

**Public Comment on Zero-Emission Appliance Workshop:
Preemptive Panel Upgrade Program Suggestion**

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This comment does not address development of the standards themselves but follows up on other discussions during the workshop.

Installation of zero emission space and water heaters will require electric panel upgrades by some, and perhaps many, homeowners. Panel upgrade lead times can be very long, as documented in a 2022 PG&E report (Ref 1). Separately, PG&E reports that half of all panel upgrades require between 5 and 14 months to complete (Ref 2). These lead times could force residents to find alternate housing since they would have no heat or hot water for months.

A discussion during the workshop touched on the need for Government-funded programs to perform panel upgrades for disadvantaged homeowners. The following is a suggestion for a broader program to preemptively upgrade California homes, minimizing situations where an emergency appliance replacement is held up waiting for an electric panel upgrade and accelerating conversion of California homes to electric-ready.

Municipality-Administered Electric-Ready Home Program Description

- A. Municipality would choose and fund a single contractor to upgrade home electric panels within a neighborhood.
- B. Municipality works with Utility to upgrade neighborhood distribution network to accommodate loads in an electric-ready neighborhood. Upgrades are complete before homes are retrofitted.
- C. Municipality floats 30-year bonds to fund the program.
- D. Municipality costs are recovered by 360 monthly fees on each retrofitted home. Fee is tied to address, not homeowner. Current homeowner pays that month's fee. Could be administered through same system as used to collect water or waste collection bill.
- E. Homeowner participation is voluntary.

Benefits

- a. Accelerates conversion of California homes to all-electric.
- b. Homeowner cost is reduced to a relatively small monthly fee, maximizing participation.
- c. Cost is shared by all homeowners that will benefit, minimizing burden on current homeowner.
- d. Homeowner has easy, local access to city officials to deal with issues relating to their retrofit.
- e. Neighborhoods homes built within a relatively short time frame will utilize similar designs and construction methods, so retrofit characteristics should be very similar home-to-home. Contractor can use something like an assembly-line process in neighborhood, reducing their costs.

- f. It is more efficient for Utility to upgrade a whole neighborhood than the current piecemeal approach where the upgrades are triggered by an individual panel upgrade request.
- g. Because homeowner cost of panel upgrade is spread over 30 years, homeowner will be more likely to commit funds to preemptively replace appliances with efficient electric units. This is especially true for space heaters since a heat pump also provides summertime cooling.
- h. Local Air Districts could coordinate programs to prioritize upgrading neighborhoods whose emissions most greatly impact air quality.
- i. Government funds that would have been dedicated to panel upgrade rebates could be redirected to appliance rebates, accelerating preemptive appliance upgrades.
- j. Government assistance programs could be tied to the needs/eligibility of the current homeowner, perhaps minimizing cost or at least spreading it out.

Perhaps CARB could recruit a municipality to undertake a pilot program.

Even if the broad program I suggest is not implemented, some portions of it could be applied to Government-funded upgrade programs for disadvantaged neighborhoods.

References

1. PG&E. 2022. Service Upgrades for Electrification Retrofits Study Final Report. CALMAC STUDY ID: PG&E0467.01. Available at: <https://pda.energydataweb.com/#!/documents/2635/view>
2. San Francisco Chronicle, April 1, 2023. 'This S.F. homeowner tried to go all-electric. Her case shows the extraordinary effort that can take.' Julie Johnson. Available at [S.F. homeowner still awaiting PG&E upgrade for all-electric appliances \(sfchronicle.com\)](https://www.sfchronicle.com/sf/article/S.F.-homeowner-still-awaiting-PG&E-upgrade-for-all-electric-appliances-17500000)