

From: Sean Armstrong <[REDACTED]>
Sent: Wednesday, December 11, 2024 4:49 PM
To: Peter Campbell <[REDACTED]>
Cc: Melissa Yu <[REDACTED]>; CA Building Decarbonization <[REDACTED]>
[REDACTED]>; San Diego Building Electrification Coalition <[REDACTED]>
Subject: [EXTERNAL] Comment Letter to SCAQMD re: Affordable Housing support for rules 1111 and 1121

Dear Peter Campbell,

It is not commonly known that:

1. Nationally Affordable Housing essentially began the modern building electrification movement in 2007, when the USDA Rural Development Division began funding hundreds of houses and apartments each year that competitively scored only if they developed all-electric housing with heat pumps. In California, again it has been affordable housing that developed the supermajority of all-electric housing until 2020, when it became popular with utilities and embraced by the CEC's Title 24 Code.
2. Affordable Housing developers have shown me that when replacing an old 50 gallon gas tank water heater, a new \$900 Ultra Low NOx tank is \$200 more expensive than a \$700 No NOx electric resistance tank. In California electric resistance water heating is operationally more expensive than gas (but not so in other states), so an \$1860 No NOx heat pump tank eliminates that concern. It costs \$300,000 to \$800,000 per apartment to purchase a building, so the additional \$1000 marginal cost of using a heat pump is a de minimus (0.3% to 0.12%) financial impact to the ownership cost of a building.
3. Replacing an old gas wall furnace with a new one is more expensive than removing it in favor of a new packaged heat pump. An Energy Star, \$550 packaged heat pump can be installed in a window in under an hour, or in a wall in 3 hours, and also provide life-saving air conditioning. However, a least-cost, apartment-standard \$900 gas wall furnace requires 4+ hours to safely remove, replace and test for combustion safety.

In short, the circumstances that face affordable housing developers has led them to build and retrofit to all-electric to simply save money. With the addition of tax credits and rebates, it makes no financial sense to install gas replacements to gas appliances. Resistance to change is the reason that some developers oppose new, desperately needed air quality regulations, not information derived from a depth of experience and cost comparisons.

Sincerely,
Sean Armstrong
Managing Principal
Redwood Energy