

AB 617: SCIENTIFIC TOPICS RELATED TO AIR TOXICS IN COMMUNITIES
Office of Environmental Health Hazard Assessment &
California Air Resources Board
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SRP Discussion Draft

Statutory Role for the SRP in the Implementation of AB 617

The Scientific Review Panel on Toxic Air Contaminants (SRP) was initially established to advise the California Air Resources Board (CARB) in their evaluation of the health effects toxicity of substances pursuant to Health and Safety Code Section 39660 et seq. (Toxic Air Contaminant Program). More recently, AB 617 identifies a consultation role for the SRP in:

- CARB's preparation of a monitoring plan regarding the availability and effectiveness of toxic air contaminant and criteria air pollutant advanced sensing monitoring technologies and existing community air monitoring systems, as well as the need for and benefits of establishing additional community air monitoring systems [Health and Safety Code Section 42707.5(b)].
- CARB's preparation of a statewide strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden. The state board shall update the strategy at least once every five years. [Health and Safety Code Section 44391.2(b)].

Scientific Topics for the SRP

Going forward, CARB and the Office of Environmental Health Hazard Assessment (OEHHA) are seeking continued consultation and the assistance of the SRP in supporting the development of effective emissions and exposure reduction strategies, and developing improved methodologies for health risk assessment and tracking.

We propose three topic areas for consideration by the SRP in supporting the ongoing implementation of AB 617:

- I. Provide guidance on the identification of emerging contaminants of concern, including recommending priority substances for OEHHA to develop or update health risk values. These may include contaminants identified in communities through air monitoring or emissions inventories.
- II. Provide guidance on assessing potential health risks from combined exposure to multiple contaminants, especially where individual pollutant exposures are below current standards (for example, Reference Exposure Levels or Ambient Air Quality Standards). Potential risks should consider sensitive populations.

- III. Provide input on identifying the kinds of health benefits from reductions in localized air pollution that are most amenable to measurement.

Over the next several years, CARB and OEHHA staff will provide recurring updates on the implementation of AB 617 at SRP meetings, and will develop briefing materials on these topics as information becomes available and review and consideration by the SRP is requested on each of these topic areas.

Additional detail about each of these scientific areas is described below.

I. Health Risk Values for Contaminants in AB 617 Communities

Scientific Topic/Issue Provide guidance on the identification of emerging contaminants of concern, including recommending priority substances for OEHHA to develop or update health risk values. These may include contaminants identified in communities through air monitoring or emissions inventories.

Background The air monitoring and emissions reduction efforts in AB 617 communities will generate extensive data on emissions and presence of air toxics in California communities. Of the specific chemicals identified, some are likely to have no existing health guidance values such as those established under the Air Toxics “Hot Spots” Program, other state programs (e.g., Proposition 65 safe harbors), or federal programs. Having health guidance values for contaminants to which people are exposed is important to understanding potential risks to communities. This in turn can inform decision-making. The work to fill in the gaps in health criteria for specific chemicals expediently needs to be prioritized.

Approach OEHHA and CARB propose to review the available datasets on air pollutant emissions and their levels across selected communities. From this information, priority substances will be proposed for further evaluation. These priorities will be reviewed publicly and through expert consultation. The further evaluation of chemicals to provide guidance on potential health impacts will potentially follow one of two paths:

1. Using current methodologies and processes (such as through the “Hot Spots” approach; Reference Exposure Levels or Unit Risk Factors), and/or
2. Adopting interim or provisional values through an expedited process to allow early use for communities.

Draft documents would be prepared for SRP and public review.

Potential Work Products The following work products could be brought to the SRP for comment and review:

- Document summarizing chemical-specific information gathered in AB 617 communities, both from emissions inventories and air monitoring results.
- Document proposing priority substances in AB 617 communities for development of health guidance values, and the rationale for their selection. Include a characterization of extent to which existing health guidance values are available.
- Risk assessment documents proposing new or updated health guidance values for chemicals, either through existing methodologies and processes (“Hot Spots”) or more expedited review to be used on an interim/provisional basis.

Timeline In the first-year communities selected for air monitoring, air districts must deploy air monitoring by July 2019. In first-year communities selected for emissions reduction programs, air districts must adopt programs by October 2019.

CARB is working with local air districts to develop community-level emissions inventories this spring based on existing data. These initial inventories will provide information that CARB and OEHHA can begin synthesizing across communities to identify priority chemicals for further consideration. CARB has also adopted a new emissions reporting regulation that will provide enhanced data on an annual basis starting in 2020. AB 617’s air monitoring programs are also likely to generate community-level data on a continuing time frame over the next few years. Since this information will be available in incremental steps, and additional communities will be selected in coming years, we propose to bring materials forward on a rolling basis in a manner by which new information can be incorporated into proposed priorities and activities. Initial materials could be brought to the SRP in late 2019.

II. Addressing Cumulative Exposures in Communities

Scientific Topic/Issue Provide guidance on assessing potential health risks from combined exposure to multiple contaminants, especially where individual pollutant exposures are below current standards (for example, Reference Exposure Levels or Ambient Air Quality Standards). Potential risks should consider sensitive populations.

Background Many AB 617 communities face burdens from multiple sources of pollutants in their air, which affect air quality and raise concerns for cumulative impacts. Currently, there are different types of available tools that have been developed to assess cumulative risks and impacts. For example, the methodology adopted as part of the Air Toxics “Hot Spots” Program enables a consideration of cumulative risks from multiple pollutants, including both carcinogens and non-carcinogens, but generally from a single source. This type of approach is data-intensive and requires understanding risks from individual chemicals or mixtures.

Other approaches to evaluating cumulative impacts have been developed that use both quantitative and semi-quantitative data about multiple types or sources of pollution. Typically this approach is applied to a geographic area and the tool’s results screen for the identification of areas facing the greatest cumulative burdens and vulnerabilities. An example of this is OEHHA’s CalEnviroScreen tool that evaluates California communities at the census tract scale.

Approach OEHHA and CARB propose to draw from the data collected and/or developed in the AB 617 communities to explore how cumulative impacts may be better understood and assessed. Opportunities to apply existing approaches will be considered, and novel approaches that move toward a fuller and more accurate characterization of health risks may be proposed.

Potential Work Products The following work products could be brought to the SRP for comment and review:

- Document illustrating case studies from AB 617 communities showing cumulative impact and/or risks and the extent to which existing tools are able to capture those impacts and/or risks.
- Document describing potential ways to supplement or enhance existing approaches to cumulative impacts analysis.

Timeline Community emissions inventories will become available in 2019 and on an ongoing basis. Initial materials describing case studies could be brought to the SRP in late 2019. A later phase of the project is the development of materials proposing ways to enhance analysis of cumulative risks and impacts.

III. Tracking Community Health Benefits Through Indicators

Scientific Topic/Issue Provide input on identifying the kinds of health benefits from reductions in localized air pollution that are most amenable to measurement.

Background Demonstration of health benefits in communities from reductions in localized air pollution presents a number of scientific and data management challenges. Emissions and discharges of pollutants can result in unhealthy levels of environmental concentrations of contaminants. When people come in contact with pollutants in air, water, food, and soil, they receive a dose of chemical which may or may not result in health effects that can be measured. Potential chemical exposures, doses, and subsequent health effects can be assessed with different degrees of ease and reliability through measurement of environmental concentrations of the chemicals of concern, measurement of levels of those chemicals or their surrogates in people (biomonitoring, biomarkers), and through reporting of health outcomes (morbidity/mortality; health surveillance). Data of these types are likely to be useful in characterizing potential benefits to communities from emissions reductions.

Approach OEHHA and CARB propose to advance this topic through a stakeholder-engaged process. Given the complexity of the subject and the different ways that it can be approached, we propose to convene experts in various disciplines, SRP members, AB 617 community members, and others in public forums/symposiums. In these forums, scientific topics can be introduced to consider the challenges, identify potential near-term metrics or measures that could be helpful, and/or better ways to characterize exposures or outcomes that can be tracked, so that the health benefits to communities can be documented.

Potential Work Products The following work output could be brought to the SRP for comment and review:

- A public symposium or forum featuring presentations from subject matter experts in methods to evaluate chemical exposure and related health outcomes, with a focus on community-based participatory research approaches. Topics could include the use of biomonitoring and/or biomarkers to assess exposures (and exposure reductions), the extent to which health outcome data can be used to characterize exposure reduction, and best practices for community-academic research partnerships. Participation by SRP members would be requested.
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Timeline The concepts that this proposal addresses could be developed relatively quickly. It is expected that a forum/symposium of the type described above could be held in 2020.
