

**DOCKETED**

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*Comment Received From: Laura Feinstein*  
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## **Energization for Home Electrification Retrofits**

*Additional submitted attachment is included below.*



5/10/23

Re: Docket #: 23-IEPR-05, Accelerating Distribution Grid Connection  
Comment Title: Energization for Home Electrification Retrofits

Dear Commissioners,

Thank you and your staff for organizing an excellent workshop on accelerating distribution grid connection. The presentations were highly informative and helped shed light on a topic that is complex and vitally important for the health of California's economy and climate.

There was a noticeable gap in the day's discussion: **there was no examination of the energization process for building owners who are applying for electric panel and service upgrades when electrifying their HVAC or water heaters.**

Fossil fuel combustion for building appliances contributes approximately ten percent of the state's greenhouse gas emissions, and by executive order, California plans to install 6 million new heat pumps by 2030. Gas-fired building appliances are also a major source of health-harming NO<sub>x</sub>, ozone, and fine particulate matter pollution in California. To meet its obligations under the Clean Air Act, the Bay Area Air Quality Management District has adopted zero-emission appliance standards that would require 100% of new home water heaters and space heating to be zero-emission (and therefore, mostly electric heat pumps) within a decade.

The goal of converting California to clean electric appliances could be waylaid if we can't get the electrical service upgrade process working better for building owners.

When building owners convert from an existing gas-fired appliance to an electric heat pump, it can trigger a breaker panel upgrade, which in turn may trigger an electrical service upgrade from the energy provider.

This process, as highlighted in the May 2022 report on *Service Upgrades for Electrification Retrofits* by NV5, is often opaque, time-consuming, and expensive.<sup>1</sup> The report had several concerning findings on how the electric service upgrade process works for residential consumers:

- Some customers reported that the overall service upgrade process is confusing, and it took longer than expected, often exceeding **six to nine months** (p 5).
- Utility contractors reported customers may pay **between \$300 and \$16,000 or more to the Utility for costs** that exceed the allowance for service upgrades (p 6).
- Transformer and pole upgrade costs are partially covered by customers if there are two customers served by the transformer. If there is only one customer serviced by the

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<sup>1</sup> NV5 Inc., and Redwood Energy. "Service Upgrades for Electrification Retrofits Study Final Report." PG&E and SDG&E, May 27, 2022. <https://pda.energydataweb.com>.

transformer, the customer fully covers the upgrade costs. Contractors reported these **additional costs range between \$2,850 to \$30,000 or more** (p 6).

Adding six to nine months and tens of thousands of dollars to a home electrification project could greatly slow an equitable, affordable transition to clean appliances. Most residential building owners replace HVAC and water heater systems when the old one breaks. They need a new, functional appliance in a matter of days to keep homes warm and safe for their occupants. Additionally, spending tens of thousands of dollars on an electrical service upgrade is out of reach for California middle and lower-income homeowners, is cost-prohibitive for many affordable housing owners, and could drive up rents for tenants.

There are important strategies to avoid the electrical service upgrade process altogether, such as avoiding a panel upgrade by using load-management devices, installing a 120-volt heat pump water heater, or using a temporary gas appliance, commonly referred to as the Watt Diet. Avoiding a service upgrade entirely is the easiest option for building owners when they electrify their HVAC and water heaters. For more information on these approaches, please see Tom Kabat's excellent letter submitted to this docket. However, some homes – mainly those with panels under 100 amps – will still need panel and service upgrades to electrify.

Electrification of space and water heating in homes and businesses is a vital part of making California's climate and clean air goals a reality. We urge the Energy Commission, along with the California Public Utilities Commission and energy corporations, to carefully consider how to make electrical service upgrades a more consistent, affordable, and expedited experience.

Sincerely,

Laura Feinstein, Ph.D.  
Sustainability and Resilience Policy Director  
SPUR