



The new degree of comfort.™

June 21, 2022

Ms. Jennifer Elwell
Bay Area Air Quality Management District
375 Beale Street
Suite 600
San Francisco, CA 94105

RE: Bay Area Air Quality Management District Draft Amendments to Regulation 9, Rules 4 and 6: NOx Emissions from Building Appliances

Dear Ms. Elwell,

Rheem Manufacturing Company (Rheem) appreciates the opportunity to submit the following comments regarding the Initial Study for an Environmental Impact Report (EIR) and revised draft amendments to Regulation 9: Inorganic Gaseous Pollutants; Rule 4 and Rule 6 impacting nitrogen oxides (NOx) emissions from building appliances.

Rheem is an industry leader in total heating, cooling, refrigeration and water heating solutions and one of the few global brands with product offerings covering residential and commercial heating, cooling, conventional and hybrid storage water heaters, tankless water heaters, solar water heating systems, pool and spa heaters, commercial boilers, residential hydronic and geothermal systems, commercial refrigeration products, indoor air quality accessories, and replacement parts for all categories. Rheem is headquartered in Atlanta, Georgia, and has U.S. based manufacturing facilities in California as well as in Alabama, Arkansas, Connecticut, and North Carolina.

Rheem remains committed to bringing sustainable water heating and HVAC solutions to the market to achieve decarbonization goals and to provide cost-effective heating and cooling solutions for new construction and replacement applications serving a broad cross-section of residents, homeowners, and businesses. An essential component in meeting emissions reduction targets is *market readiness*, which includes technology availability, service and installation capabilities, and consumer awareness. While Rheem supports Bay Area Air Quality Management District's (BAAQMD) broader objectives to reduce NOx emissions in the region, we remain concerned about the market readiness to achieve the stated targets.

Market readiness concern: Premature zero-NOx implementation could result in net increase in GHG emissions associated with increased electricity production.



INTEGRATED HOME COMFORT



Rheem supports BAAQMD intent not to mandate specific technology solutions to achieve zero-NOx emissions, however, it is very likely the solutions will be predominately electric based technologies including electric heat pump systems. As such, Rheem is concerned that a full implementation of the proposed rule amendments could generate a net increase in GHG emissions associated with increased electricity production. Rheem agrees that further technical study and evaluation is needed to ensure no adverse impacts on the environment and to inform use of “near- zero” emissions or dual fuel solutions that include some types of natural gas.

Market readiness concern: Manufacturing technology assessment should occur *prior* to finalizing targets and dates.

To reiterate our prior comments, the range of technologies needed to meet the proposed zero NOx requirements and implementation dates has not been established. For example, while there are residential heat pump water heaters that can be used today to meet these targets in many new homes, there are no known technologies to replace all commercial applications. Rheem supports the Air Pollution Control Officer (APCO) requirement for the interim reports within the draft regulation, to be completed no later than two years prior to the compliance date. However, we believe the first report should be completed *prior* to finalizing the proposed rule, and more frequently thereafter, to provide appropriate planning and a proper development horizon. Typical product development cycles are five years—significantly longer than the two years outlined in the BAAQMD regulation.

Market readiness concern: Equipment scope should be narrowed to ensure available solutions.

Additionally, the scope of the Regulation 9, Rules 4 and 6, is far reaching including residential, commercial, and industrial equipment with up to 2 million Btu/h, impacting multiple product types used for various single family, multi-family and commercial business applications. Rheem recognizes that a very small subset of products included already have zero-NOx replacement solutions and that with sufficient development time and incentives this offering will grow. However, there is also a significant portion of the products and applications covered by the regulation that cannot easily or cost-effectively be transitioned within the proposed timeframe. In particular, large water heating equipment installations, especially those used for commercial applications, will not meet the deadlines used by BAAQMD and could provide significant cost impacts to consumers and businesses where replacements or retrofit products are not available.

Market readiness concern: Installation challenges need to be addressed, especially for replacements.

Staff should consider and recognize that there are multiple applications and installation challenges that need to be overcome and addressed prior to the compliance date. Key installation challenges already noted include:

- Emergency replacement of failed HVAC and water heating equipment, funding, product availability, ease of installation and contractor timing for service
- Electric wiring and panel upgrades and insufficient power supply with older homes
- Larger installation footprints, provisions for air flow for heat pumps and renovation costs
- Need for high temperature water supply for commercial processes, restaurants, laundry, hospitals, and healthcare facilities.
- Compliance path for large commercial and rooftop HVAC units which have not traditionally been subject to NOx restrictions and have limited replacement options

Market readiness concern: Compliant solutions should include “near-zero” emissions pathways for maximum effectiveness.

Staff should continue to consider and allow for “near” zero emissions solutions, which could include some types of natural gas, to achieve significant NOx reductions, while at the same time preserving energy resilience and emergency back-up for the larger equipment. Where applications cannot easily be decarbonized, certain ‘off-ramps’ may need to be included.

Rheem commends Staff for their inclusion of hybrid (dual fuel furnace) heat pumps that comply on an average basis, recognizing the readiness and effectiveness of this technology to reduce emissions. Rheem recommends that a definition and calculation procedure for average NOx emissions be included. Rheem also requests that hybrid (dual fuel) heat pumps for water heating equipment be included. This would apply to installations where a small percentage of the total heating load is provided by a gas fired water heater/boiler for the purposes of emergency back-up and peak loads. Electric heat pumps with storage tanks used to replace gas fired equipment usually require much larger installation footprints and will typically comprise of multiple units. Utilizing gas equipment for some portion of the total load would provide for a simplified installation and lower cost. As with air hybrid heat pumps, compliance for such water heating equipment could be determined on an average basis.



Rheem continues to support a harmonized California state and BAAQMD coordinated compliance plan with the following recommendations:

- More narrowly tailor definitions for a specific subset of residential equipment types, sizes and applications with known replacement solutions and costs
- Better define compliance parameters for hybrid dual fuel furnaces and provide a compliance path for dual fuel water heating equipment
- Outline incentives and funding for adoption and installation of new equipment for replacement applications, especially for affordable housing, and including electric panel upgrades and emergency replacements
- Provide exceptions for commercial and industrial applications, including those requiring high temperature water

Rheem appreciates BAAQMD's effort in further developing the proposal and completing the EIR. We look forward to collaborating further with staff in the rulemaking process, including participating in a working group to address implementation, and would be happy to discuss our comments.

If there are questions, please do not hesitate to contact me directly.

Sincerely,

A handwritten signature in black ink that reads "Karen B. Meyers".

Karen Meyers
Vice President, Government Affairs
Rheem Manufacturing Company

cc: BAAQMD Board of Directors c/o Marcy Hiratzka, Clerk of the Boards, Executive & Administrative Resources
Joe Boros
Allison Skidd

