

## **Independent Emissions Market Advisory Committee**

### **Sub-committee Comment on Environmental Justice Implications of California Climate Change Policies**

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#### **A. Context**

California faces intensifying risks from climate change, including more intense forest fires, coastal erosion, prolonged droughts, and more frequent episodes of extreme heat. In response to these escalating risks, California has committed to reducing its greenhouse gas emissions, and to protecting the public against significant climate change related damages. The state is implementing a suite of policies designed to reduce in-state GHG emissions and stimulate the development of low carbon solutions that can be deployed more broadly.

California's efforts to mitigate global climate change are important. However, climate change is not the only environmental concern that poses significant risk to the well-being of Californians. Local and regional air pollution poses significant environmental and health risks. Going forward, these local pollution problems should be addressed as vigorously as global climate change, particularly in marginalized communities which are disproportionately exposed to these risks.

The critical importance of local air pollution problems notwithstanding, our committee is tasked with reviewing California's GHG cap-and-trade program and associated climate change policies. Our charge is not to question the fundamental policy architecture, but rather to evaluate the policy design and governance choices that could have significant implications for program effectiveness. The focus of this sub-committee, in particular, is on how California's climate change policies and programs could impact socioeconomically disadvantaged communities.

In this commentary, we briefly review some of the research that investigates these issues, we assess the ways in which CARB has been responsive to environmental justice (EJ) concerns, and we highlight some policy design and implementation features that warrant particular attention.

Although conversations with the EJ community were considered carefully in the writing of this report, this is not intended to be a consensus document. This comment seeks to characterize the range of opinions and perspectives on key issues, identify knowledge gaps, and highlight issues that merit careful attention going forward.

#### **B. Lessons from literature on cap-and-trade and environmental justice**

Although the GHG cap-and-trade program has attracted a great deal of attention, it is important to keep in mind that cap-and-trade plays a supporting role in California climate policy. More prescriptive

programs and regulations are expected to deliver the majority of mandated GHG emissions reductions.<sup>1</sup> That said, the cap and trade program does have three critical roles to play:

1. A binding emissions cap ensures that the state's GHG emissions reduction targets are met.
2. Trading of allowances between firms can significantly reduce abatement costs incurred to meet the cap.
3. The sale of allowances raises revenues that can be used to mitigate adverse impacts of climate change and/or reduce any inequities in cost burden.

Economists favor market-based climate change policies, such as emissions trading programs, because they are designed to seek out and incentivize the least costly GHG abatement options. Environmental justice advocates have been quick to point out that the least cost climate change mitigation solutions need not be the most equitable or desirable. In principle, revenues raised through the sale of allowances can be used to offset these inequities. In practice, this kind of redistribution can get complicated.

One complication is that GHGs are often co-emitted with local pollutants that cause localized health and environmental damages. Thus, the allocation of GHG emissions abatement responsibilities can have important implications for local environmental quality. Historically, GHG emissions and emissions of local pollutants from point sources have been strongly positively correlated. In the past, changes in emissions have primarily been driven by variation in industrial production levels. However, the relationship between GHGs and local pollution could look quite different if pollution reductions are induced by a policy targeting one form of pollution. For example, a gas-fired boiler could increase combustion temperatures to lower GHGs, but this would increase local pollutant emissions (Holland, 2012). In this case, mandating a decrease in GHGs would lead to a *deterioration* of local environmental quality. The impact of a policy-induced reduction in GHGs on local pollution will really depend on the extent to which local and global pollutants are substitutable.

Economists have begun to empirically investigate the cross-effects of pollution regulations. Holland (2012) examines the response of GHG emissions to an increase in the stringency of NOx regulations for California power plants. In this context, electricity generating firms primarily complied with the policy by reducing output which reduced both types of pollutants. Brunel and Johnson (2016) isolate plausibly exogenous spatial and temporal variation in local and regional air pollution induced by the Clean Air Act in order to empirically evaluate complementarities in U.S. manufacturing sectors. In contrast to Holland, they find that significant, policy-induced reductions in local pollution have not had ancillary benefits in terms of GHG reductions, presumably because abatement investments delivered targeted reductions in regulated pollutants. These findings highlight the possibility that historic correlations in local and global emissions trends can be misleading indicators of how a policy-induced change in one form of pollution will affect the other.

A recent paper by Cushing et al (2018) examines temporal patterns in local pollutants, toxics, and global pollutants emitted from point sources regulated under California's GHG emissions

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<sup>1</sup> Companion policies, such as the renewable portfolio standard, are expected to deliver the majority of GHG emissions reductions. CARB estimates that cap-and-trade will deliver less than 30% of mandated GHG emissions reductions by 2020. See [Climate Change Scoping Plan](#)

trading program. These authors compare emissions levels prior to the policy (2011-2012) and the three years following the introduction of the policy (2013-2015). The study finds that, variation in GHG and local pollutant emissions were positively correlated over this time period. Notably, 52% of facilities regulated under the GHG emissions trading program increased emissions in the post-policy period relative to 2011-2012. The authors estimate find that emissions increases between these two time periods were disproportionately located in low income and minority neighborhoods.

The findings of Cushing et al. are concerning but not dispositive. One complication lies in the inter-temporal comparison that these authors construct. Comparisons across these two time periods confound the effects of the GHG cap and trade program with some other significant determinants of local pollution and GHG emissions. For example:

- Over the period 2013-2015, in addition to implementing the GHG emissions trading program, California (and the rest of the country) was recovering from the recession. With economic recovery comes an increase in industrial production and associate emissions.
- In the electricity sector, the closure of the San Onofre nuclear power plant in 2012. This major shut down induced a significant increase in output among fossil fuel generation in the state. It is estimated that the nuclear plant closure increased greenhouse gas emissions from power plants in California by 35%.

In order to isolate the effect of the GHG cap-and-trade program on the distribution of emissions over this time period, additional work is needed to control for these and other factors.

A second concern pertains to the sensitivity of the results to the chosen time period. Cushing et al. report: "Since California's cap-and-trade program began, neighborhoods that experienced increases in annual GHGs and co-pollutant emissions from facilities nearby had higher proportions of people of color and poor." However, subsequent research looking into this question has found that the answer is sensitive to how the comparison is constructed. For example, Meng (2018) finds no significant difference in average GHG emissions trends over the period 2012-2015 across disadvantaged and non-disadvantaged communities. If anything, emissions trajectories over this period suggest the emissions gap is narrowing.

In sum, the empirical evidence on the cross-effects of local and global pollution regulations is mixed. It is not our role to debate the merits of these aforementioned studies. Instead, we advise the legislature and staff to monitor and analyze the distribution of emissions impacts associated with California's GHG emissions trading program, in addition to other policies.

### **C. Governance**

CalEPA staff are to be commended for their thoughtful and deliberate approach to addressing some complex issues and tradeoffs across a state that is regionally and culturally diverse. The cap-and-trade program design should continue to reflect its intention of being the backstop to the suite of climate policies that help drive down CO2 emissions. At the same time, the state should also support efforts to address air quality concerns in marginalized communities across the state through additional policies like AB 617, which we agree with environmental justice communities, is but a first step to truly prioritizing addressing local pollution in vulnerable communities.

It is important to recognize and commend the leadership within the environmental justice movement for pushing the concerns of many Californian's to the forefront of our political discourse pertaining to how we will prioritize those concerns within the context of climate action. Environmental justice communities are supportive of the governance changes that have been adopted to ensure their concerns receive the proper attention and action from senior staff within CARB and CalEPA. Today, the California Air Resources Board has expanded to include two voting members with experience on environmental justice issues. Additionally, the Legislature through AB 197 now has two appointments to the California Air Resources Board that are non-voting members but can continue to provide legislative oversight on concerns raised by environmental justice communities before the Board. CARB has also created the role of Assistant Executive Officer for Environmental Justice primarily responsible for coordinating with and representing the interests of environmental justice communities on behalf of the agency.

Finally, in 2015 the agency recommissioned the Environmental Justice Advisory Committee (EJAC), which is comprised of community leaders and experts on environmental justice issues. Since the passage of AB 32 in 2006, the environmental justice advocates and community leaders have grown in influence. That influence is reflected in these governance changes ensuring that these communities can participate more directly and substantively in how California addresses climate change and local air pollution challenges. CARB staff continue to demonstrate the importance of ensuring community leaders are included in the regulatory process through its public workshops held in environmental justice communities, increased transparency with public reporting of data, and willingness to adjust outreach efforts to ensure cultural relevance and competency. We recommend that CARB remain consistent in these outreach efforts both with local communities and with current EJAC committee members.

#### **D. Monitoring impacts of GHG emissions regulations on local air quality**

While climate is the focus of this committee, it is important to recognize the air quality impacts on vulnerable communities of climate regulations. To that end, the 2017 Scoping Plan includes a strong acknowledgement that climate action can only be considered fair and equitable when inequities across communities are addressed.

The passage and subsequent implementation of AB 197 and AB 617 provides an opportunity for the agency and the state to demonstrate the priorities of local air quality coupled with climate and the prevention or mitigation of unintended consequences. Coupled with the last update to the CalEnviro Screen, a tool that aides the state in identifying hot spots in communities across the state for investment and encourages collaborative action with local communities. This is especially relevant to identified neighborhoods where local air districts are tasked with addressing toxic and local criteria pollutants that are known to exacerbate poor health outcomes. With the support and backing of the Board, increased local monitoring and real-time data collection, fair and equitable action on climate and air quality can be catalyzed throughout the state.

The IEMAC committee had the opportunity to meet with environmental justice advocates to discuss, among other issues, the intent and potential of AB 617. Their assessment is that the AB 617 process is extremely new and under development. EJ advocates correctly note that

many of the key pillars and programs of AB 617 have yet to be defined. Important concerns were raised about enforcement protocols for air districts. Thus, while the policy constitutes a promising first step, we cannot safely assume that it will sufficiently address environmental justice issues. Although there is real potential, it is far from clear that AB 617 will indeed provide the robust changes necessary to how the state addresses local criteria pollutants. We agree with this assessment.

In order to be successful, implementation of AB 617 will require consistent and adequate funding from the Legislature, and sufficient and dedicated staff. Workshops are being convened throughout the state to engage communities on best practices and planning. Efforts to develop relationships with local leaders that will lead to truly identifying the sources of concerns are ongoing.

There is a critical trust gap that must be overcome if this program development process is to be successful. Given the striking inequities in exposure to harmful local air pollution, environmental justice communities may have low expectations and/or anticipate minimal attention and effort from the agency. This committee recommends that staff continue to have robust engagement with community leaders, ensuring information materials are culturally relevant, and maintain transparency of timelines, goals, and information. We furthermore recommend that communities that have not been included in the first round of implementation continue to be engaged. For example, Richmond was not prioritized in the first round, but given its proximity to a major oil refinery, should be considered for the second round of implementation.

While AB 617 presents a potentially significant step forward in addressing the social needs that run parallel to air quality challenges, understandable skepticism remains. Agencies must earn trust and demonstrate meaningful progress by investing substantively in substantive environmental quality improvements, particularly in communities impacted disproportionately by adverse public health outcomes related to local air quality conditions and other environmental factors such as transportation, proximity to ports, and freight goods movement.

## **E. Investing in EJ Communities**

California climate change policy includes a number of programs designed to mitigate the impacts of California climate policies on low income households. Programs include: 1) the provision of climate credits directly to households; 2) climate investments and other efficiency, fuel switching, and vehicle mile reducing programs and policies that help households lower their expenditures on electricity, natural gas and gasoline; and 3) low-income rate assistance programs, which although unrelated to the Cap-and-Trade Program, can reduce households' budgetary burden associated with electricity and natural gas consumption. Because the latter two types of measures can lower energy and gasoline bills, they indirectly help to lower any Cap-and-Trade compliance cost passed on to customers.

A 2016 study conducted by the UCLA Luskin Center estimated that low income households would receive more in climate credits than they would pay in Cap-and-Trade associated costs as electricity consumers (Gattacicecca et al. 2016). In other words, low-income households could receive a positive financial impact of between \$215 and \$246 cumulatively, from 2016 through 2020, associated with the Cap-and-Trade Program.

In addition to climate credits, it is estimated that over half of the \$2 billion in implemented projects (\$1 billion) is providing benefits to disadvantaged communities, including 31 percent (\$615 million) going to projects located within these communities. This exceeds the requirement under SB 535 (De León) that at least 25 percent of investments are allocated to projects that benefit disadvantaged communities. In 2016, Governor Brown signed AB 1550 establishing new investment minimums for disadvantaged communities, and low-income communities and households. In addition to subsidizing the cost of critical mitigation projects, additional programs designed to reduce the financial pressure on low-income communities due to increase in energy costs are also supported by investments from the revenue in the cap and trade program.

As noted above, the GHG cap-and-trade program provides an essential means of raising revenues to support promising climate change mitigation investments, and to offset inequalities (pre-existing or policy induced). We encourage CARB and the Legislature to continue working together to prioritize promising investments in disadvantaged EJ communities.

## **F. EJAC Recommendations**

While there are some stark differences between the EJAC recommendations on which tools the state should adopt to meet its emissions goals and what was eventually adopted, staff and Board support of the committee is helping to build trust. It is important to note that trust does not require that the recommendations from the EJAC being accepted. Even when there are disagreements and discrepancies between recommendations and policy implementation, trust can still be cultivated if recommendations are received and analyzed by staff, and if the discussion around these recommendations is transparent and substantive.

Shared benefits from the state's climate policies are critical to ensuring equity is achieved. Some examples of this are the state's California Alternate Rates for Energy (CARE) Program that helps to reduce energy costs for low-income families. Programs like these are supported by EJAC members who understand how these programs will be impacted by new regulations. Having this perspective is important to reducing the potential for negative unintended outcomes associated with the agency's strategies.

Also of concern to environmental justice advocates is the definition of what constitutes a "Direct Environmental Benefit". These communities have long held that offsets, which can provide an important means of enhancing cost effectiveness of climate change mitigation, export California benefits and contribute to the creation of toxic hotspots in vulnerable communities. Ensuring that offset projects from outside of California meet specific verifiable criteria on a project by project basis, can alleviate most of the concerns that benefits from approved offset protocols will indeed benefit Californians in some direct way. The creation of the Offset Protocol Task Force by AB 398 will also provide some assurances to environmental justice communities and advocates that more deliberate consideration will be given to new offset projects in the state.

While differences remain between CARB's positions and the concerns of some environmental justice leaders in how air quality and GHG reductions are addressed, it is crucial that CARB continue to engage and work with environmental justice communities. There also remains concerns that AB 197, which calls for CARB to prioritize direct emission reductions is somehow not being implemented with the appropriate intent of the legislation fully realized.

The most important component of AB 197 to environmental justice advocates is the direction it gives CARB to prioritize direct emission reductions at the source level. There continues to be an underlying concern that the state's primary focus particularly with the cap and trade program to reduce GHG emissions will diminish the priority to address localized criteria pollutants from industrial sources. This tension continues to undermine efforts to narrow the communication gap between CARB staff and many advocates adding to lingering sentiments of mistrust. Although these issues fall outside of the scope of this committee, however we do recognize that trust is earned, and CARB should continue to take the necessary steps to build that trust with communities who have historically not played a direct role in creation and implementation of air quality regulations.

The recommendations of the EJAC, while not accepted completely, demonstrate that people are paying close attention to the decisions that CARB is making and want to be a part of the solution to the crisis. The recommendation of this committee is that CARB continue to be transparent and consistent in engaging with and strongly considering the analysis and recommendations without prejudice from EJAC members and local environmental justice advocates.

## **G. Conclusion**

In this commentary, we have highlighted some issues and concerns that warrant particular attention going forward:

- We encourage the legislature and staff to monitor and analyze the distribution of emissions impacts associated with California's GHG emissions trading program, in addition to other policies.
- We acknowledge the governance changes that have been made to help EJ communities participate more directly and substantively in how California addresses climate change and local air pollution challenges. It is important that CARB remain consistent in these outreach efforts both with local communities and with current EJAC committee members.
- We underscore the importance of investing substantively in critical environmental quality improvements in EJ communities via AB 617 and related regulations.
- We encourage ARB to work with the Legislature to broaden opportunities for meaningful mitigation investments in disadvantaged communities throughout the state.
- We acknowledge EJ concerns pertaining to the implementation and intent of AB 197. We encourage ARB to continue working with the Legislature and EJAC committee members to address and alleviate these concerns.

We are hopeful this commentary will reflect the progress that CARB has made in working to ensure environmental justice communities participate in a robust vetting process of pending regulations so as to feel that they are indeed being heard. It is clear however that in spite of this progress, more is expected and must be done to further an inclusive and transparent process between the agency and local communities. CARB should continue to build trust with communities who have historically not played a direct role in creation and implementation of air quality regulations.

We also sought to provide a balanced analysis of the current program and the EJ perspective that continues to encourage CARB to consider and identify gaps, which may need further action to ensure local communities share in the benefits of California's climate policies. That is an outcome that both the agency, the Legislature, and environmental justice communities want. The IEMAC committee fully agrees with this and believes these recommendations can help continue to keep the state on track to meet its GHG emissions goals, while also ramping up its effort to mitigate and reduce local pollution burdens in California's most vulnerable communities.

## References

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