footnotes below for citations.)

Please join the growing number of City Councils that are leading the nation toward a clean energy future by supporting all-electric new construction.

Sincerely,

Terry Nagel

Chair, Sustainable San Mateo County terrynagel@gmail.com | 650-678-7082

Terry Nozel

Facts About Natural Gas in New Construction

- All-electric multifamily buildings are less expensive to build. In California, developers save an average of \$3,300 per unit in multifamily construction costs by avoiding natural gas use.¹
 Electrifying a new single-family home in the Bay Area saves more than \$10,000 over the lifetime of the equipment, compared to a conventional mixed-fuel new home using gas heating and appliances.²
- Natural gas lines are extremely hazardous. Aging pipelines contribute to dangerous methane leaks, which are at an all-time high."³ In urging San Francisco to ban natural gas in new construction, Debbie Raphael, Director of the city's Department of the Environment, recently pointed out that, on average in the United States, a natural gas or oil pipeline catches fire every four days, results in an injury every five days, explodes every 11 days, and leads to a fatality every 26 days, according to research done by the city. In February 2019, a natural gas line explosion on Geary Street burned five buildings. As we all know, the 2010 natural gas pipeline explosion in San Bruno killed eight people and destroyed a neighborhood.⁴
- Natural gas is linked to increased illness and death. Gas stoves release smog-like NO2 pollution that doubles risks for heart and lung disease and triples the use of asthma medications.^{5 6} Improperly vented gas appliances lead to carbon monoxide poisoning that results in roughly 15,000 emergency room visits and 500 deaths every year.⁷
- PG&E supports the transition to all-electric new construction and has urged the California Energy Commission to move up the deadline from 2025 to 2022.8

¹ Bruceri, M. (2019). "Draft 2019 Energy Efficiency Cost-effectiveness Study: Low Rise Residential." For PG&E Codes & Standards, prepared by Frontier Energy. March 15, 2019

² Capital and energy costs of thermal systems are based on Residential Building Electrification in California by E3 (April 2019); electricity costs specific to PCE/SVCE territory. All-Electric Home, Increased Solar bill impacts are based on Low-Rise Residential New Construction 2019 Cost Effectiveness Study by Frontier Energy (August 2019)

³ "Global Methane Emissions Reach a Record High." The New York Times, July 14, 2020. https://www.nytimes.com/2020/07/14/climate/methane-emissions-record.html

⁴ Fastracker.org. "Pipeline Incidents Continue to Impact Residents." https://www.fractracker.org/2018/12/pipeline-incidents-impact-residents/

⁵ Utah Dept. of Environmental Quality. (2018). "Understanding Utah's Air Quality" < https://deq.utah.gov/communication/news/featured/understanding-utahs-air-quality>

⁶ Jarvis et al. (1996) "Evaluation of asthma prescription measures and health system performance based on emergency department utilization." https://www.ncbi.nlm.nih.gov/pubmed/8618483

⁷ USDN, Methane Math, https://sfenvironment.org/sites/default/files/fliers/files/methane-math_natural-gas-report_final.pdf

⁸ PG&E Gets on Board with All-Electric New Buildings in California. https://www.greentechmedia.com/articles/read/pge-gets-on-board-with-all-electric-new-buildings-in-california

From: Libby Traubman <>

Sent: Friday, July 17, 2020 1:22 PM To: Clerk <clerk@cityofsanmateo.org>

Subject: Item 27 Monday night council meeting

To San Mateo City Council Members:

I am writing to encourage you to vote for the New Multi-family Construction Building Electrification Policy Option. San Mateo, along with all neighboring cities, needs to think about the future we are preparing for the next generations. Any new constructions provides the opportunity to choose electricity for our source of energy rather than natural gas, a serious health risk and a source of causing our very serious climate crisis. We should never miss an opportunity to eliminate what isn't working in the best interest of Life and the health of our living system. Although these decisions may be difficult and challenging in the moment, it is critical we think long term and do the right thing.

Thank you for giving this your very serious consideration. Please let's make San Mateo a model of demonstrating that we are all interdependent, interconnected, and interrelated.

Libby Traubman

One Earth, One Humanity, One Future