State of California

Air Resources Board

BOARD ITEM SUMMARY

ITEM # 20-12-4: Update on Indoor Air Quality: Successes, Continuing Concerns, and Challenges

STAFF RECOMMENDATION:
Staff will update the Board on the Indoor Air Quality (IAQ) Program. Staff recommends that the Board approve the proposed resolution.

DISCUSSION:
The California Air Resources Board (CARB) IAQ Program aims to protect the health of residents by improving the air quality in indoor environments in California. CARB's IAQ Program will expand our understanding of IAQ such that we can identify sources of unhealthy indoor air and implement solutions that will reduce exposures to elevated levels of pollutants that may concentrate in indoor environments.

CARB has implemented many programs to reduce indoor air pollutants from numerous sources and to mitigate the health impacts from exposures to these pollutants. For example, CARB's air cleaner regulation limits ozone emissions from portable air cleaners because exposure to elevated levels of ozone has been demonstrated to adversely impact health. Also, CARB's composite wood product regulation limits emissions of formaldehyde, a known carcinogen that can off-gases from composite wood products and accumulate in enclosed indoor environments.

Despite progress in these areas, additional efforts are necessary to improve IAQ and to protect the public health and welfare of California residents. The IAQ Program will be analyzing the numerous sources that contribute to unhealthy air quality in indoor environments in order to develop efficient and effective solutions that will reduce levels of harmful pollutants.

CARB recognizes that people living in disadvantaged communities (DAC) are disproportionately exposed to elevated levels of air pollutants in both indoor and outdoor environments. Unfortunately, residents in DACs often must contend with many other socioeconomic and environmental stressors that exacerbate vulnerabilities to health issues, such as inadequate access to healthcare and elevated exposure to unhealthy air quality. The IAQ Program will conduct additional research to enhance CARB's understanding of sources of indoor air pollution, including identifying activities that contribute to exposures to unhealthy air quality in DACs. This research will shape CARB's policies on community air quality and inform mitigation programs.

One prominent source of unhealthy indoor air pollution is natural gas appliances, which are found inside many homes and buildings throughout California. Natural gas

appliances used indoors have been found to increase certain harmful air pollutants in homes, including NO_2, to levels exceeding the Federal and State Ambient Air Quality Standards. Aggressive building electrification will help improve indoor air quality related to natural gas combustion in buildings and will reduce the amount of air pollutants and greenhouse gas emissions that are ultimately released to the outdoor environment.

The presentation will provide the Board with a brief update on CARB's activities to mitigate indoor air pollution. Staff will present an overview of the IAQ Program and highlight several programs and mitigation actions that reduce Californians' exposure to harmful indoor air pollutants. Staff will confirm its commitment to improving indoor air quality throughout the state. Staff will acknowledge that residents of DACs are all too often exposed to disproportionately higher levels of unhealthy air pollutants and experience heightened vulnerability to the health impacts that result from exposures to elevated levels of indoor air pollution. Staff will summarize key benefits of building electrification, which would improve indoor and outdoor air quality and mitigate climate change by reducing greenhouse gas emissions. Finally, staff will propose that CARB updates the IAQ guidelines to align with the latest scientific evidence.

SUMMARY AND IMPACTS:

CARB has successfully implemented many programs to reduce indoor sources of air pollutants. Despite longstanding efforts to mitigate ozone and formaldehyde emissions in indoor environments, CARB recognizes that many Californians are still exposed to unhealthy levels of indoor air pollution. CARB acknowledges that residents of disadvantaged communities tend to experience disproportionately severe health impacts that result from exposure to elevated levels of harmful pollutants. Past research has demonstrated that natural gas appliances used indoors contribute to indoor and outdoor air pollution and exacerbate climate change. Our continuing analysis of indoor air pollution and its impacts demonstrate the health and environmental benefits of aggressive building electrification programs, which will help achieve California's air quality, climate change, and public health goals. Updating CARB's indoor air pollution guidelines will provide key guidance to agencies, researchers, and the public on how to ensure indoor air does not exceed safe levels based on the latest scientific evidence.