PROPOSED

State of California
AIR RESOURCES BOARD

CALIFORNIA INDOOR AIR QUALITY PROGRAM UPDATE

Resolution 20-32

November 19, 2020

Agenda Item No.: 20-12-4

WHEREAS, in 2005 the California Air Resources Board (CARB) provided to the California Legislature a peer-reviewed comprehensive *Indoor Air Quality* report (the Report) that summarized the best scientific information available at that time on indoor air pollution;

WHEREAS, the Report found that Californians spend an average of 87 percent of their time indoors and that indoor air pollutants from numerous sources can cause health effects, including cancer, premature death, asthma, and other respiratory and cardiovascular diseases;

WHEREAS, the Report included indoor air quality guidelines for pollutants including nitrogen dioxide (NO_2), formaldehyde, carbon monoxide (CO), PM_{10}, $PM_{2.5}$, polycyclic aromatic hydrocarbons (PAHs), and chlorinated hydrocarbons;

WHEREAS, since the 2005 Report additional studies have added to the body of research demonstrating acute and chronic health effects from exposure to indoor air pollution;

WHEREAS, studies have indicated that long-term exposure to higher levels of air pollution may increase the vulnerability of individuals to COVID-19, including worsening the impacts of the virus;

WHEREAS, CARB-funded research found that children who are exposed to elevated levels of $PM_{2.5}$ are more likely to develop asthma and to experience allergic airway inflammation;

WHEREAS, studies have linked exposure to high levels of NO_2 and other nitrogen species (NOx) emitted from gas appliances with asthma and exacerbation of other respiratory symptoms;

WHEREAS, indoor air pollutants including formaldehyde and other volatile organic compounds (VOCs), fine particles ($PM_{2.5}$), semivolatile organic compounds (SVOCs), and perfluoroalkyl and polyfluoroalkyl substances (PFAS) can cause known adverse health effects, including asthma, allergies, cancer, premature death, increased respiratory and cardiovascular diseases, and endocrine disruption;

WHEREAS, CARB adopted California Code of Regulations, title 17, section 41986 to limit ozone emissions from indoor air cleaning devices. Pursuant to that regulation, which has been in effect since 2008, all indoor air cleaners sold in, or shipped to, California must meet ozone emission and electrical safety standards;

WHEREAS, in 2008 CARB adopted California Code of Regulations, title 17, sections 93120-93120.12 to limit emissions of formaldehyde from hardwood plywood, particleboard, and medium density fiberboard in California and beginning in 1990 CARB adopted California Code of Regulations, title 17, sections 94507-94517 to limit emissions from consumer products including many used indoors;

WHEREAS, indoor air pollution sources such as gas appliances can contribute to outdoor air pollution levels and climate change;

WHEREAS, residents of vulnerable and disadvantaged communities (DACs) are at higher risks of exposure to unhealthy levels of indoor and outdoor air pollution. As a result, residents often suffer disproportionately from the serious health impacts caused by exposure to elevated levels of pollution;

WHEREAS, there is an urgent need to update CARB's indoor air pollution guidelines to provide agencies, researchers, and the public guidance on safe levels for indoor air pollutant exposures;

WHEREAS, there is an urgent need for the establishment of clean air centers that would provide healthy indoor environments during wildfire events. These centers would feature upgraded filtration equipment that would prevent wildfire smoke from accumulating at unsafe levels in the clean air center and would serve as a refuge for residents affected by poor air quality during wildfires;

WHEREAS, CARB recognizes the conclusion of recent studies that 100 percent electrification of natural gas appliances in California would result in significant health benefits and reduction of greenhouse gas (GHG) emissions from natural gas combustion in residential buildings;

WHEREAS, CARB-funded research has concluded that Assembly Bill 32 (Stats. 2006, ch. 488)/Senate Bill 32 (Stats. 2016, ch. 249) and carbon neutrality by 2045 will require less reliance on fossil fuel combustion. By replacing fossil fuel use in buildings with zero carbon electricity, there is an opportunity to also improve IAQ; and

WHEREAS, the Board finds that:

1. The informational update identifies the successes of the Indoor Air Quality Program while recognizing that many communities are still exposed to unhealthy levels of indoor air pollution;

2. Residents of DACs tend to suffer disproportionate health impacts due to heightened exposure to unhealthy levels of indoor air quality in low income communities, as well as other inequities that increase health vulnerabilities of residents;

3. The informational update describes the Indoor Air Quality Program and outlines ongoing work to build on the existing body of health research on indoor air health effects and to further refine our understanding of sources of indoor air pollution and the health impacts that result from exposure to unhealthy indoor air quality. This information will be used to improve tools that guide decision making with the ultimate goal of reducing emissions from indoor sources and improving the health of California residents; and

4. The informational update outlines near-term and future CARB actions that staff will develop for future Board consideration or potential Executive Officer implementation, as appropriate under State law, to protect the health of Californians by reducing exposure to harmful pollutants in indoor environments.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby directs staff to:

1. In consultation with the California Energy Commission and other agencies, support updates of the California Building Standards Code for stronger kitchen ventilation standards and electrification of appliances, including stoves, ovens, furnaces, and space and water heaters, in the 2022 code cycle for all new buildings in order to protect public health, improve indoor and outdoor air quality, reduce GHG emissions, and set California on track to achieve carbon neutrality;

2. Support the development of rules and/or best practices, in coordination with air districts, to reduce NOx and other harmful appliance emissions, and promote electrification. The rules and best practices could address appliance categories including stoves, ovens, furnaces, and space and water heaters;

3. Expand CARB's work to understand disparities, reduce indoor pollution and improve health within vulnerable and disadvantaged communities through research, education, incentives and building standard support. Support actions

such as building ventilation upgrade projects, to improve indoor air quality in coordination with residents, local air pollution control districts, and other stakeholders;

4. Continue to elevate community engagement in the research conducted by the Research Division on indoor air quality and exposure assessment;

5. Develop indoor air quality guidance documents, including measures to reduce smoke exposure and develop clean air spaces during wildfires, to educate and encourage the public to take appropriate actions to protect themselves from the health impacts of pollution exposure.