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Rob Koslowsky Comment re 2022 Energy Code Pre-Rulemaking

To Whom It May Concern:

For Docket #: 19-BSTD-03 Project Title: 2022 Energy Code Pre-Rulemaking

Please repeal the 2019 Building Code making all-electric residential construction a mandate. Choice for homeowners to use natural gas as an option must be restored to ensure choice and resiliency.

Resiliency is best served by allowing residents to enjoy the services of both gas and electric. The attached submission reflects some of the reasons to repeal the rooftop solar mandate, forestall any natural gas bans, and exclude mandates for residential battery systems â€“ Homeowners Lack Representation in Sacramento_RKK_April 5 2021.

Thank you for your consideration,
â€¦Rob

Rob Koslowsky, Cloverdale, California
Author of The Tubbs Fire.
Also author of The Upstart Startup & Breach of Trust.

Additional submitted attachment is included below.

Homeowners Lack Representation in Sacramento

To Whom It May Concern,

Efficiency First California (EFC) claims to bring "the voice of home performance to policy decisions." However, as far as I can tell, this group, cloistered in Sacramento, hasn't been bringing the voice of homeowners to State policymakers. The resulting public policy mandates are especially obvious to homeowners that have been forced to rebuild due to wildfires over the past four years.

Who are these members of the "professional class" influencing our political leaders and their (unelected) appointees?

EFC tells us, "Now more than ever, the voice of home performance professionals is needed to inform decision-makers and shape policies to ensure success. We do that through advocacy."

Efficiency First California's definition of advocacy amounts to influence peddling and the enforcing of "resource allocation decisions within political, economic, social, and institutional systems." Once again the homeowners and renters are left out of the process. Agencies like EFC claim they know better than the working public on how to live and they believe everyone *must* reside in an all-electric structure. Why do residents of the Golden State have to kowtow to activists and convert their homes to all-electric covered in solar panels, especially when it's acknowledged as a flawed mandate?

I guess we'll find out in the years to come, unless some of these oppressive building codes can be overturned. If not, California will become Governor Newsom's grand experiment on the world stage, whether he remains as governor or not.

Read on,
…Rob

Homeowners Lack Representation in Sacramento

"There are bigger challenges in front of us for reduction of greenhouse gases, and new housing is small potatoes. The reason [the government and activists] went after new housing was there's no built-in opposition. Who is going to speak out; the new homebuyer who doesn't show up at a City Council meeting? When those homebuyers find out they can't have their gas range, gas fireplace, gas BBQ, gas heater for their swimming pool (and I haven't even touched on space and water heating) then you're going to hear a hue and cry far and wide."

– Home Builder, Santa Rosa, April 2, 2021

I received a comprehensive response from the Executive Director of Efficiency First California (EFC) to a number of points I've recently submitted to the California Energy Commission. After reading his reply, I thought I would share my and a number of residents' views in a paragraph-by-paragraph response.

EFC is not working for homeowners	Energy, Gas + Electric	Only Electric
On leakage	Natural gas fixable	Electric losses not recoverable
Fact: Greenhouse gases declining in California and across the U.S.		
On ratepayer costs	Flat and could be lowered	Increasing
On single-sourced energy	Resilient with gas	All-electric not resilient
On back-up power	Cost-effective with gas	Battery back-up costs prohibitive
Fact: Peak oil dates continue to shift further out, decade after decade		
On all-electric activism	CalPa stopped advocating for cost-effective energy	CalPa not protecting consumers, but aligned with Sierra Club activism

R.K. Koslowsky, March 2021

A brief tabular summary of the issues and how a multi-fueled living space is preferable for a good quality of life

Many of the counter arguments to EFC's assertions are described below. For years, they have been raised by property owners and renters.

EFC on leakage assertions:

"One of the new concerns is the amount of methane released during transmission and distribution. The measured leakage numbers are more than double what was used in previous assumptions - this makes the GHG impacts of Nat Gas more harmful that coal in many parts of the country."

I asked the EFC to list its reference sources, as leakage is not a new concern, and this assertion is an exaggeration. In an earlier Rocky Mountain Institute (RMI) report on natural gas leakage, the study states: "We account for that impact here, using leakage estimates ranging from 2%, EPA's 2016 estimate, to 3.8%, from Robert Howarth's research at Cornell."

I also find it interesting that the State of California has been systematically ignoring leaks too. NASA employed aircraft equipped with gas-imaging equipment to fly over California during a three-year period, 2016 – 2018. The agency and its Earth science researchers found: "A handful of operations are responsible for the vast majority of methane emissions." In the companion Nature report published on November 6, 2019, scientists estimated that more than half of the state's methane emissions released into the atmosphere come from landfills, dairy farms, and the oil & gas industry. "And a fraction of the 272,000 sources surveyed -- just 0.2% -- account for as much as 46%," according to numerous media outlets. Simply fix these major leaks and don't penalize homeowners.

EFC ignores the fact that electrical "leakage" or loss is much worse, between 2 and 4%, during high-voltage transmission and 6 – 9% in the distribution (lower voltage). Furthermore, with the advent of an updated NEM, there continue to be two-way energy transfers, for which the loss components in a rooftop solar system drive it towards the 9% level. On top of that, electricity coming from a long distance, is only 30% efficient, so, at best, 30% electric supply combined with a 300% efficiency (a high COP number), electric appliances produce only at a 90% level, much less than the typical 96% offered by gas space heating in the home.

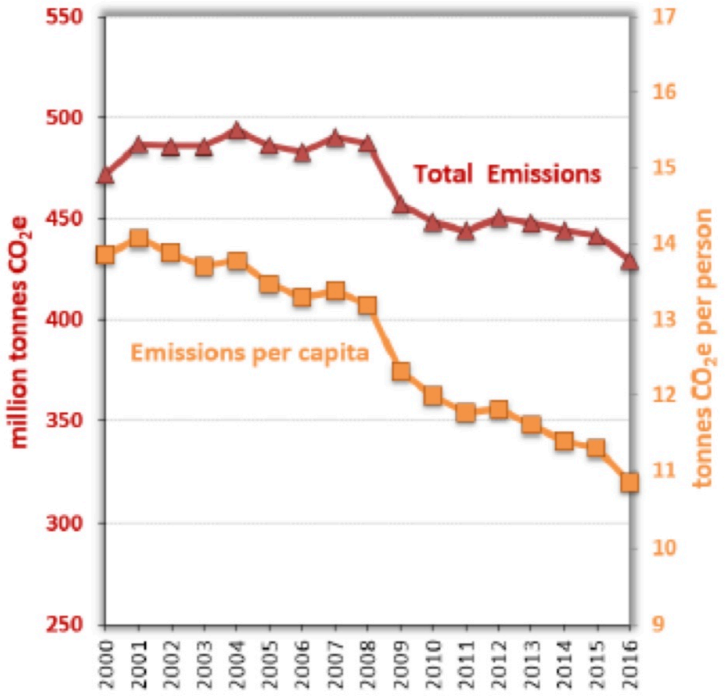
And if it that isn't enough, higher summer temperatures cause even greater electric line losses in addition to sagging high-voltage wires, which spark as they droop onto trees below, with the potential to cause another wildfire.

EFC on GHG Emissions:

The state's policy has shifted to reducing GHG emissions - period. The bottom line is using gas requires combustion, combustion = GHG emissions, there simply is no avoiding this impact. With the focus on GHG emissions the oversight has shifted from the CPUC to the California Air Resources Board and local Air quality districts. Electric appliances do not emit GHGs and are much more efficient, a typical heat pump is 300% efficient, a gas furnace will never be more that 98% efficient. You can't make clean fossil fuel and the electricity on the grid in CA is over 30% carbon free, and getting cleaner all the time.

Besides the aggressive posture that "that's it," the policy has changed, so too bad homeowners and renters – period, get over it . . . CARB has reported for *over a decade* that California GHG emissions have been dropping, while the overall U.S. contributions to carbon emissions has seen declines over the past two years as well. Some push the false narrative that carbon emissions are rising in the U.S., but this is not true.

Figure 1b. California Total and Per Capita GHG Emissions



Source: CARB. *California Greenhouse Gas Emissions for 2000 to 20*

Electric appliances, such as heat pumps, emit greenhouse gases in the form of refrigerant leaks, and many of these refrigerants, especially the ones coming in the next couple of years, are more dangerous than methane. Besides, methane devolves to carbon dioxide in the atmosphere, which can be removed via carbon capture technologies.

Efficiency does not equal better performance or cost savings. Carbon free electricity is a misnomer. When the sun sets or the wind calms, these unreliable renewable resources (termed "variable resources" by academics) are replaced by a baseline of nuclear power, disappearing coal plants, and an increasing number of natural gas power plants. More of these "off-hour" generating facilities will be required as rooftop solar mandates (which is bad public policy) and all-electric decrees drive up electric use in an energy sector experiencing rapid price increases concurrent with subsidy reductions.

EFC on phasing out natural gas:

The train has left the station. The CPUC is currently working on a plan for the Long Term Phase Out of Residential Natural Gas - this is not a study but a step by step plan for how to phase out natural gas in buildings. The CPUC is also working on new all-electric rates structure that address the added winter load from heating with heat pumps and to provide cost parity to fossil fuel

alternatives. Natural gas prices will escalate as subsides are reduced and demand goes down - most predictions indicate $3.00 to $4.00 per therm in ten years.

Actually, many believe the train is heading in the wrong direction. California agencies were supposed to be protecting consumers, yet a number of them have abdicated their roles, which are supposed to be to keep energy prices down and ensure a reliable supply of electricity and natural gas. As Robert Bryce, in *Forbes*, wrote in December 2020, "About 86 percent of all the homes in California use natural gas. Banning the direct use of the fuel for cooking, home heating, water heaters, and clothes dryers, will force consumers to instead use more electricity which, on an energy-equivalent basis, costs four times as much as natural gas. That's an unconscionable energy tax in California, which has the highest poverty rate of any state in America."

It turns out that subsidies under the NEM structure will decrease sooner and faster for those expecting credits on their newly installed (forced, not voluntary) rooftop solar systems. Furthermore, the 20-percent increase in electric rates since late 2019 make any efficiency gains in electric appliances a moot point. Efficiency (higher COP, etc.) with higher electric rates makes all-electric appliances a bad investment. Natural gas rates will *not* increase, especially if the country has a greater than 250-year supply of it. Since 2018, our country has become energy independent. Why wouldn't we use our energy resources to retain and grow prosperity and provide an improved quality of life for all Californians and Americans? Any natural gas price increases would be due to government leaders, hijacked by an ideology, taxing 86 percent of Californians who rely on natural gas to stay warm, wash, cook, and clean.

Even if gas rates double, as EFC suggests, electric rates will still be twice as expensive: "Household utility rates are as follows: Gas costs range from $1.60 - $2.14/therm, with a PG&E procurement cost $0.48/therm. Electric rates range from $0.24 - $0.31/kW in a three-tier system, with an equivalent cost of $9.00/therm."

Why would any government restrict an abundant, clean energy supply just to jack up the price to achieve an activist goal that can't be met but results in more costly housing, less resiliency, and establishing a life of dependency?

EFC on single-sourced energy:

It is cheaper to build new construction with one energy source. Did you factor in the infrastructure costs? New bldg. code requires an electric circuit in the same location as any gas appliance. This makes the building "all-electric ready" so when the gas appliance fails you can replace it with a more efficient electric unit with no infrastructure upgrades. Then there is the service to the house from the main - you need to capture all the costs. Call it what you want it is code and you have to do it. Why not go all electric and take advantage of your own electrical generation?

This is not apples-to-apples, and the EFC knows it. Besides, the premise is incorrect as multi-fueled homes are actually more cost-effective. California housing continues to be made more *unaffordable* because of strings of triennial building code add-ons that tack on significant cost-upon-cost to the residential home.

We rebuilt our home in Sonoma County, and the building code upgrades (EV outlet in the garage, wiring dropped in the attic for future solar panels, and so much more) added almost $85,000 to its replacement cost because of such mandated code upgrades made since the 2000 era. EFC's assertions that, "it is code and you have to do it," could be taken as offensive or intimidating by the almost 11 million homeowners who will be faced with more than $110,000 in upgrades to replace natural gas with all-electric functionality in homes built before 2017 [1,2].

For another proof point, the cost to running electrical (rough-in) was much more expensive than running plumbing (water, waste, and natural gas rough-in) to rebuild our home in Santa Rosa (2018 estimates from three builders). Even the oft-referenced Rocky Mountain Institute hasn't been able to support EFC's efforts in the area of space heating. For example: "The Rocky Mountain Institute, in their 2018 report, *The Economics of Electrifying Buildings*, cautions regulators and policymakers, 'Many households currently heated with natural gas will not find it cost-effective to switch from furnaces to electric heat pumps at today's prices.' The report goes on to say, 'Demand flexibility that optimizes for typical time-of-use rates can reduce energy costs, but is not usually significant enough to tip the scales in favor of electrification. Different pricing structures that capture more of these [heat pumps'] flexible capability could provide much greater value and further improve customer economics.'" (pp.10, 20)

This means that government regulators have to rig electric rates and try to shift demand to the detriment of Californians, which contravenes their mandate to provide its residents with cost-effective and reliable energy.

EFC on backup power due to loss of electric supply:

Natural gas back up. Show me how to use combustion and not produce GHGs and I am all in - it doesn't happen. Batteries are coming down in cost and if you use them for arbitrage they can be cost effective today. They will get cheaper as the industry scales. No harmful pollutants from exhaust, no potential to explode (remember San Bruno). No CAS - Combustion Safety Testing in all-electric. True resilience will come from small micro grids that share assets (solar and storage). PSPS - who cares if you are on a micro grid - that is true resilience.

Natural gas ensures resilience; batteries do not do so well. For four times the initial cost, a solar+ battery solution from either Tesla or Enphase peters out after 23 hours maximum. This is not good resilience during multi-day PSPSs. It's not about combustion, which should be addressed through carbon mitigation techniques (a state priority), it's about cost-effectiveness, reliable energy supply, and ongoing lower operating costs for homeowners and renters [3, 4].

In the name of common sense it's time to plug natural gas leaks, just like when a water main leaks or a sewer line breaks. It's also important to realize that methane releases also come from wetlands (the largest), rice paddy fields, livestock, swamps, biomass energy production (growing), landfills, and fossil fuel production (sixth in the ranking of top CH_4 producers).

EFC on peak oil:
People don't like change - peak oil has hit and fossil fuels are on the decline. 90% of nat gas consumption in CA is for residential use. We import over 85% of that from out of state. The methane leaks in distribution are enough to make most realize this is not a good idea or sustainable. CA is weaning itself off nat gas - it has to due to GHG reduction mandates. The first step it to electrify transportation, buildings are not far behind.

I've lived through multiple "peak oil" decrees, so I'll reserve comment on the assertion that we've already passed it. The EIA reported during the Obama years that, "oil production would increase at an average rate of about one percent per year through 2040 without peaking." Does the EFC have some new data to share? I believe the EFC 90% number is way off as a metric for residential use of natural gas. According to the CEC, it's more like 21% [5]. We also import a large portion of natural gas from other states in order to provide more cost-effective energy consumption with its attendant reliability, something I've been unable to say since the Governor Gray Davis era.

EFC on all-electric:
There are sectors of the economy that are difficult to electrify - that where we should continue to use natural gas, and other carbon free solutions such as renewable natural gas. Transportation and buildings are well suited to carbon-free energy, the electric solutions exist today and outperform the fossil fuel status quo. Is it really a right to poison the environment, and other people, in the name of choice? Don't be fooled big oil - they have been aware of the negative impacts of fossil fuels since the 60s - they just covered it up in the name of profit.

We'll have to disagree. Buildings are *not* well-suited to carbon-free energy and electric solutions do *not yet exist* that outperform their natural gas counterparts. This came to light during the past year of my investigations as a homeowner, after I participated in a pre-Covid presentation by Sonoma Clean Power (SCP) on all-electric reach codes. That talk was fraught with many misleading points, with answers to questions never provided. Is it any wonder homeowners have not snapped up electric appliances [6]. One way to *force* consumers to use them is to have government *subsume the free market* and *mandate* their purchase, installation, and use. This of course, builds resentment toward and skepticism of government claims in helping residents.

The balance of EFC's comments appeared to be rooted in "talking points" promulgated by Sierra Club and others, groups illegally intervening and hijacking California agencies, such as CalPA. Instead of advocating for consumers, CalPA is pushing bad public policy on behalf of unelected commissioners linked tightly with environmental groups who don't care about living costs [7]. To wit, the same referenced Robert Bryce article noted, "Organizations such as the Sierra Club, the Environmental Defense Fund (EDF) and Union of Concerned Scientists to name a few, has become more aggressive, and there has never been a mention by them about what the cost impacts would be on customers who are struggling with utility costs, and household expenses." They continued, "More importantly, it appears their belief is cost increases should not be a determining factor with regard to approval of

new energy policies because the need to address climate change trumps all concerns that might arise."

Worshipping at the altar of climate change policies should not deprive Californians (or Americans) of prosperity, choice, and safety. America does not have to be torn down and rebuilt to achieve further carbon dioxide reductions or move towards more cost-effective energy solutions for its residents. Common sense management of our existing infrastructure will do the trick.

"The United States Court of Appeals for the Second Circuit unanimously ruled that the City of New York's climate change lawsuit against Chevron and a group of other energy producers is without merit and must be dismissed . . . The court rejected the City's attempt to regulate and recover damages from the targeted defendants' 'admittedly legal commercial conduct in producing and selling fossil fuels around the world,' and noted that 'every single person who uses gas and electricity contributes to global warming.'"

– Chevron press release, April 1, 2021

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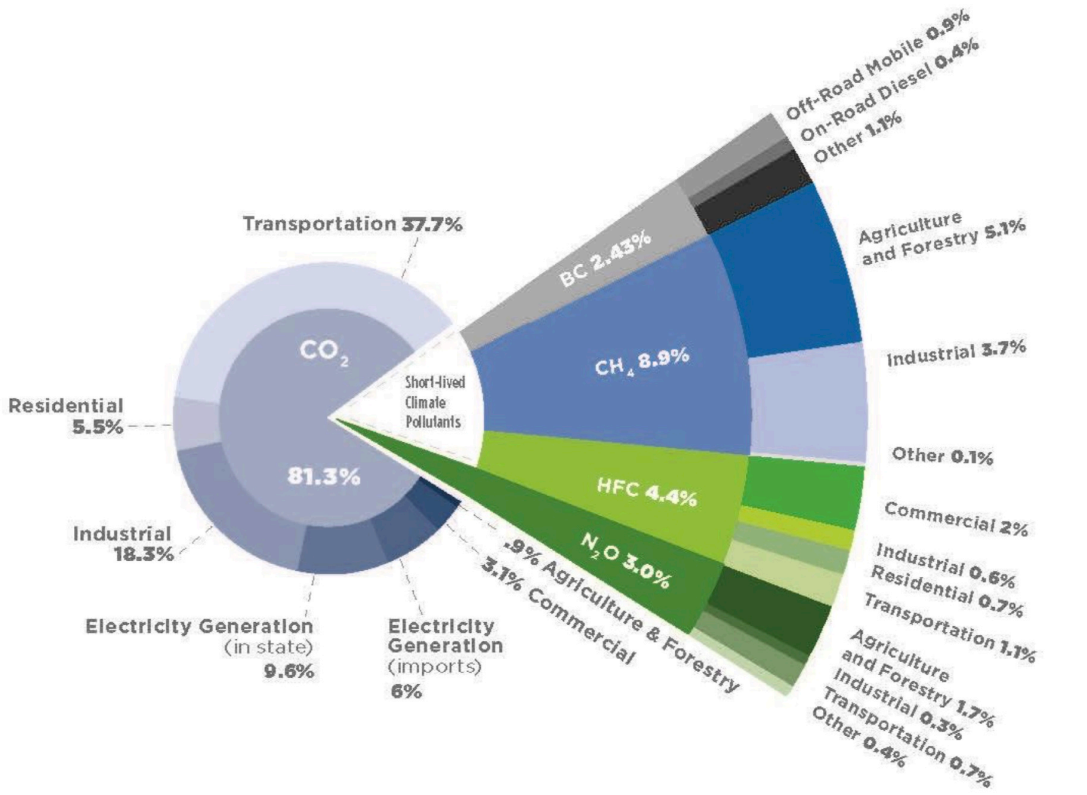
[1] *Single Family Residence – All-electric reach codes costs*, R.K. Koslowsky, update submitted with table, version 3, March 2021.
[2] *Mandating Rooftop Solar is a Bust*, R.K. Koslowsky, update submitted March 2021.
[3] *Natural Gas as Backup Is Better than Solar plus battery*, R.K. Koslowsky, submitted Oct 2020.
[4] *Battery Mandates Are Not the Way to Go*, R.K. Koslowsky, submitted December 2020.
[5] Natural gas continues to play an important and varied role in California. Nearly 45 percent of the natural gas burned in California was used for electricity generation, and much of the remainder consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors. Other analyses by the CEC-CARB show the residential contribution closer to 5.5%:



[6] The report, *Superiority of Natural Gas Appliances*, R.K. Koslowsky, February 2020, documents the advantages of natural gas appliances over their electric counterparts for residential use.

[7] The submission, *Renewables Have Raised Electricity Prices*, R.K. Koslowsky, November 2020, documents how previous studies, including the sole-sourced one funded by the CEC, were misleading. Economists and academics highlight that this government-funded study didn't "incorporate three key costs," which are the unreliability of renewables, the large amounts of land they require, and the displacement of cheaper 'baseload' energy sources like nuclear or natural gas plants. The higher cost of electricity (and its continuing rise) reflects "the costs that renewables impose on the generation system including those associated with their intermittency, higher transmission costs, and any stranded asset costs assigned to ratepayers."