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Jennifer Elwell
Bay Area Air Quality Management District
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Submitted electronically: jelwell@baaqmd.gov

June 21, 2022

RE: Comments on Amendments of 9-6 “Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters”.

Dear Jennifer Elwell,

On behalf of the Associated General Contractors (AGC) of California, we are submitting comments to the Bay Area Air Quality Management District in response to Rule 9-6 “Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters”.

AGC of California is a member-driven organization that statewide consists of over 900 companies. Our members provide commercial construction services on a broad range of projects within vertical building, highway & transportation, and utility. We believe the construction industry is vital to the success of California. Together, our members actively create opportunities to build and strengthen our state. We are passionate about shaping policy, improving industry relationships, and developing our workforce.

AGC of California appreciates the opportunities to participate in Bay Area Air Quality Management District’s regulatory process by submitting a comment letter to advocate on behalf of the construction industry. A summary of our concerns includes the lack of feasibility of heat pump water heaters and the lack of reliable electrical grid to support the increase in electrical energy demands. Please read below for more information.

1. Concerns surrounding the requirement of heat pump water heaters.

According to Silicon Valley Clean Energy’s reservation tracker of their FutureFit Heat Pump Water Heater Program, the cost of heat pump water



heaters in relation to natural gas water heaters may be more than doubled. For instance, the average cost of an installed 50-gallon heat pump water heater can cost up to \$5,868 in comparison the average of an installed 30 – 50-gallon gas-fueled water heater can cost up to \$2,200. In addition to the cost, heat pump water heaters take more time to heat water than a gas-fueled water heater. According to General Electric appliances, a heat pump may only be able to recover 8 gallons of water per hour, whereas standard heating elements can recover up to 22 gallons of water per hour. Therefore, if the average shower uses approximately 16 gallons of water, the heat pump would need to run for 2 hours per shower to accommodate the household’s needs. Furthermore, in the wintertime when ambient air temperatures are likely to be lower, the heat pump will have to run longer to heat the water. This may result in dissatisfied customers who do not have enough hot water to satisfy their needs which would have negative impacts on contractors and their businesses.

2. Unprepared electrical grid to support increased demands.

Another significant disadvantage is that heat pump water heaters require electricity to move heat from one place to another instead of generating heat directly. This poses as a disadvantage due to the instability of our electrical grid at this moment in time. As new regulations are adopted that will increase the demand for electricity, our electrical grid simply will not be able to accommodate. The peer-reviewed article, “Translating Climate Change and Heating System Electrification Impacts on Building Energy Use to Future Greenhouse Gas Emissions and Electric Grid Capacity Requirements in California,” analyzed climate change and electrification impacts to system-wide endpoint impacts on future electric grid configurations (Tarroja, et al., 2018). They concluded that although electrification may decrease greenhouse gas emissions, it requires significant increases in electrical grid capacity. Specifically, that the large loads do not temporally align with daily renewable generation and therefore require increases in dispatchable electric grid capacity to support the electric grid configuration.

According to the CalMatter’s article, “California’s electric grid is not ready to meet climate goals,” California’s electrical grid was largely developed in the last century and was designed with natural gas fired generation located in urban areas, supplemented by remote hydro, nuclear, and geothermal energy (2022). The electrical grid was *not* designed to accommodate phasing out urban gas-fired generation and tripling the amount of energy delivered from remote wind and solar energy.

The impacts of an unprepared electrical grid may result in increased blackouts which would affect millions of Californians. Bloom Energy released a California Power Outage Map based on data collected between 2017 and 2019. During that time there were over 50,000 significant power outages across the state that impacted approximately 51 million customers. Although it is commonly perceived that blackouts happen primarily in rural communities, they are becoming more common in cities as well. For instance, California’s 5 largest cities including Los Angeles, San Diego, San Jose, San Francisco, and Fresno, experienced 10,417 outages impacting approximately 20% of the state’s population. Additionally, San Bernadino alone experienced 1,208 backouts impacting 1.4 million customers. What is perhaps more concerning is that electrical power outages are steadily increasing. In October 2019, the blackout events increased by 80% compared to the year before and the individuals it impacted increased by 204%.

On January 13, 2021, the California Independent Systems Operator, California Public Utilities



Commission, and California Energy Commission released a report regarding the root-cause analysis of the mid-August extreme heat wave power blackouts. This report states that the root-cause was attributed to “extreme weather conditions, resource adequacy and planning processes, and market practices”. Additionally, it states “[t]he energy markets can help fill the gap between planning and real-time conditions, but the West-wide nature of this extreme heat wave limited the energy markets’ ability to do so”. Therefore, it expresses the need to have a carefully thought-out regulation that take California’s current resources into consideration, as opposed to initiating a plan that may not practical.

Lastly, AGC of California acknowledges your amendment that stipulates an interim report saying “[n]o later than two years prior to the compliance date listed in Section 9-6-301.5 and Section 9-6-303.5 of this Rule, the APCO shall present to the Air District Board of Directors for consideration at a public meeting a report that includes the technology options currently (and projected to be) available to comply with the applicable standard; the market availability of such technology; the projected costs of purchase and installation of such technology, including electrical panel upgrades, as applicable; and any incentive programs available to reduce those costs.” However, AGC of California would encourage the Bay Area Air Quality Management District to consider conducting the interim report before the amendments are adopted as there are too many uncertainties. If the Bay Area determines that the amendments are infeasible after the amendments have been adopted, then that would require back peddling to remedy. We encourage a thoroughly thought-out plan to be implemented prior to adoption.

Conclusion

AGC of California appreciates Bay Area Air Quality Management District for allowing AGC of California to comment on Rule 9-6 “Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters”. We assert that Bay Area Air Quality Management District consider the comments we have expressed above. If you have any questions regarding the comments, please contact Brian Mello at 603-770-9264 (email: mellob@agc-ca.org). We appreciate the opportunity to comment and hope these concerns are addressed.

Sincerely,

Brian Mello

Brian Mello
Associate Vice President of Engagement & Regulatory Affairs
Associated General Contractors of California

