

## Comment Letter #2

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**To:** AQMPTeam <AQMPteam@aqmd.gov>

**Subject:** AQMP comment

Large numbers of small appliances contribute unnecessarily to NOx emissions, and many of them have never been regulated by a RACT rule. My recommendations for the long-term plan:

1. The NOx emission standard for residential-scale water heaters should be zero. This job is widely done using solar, electric resistance, and electric heat pump technologies presently, which already achieve zero emissions. There is no reason to continue to provide a special carve-out for natural gas combustion, except potentially in remote areas subject to frequent PSPS shutoffs. However, most ultra-low NOx natural gas water heaters seem to require electricity now anyway, so a remote area carve-out may not be necessary. Furthermore, as replacements transition to ultra-low NOx, power outlet retrofits are becoming necessary to support the electrical needs of the gas-fired units; why not pull 240 volts instead of 120 and convert to zero emission? The simplest implementation would be a stop-sale on water heaters with NOx emissions.
2. The NOx emission standard for residential-scale clothes dryers should be zero. This job is widely done using clotheslines, electric resistance dryers, electric heat pump dryer technologies presently, which already achieves zero emissions. There is no reason to continue to provide a special carve-out for natural gas combustion in any part of SCAQMD jurisdiction. The simplest implementation would be a stop-sale on clothes dryers with NOx emissions.
3. The ultra-low NOx emission standard for residential fan-forced space heating has produced some benefit, but over the long term ultra-low is still unreasonably high compared to zero emission alternatives such as heat pumps. Significant portions of the US with similar climates never bothered to install widespread natural gas service or LPG alternatives; houses are all-electric and space heating is via electric heat pumps. I recommend a stop-sale on such furnaces that exceed a zero-NOx standard for residential and light commercial equipment.
4. The NOx emission standard for cooking equipment including stoves, ovens, cooktops, flat-tops, and fryers should be zero. This job is widely done using electricity presently, which already achieves zero emissions. There is no reason to continue to provide a special carve-out for natural gas combustion in any part of SCAQMD jurisdiction except potentially in remote areas subject to PSPS shutoffs. The simplest implementation would be a stop-sale on cooking equipment with NOx emissions. This equipment also operates indoors without proper ventilation and adversely affects indoor air quality.
5. The low NOx emission standard for pool and spa heating has produced some benefit, but over the long term ultra-low is still unreasonably high compared to zero emission alternatives such as solar and heat pump heaters. Significant portions of the US with similar climates never bothered to install widespread natural gas service or LPG alternatives; there are still plenty of swimming pools in Florida, for example. I recommend a stop-sale on such pool and spa heating equipment that exceeds a zero-NOx standard.

Many of these changes will include some nonzero retrofit cost, which is unfortunate but can be managed by end users and with appropriate rebate programs. If this were not the case, we would all still be shoveling coal and splitting wood. These rules can also be phased in by targeting new construction first, remodeling second, and other retrofits third.