D.3 August 3, 2021

CONSIDER authorizing the Conservation and Development Director, or designee, to develop an ordinance amending the County building code to require certain types of newly constructed buildings be powered only by electricity and not by natural gas

Correspondence Received

In Support

Pg 1 - 2	Nora Kurlawalla, Contra Costa
Pg 3	Mark Levine, Contra Costa
Pg 4 -5	Denice Dennis, Marinell Danel, Joani DeVries, Gail Susan Gordon
Pg 6	Rebeca Anyaa, Contra Costa Resident
Pg 7-8	Lynda Deschambault Executive Director, www.ccccclimateleaders.org
Pg 9-12	Gary Farber, 350 Contra Costa (w/ letter from Misti Bruceri, California Energy Codes and Standards)
Pg 13-16	Jody London, Sustainability Coordinator, CCC (fwd of Gary Farber)
Pg 17-18	James Naprawa, M.D.
Pg 19-20	Nancy Hu, The Climate Reality Project
Pg 21	Bradley Waite, President, Sustainable Rossmoor
Pg 22-23	Wei-Tai Kwok
Pg 24-28	Lilly Chen, Climate Health Now, Climate Reality Leadership Corps volunteer
PG 29-30	Maria Gastelumendi, The Rising Loafer Café and Bakery
Pg 31-32	Frederick Bialy, M.D.
Pg 33-34	Robert S. Kenney, Vice President, Pacific Gas and Electric Co.
Pg 35-36	Betty Lobos, Citizens' Climate
Pg 37-38	Marti Roach (copy of Naprawa)
Pg 39-42	Leah Louis-Prescott, Senior Assoc RMI Carbon-Free Buildings
Pg 43-51	Response letter from Frontier-MBA, Alea German, Enineering Manager
Pg 52-54	Cynthia Mahoney, MD and Amanda Millstein, MD On behalf of Climate Health Now
Pg 55-56	Lisa Groelz Marshall, Principal, Ecological Building Strategies
Pg 57-58	Susan Bock, Contra Costa
pg 59-63	Melissa Yu, Sierra Club, San Francisco Bay
Pg 64	Shalini Swaroop, General Counsel, Marin Clean Energy (MCE)
Pg 65	Barbara Beno, Hercules
66-67	Anna Lin-Campbell, Contra Costa
68-69	Ryan Buckley, Saranap

No correspondence received in opposition

From: Clerk of the Board
Sent: Thursday, July 29, 2021 1:51 PM
To: June McHuen; Jami Morritt
Subject: FW: Comment Contra Costa Supervisor Board Meeting Aug 3 2021

Please see below.

Stacey M. Boyd
Deputy Clerk
Clerk of the Board
1025 Escobar St., 1st Floor
Martinez, CA 94553
(925)655-2002 (Desk)
(925)655-2000 (Office)

From: Nora Kurlawalla <norajmk@gmail.com>
Sent: Thursday, July 29, 2021 12:05 PM
To: Clerk of the Board <ClerkOfTheBoard@cob.cccounty.us>
Subject: Fwd: Comment Contra Costa Supervisor Board Meeting Aug 3 2021

---------- Forwarded message ---------
From: **Nora Kurlawalla** <norajmk@gmail.com>
Date: Thu, Jul 29, 2021 at 11:51 AM
Subject: Comment Contra Costa Supervisor Board Meeting Aug 3 2021
To: <clerkoftheboard@cobcccounty.us>
Cc: Tim and Sharla Donahue <timothy-donahue@sbcglobal.net>, Bob & Barb Hayes <hayesrp@sbcglobal.net>, Dawn Morrow <Dawn.Morrow@bos.cccounty.us>, Andrea Haylett <amhaylett@gmail.com>, Dolores Darling-Riordan <doloresdarling@sbcglobal.net>, Sharee Eisenga <sharee66@gmail.com>, Harriet Gilbert <hsg1948@icloud.com>, Jackie <jdeasy2@aol.com>, Jacquelyn Higgins <Jacquelyn.Higgins@cchealth.org>, Marilyn Lanfri <marilynlanfri@comcast.net>, Quinten Mclane <qumc123@gmail.com>, Lidwin Serpanchy <lfserpanchy@gmail.com>, Hilde Brautigam <hildebrautigam@msn.com>, Cheri Stephen <cheri@zoescruises.com>

Contra Costa Board of Supervisors

As a 40 + year resident of Contra Costa County I am writing due to considerable concern at the rapid spread of the Delta Variant of Covid which per Contra Costa Coronavirus Dashboard has a death rate of 99% for the unvaccinated. It is now apparent that a MANDATORY Mask Mandate is required for at least 3 months. It is also apparent that Covid Vaccination should now be MANDATORY for everyone with only a medical exemption signed by a licenced Medical doctor including Licence Number being acceptable and subject to mandatory monthly review. Looking at historic Smallpox and TB controls I believe there is precedent for mandatory control of Covid and its variants. I personally remember being vaccinated for smallpox, polio and TB and receiving numerous mandatory vaccinations prior to starting a nursing career in Scotland.

The time of platitudes and niceties is over with this pandemic and we need at least 90% or more age 12 and over fully vaccinated by Labour Day 2021. We have " a collective civic responsibility to be fully vaccinated" as so well stated by Nicola Sturgeon First Minister of Scotland

We simply can not permit unvaccinated individuals who are in the minority to repeatedly put the majority at risk of a deadly infection from a Coronavirus that will undoubtedly mutate constantly, dangerously and eventually lead to economic and social collapse. We are at risk of social unrest from the fully vaccinated who will direct hostility towards the unvaccinated such is the frustration out in the community re the unvaxxed population.

I do believe to accomplish urgent full vaccination that the County will have to go to where people are at all hours of day and night, whether it be at work or home.

All the scientific and medical papers I read point to vaccination being the only way out of this pandemic and I urge Contra Costa County to adopt strict, tough enforceable Public Health measures that can be adopted State wide and on a National level.

Respectfully
Nora J Macdonald Kurlawalla.

From:	mdlevine <mdlevine@lbl.gov>
Sent:	Sunday, August 1, 2021 7:20 PM
To:	Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc:	Clerk of the Board
Subject:	Electrification of Buildings in Contra Costa County
Attachments:	mdlevine.vcf

I am writing this message as a 29-year resident of Contra Costa County who is proud of our county's outstanding effort on environmental protection. The most important environmental issue of our age is climate change. The electrification of buildings is a critical step to moving toward a carbon neutral future. As such, I urge the Board of Supervisors to act on electrifying all new buildings in Contra Costa if cost-effective (which it almost always will be). There is no action within the purview of the County that can move us more effectively toward carbon neutrality, and without this action the County cannot achieve that end.

It is worth noting that more than 45 California cities and counties have adopted new building electrification "reach" codes. These codes will not only reduce greenhouse gas emissions but also lead to heathier buildings. The will also provide a model for cities in Conta Costa County to emulate.

Thank you for considering these views. I look forward to your adopting these measures.

Sincerely,

Mark D. Levine

El Cerrito, CA. 94530

Stacey Boyd

From: Denice A Dennis <deniceadennismph@gmail.com>
Sent: Friday, July 30, 2021 10:05 AM
To: Diane Burgis; Supervisor Candace Andersen; District5; Karen Mitchoff; John Gioia
Cc: Clerk of the Board; Gail Gordon; Joan deVries; Marinell Daniel
Subject: 8.3.21BOSPublic Comment #D3

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." We are writing as part of 1000 Grandmothers for Future Generations to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and
(2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for 2022 implementation for all new construction where a cost effectiveness study is complete.

1000 Grandmothers for Future Generations is an organization of elder women advocating for urgent actions to address Climate Justice. We are very concerned about the action required NOW, as our actions (or inactions) will have severe consequences for our children and our children's children, and especially those who are most impacted by climate chaos. In CA, we do not need to look far at how the Climate Emergency is causing devastation and impacting public health.

As you know, Building Electrification is essential to reaching emissions reduction goals, and thus is included in the County's Climate Emergency Resolution. According to the County's current Climate Action Plan (2015), residential and nonresidential greenhouse gas emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County). This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level.

Over 45 CA cities and counties have adopted new building electrification "reach" codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

We cannot afford to wait for the state or federal government to take action on Electrification for New Buildings. We need you to take leadership now for all of the cities in the County. Thank you for taking swift action for adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Toward Health for All,

Marinell Daniel, El Sobrante
Denice A. Dennis, MPH, El Cerrito
Joani deVries, MS, Clayton
Gail Susan Gordon, LMFT, El Sobrante

From: Rebecca Anaya <
Sent: Saturday, July 31, 2021 11:04 AM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc: Clerk of the Board
Subject: Letter re: Building electrification in Contra Costa County

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and
(2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

As an individual and resident of Contra Costa County, I'm trying to do what I can to address the climate emergency at a local level, and I think there are a lot of benefits of going all electric for new buildings, including: it's better for the environment and essential to reaching Climate Emissions Reductions Goals, it's healthier (just yesterday I turned on my gas stove and accidentally inhaled a puff of gas fumes - yuck!), it's safer, especially in our area due to risk of earthquakes, it's less expensive to maintain (for example saving on the costs of installing gas lines), and it will help create green jobs. Regarding equity considerations, since the state is moving to all electric, gas prices are likely to increase more with a disproportionate impact on low income communities.

As you know, Building Electrification is essential to reaching emissions reduction goals, and thus is included in the County's Climate Emergency Resolution. According to the County's current Climate Action Plan (2015), residential and nonresidential greenhouse gas emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County). This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level.

Over 45 CA cities and counties have adopted new building electrification "reach" codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

Thank you for your commitment to Electrification for New Buildings. Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,
Rebecca Anaya
El Cerrito Resident

From: Contra Costa County Climate Leaders (4CL) <info@cccclimateleaders.org>
Sent: Friday, July 30, 2021 2:55 PM
To: John Gioia; Candace Andersen; Supervisor_Burgis; SupervisorMitchoff; District5
Cc: 'Lynda Deschambault'; Monica Nino
Subject: 4CL Comments BOS Item D3: August 3rd Electrification

July 30, 2021

jgioia@bos.cccounty.us
candace.andersen@bos.cccounty.us
dist3@bos.cccounty.us
SupervisorMitchoff@bos.cccounty.us
dist5@bos.cccounty.us

cc Monica.Nino@cao.cccounty.us

Honorable Chair Burgis and Board of Supervisors,

I am currently in school, and it is unlikely that I will be able to attend the August 3rd Board of Supervisors meeting.

Agenda:
http://64.166.146.245/agenda_publish.cfm?mt=ALL&get_month=8&get_year=2021&dsp=ag&seq=1790
Access via Zoom: https://ems8.intellor.com/join/GI665wZkzt

Attached are our comments regarding Agenda item D3:

CONSIDER authorizing the Conservation and Development Director, or designee, to develop an ordinanc buildings be powered only by electricity and not by natural gas, as recommended by the Sustainability Co examine whether the County building code should be similarly amended for certain other types of newly c Development)

Please read these comments into the minutes and provide these attached as part of the public record.
Thanks for all you do to ensure our community is sustainable for future generations to enjoy!

Lynda Deschambault
Environmental Scientist and Educator
Executive Director, www.cccclimateleaders.org

Contra Costa County
Climate Leaders

July 31, 2021

jgioia@bos.cccounty.us
candace.andersen@bos.cccounty.us
dist3@bos.cccounty.us
SupervisorMitchoff@bos.cccounty.us
dist5@bos.cccounty.us

cc Monica.Nino@cao.cccounty.us

Honorable Chair Burgis and Board of Supervisors,

We are proud that you represented us last year and passed the CER (Climate Emergency Resolution) declaring a state of Emergency---listing the various items that would help to drawdown our greenhouse gas emissions. We are pleased that you are considering tonight the policy to require all new construction to be fully electric through the adoption of reach building codes.
Please approve the Sustainability Committee's recommendation.

Further, we suggest that you also add a requirement for any remodels that are in excess of $250,000 in value. Many cities consider these large re-do's as essentially 'New Construction' and I encourage you to follow their lead: and mandate an all-electric building code for them as well.

For a list of city examples, background and policy resources, please consider this great fact sheet that summarizes everything in one place. https://www.cccclimateleaders.org/issue-of-the-month/electrification/

Dozens of Cities have taken the lead on ensuring the built environment does not continue to increase greenhouse gas emissions. We ask you to proceed with this item as outlined in the Climate Emergency.

Please implement the new code to require all new buildings and significant remodels to be all electric. Please complete and implement by the end of this calendar year.

Sincerely,

Lynda Deschambault
Environmental Scientist and Educator.
Executive Director
www.cccclimateleaders.org
info@cccclimateleaders.org

From: Gary Farber <
Date: Friday, July 30, 2021 at 10:33 AM
To: John Gioia <John.Gioia@bos.cccounty.us>, District5 <District5@bos.cccounty.us>
Cc: Demian Hardman <Demian.Hardman@dcd.cccounty.us>, Jody London <Jody.London@dcd.cccounty.us>, Wes Sullens <wsullens@usgbc.org>
Subject: New Building Electrification Ordinance

Supervisors Glover and Gioia,

Attached is a letter from 350 Contra Costa regarding ordinance design choices to achieve new building electrification in our county.

Please feel free to contact me should you have any questions or comments.

Gary Farber, on behalf of 350 Contra Costa

July 30, 2021

Supervisor Federal Glover
Supervisor John Gioia
Contra Costa County Sustainability Committee

RE: NEW ORDINANCE for ALL-ELECTRIC NEW BUILDINGS

Dear Supervisors,

Thank you for your work on electrification - for both buildings and vehicles. Regarding the scope of a proposed county ordinance to require that new buildings be all-electric, on behalf of 350 Contra Costa I want to address a couple of key issues: a) What building or occupancy types (hereinafter referred to as 'buildings') may be included? and b) Ordinance designed as energy code change, or as natural gas ban?

Many proposed electrification reach code ordinances are submitted to the CEC[1] for approval, assuming that banning natural gas constitutes a 'change' to the energy code. The CEC has been routinely approving these codes, as long as a cost effectiveness study from a source recognized as reliable is submitted for each building type that the code will cover[2].

The California Energy Codes & Standards program (hereafter referred to as Codes & Standards)[3] is the source typically used for these electrification cost effectiveness studies. Codes & Standards has such studies for all basic building types, for both Climate Zones within our County (CZ's 3 and 12).

A point of confusion is that the Codes & Standards 'Nonresidential' cost effectiveness study looked specifically at office, retail and hotel type buildings. Some jurisdictions have assumed that this study may only be used for these specific building types. However, Misti Bruceri of Codes & Standards informed me that the CEC routinely accepts Codes & Standards' nonresidential study to apply to all nonresidential building types (see attached letter). This stands to reason, as the energy code requirements (for envelope, HVAC and lighting systems) are close to identical for all nonresidential occupancies, with variances only in lighting power and ventilation rates between the various specific nonresidential building types.

In addition to nonresidential buildings, Codes and Standards has prepared electrification cost studies for both low-rise and high-rise residential buildings[4]. Therefore, cost studies exist that allow electrification reach codes to include all building types.

---

1 CEC = California Energy Commission
2 Source: Misti Bruceri, CA Codes & Standards
3 Codes & Standards is a project of this state's investor owned utilities. See their reach code page at https://localenergycodes.com/

However, Oakland's electrification code[5], which applies to all new buildings, did not go through CEC approval. According to Alain Placido[6], the key contact for Oakland's electrification code, Oakland does not believe that a natural gas ban constitutes an energy code change. (Until my retirement in 2019, I worked as a building energy consultant since the energy code's inception, working closely with the CEC on code issues over the years, and I agree with Oakland's stance). Berkeley was the first CA city to institute a natural gas ban, and that city recently won a legal challenge to it[7]. Amy Ryder of the Building Decarbonization Coalition informed me that Petaluma and Morgan Hill also enacted new building electrification requirements without CEC approval, and parts of San Jose's and Santa Cruz's electrification ordinances were enacted without CEC approval.

According to Codes and Standards, achieving CEC approval can take months. Designing an electrification ordinance that does not require CEC approval might save around one half year when staff time savings and CEC approval wait time are considered.

Bottom line: Whether the County wants to treat an all-electric ordinance as a 'reach' code, and submit an application to the CEC (with requisite cost studies) for approval, or prefers to treat an all-electric ordinance as simply a natural gas ban, thus bypassing CEC approval, the County can now include every building and occupancy type.

The County should give serious consideration to treating an electrification code as simply a natural gas ban; such an electrification ordinance would be simpler to design, and would bypass CEC approval, thus allowing this County to enact such an ordinance more quickly – in keeping with the County's commitment to treating Global Warming as an emergency. And by enacting a simpler electrification ordinance that both covers all building types and that can be approved more quickly, it provides a good model for local jurisdictions in Contra Costa County to emulate.

As for designers and builders who indicate that a proposed new building will include processes (e.g. commercial cooking, industrial boilers) that electric systems cannot meet (in terms of functionality and/or costs), the County's electrification ordinance can include a waiver (or exemption) process, as other electrification ordinances do. Including such a waiver system for processes thereby eliminates any need to exclude any particular building types from an electrification ordinance.

Please feel free to contact me should you need any additional information.

Gary Farber, on behalf of 350 Contra Costa

cc: Jody London, Demian Hardman-Saldana, Wes Sullens

attachment: July 28 letter from Misti Bruceri, California Energy Codes & Standards

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4 Codes & Standards electrification cost studies available at https://www.localenergycodes.com/content/resources
5 Oakland new buildings electrification code: https://cao-94612.s3.amazonaws.com/documents/13632-CMS.pdf
6 Alain Placido, Supervising Civil Engineer. Communication on 7/29/21 agplacido@oaklandca.gov 510-238-7110
7 US District Court, Northern District, Case No.: 4:19-cv-07668-YGR , July 6, 2021

CALIFORNIA ENERGY CODES & STANDARDS
A STATEWIDE UTILITY PROGRAM

July 28, 2021

To: Gary Farber

Email: gary.f8642@gmail.com

Re: Contra Costa County Ordinance Development

Dear Gary,

The New Nonresidential Buildings (2019) cost effectiveness study, prepared on behalf of the California Energy Codes & Standards Utility Program, evaluated measure packages using the Energy Commission's TDV metric as well as on-bill impacts. The study components completed to date were requested by jurisdictions. Additional non-residential applications are in progress. The published study includes analysis of offices, retail buildings, and hotels. The studies are typically included by jurisdictions as substantiation in packages submitted for approval to the California Energy Commission for new building electrification reach codes for nonresidential occupancies. The completed cost effectiveness studies are available at LocalEnergyCodes.com.

Most jurisdictions that have adopted an all-electric ordinance (modifying Part 6 or another part of the code) applied the requirements broadly, to all new nonresidential projects. Some included specific exceptions such as for industrial processes or commercial cooking equipment, where it was felt that the requirements may be infeasible.

The following Bay Area jurisdictions adopted all-electric reach codes supported by the analysis in the 2019 Nonresidential New Construction Cost-effectiveness Report and received Energy Commission approval: Brisbane, Burlingame, Cupertino, Daly City, East Palo Alto, Healdsburg, Los Altos, Menlo Park, Millbrae, Mountain View, Pacifica, Redwood City, Richmond, San Carlos, San Mateo County, Saratoga, and Sunnyvale.

Jurisdictions interested in additional analysis may contact the Reach Codes program at info@localenergycodes.com.

Sincerely,

Misti Bruceri

(on behalf of LocalEnergyCodes.com)

From:	Clerk of the Board
Sent:	Friday, July 30, 2021 2:11 PM
To:	June McHuen
Subject:	FW: New Building Electrification Ordinance
Attachments:	Sust Comm Ltr elect code 350 7-30-21.pdf

Stacey M. Boyd
Deputy Clerk
Clerk of the Board
1025 Escobar St., 1st Floor
Martinez, CA 94553
(925)655-2002 (Desk)
(925)655-2000 (Office)

From: Jody London <Jody.London@dcd.cccounty.us>
Sent: Friday, July 30, 2021 1:14 PM
To: Clerk of the Board <ClerkOfTheBoard@cob.cccounty.us>
Cc: Jami Morritt <Jami.Morritt@cob.cccounty.us>
Subject: FW: New Building Electrification Ordinance

Hi Jami,
This letter relates to Item D3 on the August 3 Board agenda.

Jody London
Sustainability Coordinator
Contra Costa County
(925) 655-2815 (office)
(925) 434-3250 (mobile)
www.contracosta.ca.gov/6780/Sustainability

Three easy ways to track the exciting work we're doing in Contra Costa County:

1. *To follow the General Plan and Climate Action Plan updates, sign up at EnvisionContraCosta2040.org.*
2. *To follow the County's Sustainability Commission, please visit the County's Notify Me page.*
3. *To follow the Board of Supervisors Sustainability Committee, Subscribe Here*

From: Gary Farber <gary.f8642@gmail.com>
Sent: Friday, July 30, 2021 10:33 AM
To: John Gioia <John.Gioia@bos.cccounty.us>; District5 <District5@bos.cccounty.us>
Cc: Demian Hardman <Demian.Hardman@dcd.cccounty.us>; Jody London <Jody.London@dcd.cccounty.us>; Wes Sullens <wsullens@usgbc.org>
Subject: New Building Electrification Ordinance

Supervisors Glover and Gioia,

Attached is a letter from 350 Contra Costa regarding ordinance design choices to achieve new building electrification in our county.

Please feel free to contact me should you have any questions or comments.

Gary Farber, on behalf of 350 Contra Costa
(925) 944-5930

Jody London

350ContraCosta

July 30, 2021

Supervisor Federal Glover
Supervisor John Gioia
Contra Costa County Sustainability Committee

RE: NEW ORDINANCE for ALL-ELECTRIC NEW BUILDINGS

Dear Supervisors,

Thank you for your work on electrification - for both buildings and vehicles. Regarding the scope of a proposed county ordinance to require that new buildings be all-electric, on behalf of 350 Contra Costa I want to address a couple of key issues: a) What building or occupancy types (hereinafter referred to as 'buildings') may be included? and b) Ordinance designed as energy code change, or as natural gas ban?

Many proposed electrification reach code ordinances are submitted to the CEC[1] for approval, assuming that banning natural gas constitutes a 'change' to the energy code. The CEC has been routinely approving these codes, as long as a cost effectiveness study from a source recognized as reliable is submitted for each building type that the code will cover[2].

The California Energy Codes & Standards program (hereafter referred to as Codes & Standards)[3] is the source typically used for these electrification cost effectiveness studies. Codes & Standards has such studies for all basic building types, for both Climate Zones within our County (CZ's 3 and 12).

A point of confusion is that the Codes & Standards 'Nonresidential' cost effectiveness study looked specifically at office, retail and hotel type buildings. Some jurisdictions have assumed that this study may only be used for these specific building types. However, Misti Bruceri of Codes & Standards informed me that the CEC routinely accepts Codes & Standards' nonresidential study to apply to all nonresidential building types (see attached letter). This stands to reason, as the energy code requirements (for envelope, HVAC and lighting systems) are close to identical for all nonresidential occupancies, with variances only in lighting power and ventilation rates between the various specific nonresidential building types.

In addition to nonresidential buildings, Codes and Standards has prepared electrification cost studies for both low-rise and high-rise residential buildings[4]. Therefore, cost studies exist that allow electrification reach codes to include all building types.

---

1 CEC = California Energy Commission
2 Source: Misti Bruceri, CA Codes & Standards
3 Codes & Standards is a project of this state's investor owned utilities. See their reach code page at https://localenergycodes.com/

However, Oakland's electrification code[5], which applies to all new buildings, did not go through CEC approval. According to Alain Placido[6], the key contact for Oakland's electrification code, Oakland does not believe that a natural gas ban constitutes an energy code change. (Until my retirement in 2019, I worked as a building energy consultant since the energy code's inception, working closely with the CEC on code issues over the years, and I agree with Oakland's stance). Berkeley was the first CA city to institute a natural gas ban, and that city recently won a legal challenge to it[7]. Amy Ryder of the Building Decarbonization Coalition informed me that Petaluma and Morgan Hill also enacted new building electrification requirements without CEC approval, and parts of San Jose's and Santa Cruz's electrification ordinances were enacted without CEC approval.

According to Codes and Standards, achieving CEC approval can take months. Designing an electrification ordinance that does not require CEC approval might save around one half year when staff time savings and CEC approval wait time are considered.

Bottom line: Whether the County wants to treat an all-electric ordinance as a 'reach' code, and submit an application to the CEC (with requisite cost studies) for approval, or prefers to treat an all-electric ordinance as simply a natural gas ban, thus bypassing CEC approval, the County can now include every building and occupancy type.

The County should give serious consideration to treating an electrification code as simply a natural gas ban; such an electrification ordinance would be simpler to design, and would bypass CEC approval, thus allowing this County to enact such an ordinance more quickly – in keeping with the County's commitment to treating Global Warming as an emergency. And by enacting a simpler electrification ordinance that both covers all building types and that can be approved more quickly, it provides a good model for local jurisdictions in Contra Costa County to emulate.

As for designers and builders who indicate that a proposed new building will include processes (e.g. commercial cooking, industrial boilers) that electric systems cannot meet (in terms of functionality and/or costs), the County's electrification ordinance can include a waiver (or exemption) process, as other electrification ordinances do. Including such a waiver system for processes thereby eliminates any need to exclude any particular building types from an electrification ordinance.

Please feel free to contact me should you need any additional information.

Gary Farber, on behalf of 350 Contra Costa

cc: Jody London, Demian Hardman-Saldana, Wes Sullens

attachment: July 28 letter from Misti Bruceri, California Energy Codes & Standards

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4 Codes & Standards electrification cost studies available at https://www.localenergycodes.com/content/resources
5 Oakland new buildings electrification code: https://cao-94612.s3.amazonaws.com/documents/13632-CMS.pdf
6 Alain Placido, Supervising Civil Engineer. Communication on 7/29/21 agplacido@oaklandca.gov 510-238-7110
7 US District Court, Northern District, Case No.: 4:19-cv-07668-YGR , July 6, 2021

Stacey Boyd

From: james naprawa <
Sent: Sunday, August 1, 2021 1:35 PM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5; Clerk of the Board
Subject: Fwd: Agenda item for Building Elec. is on NEXT Tuesday! Letters needed by monday at latest

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the board

August 1, 2021

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and (2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

I am a pediatrician and work in the emergency department at UCSF Benioff Children's Hospital, Oakland. I believe strongly in the importance of creating sustainable clean energy solutions to respond to the challenges of climate change. Our society must move as quickly as possible away from oil and gas and towards renewable sources of energy such as solar and wind. Rising temperatures, worsening droughts, and a new "forest-fire" season have made the urgency of our situation abundantly clear. We must act now to ensure a healthy climate for future generations.

Every day, I see the effects of air pollution on children in the form of asthma exacerbations. Asthma disproportionately affects poor children who are more likely to live in urban areas and/or around refineries and other sources of pollution. All-electric buildings are healthier, safer, and cheaper to build and maintain than those powered by gas. The move towards a green energy grid will improve air and water quality in our towns and cities.

According to the County's 2015 Climate Action Plan, 28% of total greenhouse gas emissions come from residential and nonresidential buildings. The California Energy Commission has concluded that building electrification offers the most promising path to achieving GHG reduction targets in the least costly manner.

Over 45 CA cities and counties have adopted new building electrification reach codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

Thank you for your commitment to Electrification for New Buildings. Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,
James Naprawa, MD

Walnut Creek, CA
94595

From: Nancy Hu
Sent: Monday, August 2, 2021 12:45 AM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5; Clerk of the Board
Subject: Support for All-Electric Building Reach Codes

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the board

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing as a member of The Climate Reality Project, to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and (2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

The Climate Reality Project is a non-profit organization committed to urging global action in solving our climate crisis. We push for aggressive climate action and high-level policies that accelerate a just transition to clean energy. All-electric new buildings are not only *essential* to meeting GHG emissions reduction goals, but also they're safer and healthier, and they even cost less to build and maintain. This policy will even help grow green jobs.

As you know, Building Electrification is included in the County's Climate Emergency Resolution. According to the County's current Climate Action Plan (2015), residential and nonresidential greenhouse gas emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County). This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level.

Over 45 CA cities and counties have adopted new building electrification "reach" codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

As a health professional myself, I care greatly about the health impacts on the public, and especially of my family. Burning gas in homes and buildings for heating and cooking produces toxic air pollution like nitrogen oxides, carbon monoxides, and formaldehydes that are hazardous to our health. This disproportionately harms frontline communities (ie communities that experience the first and worst consequences of climate change). Did you know, children living in homes with gas stoves have a 42% higher risk of asthma symptoms? I personally have a gas stovetop, but I refuse to use it for cooking. I use a portable induction stove and my electric appliances instead. Induction gives your cooking more power and more control. Induction is also safer to cook with, as the stovetop immediately cools down as soon as the pan is removed. How often have you heard of a fire accident within a home because someone forgot to turn off the gas stove? Too many. Gas lines are also dangerous in our area due to earthquakes which can break gas lines and cause fires, and they're more prone to disrepair because gas lines are more difficult and expensive to maintain.

If you're concerned about jobs, a recent study commissioned by labor unions and associations points to the promise of jobs growth with the move to transition away from fossil fuels. A study by UCLA found that updating to efficient electric appliances in California's buildings over the next 25 years would result in a net increase of 100,000 full-time jobs in construction, manufacturing and the energy sector each year.

As I personally try to electrify my townhome, switching to more efficient air and water heat pumps instead of our current systems which run on gas, adding rooftop solar panels, switching out our gas range, I can easily say that I wish it were all electric to begin with. The costs to retrofit and switch after building are daunting and we owe it to future generations to make new buildings all-electric right now.

Thank you for your commitment to Electrification for New Buildings. Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,
Nancy Hu, DDS
The Climate Reality Project
Lafayette Environmental Task Force, Former Vice Chair

******

"You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make." -Jane Goodall 

From: Brad Waite <
Sent: Monday, August 2, 2021 8:30 AM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc: Clerk of the Board
Subject: Agenda item D3, CCC BOS meeting, August 3, 2021

Follow Up Flag: Follow up
Flag Status: Completed

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff
cc Clerk of the board

Re: Agenda item D3, CCC BOS meeting, August 3, 2021

Dear Chair Burgis and members of the Board,

Last summer, the twelve people on the Steering Committee of Sustainable Rossmoor voted unanimously to endorse the draft Contra Costa County Climate Emergency Resolution. In September of last year, you as a Board unanimously adopted that Climate Emergency Resolution – one component of which reads: "BE IT RESOLVED that Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes."

Here we are, eleven months later, and you are finally concretely addressing this "*emergency action*".

I am writing on behalf of Sustainable Rossmoor to urge you to take immediate action to establish a natural gas ban on the construction of ALL new buildings, so that these buildings will be all-electric in as swift a manner as is possible.

Sustainable Rossmoor's mission is "to promote environmentally sustainable practices in Rossmoor, the surrounding community, and the world at large." Several thousand homes in Rossmoor were built as all-electric in the 1970's. For decades, these homeowners have been enjoying the efficiency and cost-effectiveness of electric heat pumps for both home heating and cooling. And they have been breathing indoor air free of the pollution caused by burning natural gas – which often makes indoor air more polluted that outdoors. And just as importantly, it's consistent with our dedication to reducing greenhouse gas emissions and leaving our grandchildren a habitable world.

So for both the health of your constituents and of the planet, please, finally take this emergent action.

Sincerely,
Bradley Waite, President

Wei-Tai Kwok
Oak Hill Rd
Lafayette, CA 94549
August 2, 2021

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff
cc Clerk of the board

re: Building Electrification Ordinance
Item D3, August 3, 2021 Board of Supervisors Meeting

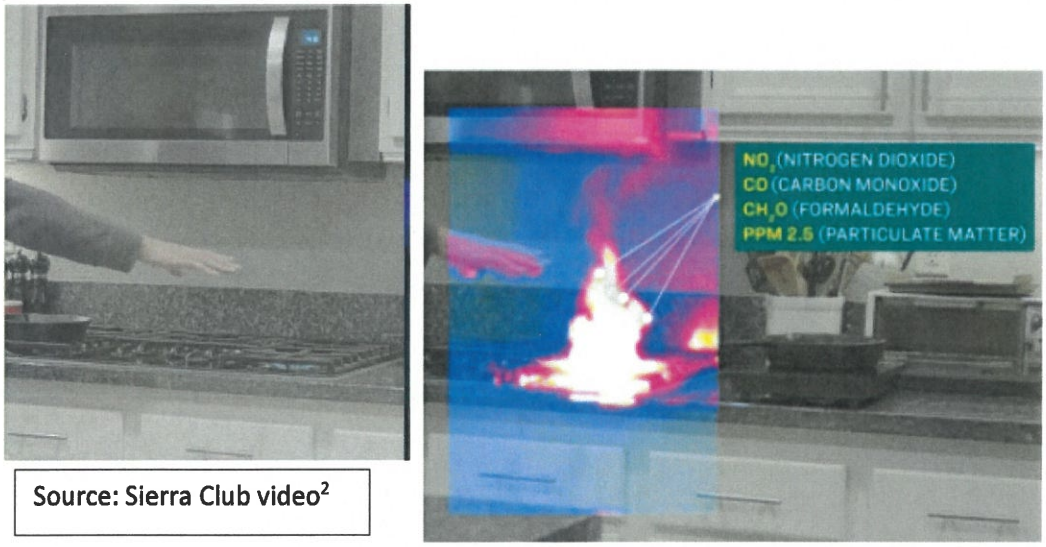
Dear Chair Burgis and members of the Board,

I am pleased to see the County making strong progress to identify tangible actions in follow up to the September 2020 Climate Emergency Resolution passed unanimously by the Board.

I have reviewed and urge you to SUPPORT the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible (e.g. in early 2022, and not wait until January 2023) for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete. I would also support requesting the Statewide IOU team to develop a study at no direct cost to the County for all other building types contemplated, with a priority on mid-rise residential and high-rise residential.

Why?

1. **Improve Health and Safety**, particularly for disadvantaged communities. Moving away from polluting fossil fuel infrastructure towards clean, renewably generated electricity is an essential environmental justice starting point to address marginalized communities who currently bear the larger brunt of environmental pollutants. Gas cooktops, for example, create significant, unhealthy indoor air pollution.[1] Moving to all-electric appliances, particularly in multifamily dwelling units will create safer indoor environments for these at-risk communities.

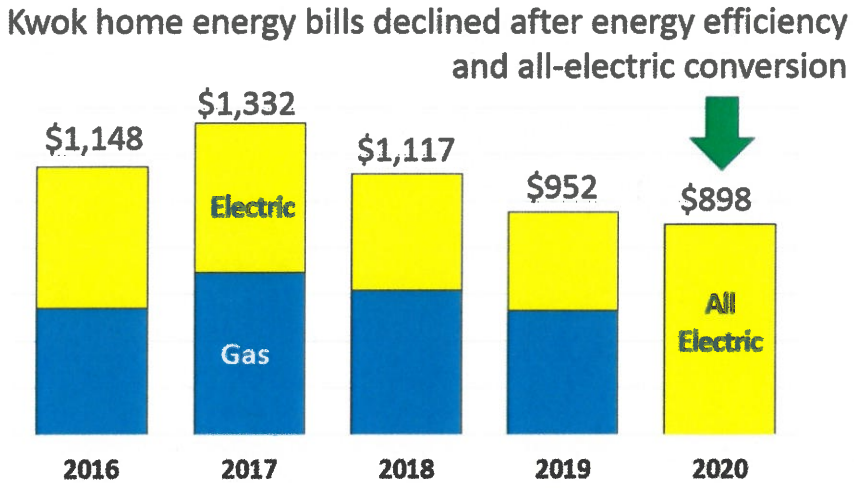


Source: Sierra Club video[2]

Left: *Natural gas cooktop flame. Right: Special camera reveals invisible air pollutants.*

2. **Economic Benefits of Electrification.**

I retrofitted my own single family home in Lafayette in 2019 to remove all gas appliances in favor of heat pump HVAC, heat pump water heating, induction electric cooking and electric fireplace. I was pleased to confirm what I had read in many building electrification studies: that the operating costs are the same or less than a mixed fuel building. My key conclusion was "when I built my home in 2004, I should have built electric from the start." It would have been more cost effective than a retrofit, I would have enjoyed high efficiency and lower costs, and also enjoyed a more comfortable home. This is why I spend the time advocating to build electric from the start.



Thank you once again for moving forward quickly to take tangible follow-up action on the Board's Climate Emergency Resolution. This is an EMERGENCY where time is of the essence to stop burning fossil fuels in our buildings.

Sincerely,

Wei-Tai Kwok
Renewable Energy Executive
Past President, Sustainable Lafayette
City of Lafayette's 2015 Green Award Honoree
Co-Founder, The Climate Reality Project Bay Area Chapter

Footnotes:

1) "Health and Air Quality Impacts of Cooking with Gas" RMI: https://rmi.org/press-release/health-air-quality-impacts-of-cooking-with-gas/
2) Gas Stove Emissions Side by Side video (Source: Sierra Club) https://drive.google.com/file/d/1gwhCwWPxqISXg3IsNyli9oxWSYL6gmII/view

Chen LC

From: LC <
Sent: Monday, August 2, 2021 10:22 AM
To: Diane Burgis; john.giola@bos.cccounty.us; Clerk of the Board; District5; Supervisor Candace Andersen; Karen Mitchoff
Subject: re: Building Electrification Ordinance Item D3, August 3, 2021 Board of Supervisors Meeting
Attachments: NewEnglJournMed2020.pdf

Dear Chair Burgis and members of the Board,

As a 20+ year resident of Alamo and a practicing hospice and palliative care physician at Kaiser in the Diablo Service Area (encompasses areas of Brentwood to the east, Lamorinda to the west, and Livermore to the south), I write today to strongly urge you to support urgent measures to eliminate natural gas from our new building infrastructure, starting with the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible (e.g. in early 2022, and not wait until January 2023) for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

Human society's use of natural gas is a serious and under-recognized public health hazard. So much so that the New England Journal of Medicine, one of our most respected publications in the medical industry, published the attached editorial urging the end to natural gas infrastructure. Please read the highlighted sections to understand why I, along with the medical community, are urging our elected leaders to act immediately to stop expanding natural gas infrastructure.

I am advocating for these changes so that when my children and grandchildren suffer the effects of climate change, I can look them in the eye and say that I did all I could to combat these changes. I hope you can say the same.

Thank you.

Sincerely,

Lilly Chen, M.D.
Alamo, CA
Climate Health Now
Climate Reality Leadership Corps volunteer

LC Chen

An audio interview with Dr. David Cutler is available at NEJM.org

it only more difficult to weigh the complex trade-offs of any reform. Yet if anything unites Americans when it comes to their health care, it's that once they have it, they don't want to let it go.

Disclosure forms provided by the author are available at NEJM.org.

Dr. Rosenbaum is a national correspondent for the *Journal*.

1. Kaiser Family Foundation. Public opinion on single-payer, national health plans, and expanding access to Medicare coverage. November 26, 2019 (https://www.kff.org/slideshow/public-opinion-on-single-payer-national-health-plans-and-expanding-access-to-medicare-coverage/).
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3. Tetlock PE. Thinking the unthinkable: sacred values and taboo cognitions. Trends Cogn Sci (Regul Ed) 2003;7:320-4.
4. Fiske AP, Tetlock PE. Taboo trade-offs: reactions to transactions that transgress the spheres of justice. Polit Psychol 1997;18:255-97.
5. Medicare for all is asked by Javits. New York Times. April 15, 1970:18 (https://www.nytimes.com/1970/04/15/archives/medicare-for-all-is-asked-by-javits.html).

DOI: 10.1056/NEJMp1916615

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The False Promise of Natural Gas

Philip J. Landrigan, M.D., Howard Frumkin, M.D., Dr.P.H., and Brita E. Lundberg, M.D.

Production of natural gas has grown by nearly 400% in the United States since 1950, and gas is now the country's second-largest energy source. The main driver of this increase has been the wide-scale adoption of hydraulic fracturing ("fracking"). During the fracking process, large volumes of water, sand, and chemicals are injected deep underground at high pressure to fracture shale deposits and sand and coal beds to release trapped gas. The world's largest gas-transmission network — with more than 300,000 miles of interstate and intrastate transmission pipelines, 2.1 million miles of local distribution lines, and more than 1000 compressor stations — brings this gas to the market. The ready availability of gas has reduced dependence on coal and oil, enables the United States to ship gas overseas, and will make the country a net energy exporter by 2020.[1] It has also made gas an important feedstock for the chemical, pesticide, and plastics-manufacturing industries.

Natural gas, composed principally of methane, has been hailed as a clean "transition" fuel — a bridge from the coal and oil of the past to the clean energy sources of the future. This claim is partially true. Gas combustion produces only negligible quantities of sulfur dioxide, mercury, and particulates. It is thus less polluting than combustion of coal or oil, and this benefits health.[2] Gas combustion also generates less carbon dioxide per unit of energy than combustion of coal or oil.

But beneath this rosy narrative lies a more complex story. Gas is associated with health and environmental hazards and reduced social welfare at every stage of its life cycle.[2] Fracking is linked to contamination of ground and surface water, air pollution, noise and light pollution, radiation releases, ecosystem damage, and earthquakes (see table). Transmission and storage of gas result in fires and explosions. The pipeline network is aging, inadequately maintained, and infrequently inspected. One or more pipeline explosions occur every year in the United States. In September 2018, a series of pipeline explosions in the Merrimack Valley in Massachusetts caused more than 80 fires and explosions, damaged 131 homes, forced the evacuation of 30,000 people, injured 25 people, including two firefighters, and killed an 18-year-old boy. Gas compressor stations emit toxic and carcinogenic chemicals such as benzene, 1,3-butadiene, and formaldehyde. Wells, pipelines, and compressor stations are disproportionately located in low-income, minority, and marginalized communities, where they may leak gas, generate noise, endanger health, and contribute to environmental injustice while producing no local benefits. Gas combustion generates oxides of nitrogen that increase asthma risk and aggravate chronic obstructive pulmonary disease.

Compounding these hazards are the grave dangers that gas extraction and use pose to the global climate.[3] Gas is a much more powerful driver of climate change than is generally recognized. As much as 4% of all gas

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Health and Environmental Hazards of Natural Gas.*		
Category	**Pathways and Mechanisms**	**Established and Potential Health Hazards**
Local hazards		
Water contamination	Ground and surface water at gas wells is contaminated with fracking chemicals.	Many fracking chemicals are toxic: 25% are carcinogens; 75% are dermal, ocular, respiratory, and gastrointestinal toxins; 40 to 50% have toxic nervous, immune, cardiovascular, and renal effects; 30 to 40% are endocrine disrupters
Air pollution	Heavy trucks, construction equipment, and drill rigs emit diesel exhaust, oxides of nitrogen, and particulates; sand piles release silica dust; gas venting and flaring produce volatile organic compounds (benzene, 1,3-butadiene, and formaldehyde).	Exacerbation of asthma and COPD; increased risk of cardiovascular disease and diabetes; increased risk of prematurity and low birth weight; volatile organic compounds increase risk for leukemia and lymphoma
Noise pollution	Heavy equipment and gas flaring generate nearly continuous noise; sound levels can reach 70 A-weighted decibels, which exceeds EPA community guidelines.	Sleep disturbance; stress (associated with increased cardiovascular disease risk); cognitive deficits in children
Light pollution	High-intensity illumination and gas flaring generate bright light day and night	Sleep disturbance; stress
Radionuclide releases	Some shale formations contain naturally occurring radionuclides such as radon, principally in Pennsylvania and Texas.	Cancers, chiefly lung cancer
Earthquakes	Seismic activity is increased near fracking sites and up to 30 miles away.	Injuries; anxiety; loss of property value
Community disruption	Poor and minority communities are disproportionately exposed to noise, toxic chemicals, and explosion hazards.	Mental health problems; substance abuse; sexually transmitted diseases
Regional hazards		
Fires and explosions	Pipeline explosions occur every year in the United States and recently occurred in Armada Township, MI; Refugio, TX; Salem, PA; Watford City, ND; and Merrimack Valley, MA.	Injury; death
Air pollution from gas combustion	Gas combustion in stoves, boilers, and furnaces generates oxides of nitrogen.	Increased asthma risk; exacerbation of COPD and cardiovascular disease
Global hazards		
Contributions to climate change	Use of natural gas causes methane leakage and gas combustion generates carbon dioxide.	Heat waves; extreme weather events; droughts; floods; wildfires; expanded ranges of vectorborne diseases; compromised food supplies resulting in famine, migration, conflict, and mental distress

* COPD denotes chronic obstructive pulmonary disease, and EPA Environmental Protection Agency. Sources of information are listed in the Supplementary Appendix, available at NEJM.org.

produced by fracking is lost to leakage, and these releases appear to have contributed to recent sharp increases in atmospheric methane.[4] Methane is a potent contributor to global warming, with a heat-trapping potential 30 times greater than that of carbon dioxide over a 100-year span and 85 times greater over a 20-year span. Gas burned in stoves and boilers additionally contributes to global warming by generating carbon dioxide. Together, this evidence suggests that the purported advantage of gas over coal and oil has been greatly overstated.

Despite growing recognition of the dangers associated with gas and recent exponential increases in the production of electricity from renewables, new gas wells continue to be drilled and new pipelines built. The U.S. Energy Information Administration projects that daily natural-gas pro-

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duction in the United States will increase by 10 billion cubic feet in the next year and that under current federal policy, more electricity will be generated from gas than from renewables each year from now through 2050.[1] This expansion of the gas infrastructure is supported by government subsidies and tax breaks that benefit the fossil-fuel industry and artificially depress gas prices.[5] State subsidies provide additional support for fossil fuels.

As physicians deeply concerned about climate change and pollution and their consequences, we consider expansion of the natural-gas infrastructure to be a grave hazard to human health. All reasonable analyses indicate that we must leave nearly all remaining fossil fuels in the ground if we are to hold the extent of global warming below 1.5°C, the target set by the Intergovernmental Panel on Climate Change, and thus mitigate the health and environmental consequences of climate change.

A further argument against investment in gas is that it is economically reckless. Such investment ignores the reality that the cost of producing electricity from renewables is falling rapidly and that energy prices are approaching a "tipping point" after which it will become cheaper to generate electricity from solar and wind sources than from gas. The Energy Information Administration estimates that by 2023 it will cost $36.60 per megawatt-hour to produce electricity from wind and $37.60 to produce solar energy, versus $40.20 to produce energy from gas. Any investment in gas is thus at risk of failing to yield an economic return and becoming a stranded asset. This risk could increase if federal subsidies for gas were to be cut.

We believe that investment in gas is also shortsighted. States that provide subsidies for gas and permit construction of new pipelines and compressor stations will lock in dependence on gas for years to come while missing opportunities to invest in renewables. The real problem with fracking, then, is that it perpetuates the carbon-based energy system and delays the transition to a carbon-free economy.

To address this problem, we recommend that state and federal subsidies for natural gas be reduced over the next 2 years and then eliminated. The International Monetary Fund has made similar recommendations. We also recommend that new residential or commercial gas hookups not be permitted, new gas appliances be removed from the market, further gas exploration on federal lands be banned, and all new or planned construction of gas infrastructure be halted. We believe an ill-conceived proposal announced recently by the Environmental Protection Agency to roll back limits on methane pollution needs to be blocked. At the same time, we call for the creation of new tax structures, subsidies, and incentives such as carbon pricing that favor wind, solar power, and other nonpolluting, renewable energy sources and policies that support energy conservation, clean vehicles, and expansion of public transit.

Implementation of these recommendations will require courageous political leadership and face fierce resistance. But wide-scale transition to renewables would yield enormous benefit for the United States. It would reduce air pollution and therefore prevent disease, extend life expectancy, and reduce health care costs. It would free up the billions of public dollars now spent on fossil-fuel subsidies, and it would protect our planet.

Models exist for effective climate action. In July 2019, New York State enacted comprehensive energy and climate legislation and pledged to reduce greenhouse-gas emissions by 85% by 2050. To meet this target, New York is developing the country's largest wind farm and collaborating with Ireland and Denmark to improve its electric power grid. It has also created economic incentives for clean vehicles, including trucks and buses, and tax incentives for energy conservation. Idaho Power, the largest utility in a deeply conservative state, has pledged to produce 100% of its electricity from renewable sources by 2045. The United Kingdom has committed to net zero carbon emissions by 2050. New York, Idaho, and the United Kingdom are creating new, high-paying jobs in the wind and solar energy industries.

Natural gas has been portrayed as a bridge to the future. The data now show that it is only a tether to the past. We believe it's time to reject the false promise of gas.

Disclosure forms provided by the authors are available at NEJM.org.

From the Program in Global Public Health and the Common Good and the Global Observatory on Pollution and Health, Boston College, Chestnut Hill (P.J.L.) and Lundberg Health Advocates, Newton (B.E.L.) — both in Massachusetts; and the Wellcome Trust, London (H.F.).

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This article was published on December 4, 2019, and updated on December 13, 2019, at NEJM.org.

1. Energy Information Administration. Annual energy outlook 2019: with projections to 2050. Washington, DC: Department of Energy, January 2019 (https://www.eia.gov/outlooks/aeo/pdf/aeo2019.pdf).
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5. Coady D, Parry I, Le N-P, Shang B. Global fossil fuel subsidies remain large: an update based on country-level estimates. Washington, DC: International Monetary Fund, May 2, 2019 (https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509).

DOI: 10.1056/NEJMp1913663
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The Patient-Scientist's Mandate

Sonia M. Vallabh, Ph.D.

Eight years ago, at the age of 27, I learned that I had inherited a fatal genetic mutation in the prion protein gene (*PRNP*). Pathogenic mutations in this gene cause genetic prion disease, a rare adult-onset neurodegenerative disease that is rapidly fatal once it strikes. The mutation I carry, which stole my mother's life when she was 52, makes me nearly certain to die of this disease if no preventive measure is developed.

In response, my husband, Eric Minikel, and I left our previous careers in law and transportation engineering to retrain in biomedicine. Starting in night classes and entry-level laboratory jobs, we earned our Ph.D.s in biomedical research from Harvard in the spring of 2019. In the process, we found our scientific home at the Broad Institute at MIT and Harvard, where we have now established our own laboratory focused on the development of therapies for prion disease.

There is a proud tradition of activated patients driving science. Fellow travelers of this path may be familiar with the kinds of questions we fielded from day one: whether it was wise to pursue genetic testing for a currently incurable disease; how we would weather the setbacks inherent in the drug-development process; whether it was appropriate for patients to work on their own disease. But we were fortunate to find mentors willing to fight alongside us, and together we forged a plan to tackle prion disease.

My goal is prevention: to preserve at-risk brains, including mine, in full health. Prion disease advances exceptionally swiftly: the average patient dies within 6 months after first having a symptom. Previous clinical trials have involved symptomatic patients and used a survival end point, accepting that many such patients are already profoundly debilitated at enrollment. But predictive genetic testing provides an opportunity, and arguably a mandate, to aim for a higher goal: preservation of full quality of life.

Because the onset of genetic prion disease is not preceded by an established molecular prodrome, testing drugs in healthy carriers will require a primary prevention strategy based on genetic risk. This realization has defined our priorities for the past 5 years,[1-3] leading us to focus on a drug target present in healthy people (normal prion protein, or PrP); a biomarker that can reflect drug activity absent a clinical phenotype (PrP in cerebrospinal fluid); tools for quantifying risk; appropriate recruitment infrastructure; the presymptomatic natural history of the disease; and proactive engagement with the Food and Drug Administration. As this list suggests, redefining the aims of drug development to encompass prevention leads to many new research goals. In the area of genetic prion disease, it took a patient-scientist to drive this shift. Perhaps there is something peculiarly clarifying about defining success by honestly answering the question "What would you want for your own brain?"

Since genetics provides an opportunity for prevention in only a subset of cases of prion disease, symptomatic-stage intervention will remain an important goal.

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June McHuen

From: Maria Gastelumendi <therisingloafer@gmail.com>

Sent: Monday, August 2, 2021 10:31 AM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc: Clerk of the Board
Subject: The Building Electrification reach code is item D.3.

August 2, 2021,
Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff
cc Clerk of the board

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." **My name is Maria Gastelumendi, I am writing as a small business owner for the past 18 years to urge you to support The Building Electrification Reach Item 3D of the agenda to:**

(1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and
(2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

My business, **The Rising Loafer Café and Bakery** - 3643 Mt. Diablo Blvd. Lafayette California- has earned several environmental awards for it sustainable practices. It is, always, our concern to use resources considering our impact on the future of our planet. Our next step is to look for better energy alternatives that minimize the rapid climate change, the ANSWER is to electrify our buildings.

As you know, Building Electrification is essential to reaching emissions reduction goals, and thus is included in the County's Climate Emergency Resolution. According to the County's current Climate Action Plan (2015), residential and nonresidential greenhouse gas emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County). This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level.

Over 45 CA cities and counties have adopted new building electrification "reach" codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

Thank you for your commitment to Electrification for New Buildings. Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,

Maria Gastelumendi
The Rising Loafer Cafe and Bakery
Certified Green Business
3643 "B" Mt. Diablo Blvd.
Lafayette, CA. 94549
925-284-8816
9 am to 3 pm
Wednesday to Sunday
http://risingloafercafe.com

August 2, 2021

Frederick Bialy, M.D.

El Cerrito, CA 94530

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

RE: Agenda Item D3 for Board of Supervisors Meeting on August 3, 2021.

Dear Chair Burgis and members of the Board,

I am writing to urge you all to support the recommendation of the Sustainability Committee for Contra Costa County to develop and implement, as quickly as possible, an ordinance that amends the building code to require that new construction be all-electric, eliminating the use of natural gas for space and water heating and cooking. At the time of their recommendation, they limited this requirement to new single-family homes, multi-family homes up to 3 stories, and some non-residential buildings where a cost effectiveness study was already complete. In the meantime, studies have been completed that show that all-electric construction is cost-effective in taller buildings as well and they should be included.

To fulfill the intent of the County's Climate Emergency Resolution passed last September, greenhouse gas (GHG) emissions need to be cut drastically. According to the County's 2015 Climate Action Plan, residential and nonresidential GHG emissions represent 28% of the county's total emissions. Building electrification is essential to reaching emissions reduction goals. According to the Building Electrification Ordinance for New Construction Presentation that is part of the August 3rd Agenda Packet, all-electric new construction may not be a part of the State building codes until 2026. The Climate Emergency needs to be addressed more quickly and boldly than that. Reach codes allow us to do this at the local level. In the past few years, over 45 CA cities and counties have already adopted new building electrification reach codes. Let Contra Costa County be next!

The impacts of the Climate Emergency are clear to us all. The Northwest just lived through an unprecedented heat wave. More are to come. Weather events are becoming more extreme with resultant catastrophic flooding in many parts of the world. We now face here in California an early start to another likely extreme fire season.

As a retired Emergency Physician, I am particularly concerned about the health impacts of the Climate Emergency and the burning of fossil fuels. Hundreds of deaths have been directly tied to the recent heat wave in the Pacific Northwest. The recent flooding in Germany killed at least 180 people. Flooding in less developed parts of the world usually cause many more deaths. 85 people died in the 2018 Camp Fire that destroyed much of Paradise, CA. In the last few years, the smoke from the extensive fires in the West has led to dangerous air quality in many communities with significant health impacts. Air pollution, much from the burning of fossil fuels, is estimated to cause worldwide about 9 million deaths annually. More specific to the ordinance under consideration, the burning of natural gas in homes, largely from cooking, has been documented to lead to higher levels of indoor air pollutants that have significant health impacts, many of them respiratory. An all-electric in new construction reach code will not only slow down the progression of the Climate Emergency and reduce its adverse health impacts, it will make our homes and buildings healthier and safer.

Thank you for your demonstrated commitment to addressing the Climate Emergency. Please support swift adoption and implementation of the Sustainability Committee's proposal for new building electrification.

Sincerely,

Frederick Bialy, M.D.

Pacific Gas and Electric Company

Robert S. Kenney
Vice President
Regulatory and External Affairs

P. O. Box 77000
San Francisco, CA 94177-00001
Mail Code B23A
(415) 407-6692
Robert.Kenney@pge.com

July 30, 2021

VIA EMAIL TO: jason.crapo@dcd.cccounty.us

Jason Crapo, Deputy Director
Contra Costa County Department of Conservation & Development
30 Muir Road, Martinez CA 94553

Dear Mr. Crapo:

Pacific Gas and Electric Company (PG&E) is proud to provide electric and natural gas service to the County of Contra Costa. And we are committed to helping customers and the community achieve their energy goals. As part of this commitment, PG&E welcomes the opportunity to support the County of Contra Costa's efforts to promote efficient, all-electric new construction, when it is cost-effective.

PG&E strongly supports California's climate and clean air goals. We recognize that achieving these goals requires a range of approaches and tools, including increasing the use of energy-efficient electric appliances in buildings when cost-effective. PG&E welcomes the opportunity to avoid investments in new gas assets that might later prove underutilized as local governments and the state work together to realize long-term decarbonization objectives. With all this in mind, PG&E supports local government policies that promote all-electric new construction when cost effective.

Beyond new construction, PG&E believes a multi-faceted approach is needed to cost-effectively achieve California's broader economy-wide long-term GHG reduction objectives, including both electrification and decarbonizing the gas system with renewable natural gas and hydrogen. As California's decarbonization policies evolve, PG&E will continue to ensure the safe and reliable operation of the electric and gas systems to continue supporting the customers that depend on us.

PG&E appreciates the partnership with the County of Contra Costa during its policy development process, which allows us to prepare for the future and continue providing the best service possible to customers. PG&E continuously forecasts load in its service territory and implements upgrades to the distribution grid to meet the demand. PG&E fully expects to meet the needs that all-electric buildings will require. PG&E remains ready to engage with our customers, local government, businesses, and community members to meet their needs safely, reliably, affordably, and with clean energy.

PG&E looks forward to continuing to work with the County of Contra Costa to accomplish its policy goals.

Thank you and have a safe day.

Sincerely,

Robert S. Kenney
Vice President

cc: Jody London, Sustainability Coordinator [jody.london@dcd.cccounty.us]
Demian Hardman-Saldana, Senior Planner [demian.hardman@dcd.cccounty.us]
Darin Cline, Sr. Manager, Government Relations, PG&E [Darin.Cline@pge.com]

From:	Betty Lobos >
Sent:	Monday, August 2, 2021 2:11 PM
To:	Supervisor_Burgis; Supervisor Candace Andersen; SupervisorMitchoff; John Gioia; District5
Cc:	Clerk of the Board
Subject:	Reach code to Electrify New Construction

Citizens' Climate

Contra Costa Couni

August 2, 2021

Chair Diane Burgis
Vice Chair Federal Glover
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the Board

Dear members of the Board of Supervisors of Contra Costa County,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing as a constituent and as a member of Citizens' Climate Lobby, a nonpartisan, grassroots advocacy organization focused on policies to address climate change, to urge you to act now on that resolution.

When I moved to Concord 9 years ago, I was excited to move to a state that is known as an environmental leader. I didn't realize that I was moving to a state where climate change was having such a huge impact. The heat, drought, and wildfires have become noticeably worse in just the 9 years that I have lived here.

I have long known about the negative global impacts on environmental and personal health from the extraction and use of natural gas and other fossil fuels, but I was surprised to learn, in the past year, about the in-home health effects of using natural gas. There have been more & more studies showing the negative health effects, especially on children with asthma, of the particulate matter, nitrogen dioxide, carbon

monoxide, and formaldehyde emitted by gas stoves and furnaces in the home. I want my county to require that new home construction be safe and healthy.

I urge the Board of Supervisors to join over 45 CA cities and counties and move quickly to electrify all new buildings in our county, and to adopt a "first step" reach code for single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete. This will bring substantial cost reductions in construction and maintenance by eliminating gas infrastructure. It will also lead to a safer and healthier county.

Please support swift adoption and implementation of the Sustainability Committee's proposal for New Building Electrification beginning in 2022. Thank you for your attention to this and for your timely action.

Sincerely,

Elizabeth (Betty) Lobos

Concord, CA 94520-4402

From: Marti Roach <
Sent: Sunday, August 1, 2021 3:59 PM
To: james naprawa
Cc: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5; Clerk of the Board
Subject: Re: Agenda item for Building Elec. is on NEXT Tuesday! Letters needed by monday at latest

Love this letter where you use your influence created by your work. Nice Job. Thanks for being flexible Jim.

Marti Roach, MSW
350 Contra Costa
350 Bay Area Action

"There is no climate justice without racial justice"

Sent from my iPad

On Aug 1, 2021, at 1:35 PM, james naprawa <jim.naprawa@gmail.com> wrote:

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the board

August 1, 2021

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and (2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as

possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

I am a pediatrician and work in the emergency department at UCSF Benioff Children's Hospital, Oakland. I believe strongly in the importance of creating sustainable clean energy solutions to respond to the challenges of climate change. Our society must move as quickly as possible away from oil and gas and towards renewable sources of energy such as solar and wind. Rising temperatures, worsening droughts, and a new "forest-fire" season have made the urgency of our situation abundantly clear. We must act now to ensure a healthy climate for future generations.

Every day, I see the effects of air pollution on children in the form of asthma exacerbations. Asthma disproportionately affects poor children who are more likely to live in urban areas and/or around refineries and other sources of pollution. All-electric buildings are healthier, safer, and cheaper to build and maintain than those powered by gas. The move towards a green energy grid will improve air and water quality in our towns and cities.

According to the County's 2015 Climate Action Plan, 28% of total greenhouse gas emissions come from residential and nonresidential buildings. The California Energy Commission has concluded that building electrification offers the most promising path to achieving GHG reduction targets in the least costly manner.

Over 45 CA cities and counties have adopted new building electrification reach codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

Thank you for your commitment to Electrification for New Buildings. Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,
James Naprawa, MD
2260 Whyte Park Ave
Walnut Creek, CA
94595
614 905 1229

From: Leah Louis-Prescott <
Sent: Monday, August 2, 2021 2:12 PM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5; Clerk of the Board
Subject: Comment Submission: Agenda Item D.3 for 08-03-21 Board of Supervisors Meeting
Attachments: RMI Comments-Agenda Item D.3-Board of Supervisors Meeting 08.03.2021.pdf

Dear Contra Costa County Board of Supervisors:

RMI is pleased to submit written comments on Agenda Item D.3 for the Board of Supervisors Meeting on August 3, 2021.

I would be happy to answer any questions you may have and look forward to engaging with you on these issues.

Sincerely,
Leah Louis-Prescott

RMI
ENERGY. TRANSFORMED.

Leah Louis-Prescott
Senior Associate RMI
Carbon-Free Buildings

p 810-772-8248
w www.rmi.org
| 1901 Harrison St, Ste 200 | Oakland, CA | 94612

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August 2, 2021

Contra Costa County Board of Supervisors
Supervisor Diane Burgis, Chair of the Board
Supervisor Federal D. Glover, Vice Chair of the Board
Supervisor John Gioia
Supervisor Candace Andersen
Supervisor Karen Mitchoff

cc Monica Nino, Clerk of the Board and County Administrator

Dear Chair Burgis and members of the Board,

This year, California has experienced deepening droughts, dangerous heat waves, and damaging wildfires. The fires this year have already burned twice as much land compared to this time last year, teeing the state up for yet another year of the worst wildfire season on record.[1] Ambitious climate action has never been as urgent as it is today.

Last September, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." **In order to address the climate emergency, the Contra Costa Board should require all new buildings to be built all-electric as soon as possible.**

In addition to the climate imperative, the Board should adopt an all-electric new construction ordinance because all-electric new construction is cheaper than building with gas, offers climate resiliency, protects our health and air quality, and does not put the electric grid at risk.

All-electric new construction is cheaper than building with gas

Multiple studies have shown that building all-electric will reduce construction costs, especially considering the avoided cost of gas infrastructure. SF Environment determined all-electric new construction is cheaper than building with gas for every housing type studied.[2] RMI found that building all-electric homes is less expensive than building mixed-fuel homes in all eleven cities

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[1] Cal Fire, Stats and Events, *available at* https://www.fire.ca.gov/stats-events/

[2] San Francisco Department of the Environment, *Proposed Ordinance: All-Electric Buildings for New Construction* (June 30, 2020), p. 3, *available at* https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtf_new_construction_policy_brief.pdf

evaluated, including Oakland, CA.[3] Frontier Energy concluded that all-electric homes were cost-effective across all sixteen California climate zones using the time dependent valuation (TDV) methodology.[4] E3 finds capital cost savings for all-electric single-family and low-rise multifamily compared to their natural gas alternatives, as well as lifecycle cost savings for most homes.[5] The evidence is clear that all-electric new construction saves money.

All-electric new construction offers climate resiliency

Though the Building Industry Association raises concerns about how electrification will impact residents during extreme weather events,[6] building electrification will actually increase climate resiliency. In fact, many residents living in all-electric homes with heat pumps will be more protected than those living in mixed-fuel homes. Many Northern Californians do not have air conditioning, putting them at risk during the heat waves that have been increasing in frequency and severity. However, modern electric heat pump space heaters provide both heating and cooling, so residents will be equipped with air conditioning and protected from heat waves.

During blackouts or public safety power shutoffs, all-electric homes are no more vulnerable than most gas-fueled homes. Modern gas appliances like gas tankless water heaters, furnaces, dryers, and stoves are dependent on electricity to start, meaning they will not function during a power outage.[7] In fact, modern all-electric homes can be more resilient than gas-fueled homes because heat pump water heaters can utilize solar power and pre-heat water for use when the sun goes down.[8]

All-electric new construction protects our health and air quality

Gas use in buildings presents a major threat to residents' health and air quality because gas combustion releases harmful pollutants such as nitrogen oxides, particulate matter, and carbon monoxide. Buildings are now the leading cause of premature death from combustion emissions in California (particulate matter and ozone).[9] Children living in homes with a gas stove are 24% more likely to be diagnosed with asthma by a doctor and 42% more likely to experience asthma

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[3] RMI, *The Economics of Electrifying Buildings* (2018), p. 29, *available at* https://rmi.org/insight/the-economics-of-electrifying-buildings/
RMI, *The New Economics of Electrifying Buildings* (2020), *available at* https://rmi.org/insight/the-new-economics-of-electrifying-buildings/

[4] California Energy Codes & Standards, *2019 Cost-effectiveness Study: Low-Rise Residential New Construction*, Frontier Energy (July 2019), p. 41-42, *available at* https://srcity.org/DocumentCenter/View/25380/2019-State-Cost-Effectiveness-Study-for-Residential-Reach-Codes

[5] Energy+Environmental Economics, *Residential Building Electrification in California* (Aug. 15, 2019), p. viii-xi, *available at* https://www.ethree.com/e3-quantifies-the-consumer-and-emissions-impacts-of-electrifying-california-homes/

[6] Building Industry Association, comment letter submitted on July 28, 2021, p. 1, *available at* http://64.166.146.245/docs/2021/BOS/20210803_1780/46497_2021%2007%2028%20BIA%20Contra%20Costa%20County%20All%20Electric%20Comment%20Letter.pdf

[7] Rachel Golden, *Electrification for Climate Resiliency*, Sierra Club (Oct. 9, 2019), *available at* https://www.sierraclub.org/articles/2019/10/electrification-for-climate-resiliency

[8] The Brattle Group, *The Hidden Battery* (Jan. 2016), *available at* https://www.electric.coop/wp-content/uploads/2016/07/The-Hidden-Battery-01-25-2016.pdf

[9] Irene C. Dedoussi, et al., *Premature mortality related to United States cross-state air pollution*, 578 NATURE 264 (2020), available at https://doi.org/10.1038/s41586-020-1983-8.

symptoms compared to children in homes with electric stoves.[10] These health impacts disproportionately harm low-income communities and communities of color.[11] All-electric new construction can help avoid these health risks, especially if new affordable housing projects are expected to be built in lower-income communities.

UCLA researchers estimate that if we electrify all of the fossil fuel appliances in the San Francisco Bay Area air basin, we could avoid over 300 respiratory illnesses, save over 130 lives, and save $1.2 billion in healthcare costs — every year.[12] Requiring all-electric new construction is a step in the right direction to protect residents' health and air quality.

All-electric new construction does not put the grid at risk

Though the Building Industry Association raises concern about the increased demand from all-electric new construction,[13] the utility is prepared to serve this new load. Pacific Gas and Electric Company (PG&E) states "PG&E fully expects to meet the needs that all-electric buildings will require" in its letter of support for a statewide all-electric building code to the California Energy Commission.[14]

Contra Costa County has an opportunity to become the 49th local government in California to adopt an all-electric new construction ordinance.[15] The County should require all-electric new construction as quickly as possible to ensure a cleaner, healthier future for its residents.

Respectfully submitted,

Leah Louis-Prescott
Senior Associate, RMI

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[10] Weiwei Lin et al., *Meta-Analysis of the Effects of Indoor Nitrogen Dioxide and Gas Cooking on Asthma and Wheeze in Children,* 42 INTERNATIONAL JOURNAL OF EPIDEMIOLOGY 1724 (2013), *available at* https://doi.org/10.1093/ije/dyt150.

[11] Brady Seals and Andee Krasner, *Health Effects from Gas Stove Pollution*, RMI, Physicians for Social Responsibility, Mothers Out Front, and Sierra Club (2020), *available at* https://rmi.org/insight/gas- stoves-pollution-health

[12] UCLA Fielding School of Public Health, *Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California* (2020), Appendix B, Tables B-3 and B-4, *available at* https://coeh.ph.ucla.edu/effects-residential-gas-appliances-indoor-and-outdoor-air-quality-and-public-health-california.

[13] Building Industry Association, *supra* p. 1.

[14] Pacific Gas and Electric Company, Support Letter to State and Local Government Policies that Promote All-Electric New Construction, California Energy Commission Docket #19-BSTD-03, TN#233632 (filed Jun. 24, 2020), *available at* file:///Users/lprescott/Downloads/TN233632_20200624T075808_Licha%20Lopez%20Comments%20-%20Support%20letter%20to%20state%20and%20local%20government%20policie%20(9).pdf

[15] Matt Gough, California's Cities Lead the Way to a Gas-Free Future, Sierra Club (July 22, 2021), *available at* https://www.sierraclub.org/articles/2021/07/californias-cities-lead-way-gas-free-future

FRONTIER energy

MBA
Misti Bruceri & Associates, LLC

August 2, 2021

Demian Hardman-Saldana
Senior Planner
Department of Conservation and Development
Contra Costa County
30 Muir Road
Martinez, CA 94553

Subject: Response to Bay Area BIA Comment Letter on Contra Costa County Proposed Local Amendments to the 2019 California Building Code

Dear Mr. Hardman-Saldana:

Background:

Local jurisdictions have the authority to adopt amendments to the California Building Code (Title 24) to meet local geologic, topographic, or environmental conditions. The amendments, if codified as building code ordinances, must meet certain requirements as established by the CA Building Standards Commission (CBSC).

Local ordinances (reach codes) that amend the Energy Code (Part 6 of the California Building Code), must meet two additional requirements: the standards must be cost-effective and must result in a reduction in energy use. Cost-effectiveness is typically demonstrated via documenting the impacts of installing a package of non-preempted measures that yields greater economic benefits over time than the cost of the investment relative to a code-compliant home.

As the analysis can be resource intensive and complex, the Statewide Codes & Standards Program often completes the analysis at the request of local government partners. PG&E, SCE, SDG&E, SoCalGas, and to some extent LADWP, participate in the subprogram as a Statewide Team to support the analyses discussed in this letter, although it is classified as a local program. In Fall 2018, approximately 30 local jurisdictions submitted a request to the Statewide Team to conduct analysis on the cost-effectiveness of exceeding the new 2019 code for both residential and nonresidential new construction. Given the high level of interest in the analyses, the Reach Codes Team established an informal technical advisory team including utility and local jurisdiction staff, Energy Commission, and other interested stakeholders, who met periodically throughout the analysis development. The Reach Codes team released drafts of the reports based on research versions of the Energy Commission compliance software in March 2019 and received comments from stakeholders, which were incorporated into the final reports.

The California Energy Commission does not require that local jurisdictions follow a particular method of determining cost effectiveness. Determining the cost-effectiveness of a proposed ordinance requirement is within the authority of the local jurisdiction. Cost-effectiveness results of the 2019 residential

new construction study completed are provided in two formats: the TDV[1] and the "On-Bill" perspective. The TDV method is used by the California Energy Commission for Title 24, Part 6 code development, and the On-Bill perspective was included to provide valuable information for cities considering a reach code as to how the requirements may directly impact residents.

Proposed Contra Costa County (CCC) Ordinance:

The Contra Costa County proposed ordinance will require most new construction projects (with exceptions) to adhere to an all-electric mandate. This structure differs from the City of Berkeley's recent ordinance banning the installation of new gas infrastructure for new construction projects, which is an amendment to the Health and Safety Code. The Berkeley structure is not required to be cost-effective, nor approved by the Energy Commission.

The "2019 Cost-effectiveness Study: Low-Rise Residential New Construction" report (2019 Cost-effectiveness Study) summarizes the cost-effectiveness of exceeding the code independently for both mixed-fuel building designs as well as all-electric designs. In addition, the report includes an analysis comparing homes using all-electric designs to a minimally compliant mixed-fuel design.

The County of Contra Costa's proposed ordinance references the results of the comparison, which shows that when using the TDV methodology, a minimally compliant all-electric design is cost-effective as compared to a similar mixed fuel design. Most of the unincorporated County area is within the Energy Commission's Climate Zone (CZ) 12, with a small portion located in CZ 3. With the criteria specified in the study, it is not cost-effective from the individual customer's perspective, with a B/C ratio equal to 0.63 in CZ 12 (0.55 in CZ 3). As noted in the definition of TDV above, neither utility rates nor escalation rates used in the On-Bill analysis are included in the TDV format. These factors do not impact the County's determination of cost-effectiveness.

The letter from BIA points to the 2019 Cost-effectiveness Study as the source of analyses for the ordinance language proposed by CCC. Specifically, the letter states that costs used for appliances and gas and electric infrastructure in the report are not accurate.

Specific Responses to BIA's July 28, 2021 Letter:

- **Comment 1:** "The study shows that an all-electric home is $421 cheaper to build (including the cost of appliances) but estimates from homebuilders show increased costs of more than $2,200 per home."
    - In the process of developing the study, the authors obtained equipment and labor cost estimates from a variety of sources to support the assumptions in the analysis. The table below compares average cost estimates by appliance from the study (RNC 2019) with other recent published sources. The average cost savings to build an all-electric home from the sources cited is $1,193, much greater than the $421 savings in the 2019 Residential New

[1] Time Dependent Valuation (TDV) Methodology: TDV is a normalized monetary format developed and used by the Energy Commission for comparing electricity and natural gas savings, and it considers the cost of electricity and natural gas consumed during different times of the day and year. The 2019 TDV values are based on long term discounted costs of 30 years for all residential measures. The CBECC-Res simulation software outputs are in terms of TDV kBTUs. The present value of the energy cost savings in dollars is calculated by multiplying the TDV kBTU savings by a net present value (NPV) factor, also developed by the Energy Commission. The NPV factor is $0.173/TDV kBtu for residential buildings.

Construction study. Detailed data used to calculate average costs are included in Attachment A.

Residential New Construction - Incremental Cost for Electric versus Gas Appliances						
All Appliances	HVAC	HPWH	Cooktops	Dryers	In-House	Total
RNC 2019	$ (221)	$ -	$ -	$ -	$ (200)	$ (421)
EPRI 2016	$ 15	$ (13)	$ 1,056	$ (389)	$ 50	$ 719
TRC 2019	$ 414	$ (164)				$ 250
E3 2019	$ (3,327)	$ (827)	$ (189)	$ (265)		$ (4,608)
Synapse 2018	$ (1,865)	$ 980			$ (75)	$ (960)
Navigant 2018	$ (25)	$ (25)				$ (50)
Consol 2020	$ (2,525)	$ (1,206)	$ (106)	$ 555		$ (3,282)
Average	**$ (1,076)**	**$ (179)**	**$ 190**	**$ (25)**	**$ (75)**	**$ (1,193)**
Values in parentheses represent cost savings						

- **Comment 2:** "The study also concluded that builders would save $5,750 per home in avoided natural gas infrastructure but sample costs from builders put that figure at $1,425 per home on average."
  - As stated in the study, gas infrastructure cost savings are highly variable and depend on several factors, including location, distance, and the specific conditions under which the infrastructure is installed. Each entity that provided cost estimates prefaced its estimate with the caveat that the costs are highly variable and project-dependent.
  - The table below compares cost estimates from the study (RNC 2019) with six other recent published sources, underscoring the high variability.
  - The study uses the TDV metric to demonstrate cost-effectiveness, including the full cost of the gas infrastructure, without utility subsidies equivalent to approximately 50% of the full cost. The cost savings in the published report is estimated at $11,836 (before CPUC Rule 15 / 20). These savings can be reduced to as low as $6,630 in Climate Zone 12 ($8,010 in CZ 3) while keeping the TDV benefit-to-cost (B/C) ratio above 1.0. An associated reduction in the builder cost would reduce the cost to approximately $3,890 ($4,580 in CZ 3), greater than the BIA estimate but less than or equivalent to the typical cost in several other reference sources.

Gas Infrastructure to Site	Low	High	Average	Typical
RNC 2019	$ 900	$ 25,000	$ 12,950	$ 5,750
EPRI 2016				$ 1,100
TRC 2019	$ 4,821	$ 8,742	$ 6,781	$ 6,781
E3 2019				$ 6,000
Synapse 2018				$ 6,412
SoCalGas 2019				$ 4,400
Consol 2020	$ 1,000	$ 25,000	$ 13,000	$ 1,500
Average	**$ 2,240**	**$ 19,581**	**$ 10,910**	**$ 4,563**

Frontier Energy and Misti Bruceri & Associates are pleased to offer this response to BIA's comments on the proposed CCC local amendments to the 2019 California statewide building code.

Sincerely,

Misti Bruceri
Misti Bruceri & Associates, LLC

Alea German
Engineering Manager– Frontier Energy

Attachment A: Residential New Construction Mixed Fuel and All-electric Appliance Cost Estimates

HVAC	Mixed Fuel	Electric	Incremental Cost
RNC 2019			$ (221)
EPRI 2016	$ 5,285	$ 5,300	$ 15
TRC 2019	$ 3,903	$ 4,317	$ 414
E3 2019	$ 11,604	$ 8,277	$ (3,327)
Synapse 2018	$ 7,997	$ 6,132	$ (1,865)
Navigant 2018	$ 8,177	$ 8,152	$ (25)
Consol 2020	$ 12,706	$ 10,181	$ (2,525)
Average	**$ 8,279**	**$ 7,060**	**$ (1,076)**

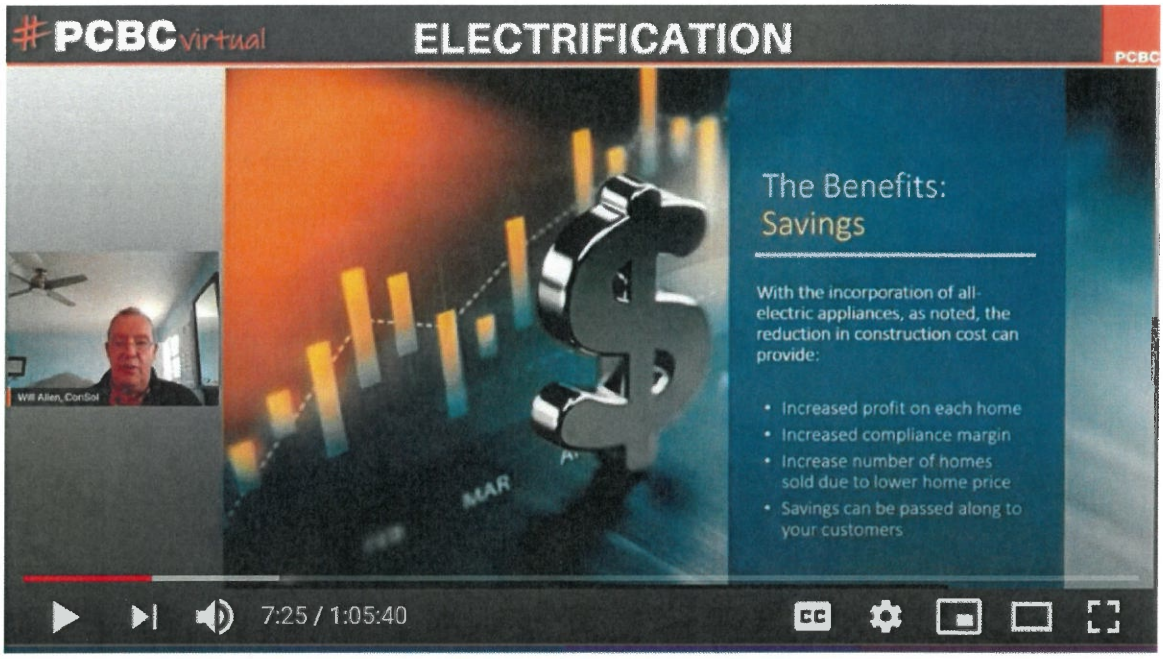
DHW	Mixed Fuel	Electric	Incremental Cost
RNC 2019			$0
EPRI 2016	$ 1,986	$ 1,973	$ (13)
TRC 2019	$ 5,368	$ 5,204	$ (164)
E3 2019	$ 4,517	$ 3,690	$ (827)
Synapse 2018	$ 1,520	$ 2,500	$ 980
Navigant 2018	$ 8,177	$ 8,152	$ (25)
Consol 2020	$ 5,263	$ 4,057	$ (1,206)
Average	**$ 4,472**	**$ 4,263**	**$ (179)**

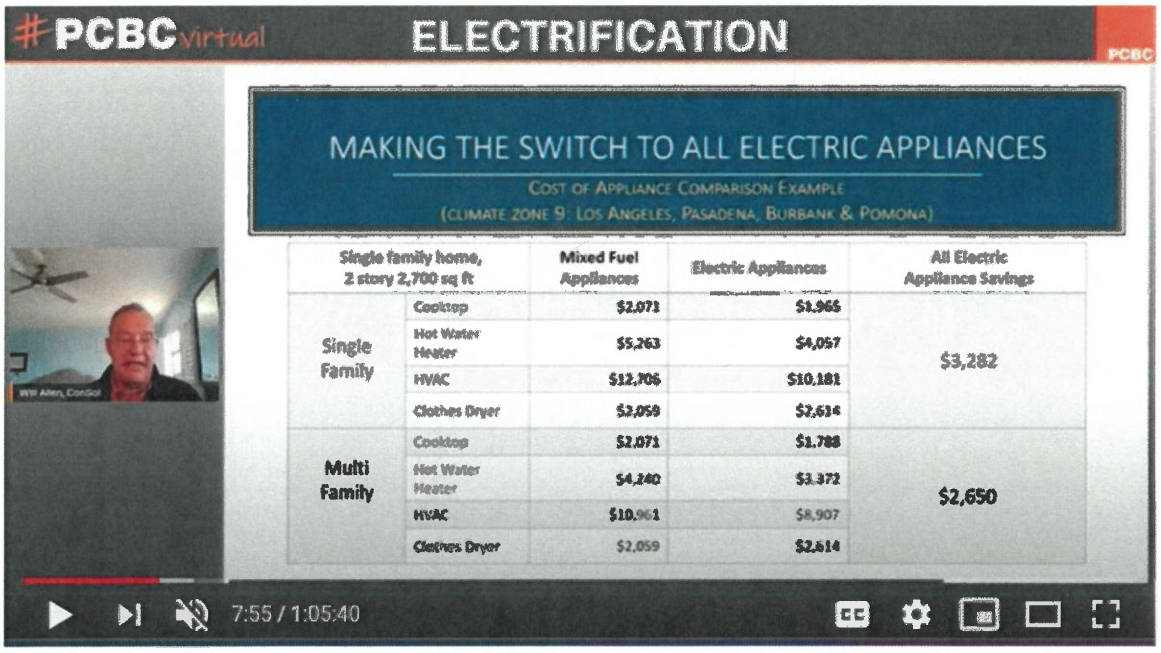
Cooktops	Mixed Fuel	Electric	Incremental Cost
RNC 2019			$0
EPRI 2016	$ 933	$ 1,989	$ 1,056
TRC 2019			
E3 2019	$ 1,882	$ 1,693	$ (189)
Synapse 2018			
Navigant 2018			
Consol 2020	$ 2,071	$ 1,965	$ (106)
Average	**$ 1,629**	**$ 1,882**	**$ 190**

Dryers	Mixed Fuel	Electric	Incremental Cost
RNC 2019			$0
EPRI 2016	$ 1,260	$ 871	$ (389)
TRC 2019			
E3 2019	$ 2,041	$ 1,776	$ (265)
Synapse 2018			
Navigant 2018			
Consol 2020	$ 2,059	$ 2,614	$ 555
Average	**$ 1,787**	**$ 1,754**	**$ (33)**

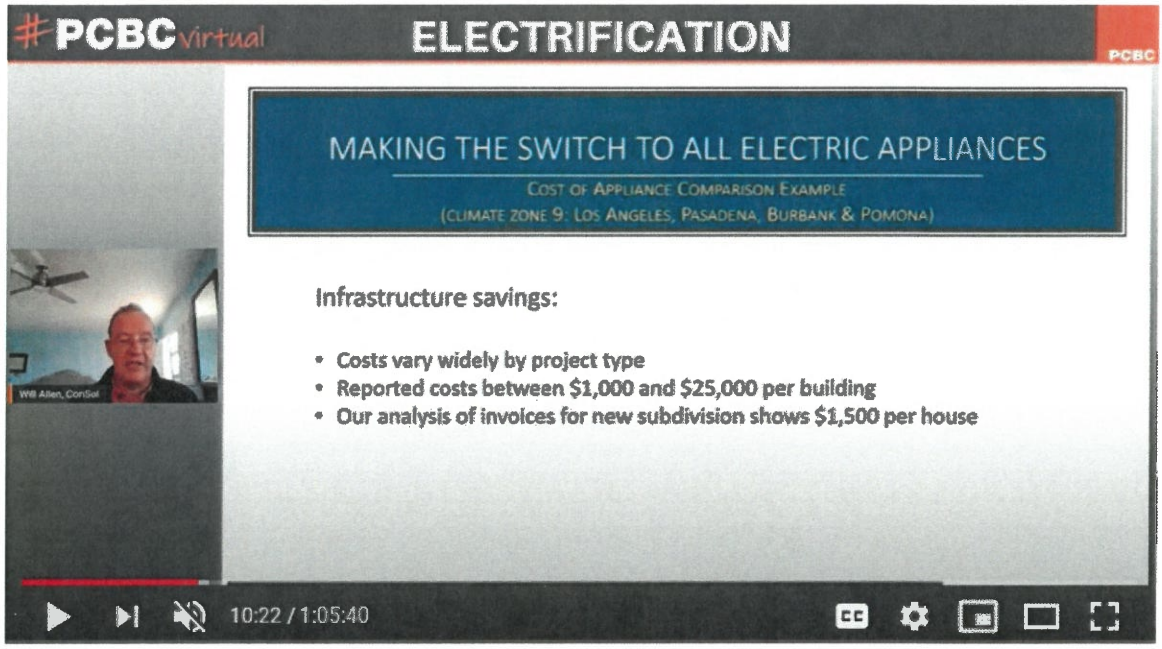
In-House Infrastructure	Gas Connections	Electric Service Upgrade	Incremental Cost
RNC 2019	$ 800	$ 600	$ (200)
EPRI 2016	$ 550	$ 600	$ 50
Average	**$ 675**	**$ 600**	**$ (75)**

Attachment B:
Excerpts from PCBC Presentation - Electrification: The Clean Energy Home Builder
Will Allen, Consol. 12-9-2020





Single family home, 2 story 2,700 sq ft		Mixed Fuel Appliances	Electric Appliances	All Electric Appliance Savings
Single Family	Cooktop	$2,071	$1,965	$3,282
	Hot Water Heater	$5,263	$4,057	
	HVAC	$12,706	$10,181	
	Clothes Dryer	$2,059	$2,614	
Multi Family	Cooktop	$2,071	$1,788	$2,650
	Hot Water Heater	$4,240	$3,372	
	HVAC	$10,961	$8,907	
	Clothes Dryer	$2,059	$2,614	


#PCBC virtual
ELECTRIFICATION
PCBC
MAKING THE SWITCH TO ALL ELECTRIC APPLIANCES
COST OF APPLIANCE COMPARISON EXAMPLE
(CLIMATE ZONE 9: LOS ANGELES, PASADENA, BURBANK & POMONA)
Will Allen, ConSol
Infrastructure savings:
• Costs vary widely by project type
• Reported costs between $1,000 and $25,000 per building
• Our analysis of invoices for new subdivision shows $1,500 per house
10:22 / 1:05:40

Attachment C: References

EPRI, 2016
EPRI Study for SMUD: SMUD All-Electric Homes Electrification Case Study: Summary for the 3-Prong Test Discussion
https://www.epri.com/research/products/000000003002011894

TRC, 2019
City of Palo Alto 2019 Title 24 Energy Reach Code Cost Effectiveness Analysis
https://cityofpaloalto.org/civicax/filebank/documents/66742

E3, 2019
Residential Building Electrification in California
https://www.ethree.com/wp-content/uploads/2019/04/E3_Residential_Building_Electrification_in_California_April_2019.pdf

Synapse, 2018
Decarbonization of Heating Energy Use in California Buildings
https://www.synapse-energy.com/sites/default/files/Decarbonization-Heating-CA-Buildings-17-092-1.pdf

Navigant SCG Report, 2018
Report for SoCalGas: Analysis of the Role of Gas for a Low-Carbon California Future
https://www.socalgas.com/1443741887279/SoCalGas_Renewable_Gas_Final-Report.pdf

SoCalGas, 2019
Letter to City of San Luis Obispo Opposing Local Ordinance

Consol, 2020
Electrification: The Clean Energy Home Builder
https://www.youtube.com/watch?v=ivSvweV2hWI&feature=youtu.be

From:	Climate Health Now <caclimatehealthnow@gmail.com>
Sent:	Monday, August 2, 2021 2:50 PM
To:	Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5; Clerk of the Board
Subject:	Letter from health professional organization in strong support of building electrification in Contra Costa County
Attachments:	CCBoS_Electrification_Letter from CHN.pdf

Dear Chair Burgis and Supervisors Andergson, Mitchoff, Gioia, and Glover,

I hope this email finds you all well. Attached please find a letter in strong support of building electrification from Climate Health Now, an organization of nearly 500 physicians and nurses in California.

The burning of fossil fuels is dangerous to our health now and to our children's future tomorrow. We urge you to take action to electrify all new buildings, as called for in the Climate Emergency Resolution, and to support the Sustainability Committee's recommendation to adopt and implement an all-electric building code as soon as possible for all new single family homes, multi-family homes up to 3 stories, and nonresidential buildings where a cost effectiveness study is complete.

Please do not hesitate to reach out to us with any questions or concerns.

Sincerely,
Amanda Millstein, MD and Cynthia Mahoney, MD
Climate Health Now

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August 2, 2021

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the board

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." We are writing on behalf of Climate Health Now, an organization of nearly 500 health professionals throughout California, to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and (2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

As health care professionals, we are on the frontlines of the climate health emergency and treat the adverse health effects of fossil fuel combustion.

First, we see that using fossil fuels to heat homes and power indoor appliances is harming our health right now. Burning gas in homes and buildings for heating and cooking produces toxic air pollution like nitrogen oxides, carbon monoxide, and formaldehyde. It is sobering to note that children living in homes with gas stoves have a 42% higher risk of asthma symptoms. This pollution disproportionately harms frontline communities, where families are more likely to rent homes without access to proper ventilation. According to the American Lung Association, Contra Costa County already has some of the worst air and highest asthma rates in the country. Contra Costa gets an F grade for particle pollution days, and a D for ozone. Hot spots near refineries and heavy traffic are more impacted. According to the Contra Costa Asthma Initiative, 300,000 Contra Costa residents live in a census tract that ranks in the 95th percentile or higher of asthma Emergency Department (ED) rates statewide. This is the highest number of people in any county in the state and the fourth highest by percent of County residents in the state. An estimated 4,950 people visit the ED for asthma each year in

the County, with this group being disproportionately comprised of people of low socioeconomic status and African-American race.

Cleaning up the toxic effects of indoor air pollution by banning new fossil gas appliances is the prudent thing to do. Contra Costa residents, our children, and our patients are already suffering from fossil fuel air pollution and worse air quality driven by global warming. Unfortunately, air quality will without a doubt deteriorate further as climate change progresses. Increased heat drives up ozone levels, while heat and drought trigger wildfire smoke, which is extremely toxic to health. Without major changes, the suffering will increase. Add to this the burden of COVID lung damage - which we do not yet know - and the burden on our lungs is great. We need clean air to breathe. We should be doing everything we can to decrease pollution where we can. It makes no sense to allow new combustion appliances going forward.

As you know, Building Electrification is essential to reaching emissions reduction goals, and thus is included in the County's Climate Emergency Resolution. According to the County's current Climate Action Plan (2015), residential and nonresidential greenhouse gas emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County). This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level. Avoiding new fossil gas infrastructure will also start the process of avoiding the leakage of methane that is inevitable from fossil gas infrastructure - from extraction to transport in leaky pipelines, to buildings. Just 3% leakage of fossil gas makes it just as bad as coal in terms of global warming.

Over 45 CA cities and counties have adopted new building electrification "reach" codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

Thank you for your commitment to Electrification for New Buildings and to protecting health. On behalf of our patients and their families, we ask that you please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,
Cynthia Mahoney, MD and Amanda Millstein, MD
On behalf of Climate Health Now

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From:	Lisa Marshall < Lisa Marshall <lisa@ecobuildstrategies.com>
Sent:	Monday, August 2, 2021 3:22 PM
To:	Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5; Clerk of the Board
Subject:	CCC Electrification reach code - letter of support
Attachments:	EBS-CCC-Electrification.pdf
Follow Up Flag:	Follow up
Flag Status:	Completed

Please find my letter of support for consideration in adopting the electrification reach code. This is an excellent step in fighting climate change, I am proud CCC is part of the solution. I look forward to the adoption of this reach code and further discussion on the topic. We all need to work together to make an impact.

Lisa Groelz Marshall, Principal
Ecological Building Strategies
mobile: 925.243.5525
email: Lisa@ecobuildstrategies.com

Ecological Building Strategies

41 Bonita Court• Walnut Creek, CA 94595• Phone: 925-243-5525
E-Mail: Lisa@ecobuildstrategies.com

Date: August 2nd, 2021

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

Dear Chair Burgis and members of the Board,

Last September, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing on behalf of Ecological Building Strategies, to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and (2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

At Ecological Building Strategies, we utilize our knowledge of sustainable building practices to guide builders/developers in creating energy efficient, less impactful, reduced carbon footprint and healthier projects. As a licensed architect in the States of California and Colorado, LEED accredited professional and GreenPoint Rater, with 25 years of experience in the commercial and residential building industry, it is my professional opinion that we can ALL do more to live in harmony with our environment. Through our work, we seek to ensure that new buildings are reducing environmental harm through reduction in the human and building footprint. As our grid improves in providing renewable energy, along with local production of energy through photovoltaics and battery storage, electrification of all new construction only makes sense. Future projects can enjoy cost savings through elimination of gas line hook ups, healthier indoor air quality and more efficient appliances and equipment, which equates to lower utility bills/lower operation costs.

Climate scientists agree and have predicted many of the natural disasters happening currently. Living in California, we have seen first hand what climate change has done to our environment; the worst wildfires in history, heat waves, mega-droughts and poor air quality have become normal. We can't do it through "good intentions", we need strict government intervention to begin to solve this problem. Electrification for New Buildings is an imperative measure for reducing emissions, and further injury to communities caused by fossil fuel usage. Therefore, the Contra Costa County adoption of an electrification reach code aligns with our own mission to further California's climate goals.

A number of California municipalities have already passed progressive forms of new building electrification "reach" codes and have seen great success, further validating the conclusions made in many studies that building electrification is a critical strategy for reducing emissions. Moving towards all-electric buildings is not only safer for the community due to reduced gas lines, but it also leads to healthier air quality, and lower energy bills as costs of gas line maintenance are spared. As California continues transitioning towards greener practices, Contra Costa County should follow the calls to action from the Sustainability Committee and implement these necessary codes for climate protection.

Thank you for your commitment to Electrification for New Buildings. Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,

Lisa Marshall, Principal
Ecological Building Strategies

From: susan bock
Sent: Monday, August 2, 2021 3:33 PM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc: Clerk of the Board
Subject: New Construction Reach Codes

Dear Supervisor

My name is Susan Bock and I am very concerned about climate change. As a resident of Contra Costa County, and as a concerned RN, I find it's important to make a difference in the wellness of all communities. Climate concerns all of us, even those who deny the existence of the impact human beings have inflicted through ignorance or greed.

Burning fossil fuel in our residential and commercial buildings is a significant contribution to local carbon emissions. According to the County's current, 2015 Climate Action Plan, residential and nonresidential emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County.) This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level.

Over 45 municipalities in the state of California have passed some form of new building electrification "reach" codes over the past few years, including Oakland, Berkeley, and the County of San Mateo.

The State of CA recognizes that electrifying energy use in buildings is essential to reaching our reduced emissions goals and is needed as we move to 100% clean energy electricity. The California Energy Commission concluded that building electrification offers the most promising path to achieving GHG reduction targets in the least costly manner.

Burning gas in homes and buildings for heating and cooking produces toxic air pollution like nitrogen oxides, carbon monoxides, and formaldehydes that are hazardous to our health. With that said,

- Children living in homes with gas stoves have a 42% higher risk of asthma symptoms.
- Gas lines are dangerous in our area due to earthquakes which can break gas lines and cause fires
- Because it is more difficult and expensive to maintain gas lines, they are more prone to disrepair

Just like in healthcare, it is less expensive to build and maintain and can save

- On the costs of required inspections of gas lines in a new building by county staff
- On the cost of changing gas systems to electric systems should gas not be provided over buildings' lifetimes.
- On the costs of repairs, if necessary, like the upgrades on gas lines in my neighborhood right now

When you start talking about green jobs, the research and support is there. A Recent study commissioned by labor unions and associations points to the promise of job growth with the move to transition away from fossil fuels. A study by UCLA found that updating to efficient electric appliances in California's buildings over the next 25 years would result in a net increase of 100,000 full-time jobs in construction, manufacturing and the energy sector each year.

I urge the Board of Supervisors to move as quickly as possible to electrify all new buildings in Contra Costa County. I urge you to adopt a "first step" reach code, and implement it in 2022 for single family homes, multi-family homes up to 3 stories, and non-residential buildings.

It's important that we embrace electrification of buildings in a timely matter for Contra Costa County.

- We need to do this for my generation, because we in part, are responsible for the continuation of climate change
- It's the right thing to do and to help overcome resistance to change
- We need to preserve and improve the climate of the planet to hand down to the next generations
- It's more cost efficient to prevent and plan than repair

Thank you for working toward an all-electric future for new buildings and adopting the proposed reach code.

Regards

Sue Bock

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June McHuen

From: Melissa Yu <melissa.yu@sierraclub.org>
Sent: Monday, August 2, 2021 4:31 PM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc: Denice A Dennis; Clerk of the Board; paul seger; David McCoard
Subject: Sierra Club's support letter RE proposed electrification reach code
Attachments: Contra Costa County Reach Code.pdf

Dear Contra Costa County Board of Supervisors,

Please find attached Sierra Club's support letter for the proposed reach code.

Best,

Melissa

--
Melissa Yu
Conservation Program Coordinator
Sierra Club, San Francisco Bay Chapter
Office: (510) 848 - 0800
Cell: (415) 870 - 3142

SIERRA CLUB
SAN FRANCISCO BAY

Serving Alameda, Contra Costa, Marin and San Francisco counties

Dear Contra Costa County Board of Supervisors,

We support the Sustainability Committee's proposed new electrification reach code because it is an appropriate and timely response, among other necessary measures, to mitigate the climate, health, safety, and housing affordability crisis in the Bay Area and across the state. The ordinance is an appropriate step to achieve Contra Costa County's climate goals. In September of last year, the Board adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all **new** construction to be fully electric through the adoption of Reach building codes." We ask the Board to take action to require all new buildings to be all-electric, as called for in the 2020 Climate Emergency Resolution, in as swift a manner as is possible, providing a strong model for the cities of Contra Costa. Additionally, we ask the Board to support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible, for implementation in 2022.

First, by directing the writing of an ordinance, the County will lead a wave of cities and counties across California in declaring that fossil fuels have no place in our homes, commercial buildings, or communities, and that we have a right to clean, safe, and affordable energy. Contra Costa will not be alone in deciding to phase out gas in new construction. 48[1] cities in California have already adopted reach codes and gas bans to shift to all-electric new construction. As we have witnessed with rooftop solar and zero-net energy policy, city and county leadership is key to raising the ambition of state policymakers. Change starts at the local level, and climate leadership is desperately needed if we are to reduce emissions to comply with climate science.

All-electric new construction will improve air quality and public health and immediately improve indoor air quality for Contra Costa residents. On average, Californians spend 68 percent of their time indoors, making indoor air quality a key determinant of human health [2]. The

[1] https://www.sierraclub.org/articles/2021/07/californias-cities-lead-way-gas-free-future

[2] Klepeis, N. E.; Nelson, W. C.; Ott, W. R.; Robinson, J. P.; Tsang, A. M.; Switzer, P.; Behar, J. V; Hern, S. C.; Engelmann, W. H. The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants. J. Expo. Anal. Environ. Epidemiol. 2001, 11 (3), 231–252.

combustion of gas inside our homes produces harmful indoor air pollution, specifically nitrogen dioxide, carbon monoxide, nitric oxide, formaldehyde, acetaldehyde, and ultrafine particles[3]. These odorless and undetectable gas combustion pollutants can cause respiratory diseases, as well as more serious conditions, including death[4]. Lawrence Berkeley National Laboratory recently found that air pollution levels in the 55-70 percent of homes with gas stoves exceed EPA's definition of clean air, i.e. air pollution levels indoors in these homes would be illegal if found outdoors[5]. A recent study found that gas stoves may be responsible for up to 12 percent of childhood asthma cases[6].

All-electric new construction will also be key to mitigating outdoor air pollution in Contra Costa. Hazardous air pollution is a particularly acute issue for low-income communities and people of color, who are exposed to higher incidences of particulate matter (PM 2.5) and other harmful pollutants[7]. While most think of trucks, power plants and industry as the major culprits of air pollution, buildings have for too long gotten a free pass. Gas combustion appliances lack modern-day pollution controls and are a major source of air pollution, particularly in the winter from gas heating. Gas appliances in residential and commercial produce nearly nine times more nitrogen oxide (NOx) emissions than gas power plants[8]. Nitrogen oxide is a precursor to ozone and PM 2.5, two pollutants that cause asthma, lung cancer, respiratory diseases, and premature death[9]. All-electric new construction is an essential step to improving air quality in Contra Costa and the greater Bay Area.

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[3] *See,* Jennifer Logue *et al.*, "Pollutant Exposures from Natural Gas Cooking Burners: A Simulation-Based Assessment for Southern California" *Environmental Health Perspectives* Vol. 122 No. 1 pp. 43-50, (2013); Victoria Klug and Brett Singer."Cooking Appliance Use in California Homes—Data Collected from a Web-based Survey." Lawrence Berkeley National Laboratory (August 2011); John Manuel, "A Healthy Home Environment?" *Environmental Health Perspectives*, Vol. 107, No. 7 1999, pp. 352–357; Nasim Mullen *et al.,* "Impact of Natural Gas Appliances on Pollutant Levels in California Homes" Lawrence Berkeley National Laboratory, 2012.

[4] California Air Resources Board, "Combustion Pollutants" (reviewed Jan. 19, 2017). Available at https://www.arb.ca.gov/research/indoor/combustion.htm

[5] "Pollution in the Home: Kitchens Can Produce Hazardous Levels of Indoor Pollutants"https://newscenter.lbl.gov/2013/07/23/kitchens-can-produce-hazardous-levels-of-indoor-pollutants/

[6] "Cooking with gas, damp housing may cause childhood asthma: study"https://www.brisbanetimes.com.au/national/queensland/cooking-with-gas-damp-housing-may-cause-childhood-asthma-study-20180415-p4z9pz.html

[7] "Inequity in consumption of goods and services adds to racial–ethnic disparities in air pollution exposure" https://www.pnas.org/content/116/13/6001

[8] "Emission Inventory Data" https://www.arb.ca.gov/ei/emissiondata.htm

[9] Health Effects of Ozone and Particle Pollution" https://www.lung.org/our-initiatives/healthy-air/sota/health-risks/

An ordinance will lower the cost of new construction and support affordable housing. All-electric homes can be cheaper to build[10] than gas-heated buildings — and they can lower monthly utility bills for Contra Costa residents and businesses[11]. Ensuring all new construction is built without gas hookups will help Contra Costa developers build more quickly and affordably as there will be no need for new costly gas infrastructure — an advantage in the Bay Area's ongoing housing crisis. A recent analysis by the Statewide Utility Codes and Standards Team found that building all-electric reduced construction costs on average $5,000 for single-family homes and over $2,000 per unit in a multi-family building.

Building all-electric will also save costs for Contra Costa residents and businesses in the long-term as we transition to a carbon-neutral economy. Gas distribution pipeline extensions to new homes are expected to become stranded assets[12] well before the end of their useful life as more buildings electrify over the coming years. Stopping investments in new gas infrastructure is a fiscally prudent strategy to avoid saddling ratepayers and taxpayers with the costs of maintaining and ultimately decommissioning stranded gas infrastructure.

An all-electric for new buildings ordinance will make Contra Costa's homes and businesses safer and more resilient in the face of climate change. California is experiencing an increasing occurrence of extreme heat waves, with practically each summer breaking previously held record temperatures[13]. Most Contra Costa residents, particularly low-income families, do not have air conditioning and are not prepared to adapt to these heat waves, posing new health and safety risks. Air conditioning is an important bonus from replacing gas furnaces with electric heat pump space heaters, as the heat pumps can operate in reverse and provide high efficiency cooling when needed. Electrification offers greater comfort, safety, and climate resiliency when temperatures peak.

Lastly, gas pipelines are vulnerable to methane leakage, over-pressurization, and earthquakes. Aliso Canyon (2015/16), Bakersfield (2015), Carmel (2014), San Bruno (2010),

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10 "Decarbonization of Heating Energy Use in California Buildings" https://www.synapse-energy.com/sites/default/files/Decarbonization-Heating-CA-Buildings-17-092-1.pdf

11 "The Economics of Electrifying Buildings" https://rmi.org/insight/the-economics-of-electrifying-buildings/

12 "The 'Rush To Gas' Will Strand Billions As Renewables Get Cheaper, Study Says"
https://www.forbes.com/sites/jeffmcmahon/2018/05/21/the-rush-to-gas-will-cost-billions-in-stranded-assets-as-renewables-get-cheaper-institute-says/#52a7065c3a0d

13 "2017 hottest summer in California history" http://www.climatesignals.org/headlines/2017-hottest-summer-california-history

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Serving Alameda, Contra Costa, Marin and San Francisco counties

and Rancho Cordova (2008), and the recent fires in North Carolina, Massachusetts, and San Francisco are
but a few of the important and unfortunate reminders of the gas system's inherent risks. Given the earthquake faults in Contra Costa County's proximity, fires exacerbated by gas pipelines after earthquakes are of significant concern. Communities with gas pipelines in earthquake-prone areas of Contra Costa face increased risks of fires since vibration and changes in pipeline tension during seismic events can result in leaking gas that fuels fires. Aging pipelines and associated equipment, and inflexible pipeline materials are vulnerable to shifts in the earth and buildings that put additional stress on pipelines, causing cracks and methane leaks.

Electricity in Contra Costa is rapidly getting cleaner through MCE Clean Energy, with 60 percent of our electricity coming from renewable sources and 30 percent coming from carbon free sources. As a result, shifting to electric power in our buildings dramatically lowers greenhouse gas emissions. The prohibition of new Natural Gas Infrastructure is a crucial part of Contra Costa's future. By mandating gas-free construction for new buildings, Contra Costa will protect the health of its residents and the affordability of its housing, while implementing the critical climate protections necessary for dramatic greenhouse gas reductions.

Sincerely,

David McCoard
Sierra Club Energy Committee Co-Chair

Paul Seger
Sierra Club Energy Committee Co-Chair

MCE | My community. My choice.

August 2, 2021

Jason Crapo, Deputy Director
Contra Costa County Department of Conservation & Development
30 Muir Road
Martinez, CA 94553
via email

Dear Mr. Crapo,

On behalf of Marin Clean Energy (MCE), I write in support of the recommendation of the Sustainability Committee to amend the County's building code to require many types of newly constructed buildings to be powered only by electricity. MCE is proud to support Contra Costa County as the Community Choice Aggregator (CCA) providing clean power to nearly 90% of the County's residents and businesses. MCE's mission is to address climate change by reducing energy-related greenhouse gas emissions with renewable energy and energy efficiency at cost-competitive rates, while offering economic and workforce benefits, and creating more equitable communities.

A transition to all-electric buildings will reduce our communities' reliance on natural gas, which produces harmful emissions that accelerate climate change and impact human health. The recommended reach codes will ensure that today's developers do not invest precious resources in last century's fuels, but instead focus on building a cleaner, greener future. By the time the proposed reach codes would take effect, the electricity MCE supplies to Contra Costa County customers will be more than 95% GHG-free, which will help to ensure that the codes achieve their intent to reduce emissions associated with energy use in buildings.

Further, as numerous studies have shown, all-electric new construction in both the residential and commercial sectors is cost effective for many building types, making building all-electric a practical, economic choice for the County. It should be noted that these studies find all-electric new construction cost effective when looking at only a portion of the costs and benefits of such projects, including impacts to customer bills, the electric grid, and carbon emissions. These studies do not account for other critical benefits of using clean electric power, including health benefits for County residents. Reducing our reliance on fossil fuels will make County residents healthier, which in turn will reduce health care costs.

For the reasons stated above, MCE is pleased to support the recommendation of the Sustainability Committee to adopt all-electric reach codes.

Sincerely,

Shalini Swaroop

Shalini Swaroop
General Counsel

From:	Barbara Beno <barbbeno@aol.com>
Sent:	Monday, August 2, 2021 5:03 PM
To:	Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc:	Clerk of the Board
Subject:	Support for Electrification Policy

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the board

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing on behalf of the Bay Area Climate Reality Leaders/Contra Costa County Squad, to urge you to:

(1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and
(2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

The Climate Reality Leadership/Contra Costa Squad is committed to working to promote public policy that will reduce and eliminate green house gas emissions.

As you know, Building Electrification is essential to reaching emissions reduction goals, and thus is included in the County's Climate Emergency Resolution. According to the County's current Climate Action Plan (2015), residential and nonresidential greenhouse gas emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County). This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level.

Over 45 CA cities and counties have adopted new building electrification "reach" codes over the past few years. In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier and safer for the community.

Thank you for your commitment to Electrification for New Buildings. Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,
Barbara Beno

From: Anna Lin-Campbell
Sent: Monday, August 2, 2021 11:38 PM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5; Clerk of the Board
Subject: Support for Implementing New Building Electrification Reach Code

Follow Up Flag: Follow up
Flag Status: Completed

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the board

Dear Chair Burgis and members of the Board,

I am writing to urge you to:

(1) take action as quickly as possible to electrify ALL new buildings in our county, as called for in the Climate Emergency Resolution you adopted last September, resolving that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes."; and

(2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

As a local resident, I believe strongly in the importance of taking swift action to respond to the challenges of climate change that are impacting our lives and will continue to drastically affect all life on this planet for generations to come if we don't take action now to move to 100% clean energy. Individuals alone can only do so much; which is why I am counting on the Board to join over 45 CA cities and counties who have adopted new building electrification "reach" codes over the past few years.

In addition to reducing greenhouse gas emissions, these ordinances lead to buildings that are healthier, safer, and less costly for the community, as well as accelerating green job growth! Electricity is less costly to build and maintain than gas, healthier than burning gas inside (which produces toxic air pollution that leads to asthma and other health issues while disproportionately harming frontline communities), and safer and easier to maintain than gas lines that can break and cause fires during earthquakes.

As you know, Building Electrification is essential to reaching emissions reduction
goals, and thus is included in the County's Climate Emergency Resolution. According to the County's current Climate Action Plan (2015), residential and nonresidential greenhouse gas emissions represent 28% of total emissions (excluding the local refineries which are not regulated directly by the County).
This source of emissions can be remedied by electrifying energy used in buildings, an activity that can happen effectively at the local level.

Thank you for your commitment to working toward an all-electric new building reach code. Please support the swift adoption and implementation of this code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,

Anna Lin-Campbell
1553 Arbutus Drive
Walnut Creek, CA 94595

From: Ryan Buckley
Sent: Tuesday, August 3, 2021 8:06 AM
To: Diane Burgis; Supervisor Candace Andersen; Karen Mitchoff; John Gioia; District5
Cc: Clerk of the Board
Subject: New Building Electrification

Follow Up Flag: Follow up
Flag Status: Completed

Supervisor Diane Burgis, Chair of the Board
Supervisor Federal Glover, Vice Chair of the Board
Supervisor Candace Andersen
Supervisor John Gioia
Supervisor Karen Mitchoff

cc Clerk of the board

Dear Chair Burgis and members of the Board,

In September of last year, the Board of Supervisors adopted a Climate Emergency Resolution and resolved that "Contra Costa County should develop policies to require all new construction to be fully electric through the adoption of reach building codes." I am writing on behalf of myself and my family to urge you to (1) take action to electrify ALL new buildings, as called for in the Climate Emergency Resolution, in as swift a manner as is possible; and
(2) support the Sustainability Committee's recommendation that an all-electric building code be adopted and implemented as soon as possible for all new single family homes, multi-family homes up to 3 stories, and non-residential buildings where a cost effectiveness study is complete.

We are in this dire climate situation today because past local leaders failed to act. Please take this opportunity to do what others before you could not.

I write this today from Pinecrest, CA where my great grandpa built a summer cabin. For 35 years I never smelled wildfire smoke here. Now it's a feature of our summers here and it's becoming a regular occurrence in Contra Costa County too.

I can think of no more important initiative than building electrification. The technology already exists to get homes and businesses safely and cost effectively off of fossil fuel; the problem today is the lack of political will to do it. You can change this.

Please support swift adoption and implementation of a new code to require all new buildings to be electric, including the Sustainability Committee's proposal for New Building Electrification beginning in 2022.

Sincerely,
Ryan Buckley
Saranap