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Comment Received From: Rob Koslowsky
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All-Electric Home Advertising Leaves Out a Lot of the Details

Additional submitted attachment is included below.

All-Electric Home Advertising Leaves Out a Lot of the Details

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Mon 3/1/2021 6:33 AM

To: Energy - Public Advisor's Office <publicadvisor@energy.ca.gov>

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To Whom it May Concern:

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

This is one example illustrating the lack of resiliency for an all-electric resident. It also highlights the higher operating costs associated with ever-increasing electric rates and the lack of choice a California resident has because they are denied the ability to use better-performing natural gas appliances.

Please remove the need for builders to build without natural gas infrastructure and the need for all-electric appliances. Rooftop solar should also be removed from the building code since it is simply bad public policy.

Regards,
...Rob

All-Electric Home Advertising – Santa Rosa’s Round Barn Community

On time-of-use or TOU: “If [homeowners and renters] were going to suffer time-of-day electricity rates, they wanted the real-time information necessary to make informed decisions about both electricity use and its cost.”

– Gretchen Bakke, *The Grid*, 2016, p.82

A real estate ad for a new Santa Rosa subdivision, Round Barn, jumped out at me. The clustered townhouse offering provided a checklist suggesting that these all-electric residences had everything that other builders’ homes did not offer. I thought about this for a while.

ENERGY-EFFICIENT FEATURES

- Cal-State® Solar System Included - No Lease, No Extra Costs
- Schlage® Keyless Entry
- Milgard Dual-Glazed Windows with Ultra-Violet Coating
- Pre-Plumbed for Electric Vehicle Charging
- GE™ Stainless Steel Kitchen Appliances
- Induction Cooktop
- ENERGY STAR® Rated Hybrid Electric Water Heater Features
- Heat Pump Technology



OTHER BUILDER/ RE-SALE



However, the clever marketing shtick fell flat after much consideration and a February 2021 tour of their three display models. As one builder subsequently told me, "This is a City Ventures development. They are one of those 'out of town' developers that is gimmicky. They obviously haven't done their homework."

I say, let's consider the options and the energy efficient part of *City Ventures'* checklist as it applies to Sonoma County.

Lacking Natural Gas Services, So Not Resilient

First, resiliency is not possible without natural gas to support the homeowner when power outages occur. Unless there is also an installed solar-battery backup system (\$\$\$) to at least provide up to 23 hours of backup, the lights go dark, hot showers are out, space heating is gone, and preparing a hot meal is impossible. During those multi-day PSPS or frequent rolling blackouts, electric power is lost. For the Round Barn housing development there is no battery backup included in the selling price.

Second, the cost of electricity shot up another 10 percent on January 1, 2021 for Sonoma Clean Power/PG&E customers. This was on top of 10 percent increases during 2020. Increasing electric consumption by virtue of increasing electric loads mandated by an all-electric home further drives monthly utility costs higher.

As Jordon Berkove of Forestville wrote to *The Press Democrat* on January 27, 2021, "Electricity is also more expensive for home heating than gas or even propane. All-electric homes were encouraged by Southern California Edison in the 1970s. These homes turned out to have all-encompassing bills many years later when the promises of low electricity rates were forgotten."

All-electric Required at Round Barn

According to the on-site real estate agent, both the rooftop heat-pump and solar panels are shared by blocks of joined townhomes (grouped together like English row houses in sets of 4, 5, 6, or 7). The initial \$269 monthly homeowners association fee includes maintenance of the heat-pump system, but *not* for the rooftop solar system, which is segmented according to townhouse and for which the interface to the utility is locked away behind a pair of tall metallic closets along one side of the housing block.

We'll set aside the outcry from many planning commissioners that residential rooftop solar is just bad public policy [1], and touch on some of the economics.

For example, gas water heaters are superior to all-electric heat-pump water-heaters. Promotion of all-electric technology, which requires a tanked design of days gone by, has been based on faulty data. For example, I challenged both the *New Buildings Institute* (NBI) and its fall of 2020 promotional campaign regarding the cost of heat pump water heaters (HPWHs) as well as *Redwood Energy* and its all-electric pocket guide comparison of two classes of electric water heaters – resistance heating and HPWHs [2].

NBI has gone silent on the challenges made while Redwood Energy doesn't even consider natural gas as an option because it's an energy resource that should be banned.

The bottom line, the operating cost of an all-electric water heater or HPWH is typically \$542, more than double the cost of operating a natural gas water heater (\$252), according to NBI's own table-based calculations, not the touted and actively promoted value of \$227. Both initial first cost (buried in the price of the home) and operating costs, using natural gas-based water heaters (tanked or tankless), are more cost-effective to heat water in the home than being forced to install an HPWH.



Plan 1's tanked electric water heater element in the garage of a Round Barn townhouse model. The associated shared, heat pump, is mounted on the rooftop to minimize loss of 100-sqaure feet of garage space [3].

Photo courtesy R.K. Koslowsky.

Gas cooktops are overwhelming favored over induction cooktops by homeowners. This is *not* a feature for these all-electric residences, but rather, a liability. Buyers of all-electric homes usually need to purchase new cookware and an analog meat thermometer, since new digital ones don't work well with the electromagnetic radiation thrown off by induction-based appliances.

There are no yards in this 237-unit housing development and the three-level structure is required to achieve the advertised square footages of 1,746 to 1,884 square feet for the three plans offered. A small community garden is available to share, similar to the English allotment system where vegetables and spices can be grown. According to the sales agent, the community is optimized for singles or professional couples or those older folks looking to downsize and not worry about doing yard work.

Selling Prices Defined by Options

Selling prices are defined by basic features, such as three GE stainless steel appliances – dishwasher, microwave, and induction stove, instead of the Wolfe versions featured in the display models. Also, plain carpet is the basic option, instead of upgraded carpets or featured laminate vinyl flooring in those plans I toured. Everything is optional, from the wine fridges to the upgraded pendant lights; from the fourth bedroom or office or weight room to the optional sliding doors; from the upgraded cabinets and quartz countertops to the tiled backsplashes; from the door finishes to the optional window coverings; from the electric fireplace to the upgraded lighting; from the optional ceiling fans (just pre-wired) to the stair rail and handrail finishes; from the upper cabinets in the laundry room to a door leading to the master bathroom; from an optional powder room (i.e., half bath) to an optional full bathroom in place of den space. The agent said the typical buyer spends an additional \$35,000 for extras, however, it looks like the model homes added closer to \$100,000 in extras for these options, plus the approximate \$84,000 in *costs* that form the base price associated with code upgrades that have crept in since the year 2000.

Even though all-electric is the theme, two of the three models featured propane tanks needed for an outdoor fire pit in one model and a front yard, outdoor kitchen featuring a built-in barbeque grill in another model, even though the kitchen-dining area is on the second floor at the back of the living space.

Speaking of stairs, I can envision most husbands of elderly couples, not comfortable with smartphones being used to adjust the temperature, being asked by their wives to walk two flights of stairs to adjust it. Dual thermostats are not a basic feature, or even an option. The brochure touts no gas bill (except for the cost of propane) and a reduced electric bill, which is inaccurate, unless it's based on 1,000 square feet of less living space and a host of other assumptions, such as not using the optional electric fireplace for heating.



Plan 3 features the largest personal, outdoor space in the Round Barn subdivision. In this staging, a propane-fueled barbeque grill is featured. Photo courtesy R.K. Koslowsky.

Looking at the bigger picture for all-electric homes, I've highlighted the California Energy Commission's (CEC's) *incorrect* gas appliance savings of \$6,171 for new home construction, touted by both Sonoma Clean Power and the Sierra Club. There is no gas appliance cost savings for new home construction, but rather, a higher cost by at least \$29,529 for all-electric appliances inside a typical all-electric house. Even so, reporter Kathryn Reed, a reporter for NBBJ, included a Sierra Club quote, touting the CEC's discredited savings figure. Keith Wood, NCBE's CEO is less aggressive than me, citing a more moderate cost increase of \$5,000 to \$10,000 to build an all-electric house.

It's much better to allow Californians to have a voice and be able to make a choice of how they fuel their homes and run their appliances. In this new venture, there is no choice and even less resiliency.

"How are meters that communicate with the utility supposed to benefit consumers? What does this give us we don't have now? To many consumers the

Smart Grid means that some bureaucrat will turn off their air conditioners when it is very hot outside."

– Boulder resident Steven Fairfax, after Xcel's failed SmartGridCity project, 2010

"Bill Protection allows customers to try the Time-of-Use (Peak Pricing 4–9 p.m. Every Day) (E-TOU-C) rate plan risk-free for the first 12 months. Customers who choose this rate plan are eligible, as well as those customers who automatically moved to this rate plan from 2020 through 2022."

– PG&E website on residential TOU rate plan, pulled February 28, 2021

[RKK: PG&E automatically moves you into its TOU plan (most customers' electric bills will rise after the first year, unless you take the time to opt out when you receive your notice that you have been enrolled). I opted out.]

 [1] Adapted from my May 17, 2020 write-up, **"Rooftop Solar Homeowners Becoming Wary of the State's Shell Game:"**

Unless a homeowner buys a solar system outright, they give up their Renewable Energy Credits or RECs to the solar company that is leasing to them the rooftop system or to the builder of the new home, which typically becomes part of the mortgage. According to Round Barn's real estate agent, the solar subcontractor owns this subdivision's RECs, a valuable financial asset.

RECs can be worth as much as \$2 per hour for a homeowner's rooftop production. But the property owner may get none of that benefit since the solar installation company keeps the RECs as part of the leasing agreement with the homeowner or the builder. That's why, in some cases, solar companies often give homeowners (directly or through builders) the solar panels for nothing. The real value is in the energy harvest and homeowners are often cut out of the transaction. That's simply because most homeowners can't afford to pay for a solar system, even after federal and/or state incentives are applied.

The California Energy Commission has its own incentive to find *any* reason to increase solar installations across the state. Making bare bones solar systems part of the 2019 Building Code was one such egregious step. This state government agency has a conflicting dual role. The CEC "maintains an accounting system that records and issues certificates of proof that one unit of electricity was generated and delivered by a renewable energy resource." This group is referred to as the *wRECKing* crew.

PG&E prefers homeowners absorbing the brunt of the utility-like generation and attendant expenses, while shielding the utility from angry environmentalists protesting the appearance of large, utility-scale solar arrays or fields of "bird-killing" wind farms.

And by mandating solar installations on every rooftop, the Sacramento politicians and regulators provide PG&E an exit strategy on their commitment to provide clean, renewable energy. As McDonnell says, the selling of RECs helps "the utility meet a goal it was already mandated to meet—thus helping excuse it from building more solar capacity itself."

He adds, "In other words, [a homeowner's] direct net contribution to reducing greenhouse gas pollution is nil." PG&E and other utility providers get all the credit. Besides, they're able to claim to be green energy providers, while they shutter nuclear and fossil fuel power plants, hoping to find more renewable energy supplies in order to take up the slack and leave Californians less resilient whenever the sun sets or the winds calm.

As an aside, Jacob Williams, GM and CEO, Florida Municipal Power Agency, said on January 13, 2021, "FMPPA and 16 Florida municipal utilities came together to create the Florida Municipal Solar Project, one of the largest municipal-backed projects in the nation. Utility-scale solar is the most affordable option for customers. The cost of energy from this project is approximately one-third the cost of energy from a private rooftop solar system. The cities only pay for the power they take, and there are no upfront or maintenance costs with a utility-scale project." This means the utility directly receives the RECs for building solar assets instead of some convoluted scheme involving homeowners or landlords, builders or solar companies, and regulators trafficking in RECs, while jacking up mortgages, creating lease-back schemes, and manipulating multi-government agency credit schemes.

[2] Removing residential gas does not make economic sense and regulatory bans remove choice of appliances and ensure much less resiliency during disasters. On the economics, for example, I looked at Redwood Energy's revised booklet (Feb 2021 version) and page 11 describes an economic comparison between two electric options for water heating – HPWHs versus electric resistance. There is not a comparison with natural gas water heaters provided. It's like seeing a comparison between good and bad, respectively, but without the better product even in the running. One question, "Why does much of the all-electric crowd require regulatory interference, onerous mandates, and expensive code upgrades (less affordable housing as a result) to bring all-electric housing forward?" Whatever happened to personal choice and market forces driving the adoption of all-electric housing?

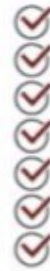
[3] The outdoor heat pump component usually weighs 120 pounds or so and should always be placed in a shady location that is outside of direct sunlight. I didn't have access to the roof and couldn't see the heat pump or how it was shielded from direct sunlight from the street either. However, a typical Rheem heat pump, mounted on a structure's roof supports both electric cooling and electric heating in one unit. Usually featuring a 14 SEER rating, a 5-ton unit will heat and cool up to 2,000 square feet, enough for each of the three plans offered in the Round Barn subdivision.

[4] An evaluation of part of City Ventures' ad for its Round Barn subdivision:

Promotion of an All-Electric Home

ENERGY-EFFICIENT FEATURES

- Cal-State® Solar System Included - No Lease, No Extra Costs
- Schlage® Keyless Entry
- Milgard Dual-Glazed Windows with Ultra-Violet Coating
- Pre-Plumbed for Electric Vehicle Charging
- GE™ Stainless Steel Kitchen Appliances
- Induction Cooktop
- ENERGY STAR® Rated Hybrid Electric Water Heater Features
- Heat Pump Technology



OTHER BUILDER/ RE-SALE



Buried in new home prices for 2021:

- Code upgrades since 2000: **+\$84,000**
- Undersized rooftop solar: **+\$13,000**
- Higher appliance costs: **+\$29,000**
- Electric bills since Jan 2020: **up 20+ percent**

Maintenance and repair costs for solar system with decreasing productions credits and without the benefit of REC ownership

Features lacking:

- Gas appliances with superior performance – furnace, water heater, dryer, cooktop/oven, and fireplace
- Resiliency from electric outages
- All the options, totaling about \$100,000
- Yards and outdoor privacy, a personal sanctuary for many

Table extract courtesy City Ventures. Graphic courtesy R.K. Koslowsky.

[5] I didn't comment on the "Schlage Keyless Entry" feature in the main write-up, however, the continuous loss of small power outages can put home security at risk. Author Bakke writes, "Two thirds of the annual cost of outages in the United States, [prior to 2016, at least, were] caused by those lasting less than five minutes, because of 'the high frequency of momentary outages relative to the sustained outages.' Lots of little outages are disastrous for [anyone] that needs constant access to information networks and for which electricity maintains security, including electric door locks, key pads, metal detectors, surveillance cameras, and so on."

Source: *The Grid*, p.205.

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Author of [The Tubbs Fire](#).

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[Author's page](#)