

Climate Change and Environmental Justice: Lessons from the California Lawsuits

ALICE KASWAN*

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I. INTRODUCTION

In June 2009, the Association of Irrigated Residents and other California environmental justice groups brought the first of several environmental justice lawsuits against California's climate change program. The lawsuits were intensely controversial, not only to the state regulators struggling to launch the nation's most comprehensive and far-reaching climate change program, but to the mainstream environmental community who believed that the lawsuits would frustrate sorely needed and hard-fought progress in climate regulation. The lawsuits could have two possible legacies: greater division and resentment between mainstream environmental and environmental justice constituencies, or—whatever the perceived merits and drawbacks to the decision to sue—a greater and broader awareness of the environmental justice community's substantive concerns.

This essay does not debate the political wisdom of suing; instead, it takes the suits as a given and attempts to enhance understanding of the environmental justice community's climate justice agenda. It describes the role of environmental justice in the development of California's climate law, AB 32, describes the lawsuits, and suggests some of the larger lessons about climate policy, cap-and-trade, and environmental justice that these lawsuits reveal. Ultimately, the environmental justice lawsuits highlight two primary themes: (1) the importance of a holistic approach to climate change policy that recognizes and integrates its multiple dimensions, including co-pollutant implications; and (2) more specifically, and moving beyond traditional environmental justice claims, the potential weaknesses and risks of cap-and-trade as a climate policy tool. The essay does not claim to resolve these complex policy debates. Nor does the essay focus on my own views on cap-and-trade and environmental justice (though these views inevitably inform the analysis to some degree). Instead, the essay's goal is to provide perspective on the lawsuits and set the stage for a constructive path forward.

A starting premise is that climate policies have multiple environmental justice implications, including the environmental and economic impacts

of both climate mitigation and climate adaptation strategies.¹ Like the lawsuits, this essay focuses on the environmental implications of climate mitigation policies, implications which arise from the strong correlation between greenhouse gas (GHG) emissions and co-pollutants.² Most GHGs result from combustion, and those combustion processes generate not only GHGs, but criteria pollutants (like nitrogen oxides and particulates) and toxic pollutants. So, indirectly, climate policies to control GHGs are likely to have significant consequences for traditional pollutants, and hold significant promise in terms of potential pollution reduction co-benefits.

II. BACKDROP: AB 32 AND ENVIRONMENTAL JUSTICE

A. *The Role of Environmental Justice in the Genesis of AB 32*

AB 32's legislative history casts light on the environmental justice community's expectations about and their ultimate disappointment in AB 32's implementation. California enacted the Global Warming Solutions Act, commonly referred to as "AB 32," in 2006.³ AB 32 establishes the goal of reducing state emissions to 1990 levels by 2020, a reduction estimated to achieve a fifteen percent reduction from 2005 emissions.⁴

1. Economic justice impacts include the cost of reducing emissions on low-income consumers. See Daniel A. Farber, *Pollution Markets and Social Equity: Analyzing the Fairness of Cap-and-Trade*, 39 *ECOLOGY L.Q.* 1, 48–53 (2012); Robert N. Stavins, *Enviro Justice and Cap-and-Trade*, *THE ENVIRONMENTAL FORUM* 20 (May/June 2008), available at http://www.analysisgroup.com/uploadedFiles/Publishing/Articles/eli_2008mj_stavins.pdf. In the United States, the environmental justice community has been largely focused on the environmental, rather than the economic, impacts of climate mitigation measures. See Farber, *supra*, at 8 n.27. Climate adaptation also presents significant environmental justice issues, both domestically and internationally. Poor and marginalized communities are the most vulnerable to the impacts of climate change, and their particular vulnerabilities suggest the importance of developing tailored climate adaptation strategies. See, e.g., Alice Kaswan, *Domestic Climate Change Adaptation and Equity*, 42 *ENVTL. L. REP.* 11125 (2012) [hereinafter Kaswan, *Domestic Adaptation*].

2. See James K. Boyce & Manuel Pastor, *COOLING THE PLANET, CLEARING THE AIR: CLIMATE POLICY, CARBON PRICING, AND CO-BENEFITS 1* (2012), available at http://dornsife.usc.edu/assets/sites/242/docs/Cooling_the_Planet_Sept2012.pdf.

3. CAL. HEALTH & SAFETY CODE §§ 38500–99 (West 2007).

4. See CAL. AIR RES. BD., *CLIMATE CHANGE PROPOSED SCOPING PLAN ES-1* (2008) [hereinafter *PROPOSED SCOPING PLAN*], available at <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>.

The law was one of the first in the nation to establish a comprehensive, economy-wide approach rather than addressing a single sector.⁵

Environmental justice considerations were influential in the negotiations over, and development of, the legislation. As Professor Julie Sze and colleagues have described, traditional air pollutants, rather than greenhouse gases, had greater political salience with Latino legislators likely to be swing votes on climate legislation.⁶ Mainstream environmental groups that played a key role in developing and lobbying for the legislation, like the Environmental Defense Fund (now Environmental Defense) and the Natural Resources Defense Council, recognized the political importance of linking GHGs and co-pollutants and promoted the incorporation of environmental justice provisions into the legislation to attract broader legislative support.⁷

As a consequence, the legislation contains numerous references to environmental justice. The statute explicitly encourages the California Air Resources Board (ARB) to maximize the co-benefits of greenhouse gas reductions, including environmental co-benefits, and to “complement[] the state’s efforts to improve air quality.”⁸ It states that ARB must “[e]nsure that the activities undertaken to comply with [its] regulations do not disproportionately impact low-income communities.”⁹ On the economic front, AB 32 requires the state to “direct public and private investment toward the most disadvantaged communities in California,”¹⁰ suggesting that green jobs programs or other investments to reduce emissions should benefit poorer communities.

The statute also reflects the environmental justice community’s long-standing concerns about cap-and-trade programs. Although then-Governor Arnold Schwarzenegger had advocated for a cap-and-trade program, the environmental justice community’s resistance to that option resulted in

5. See *California Cap-and-Trade Program Summary* 1, CENTER FOR CLIMATE AND ENERGY SOLUTIONS (Jan. 2013), available at <http://www.c2es.org/docUploads/calif-cap-trade-01-13.pdf>. In contrast, the multi-state Regional Greenhouse Gas Initiative adopted by many Northeastern and mid-Atlantic states focuses solely on power plant emissions. See generally *Program Design*, REGIONAL GREENHOUSE GAS INITIATIVE, <http://www.rggi.org/design> (last visited Dec. 8, 2013).

6. Julie Sze, et al., *Best in Show? Climate and Environmental Justice Policy in California*, 2 ENVTL. JUSTICE 179, 179–81 (2009).

7. *Id.*

8. CAL. HEALTH & SAFETY § 38501(h). AB 32 also states that the climate change regulations should complement “efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.” *Id.* § 38562(b)(4). The legislature instructed ARB to consider the implementing regulations’ “overall societal benefits, including reductions in other air pollutants . . . and other benefits to the economy, environment, and public health.” *Id.* § 38562(b)(6).

9. *Id.* § 38562(b)(2).

10. *Id.* § 38565.

provisions that gave the ARB the option, but not the mandate, to adopt cap-and-trade.¹¹ AB 32 provides ARB with general authority to “adopt rules and regulations . . . to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions . . .[.]”¹² and states that the ARB “may,” not must, develop “market-based compliance mechanisms.”¹³ The provisions on market-based compliance mechanisms explicitly require ARB to consider localized environmental justice impacts before adopting a market-based program.¹⁴ They also require the agency to “[d]esign market-based mechanisms to prevent any increase in the emissions of toxic air contaminants or criteria pollutants”¹⁵ and to “[m]aximize additional environmental and economic benefits for California, as appropriate.”¹⁶

AB 32 also contains provisions to enhance participation from disadvantaged communities. The statute required ARB to create an Environmental Justice Advisory Committee (EJAC) composed of representatives from the state’s most polluted areas.¹⁷ The law explicitly requires ARB to consult with a wide variety of stakeholders, including not only the regulated community, but also the environmental justice community and environmental organizations.¹⁸

Thus, AB 32 encourages the development of climate change policies that address not only GHG emissions, but co-pollutants and other indirect consequences. The explicit attention to environmental justice considerations throughout the statute undoubtedly created expectations within the environmental justice community that their concerns would play a key role in the statute’s implementation.

11. See Sze, et al., *supra* note 6, at 183.

12. CAL. HEALTH & SAFETY § 38560.

13. *Id.* § 38570(a) (stating that the ARB “may,” not must, develop “market-based compliance mechanisms”).

14. *Id.* § 38570(b)(1) (“[T]he state board shall do all of the following: (1) Consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution”).

15. *Id.* § 38570(b)(2).

16. *Id.* § 38570(b)(3).

17. *Id.* § 38591(a).

18. *Id.* § 38501(f). The statute also specified that ARB must hold public workshops in areas with poor air quality, areas that must include (but are not limited to) minority and low-income communities. *Id.* § 38561(g).

B. AB 32 Implementation and the Emergence of Cap-and-Trade

Governor Schwarzenegger's interest in cap-and-trade did not wane when the legislature refused to mandate the program. Shortly after AB 32 was passed, the Governor, by Executive Order, established a "Market Advisory Committee."¹⁹ This committee brought together experts on market-based mechanisms and instructed state agencies to "develop a comprehensive market-based compliance program."²⁰ The Market Advisory Committee focused on a cap-and-trade program for California and identified guiding principles and specific program design recommendations.²¹ These initiatives did not dictate the adoption of cap-and-trade; a decision relegated to ARB, but they revealed the administration's active development of cap-and-trade as a policy option.

The Environmental Justice Advisory Committee, created pursuant to the statute, advocated strongly against the adoption of cap-and-trade and encouraged ARB to adopt alternative measures, including greater reliance on direct regulation, government incentives, and a carbon fee.²² Nonetheless, the initial scoping plan, approved in December 2008, included a cap-and-trade program among a broad suite of measures to reduce GHG emissions.²³

After completing the Scoping Plan, ARB began to implement the Scoping Plan's many elements, including developing specific regulations for the cap-and-trade program. The cap-and-trade regulations were approved by the Air Resources Board in October 2011.²⁴ The agency set the initial cap for 2012 and established a path of declining annual caps to achieve the 2020 goal.²⁵ Beginning in 2012, the cap-and-trade program

19. See Exec. Order No. S-20-06 (Oct. 18, 2006), available at <http://www.casfcc.org/2/StationaryFuelCells/PDF/Executive%20Order%20S-20-06.pdf>.

20. *Id.* at ¶ 5.

21. *Recommendations for Designing a Cap-and-Trade System for California*, MKT. ADVISORY COMM. TO THE CAL. AIR RES. BD., (2007), available at <http://www.energy.ca.gov/2007publications/ARB-1000-2007-007/ARB-1000-2007-007.pdf>.

22. See, e.g., ENVTL. JUSTICE ADVISORY COMM., RECOMMENDATIONS AND COMMENTS OF THE ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE ON THE IMPLEMENTATION OF THE GLOBAL WARMING SOLUTIONS ACT OF 2006 (AB 32) ON THE PROPOSED SCOPING PLAN at 39-42 (Dec. 2008) [hereinafter EJAC 2008], available at <http://www.arb.ca.gov/cc/ejac/proposedplan-ejaccommentsfinaldec10.pdf>.

23. PROPOSED SCOPING PLAN, *supra* note 4, at 30.

24. See CAL. CODE REGS. TIT. 17, §§ 95800-96022 (2012). The process began with a Preliminary Draft Regulation for a California Cap-and Trade Program, released in November 2009. *Preliminary Draft Regulation for a California Trade Program*, CAL. AIR RES. BD. (Nov. 2009), available at <http://www.arb.ca.gov/cc/capandtrade/meetings/121409/pdr.pdf>.

25. See CENTER FOR CLIMATE AND ENERGY SOLUTIONS, *California Cap-and-Trade Program Summary* 4, 6 (Figure 2) (2013), available at <http://www.c2es.org/doc Uploads/calif->

addresses emissions from large stationary sources, including electricity generators and large industrial facilities emitting more than 25,000 metric tons of carbon-dioxide equivalent (CO₂E) per year.²⁶ Beginning in 2015, the cap-and-trade program is to expand to include fuel distributors (including distributors of transportation fuels and heating fuels, like natural gas). By 2015, the cap-and-trade program is expected to include “eighty-five percent of the state’s greenhouse gas emissions”²⁷

After intensive debate about selling allowances (at a state-run auction) versus distributing them without cost, the Agency developed a complex mechanism for distributing almost all of the allowances for free at the outset of the program. However, utilities must use the revenue for ratepayer benefit²⁸ and there will be an increasing proportion of auctioned allowances in future allowance distributions.²⁹ The cap-and-trade program allows the use of offsets—reductions by unregulated entities that can be used to “offset” and replace the reductions required in the regulated sectors.³⁰ As further discussed below, ARB developed specific offset limitations and allowable offset protocols.³¹

Although the Scoping Plan contains many GHG reduction measures, cap-and-trade is the primary control mechanism for industrial sources. The Scoping Plan contemplates direct industry controls only for those industries with extensive fugitive emissions that cannot be adequately tracked or monitored under a cap-and-trade program, including oil and gas extraction, natural gas transmission, and refineries.³² The Scoping

cap-trade-01-13.pdf. The cap increases, rather than decreases, in 2015 to accommodate the addition of fuels to the program. Nonetheless, the overall trajectory for stationary sources and fuels distributors is one of decreasing emissions. *See id.*

26. *Id.* at 2.

27. *Id.* at 1.

28. *See* Philippe Brisson, et al., *California’s Cap-and-Trade Regulations: Design Elements and Outstanding Issues*, WORLD CLIMATE REPORT, (Dec. 23, 2011), available at http://www.bna.com/uploadedFiles/Content/Press/California_Cap-and-Trade_Regulations_Design_Elements.pdf. *See infra* note 171 and accompanying text (describing use of allowance revenue).

29. Brisson, et. al. at 2.

30. *See generally id.* at 3.

31. *See infra* notes 73 to 80 and accompanying text.

32. *See id.* at 55. ARB anticipates proposing measures to address emissions from oil and gas extraction in 2014. As of late 2013, the agency is still collecting data to determine how to address natural gas pipeline distribution leaks. In the refinery context, ARB is working with local air districts to address refinery methane emissions, and is no longer pursuing state-level controls for refinery flaring in light of existing controls by local air districts. *Climate Change Scoping Plan First Update: Discussion Draft for Public*

Plan also includes a requirement for energy efficiency audits designed to generate additional information about industry emissions, information that could, potentially, lead to future direct industrial controls. Large industries and power plants must conduct energy efficiency audits that assess GHG reduction potential as well as associated co-pollutant reductions.³³ The audits do not, however, require reductions, and ARB has not yet determined whether the information obtained will be translated into direct regulatory requirements for increased energy efficiency.³⁴ It remains unclear whether they will provide the basis for future revisions to permit conditions or future regulatory action to directly require industrial energy efficiency improvements.

In contrast to the industrial sector, numerous complementary measures will have an impact on electricity sector emissions. In addition to AB 32, California has adopted legislation limiting future reliance on high-emitting energy sources (that is, coal-fired power).³⁵ The state has also adopted a renewable portfolio standard that requires the state to obtain thirty-three percent of its electricity from renewable sources by 2020;³⁶ the greater the share of renewable energy, the smaller the share of GHG-emitting fossil-fuel sources. In addition, the Scoping Plan seeks to reduce electricity-related emissions by reducing energy demand through more stringent building and appliance standards, as well as other consumer energy efficiency incentives.³⁷

Review and Comment 36-37, CAL. AIR RES. BD. (Oct. 2013), available at http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf.

33. See PROPOSED SCOPING PLAN, *supra* note 4, at 54.

34. As of Fall 2013, ARB is mid-way through the process of obtaining the energy efficiency and co-pollutant reports. See SCOPING PLAN FIRST UPDATE DISCUSSION DRAFT, *supra* note 32, at 36. ARB is summarizing the information into sector-specific summary reports, and “will use these findings to identify the best approaches to secure energy efficiency improvements and the associated emissions reductions at California’s largest facilities.” *Id.*

35. SB 1368 “created greenhouse gas performance standards for new long-term financial investments in base-load electricity generation serving California customers.” PROPOSED SCOPING PLAN, *supra* note 4, at 5. The law covers both in-state electricity generation and out-of-state electricity imported into California. See Patricia Weisselberg, Comment, *Shaping the Energy Future of the American West: Can California Curb Greenhouse Gas Emissions from Out-of-State, Coal-Fired Power Plants Without Violating the Dormant Commerce Clause?*, 42 U.S.F. L. REV. 185 (2007).

36. PROPOSED SCOPING PLAN, *supra* note 4, at 44. The state adopted legislation mandating the 33 percent RPS in 2011. See California Public Utilities Commission, *RPS Program Overview*, <http://www.cpuc.ca.gov/PUC/energy/Renewables/overview.htm> (last visited Oct. 23, 2013). The Scoping Plan also incentivizes solar power through implementation of Governor Schwarzenegger’s Million Solar Roofs Program. PROPOSED SCOPING PLAN, *supra* note 4, at 53.

37. See *id.* at 41–44.

Although transportation fuels will come under the cap-and-trade program in 2015, numerous complementary measures have and will continue to affect transportation-related emissions, which are a primary source of both GHG and traditional pollution in California. Mechanisms to reduce vehicle emissions include California's GHG standards for cars³⁸ and a low-carbon fuel standard.³⁹ Recognizing the connection between land use patterns, vehicle miles travelled, and transportation emissions, the Scoping Plan includes anticipated reductions from regional transportation and land use plans developed pursuant to SB 375, a land-use-oriented GHG reduction law adopted in 2008.⁴⁰

Thus, the Scoping Plan measures address a range of emissions sources in a wide variety of ways. Nonetheless, cap-and-trade emerged as the primary restraint on individual stationary emissions sources, particularly for industrial sources. Moreover, although measures like the Renewable Portfolio Standard and efforts to enhance consumer energy efficiency will have an indirect effect on power plant emissions, cap-and-trade provides the only direct constraint on existing power plant emissions. Recent environmental justice lawsuits reflect the environmental justice community's dissatisfaction with this state of affairs.

III. THE LAWSUITS

Environmental advocates have brought three different legal actions against ARB. The first, *Association of Irrigated Residents Association v. CARB*, challenged various features of the scoping plan and the environmental review document accompanying it. The second, *Coalition for a Safe Environment, et al., v. CARB*, consisted of a complaint filed with the U.S. Environmental Protection Agency arguing that the cap-and-

38. *See id.* at 38-41. Prominent among these strategies are the "Pavley greenhouse gas vehicle standards," named after the legislator, Fran Pavley, who spearheaded California GHG vehicle emission standard legislation in 2002. *See id.* at 39. Additional measures include promoting other vehicle efficiency improvements, like tire inflation, *id.* at 51, mechanisms, like port electrification or controls on truck emissions, to reduce emissions associated with goods movement, *id.* at 52-54, and promotion of high-speed rail. *Id.* at 56.

39. *See id.* at 46-47.

40. SB 375 requires the state to develop regional passenger vehicle GHG emissions reduction targets and then requires regional Metropolitan Planning Organizations to develop sustainable communities strategies that demonstrate how future land use patterns would reduce transportation emissions. *See id.* at 47-48.

trade program violates federal civil rights regulations. The third, *Citizens Climate Lobby v. CARB*, brought by two environmental groups, challenged ARB's offset approval methodology. The central claims and resolution of each case are discussed immediately below, while their larger lessons are discussed in Part IV.

A. Association of Irritated Residents: *A Challenge to the Scoping Plan and the Functional Equivalent Document*

Six months after the Scoping Plan's adoption, in June 2009, several environmental justice organizations and environmental justice activists brought suit in *Association of Irrigated Residents v. California Air Resources Board*, arguing that the Scoping Plan did not comply with AB 32 and that ARB's "Functional Equivalent Document" (FED) did not adequately analyze the Plan's environmental impacts.⁴¹ The FED is the environmental review mechanism for ARB actions, and is largely equivalent to an Environmental Impact Report under California's Environmental Quality Act (CEQA).⁴²

1. *The Scoping Plan Challenges*

Petitioners raised numerous objections to the Scoping Plan; this essay highlights the most significant claims that raise the most important policy issues. Petitioners argued that the Scoping Plan did not go far enough. They alleged that the Scoping Plan focused solely on meeting the specific emissions goal of reducing 2020 emissions to 1990 levels, and failed to comply with the law's independent requirement to adopt the "maximum technologically feasible and cost-effective reductions."⁴³ In other words, Petitioners argued that the 2020 goal was a minimum and that ARB had an independent obligation to pursue the "maximum" feasible and cost-effective reductions.

In a March 2011 order, the District Court rejected these allegations, a judgment that was subsequently affirmed by the Court of Appeals.⁴⁴ The

41. Petitioners included the Association of Irrigated Residents, California Communities Against Toxics, Coalition for a Safe Environment, Communities for a Better Environment, Society for Positive Action, West County Toxics Coalition, and several environmental justice activists as individuals. See *Ass'n of Irrigated Residents v. Cal. Air Res. Bd.*, No. 09-509562, slip op. at 19–21 (Ca. Super. Ct. Mar. 18, 2011), <http://cdn.law.ucla.edu/SiteCollectionDocuments/Environmental%20Law/Court%27s%20Final%20Order%203%2017%2011.pdf>.

42. *See id.*

43. *Id.* at 7.

44. *See Ass'n of Irrigated Residents v. Cal. Air Res. Bd.*, 206 Cal. App. 4th 1487 (2012).

Appellate Court noted that the Scoping Plan’s focus on achieving 1990 GHG levels by 2020 is a step in a longer process of developing emission reduction mechanisms, and does not constitute ARB’s final regulatory stance.⁴⁵ Moreover, the Appellate Court observed that the Agency’s analysis of the technological and economic feasibility of a wide range of options suggested that ARB had attempted to identify the maximum available reductions. It further noted that ARB’s decision not to take particular measures appeared motivated by substantive concerns about the measures, not by an unwillingness to reduce emissions to the maximum extent possible.⁴⁶

Petitioners also alleged that ARB failed to go far enough because it did not adopt sufficient direct controls on agriculture and industry.⁴⁷ The District Court noted that ARB had evaluated controls in the agricultural sector and that the agency’s decision not to pursue direct regulatory controls was not arbitrary and capricious in light of its determination that it lacked sufficient information about the complex biological systems at issue.⁴⁸ In addition, the District Court concluded that, contrary to Petitioners’ claim, ARB had not excluded industry because large industries are incorporated in the state’s cap-and-trade program.⁴⁹

Many of Petitioners’ remaining arguments were directed to ARB’s emphasis on a cap-and-trade program. The District Court observed that the agency had included cap-and-trade as one mechanism among many complementary measures, and that “[a]s the agency with technical expertise and the responsibility for the protection of California’s air resources, ARB has substantial discretion to determine the mix of measures needed to ‘facilitate’ the achievement of greenhouse gas reductions.”⁵⁰

45. *Id.* at 1496–97.

46. The appellate court also stated that the statute, in at least one place, explicitly connected the “maximum technologically feasible and cost-effective reductions” requirement to the goal of “achieving the statewide greenhouse gas emissions limit.” *Id.* at 1497. However, the “maximum achievable” language is linked specifically to the emissions goal in only one section, § 38560.5(c). *Id.* In numerous other sections, the “maximum achievable” language appears to be independent of the achievement of the specific 2020 emissions reduction goal. *See* CAL. HEALTH & SAFETY CODE §§ 38560, 38561(a), 38561(b).

47. *See* Association of Irrigated Residents, slip op. at 8.

48. *Id.* at 8–9. The appellate court likewise concluded that ARB’s approach to the agricultural sector was “neither arbitrary nor irrational.” *See* Ass’n of Irrigated Residents, 206 Cal. App. 4th at 1502–03.

49. Ass’n of Irrigated Residents, No. 09-509562, slip op. at 9.

50. *Id.* at 11. The appellate court observed that ARB had properly assessed and rejected alternative approaches. Ass’n of Irrigated Residents, 206 Cal. App. 4th at 1498–

Petitioners also asserted that ARB's analysis of the trading program's co-pollutant impacts was insufficient⁵¹ because it failed to consider the risks and costs of potential pollution increases if facilities purchased allowances rather than reducing emissions.⁵² The District Court rejected some of the Petitioners' criticisms,⁵³ validated others,⁵⁴ and left some unanswered.⁵⁵ Ultimately, the District Court concluded that, "[w]hile there may be flaws in the analyses, Petitioners fall short of demonstrating that ARB was arbitrary and capricious . . .,"⁵⁶ a conclusion upheld by the Appellate Court.⁵⁷

2. The FED Challenges

The Petitioners alleged that ARB's FED on the Scoping Plan failed to adequately analyze alternatives to the cap-and-trade program.⁵⁸ They

1500. The court concluded "[i]t is not for the court to re-evaluate ARB's judgment call, which is neither arbitrary nor unsupported in the record." *Id.* at 1499–1500. It should be noted that the appellate court's evaluation of the adequacy of the ARB's analysis of alternatives related to whether the choice of cap-and-trade was arbitrary and capricious; the appellate court did not analyze the separate issue of whether the alternatives analysis in the Functional Equivalent Document was adequate. *See id.* at 1495.

51. Ass'n of Irrigated Residents, No. 09-509562, slip op. at 12. More specifically, Petitioners asserted that ARB did not analyze the potential disproportionate impacts of controlling agricultural emissions through voluntary measures (incentivized as offset projects) rather than directly regulating agricultural emissions. *Id.* at 12–13. Petitioners also argued that ARB's assessment of cap-and-trade impacts was too limited because it focused only on certain sectors, certain pollutants, and certain geographic regions, rather than providing a more comprehensive analysis. *Id.* at 14–15.

52. *Id.* at 16.

53. For example, the court concluded that ARB had analyzed the impacts in the largest-emitting sectors, and had adequately explained why it could not provide a quantitative analysis in the remaining sectors. *Id.* at 15. The court also concluded that the agency's choice of Wilmington, California as an example for evaluating local impacts was appropriate because it contains a concentrated number of industrial facilities, and that the analysis scrupulously acknowledged the possibility that most benefits would not accrue locally. *Id.* at 16. The court did not, however, address Petitioners' concern that ARB had not evaluated the potential for emissions increases.

54. The district court acknowledged that ARB's analysis of the environmental impacts of voluntary compared to direct regulation of agricultural emissions was weak. *Id.* at 14.

55. Except to address ARB's analysis of Wilmington, CA as a sample area, the district court did not analyze the Petitioners' concerns about the limited number of pollutants analyzed, nor did it address whether the agency should have more comprehensively analyzed potential local impacts in more geographic areas. *See generally id.* at 14–16.

56. *Id.* at 16.

57. *See* 206 Cal. App. 4th at 1503–1505.

58. Ass'n of Irrigated Residents, No. 09-509562, slip op. at 29. Petitioners argued the FED did not adequately identify potential adverse environmental impacts or develop mitigation measures for the impacts, instead improperly deferring that analysis to individual rulemaking proceedings. *Id.* at 24. The District Court concluded that the FED

noted that the FED contained only three pages of discussion on alternatives to cap-and-trade, and that those three pages primarily justified cap-and-trade rather than exploring viable alternatives and comparing them with cap-and-trade. Procedurally, the Petitioners also argued that the Agency improperly approved and began implementing the Scoping Plan before it had certified the FED.⁵⁹

The District Court agreed with the Petitioners and found the alternatives analysis, and hence the FED, inadequate. It stated that, “ARB seeks to create a *fait accompli* by premature establishment of a cap-and-trade program before alternatives can be exposed to public comment and properly evaluated by ARB itself.”⁶⁰ Moreover, the Court agreed with the Petitioners that ARB had improperly approved the Scoping Plan before responding to comments on its FED, undermining its capacity to make an informed decision.⁶¹

At the time, the environmental justice groups who had brought suit hoped that the Court’s ruling would create a window of opportunity for the newly-elected Governor, Jerry Brown, to re-think ARB’s commitment to cap-and-trade and change course toward more direct regulation or a carbon tax. In July 2011, forty-one organizations from California, the U.S., and other countries signed a letter to Governor Brown requesting that he “rescue the California Global Warming Solutions Act of 2006 (AB 32) from the uncritical trust in markets that characterized [former Governor] Arnold Schwarzenegger’s approach to addressing climate change.”⁶²

However, the administration did not change course. ARB instead developed a Supplemental FED to provide more detail on the strengths

included sufficient detail for a programmatic analysis, and that ARB properly deferred more detailed analyses to individual rulemakings. *Id.* at 25–27.

59. *Id.* at 32.

60. *Id.* at 31–32. The District Court also stated that CEQA requires a more detailed analysis of alternatives “so that the public may know not only why cap-and-trade was chosen, but also why the alternatives were not.” *Id.*

61. *Id.* at 32–34. The district court enjoined ARB from further implementing the cap-and-trade features of the Scoping Plan until it completed a legally sufficient FED. *See Ass’n of Irrigated Residents*, No. 09-509562, slip op. at 3–4. That injunction was ultimately stayed by an appellate court while ARB completed its Supplemental FED. *See Bob Egelko, Calif. Cap and Trade Plan Cleared by Court*, S.F. CHRON., June 29, 2011, at 1.

62. *See* Letter from Bay Localize, et al., to The Honorable Edmund G Brown, Jr. (July 28, 2011), available at <http://ggucuel.org/wp-content/uploads/EJ-letter-re-cap-and-trade.pdf>. Environmental justice advocates reportedly submitted almost 1000 petitions asking the Governor to reconsider the cap-and-trade program. *See* Wyatt Buchanan, *State Air Board Backs Cap and Trade on Emissions*, S.F. CHRON., Aug. 25, 2011, at 2.

and weaknesses of cap-and-trade alternatives, including direct regulation and a carbon tax.⁶³ With the Supplemental FED complete, the Board voted again to adopt the Scoping Plan and found that the Scoping Plan, including a cap-and-trade program, would better meet the state's objective than any of the possible alternatives.⁶⁴ In December 2011, the District Court ruled that the Supplemental FED was adequate and that ARB had justified its regulatory choices.⁶⁵

B. Title VI Complaint Against the Cap-and-Trade Program: Disparate Impact

In 2012, the Center for Race, Poverty, and the Environment (CRPE), on behalf of several environmental justice groups, initiated a second strategy for blocking the cap-and-trade program. In a complaint filed with the EPA's Office of Civil Rights, CRPE argued that a cap-and-trade program's potential adverse co-pollutant impacts on communities constitute discrimination in violation of Title VI of the federal Civil Rights Act.⁶⁶ Title VI of the Civil Rights Act prohibits discrimination by state agencies, like ARB, that receive federal funds.⁶⁷ The EPA, like many federal agencies, adopted implementing regulations that prohibit its funding recipients from engaging in both intentional discrimination and actions that cause a discriminatory impact.⁶⁸ Accordingly, environmental justice advocates alleged that a cap-and-trade program would be unlawfully discriminatory because, by allowing covered entities to purchase

63. *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*, CAL. AIR RES. BD., (Aug. 19, 2011), available at http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf.

64. CAL. AIR RES. BD., RESOLUTION 11-27 (Aug. 24, 2011), available at http://www.arb.ca.gov/cc/scopingplan/final_res_scoping_plan_08242011.pdf.

65. See Bob Egelko, *S.F. Judge OKs Cap and Trade for Emissions Law*, S.F. CHRON., Dec. 8, 2011, at 1.

66. COALITION FOR A SAFE ENVIRONMENT, v. CAL. AIR RES. BD., *Complaint under Title VI of the Civil Rights Act of 1964* [hereinafter Title VI Complaint], available at <http://ggucuel.org/wp-content/uploads/6.8.12-CSE-v.-CARB-Title-VI-complaint2.pdf>.

67. 42 U.S.C. § 2000d-1 (2014).

68. Although the statute prohibits only intentional discrimination, implementing agencies have adopted regulations prohibiting disparate impacts as well. EPA regulations prohibit a state or local recipient of federal funds from “administering its program [so as to] have the effect of subjecting individuals to discrimination . . . or have the effect of defeating or substantially impairing accomplishment of the objectives of the program or activity with respect to individuals of a particular race, color, national origin, or sex.” 40 C.F.R. § 7.35(b) (2014).

allowances, the program could fail to decrease pollution—and might lead to increases in air pollution—in communities of color.⁶⁹

The EPA dismissed the complaint as unripe because the program’s official compliance obligations would not begin until January 2013 and, therefore, no harm had yet occurred.⁷⁰ The CPRE has indicated that it will consider re-filing its complaint as California’s cap-and-trade program proceeds.⁷¹ It remains unclear how the EPA would rule on the merits.

C. Citizens Climate Lobby v. CARB: *The Offsets Litigation*

In March 2012, environmental organizations challenged ARB’s approach to offset use in the planned cap-and-trade program in *Citizens Climate Lobby v. CARB*. Although not technically an “environmental justice” lawsuit, I discuss the case because offsets have been a lightning rod for environmental justice concerns.

1. Background on AB 32 and Offsets

Under ARB’s cap-and-trade program, covered entities can use two types of “compliance instruments” to cover their emissions. They can use the emissions allowances allocated to all of the entities that are included in the cap-and-trade program (the “covered sectors”). In addition, they can purchase offsets that represent GHG reductions made outside the covered sectors, reductions that will offset the purchasing facilities’ emissions. For example, if a timber company conserves trees that would otherwise be harvested, it could sell offsets representing the sequestered carbon to a refinery. The refinery, which must account for all emissions, would then use the offsets to cover some of its GHG emissions. Under the cap-and-trade program, facilities can use offsets to cover a maximum of eight percent

69. See Title VI Complaint, *supra* note 66, at 17–28; Peter Fimrite, *EPA Complaint Says Cap-and-Trade Racially Biased*, S.F. CHRON., June 12, 2012, at 1.

70. See *EPA, Groups Debate ‘Ripeness’ in Title VI Protest to California’s Cap-and-Trade*, INSIDEDDEFENSE.COM, <http://insidedefense.com/Inside-Cal/EPA/Inside-Cal/EPA-10/12/2012/epa-groups-debate-ripeness-in-title-vi-protest-to-california-cap-aamp-trade/menu-id-1097.html> (last visited Nov. 20, 2013).

71. See *Climate Justice in California*, CENTER ON RACE, POVERTY AND THE ENV’T, <http://www.crpe-ej.org/crpe/index.php/campaigns/climate-justice/california> (last visited Nov. 20, 2013).

of their total emissions.⁷² As discussed in more detail below, offsets could therefore cover a significant percentage of the needed reductions.

To maintain the integrity of the cap-and-trade program, ARB must determine whether offsets are legitimate and meet numerous statutory criteria. ARB has developed four offset protocols that define allowable offsets and the rules for approving them.⁷³ The first is a Livestock Protocol, which permits offsets for anaerobic manure digesters that convert manure into methane that could be used for energy or flared.⁷⁴ The second is the Ozone Depleting Substances (ODS) Protocol, which allows offsets for destruction of ODSs.⁷⁵ The third is the Urban Forest Protocol, which allows offsets for planting trees in urban settings.⁷⁶ The fourth is the U.S. Forest Protocol, which allows offsets for reforestation, improved forest management, and forest conservation. The protocol permits forestry offsets only for measures taken in the United States, not, at present, for international forestry measures.⁷⁷

ARB designed the offset protocols to meet AB 32's offset integrity requirements. AB 32 requires that all emissions reductions be "real, permanent, quantifiable, verifiable, and enforceable,"⁷⁸ and further states that the reductions must be "in addition to any greenhouse gas emission reduction otherwise required by law . . . [or] that otherwise would occur."⁷⁹

2. *The Offsets Lawsuit*

The lawsuit challenged ARB's methodology for evaluating whether proposed offsets are "additional." As the District Court observed,

72. *Chapter 6: What are the Requirements for Offset Credits and How Are They Issued?*, CAL. AIR RES. BD., (Dec. 19, 2012), available at <http://www.arb.ca.gov/cc/capandtrade/offsets/chapter6.pdf>.

73. *See Compliance Offset Program*, CAL. AIR RES. BD., <http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm> (last visited Nov. 20, 2013). The offset protocols were approved along with the cap-and-trade program. *Id.*

74. *See Compliance Offset Protocol, Livestock Projects: Capturing and Destroying Methane from Manure Management Systems*, CAL. AIR RES. BD., (Oct. 2011), available at <http://www.arb.ca.gov/regact/2010/capandtrade10/coplivestockfin.pdf>.

75. *See Compliance Offset Protocol, Destruction of U.S. Ozone Depleting Substances Banks*, CAL. AIR RES. BD., (Oct. 2011), available at <http://www.arb.ca.gov/regact/2010/capandtrade10/copodsfin.pdf>.

76. *See generally Compliance Offset Protocol, Urban Forest Projects*, CAL. AIR RES. BD., (Oct. 2011), available at <http://www.arb.ca.gov/regact/2010/capandtrade10/copurbanforestfin.pdf>.

77. *See generally Compliance Offset Protocol, U.S. Forest Projects*, CAL. AIR RES. BD., (Oct. 2011), available at <http://www.arb.ca.gov/regact/2010/capandtrade10/copusforest.pdf>.

78. CAL. HEALTH & SAFETY CODE § 38562(d)(1) (West 2007).

79. *Id.* § 38562(d)(2).

“[a]dditionality is essential to the environmental integrity of an offset program because if reductions are not additional, then the cap-and-trade program will not reduce GHG emissions beyond what would have occurred anyway.”⁸⁰ The court observed further that non-additional offsets would “undercut[] the cap-and-trade program because [they] substitute[] illusory reductions, those that would have occurred anyway, for real reductions that the capped sources should have undertaken.”⁸¹ Determining whether reductions are “additional” is an inherently challenging enterprise because it requires assessing what would have happened in the absence of the offset program, always a matter of debate.

Rather than evaluating the “additionality” of each individual offset credit application—for example, by evaluating whether a specific dairy would have installed a manure digester or whether a specific company would have destroyed ozone-depleting substances in the absence of the offset program—the Offset Protocols establish a “standard additionality mechanism” that assumes certain behavior in each context. The protocols indicate that ARB will accept offsets whenever the proposed offset activity exceeds the standard performance in that context. So, for example, since neither manure digesters nor destruction of ozone depleting substances are “common practice,” ARB determined that emissions reductions from any such proposed projects would qualify as offsets. As a consequence, a dairy or ODS-destroying company seeking to sell offsets would not have to prove to ARB that it would not have installed the digester or destroyed the ODSs without the offset program.⁸² In the urban forest context, the Agency determined that the net gain in trees from municipal or educational entities’ tree-planting programs would qualify because increases in tree planting were not the norm in most cities.⁸³ The forestry protocol is more complex, but, by way of example, it includes a performance standard for reforestation-based credits that provides offset credits only if the land to be reforested

80. Citizen’s Climate Lobby v. Cal. Air Res. Bd., No. 12-519554, slip op. at 11 (Cal. Jan. 25, 2013).

81. *Id.*

82. *Id.* at 13–14 (describing how neither manure digesters nor ODS destruction are common practice and indicating that all such projects would therefore be eligible offset projects).

83. *Id.* at 15 (reasoning that because utilities rarely plant trees, all trees planted by utilities are eligible for offset credits).

had been largely bare of trees for more than ten years, and there is little indication that reforestation would otherwise occur.⁸⁴

The Petitioners argued that ARB's approach violated AB 32 because it did not adequately ensure additionality. They argued that AB 32 requires ARB to ensure that *all* offsets are additional, and that a performance-standard approach that looks at general norms rather than a particular operator would fail to ensure that that particular project would not have occurred but for the offset program. The Petitioners identified numerous ways in which many of uncommon offset activities could, in individual cases, be motivated by factors other than the offset program and, hence, fail to be additional.⁸⁵

The District Court rejected Petitioners' arguments. The Court held that individual project assessments are equally problematic given the difficulty of assessing future emissions and future behavior on a project-by-project basis. It observed that offset programs engaged in project-based assessments, like the Kyoto Protocol's Clean Development Mechanism, had encountered numerous inaccuracies, difficulties, and costs that rendered them as or more uncertain than ARB's chosen standards-based approach.⁸⁶ The Court stated that its role was not "to decide that one methodology trumps another when decisions are made based on extensive research, stakeholder input, public input, and fact-based analysis."⁸⁷

As of this writing, Petitioners have appealed the offsets ruling. Given the difficulty of finding any objective and fully accurate metric for

84. *Id.* at 16. The U.S. Forest Offset Protocol is complex and contains many more provisions to address additionality and compensate for potential leakage. *See id.* at 16–17.

85. For example, Petitioners noted that a given project operator might have "compelling financial reasons to install the biogas control system in the absence of the offset payment," including potential profits from biogas sales or reduced liability for the environmental harms caused by open manure lagoons. Brief for Petitioner at 8, *Citizen's Climate Lobby v. Cal. Air Res. Bd.*, No. 12-519554 (Cal. Jan. 25, 2013). In the ODS context, Petitioners questioned ARB data suggesting that ODS destruction is currently very rare, and argued that it could be a sustainable business practice even without offsets. *Id.* at 30. In the Urban Forest context, Petitioners suggested that the assumption that cities do not add trees is misguided because the many benefits of tree planting could well lead cities to increase planting. *Id.* at 32–33. Petitioners voiced additional critiques of the forest protocols, most of which questioned the assumption that any given project could be considered "additional." *See id.* at 34–40.

86. *Citizen's Climate Lobby*, No. 12-519554, slip op. at 11 (Cal. Jan. 25, 2013).

87. *Id.* The court reasoned that determining additionality is inherently uncertain, regardless of the chosen methodology, and that requiring ARB to achieve certainty would require the abandonment of the offset program. Since all parties agreed that ARB did have the legislative authority to implement an offset program, the court declined to set a standard for certainty that would be impossible to achieve. *Id.* at 24–25.

determining additionality and judicial deference to agency expertise, the trial court's decision is likely to be upheld.

IV. LESSONS FROM THE LITIGATION

The lawsuits against California's climate program in general, and its cap-and-trade program in particular, likely reflect environmental justice groups' frustration that AB 32's environmental justice provisions have failed to play a significant role in the law's implementation. Of course, many AB 32 programs will have important co-pollutant benefits, particularly in the transportation and power sectors. At the same time, however, except for the non-regulatory energy efficiency and co-pollutant benefits audits, the Agency's industry provisions did not integrate co-pollutant considerations, a significant concern to groups facing concentrated and intractable pollution in their communities.⁸⁸

Reactions to the environmental justice litigation were strong. Environmentalists questioned whether the environmental justice community was fundamentally undermining climate change progress, and playing into the hands of those opposed to climate action.⁸⁹ Environmental justice groups, for their part, did not perceive themselves as undermining AB 32 because, from their perspective, greenhouse gas trading programs have proven not only unjust, but also ineffective. Thus, from their view, the lawsuits were not only about their particular environmental justice

88. Tellingly, in the Fall 2013 discussion draft of the first update to the Scoping Plan, all the public health benefits from mitigation measures were attributed to reductions in non-industrial sectors. *See Scoping Plan First Update Discussion Draft, supra* note 32, at 56.

89. *See* Farber, *supra* note 1 at 3 (observing tension between environmental and environmental justice organizations over the role of environmental justice in climate policy, especially in relation to the litigation to block California's cap-and-trade program); Alan Ramo, *Update: Order Temporarily Stayed Pending Further Briefing on Stay*, GOLDEN GATE UNIVERSITY CENTER ON URBAN ENVIRONMENTAL LAW BLOG (May 23, 2011), <http://ggucuel.org/update-on-ab-32-case-judge-issues-narrow-writ> (observing that the Petitioners had "taken a bit of heat from mainstream environmental organizations"). Alan Ramo, *Failure to Launch*, THE RECORDER (Apr. 22, 2011, 1:46 PM), <http://digitalcommons.law.ggu.edu/cgi/viewcontent.cgi?article=1231&context=pubs> (alluding to the argument that CEQA should not be used to delay environmentally beneficial projects). *Cf.* Wyatt Buchanan, *Cap and Trade Sparks Renewed Political Debate*, S.F. CHRON. (June 12, 2011, 4:00 AM), <http://www.sfgate.com/green/article/Cap-and-trade-sparks-renewed-political-debate-2368496.php> (quoting Environmental Defense climate director statement that ARB backing away from cap-and-trade could galvanize the fossil fuel industry to oppose climate change measures and would be politically "crippling").

concerns; the lawsuits were designed to steer California away from a fundamentally flawed policy approach. Moreover, to the extent the agency's analysis did not comply with the state's environmental review statutes, environmental justice groups saw their role as holding the agency accountable.

As the cases recede, the question becomes not whether the environmental groups should have brought suit, but rather what can be learned from their lawsuits. Although many claims were raised, the cap-and-trade program is the flashpoint for the environmental justice community's reaction to AB 32 implementation. Therefore, the discussion below focuses on the environmental justice critiques of cap-and-trade. These critiques can be divided into two categories: claims rooted in traditional environmental justice themes like distributional and participatory justice, and claims rooted in the environmental justice community's deep suspicion about the efficacy of cap-and-trade as a climate policy mechanism.

A couple of caveats are in order. First, my intention is to deepen awareness of the environmental justice critiques and help secure their place on the climate policy table. Full resolution of the complex issues they raise is beyond the scope of this essay. Second, my goal in this Essay is to illuminate the views of environmental justice advocates; not expound my own views. As I have discussed elsewhere, my own view on cap-and-trade is highly context-specific, and I do not attempt to articulate the nuances of that position here.⁹⁰

A. Core Environmental Justice Considerations

1. The Role of Co-pollutant Considerations in Climate Policy

As noted implicitly throughout the foregoing, the environmental justice community believes that co-pollutant considerations are relevant to climate policy. That raises the threshold inquiry: should they be?⁹¹ As the potential impacts of climate change become increasingly certain and increasingly

90. See Alice Kaswan, *Climate Change, the Clean Air Act, and Industrial Pollution*, 30 U.C.L.A. J. ENVTL. L. & POL'Y 51 (2012) [hereinafter Kaswan, *Climate Change*]; Alice Kaswan, *Controlling Power Plants: The Co-Pollutant Implications of EPA's Clean Air Act § 111(d) Options*, 32 VA. J. ENVTL. L. ___ (forthcoming 2014) (article on file with author).

91. Some commentators argue that California's climate policy should focus solely on GHG reductions, and that indirect co-pollutant benefits should not be taken into consideration in policy design. See Todd Schatzki et al., *Addressing Environmental Justice Concerns in the Design of California's Climate Policy* (2009), available at http://www.analysisgroup.com/uploadedFiles/Publishing/Articles/Environmental_Justice.pdf. I provide a more in-depth exploration of the role of co-pollutants in climate policy in Kaswan, *Climate Change*, *supra* note 90, at 55–74 and in Alice Kaswan, *Greening the Grid and Climate Justice*, 39 ENVTL. L. 1143 (2009) [hereinafter Kaswan, *Greening the Grid*].

dire, the importance of reducing GHGs as a central objective is unquestionable. The issue of what else should be taken into account is controversial. Some suggest that the most important parameter is cost-effectiveness.⁹² Cost-effectiveness is critically important. Cost effective strategies could reduce overall economic impact and promote economic justice, since high energy and product prices disproportionately impact the poor. Cost-effectiveness could also reduce carbon leakage risks by reducing incentives for production to leave California. Finally, cost-effective strategies could increase policymakers' willingness to adopt more stringent GHG reduction targets, of benefit to all and, more particularly, to the poor and marginalized who will be most severely impacted by climate change. Without minimizing the importance of cost-effectiveness, however, other policy parameters are also relevant, including co-pollutant implications, technology-forcing incentives, potential job growth, and energy independence.⁹³

In the AB 32 context, the short answer to the role of co-pollutants and other considerations in program implementation is that the California Legislature resolved this question: it required ARB to seek to achieve multiple benefits, including co-pollutant benefits.⁹⁴ But that leaves larger questions unanswered: why, and how important a role should the pursuit of such co-benefits play?⁹⁵

Environmental justice advocates believe that co-pollutant impacts should play a significant role in climate policy because, from a long-term

92. See Ann Carlson, *Designing Effective Climate Policy: Cap-and-Trade and Complementary Policies*, 49 HARV. J. ON LEGIS. 207, 216 (2012).

93. Some of these goals are mutually reinforcing, while others present difficult tradeoffs. Of relevance to this essay, policies to maximize co-pollutant benefits could, in some instances, decrease cost-effectiveness if they increased the cost of GHG reduction. See *id.* at 210–11. At the same time, the benefits of reducing co-pollutants, measured in increased productivity and protected lives, could outweigh the additional costs of GHG reductions. See Boyce & Pastor, *supra* note 2, at 6; see also Kaswan, *Climate Change*, *supra* note 90, at 72–73. This essay does not attempt to resolve the debate; it merely argues that co-pollutant implications, and their relative costs and benefits, are a legitimate consideration.

94. See Boyce & Pastor, *supra* note 2 and accompanying text.

95. See Farber, *supra* note 1, at 4 (discussing disputes about the role of environmental justice in GHG policy design). Professor Ann Carlson suggests that AB 32 should focus primarily on GHG emissions reduction and that co-pollutant considerations should be addressed solely by federal and state air pollution control laws. See Ann Carlson, *AB 32 Lawsuit: Assessing the Environmental Justice Arguments against Cap and Trade*, LEGAL PLANET (Mar. 22, 2011), available at <http://legal-planet.org/2011/03/22/ab-32-lawsuit-assessing-the-environmental-justice-arguments-against-cap-and-trade/>.

perspective, climate policies are likely to have a pervasive impact on many features of modern society, including energy systems, infrastructure, industry, and community design. The EJAC has emphasized “the very significant stake that communities of color and low-income communities have in the policy choices and implementation of California’s greenhouse gas efforts[,]”⁹⁶ a stake that derives from the relationship between greenhouse gas emissions and fossil fuel use, and the recognition that “addressing greenhouse gas emissions is about fundamentally changing the way we make and use energy.”⁹⁷ As the EJAC states, “[p]eople of color and low-income communities are being crushed under an impossible load of emissions from fossil fuel usage,”⁹⁸ and so greenhouse gas regulations that affect fossil fuel use will have a major impact on these communities.

Moreover, when “efficiency” is considered in light of a policy’s total costs and benefits, rather than narrowly in terms of industrial cost-effectiveness, integrating co-pollutant implications into climate policy design could have efficiency as well as equity benefits.⁹⁹ Developing climate policies that indirectly influence such core features without attending to their ancillary impacts could lead to significant unintended negative consequences and fail to realize potentially substantial co-benefits.¹⁰⁰ The environmental justice community’s emphasis on co-pollutant implications reflects the view that climate policies will lead to greater social welfare gains if such considerations are included, rather than excluded from the climate policy debate.

The environmental justice community’s opposition to cap-and-trade, and the importance of co-pollutant provisions to the passage of AB 32, also send a signal about the complex politics of passing climate change legislation. The common wisdom is that, to the extent that integrating co-pollutant considerations into climate policies is resisted by industry or increases costs, it could impair the political feasibility of climate policies.¹⁰¹

96. EJAC 2008, *supra* note 22, at 8.

97. *Id.*

98. *Id.*

99. See Boyce & Pastor, *supra* note 2, at vi, 2–4. Boyce and Pastor emphasize that failing to address co-pollutant benefits would leave “potential health-care savings . . . lying on the ground (or drifting in the air).” *Id.* at vi.

100. See Boyce & Pastor, *supra* note 2, at 4–6 (summarizing numerous studies identifying the large co-pollutant benefits that could result from climate policies); Kaswan, *Climate Change*, *supra* note 90, at 62–69 (describing the benefits of including co-pollutant considerations in climate policy notwithstanding the existence of separate authorities for their control); Kaswan, *Greening the Grid*, *supra* note 91, at 1153–54.

101. Cf. Farber, *supra* note 1, at 30–31 (suggesting that cap-and-trade may be the only politically viable road forward and that efforts to achieve a “perfect” solution could impede progress on a politically acceptable approach), 41 (suggesting that the way forward may be cap-and-trade or nothing).

But it is also possible that integrating co-pollutant benefits—and other co-benefits—into climate policy debates could improve the political prospects for beleaguered climate policies. Political analysts suggest that climate policies’ co-pollutant and economic benefits have greater political salience than GHG reductions because they are more tangible and immediate. The projected economic benefits of AB 32, and its role in furthering California’s green technology industry, were frequently touted to promote the law’s passage.¹⁰² When a California ballot measure, Prop. 23, threatened to paralyze implementation, activists seeking to preserve the law repeatedly emphasized the law’s pollution reduction co-benefits as a reason to reject Prop 23,¹⁰³ and the law’s air pollution benefits, not its global warming benefits, were more influential to voters who preserved the law.¹⁰⁴

At the national level and in many states, comprehensive climate change legislation continues to falter. The reasons are complex and beyond the scope of this essay. Nonetheless, a holistic and populist strategy that integrates co-pollutant considerations in a meaningful way might enhance the political momentum for national climate legislation.¹⁰⁵ While industry may balk at the effort to tie together GHG and co-pollutant reduction goals, that linkage could help build a broader political coalition in support of much-needed comprehensive climate legislation.¹⁰⁶

102. See Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39, 66 (2007) (describing Governor’s promotion of the economic benefits to be reaped from climate controls).

103. See Boyce & Pastor, *supra* note 2, at vii (observing that advocates battling Prop. 23 “found that stressing the policy’s immediate health benefits was highly persuasive, particularly among communities of color, who often feel the brunt of dirty air”).

104. Bob Epstein, *Lessons from Prop 23 – Winning Environmental Campaigns in the “Tea Party” Era* 30, E2 ENVIRONMENTAL ENTREPRENEURS (last visited Dec. 12, 2013) <http://www.e2.org/ext/doc/Epstein-ERG-April2011.pdf;jsessionid=E9B951F26C26D6F4C21174D7EEBDA774> (describing poll showing that people who voted against Prop. 23 were more strongly motivated by concerns about air pollution and public health (18%) than by the need to address global warming (7%)).

105. See Boyce & Pastor, *supra* note 2, at 1. As Boyce and Pastor state: “Because co-pollutants have clear and immediate health impacts, recognition of the magnitude and distribution of co-benefits can broaden and deepen support for climate policy among diverse sectors of the public and legislators.” *Id.* at 1; see also Kaswan, *Climate Change*, *supra* note 90, at 74.

106. See Boyce & Pastor, *supra* note 2, at vii.

2. *Distributional Consequences*

a. *What are the Distributional Effects?*

The environmental justice challenges have highlighted the potential distributional effects of cap-and-trade. The distributional consequences of cap-and-trade programs are inherently uncertain; a trading program does not dictate reductions at all facilities. Instead, facilities can choose how much to emit so long as they buy enough compliance instruments (including both allowances and offsets). Therefore, even though emissions will go down in the aggregate, they could stay the same or even increase at facilities that choose to buy more compliance instruments.¹⁰⁷

While the distribution of GHG emissions is not significant, the distribution of associated co-pollutant emissions does matter. The degree of harm associated with co-pollutant emissions varies depending upon population densities and exposure to cumulative pollution burdens.¹⁰⁸ Also relevant is an industry's co-pollutant intensity: the ratio between co-pollutants and GHG emissions.¹⁰⁹ Moreover, environmental justice advocates emphasize the racial justice implications of trading. Communities of color and poor communities experience disproportionate exposure to co-pollutants,¹¹⁰ so trading creates a potential risk of maintaining or exacerbating existing disparities.

Professors Boyce and Pastor provide a useful illustration that helps illuminate the distributional issues.¹¹¹ They have identified two facilities that emit roughly the same carbon emissions: the La Paloma natural gas

107. Environmental justice advocates have long articulated their concerns about the distributional impacts of cap-and-trade in the context of traditional air pollutants. *See e.g.*, Lily N. Chinn, *Can the Market Be Fair and Efficient? An Environmental Justice Critique of Emissions Trading*, 26 *ECOLOGY L.Q.* 80 (1999); Richard Toshiyuki Drury et al., *Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy*, 9 *DUKE ENVTL. L. & POL'Y F.* 231 (1999); Stephen M. Johnson, *Economics v. Equity: Do Market-Based Environmental Reforms Exacerbate Environmental Injustice?*, 56 *WASH. & LEE L. REV.* 111 (1999).

108. *See* Boyce & Pastor, *supra* note 2, at 42–45 (discussing differences in cumulative impacts from multiple point sources). The authors focus on cumulative impacts from stationary sources. *See id.* Also relevant are cumulative impacts from mobile and area sources. *See id.*

109. *See* Boyce & Pastor, *supra* note 2, at 21–36 (discussing differences in co-pollutant intensity among and within industrial sectors).

110. *See* Boyce & Pastor, *supra* note 2, at ix, 9–10, 38–41. Boyce and Pastor note that “the three industrial sectors for which carbon reduction may be the most important—power plants, refineries and chemical manufacturing . . . also have the most disproportionate impacts on minorities” in considering exposure to toxics and to fine particulate matter. *Id.* at 39. For a list of studies documenting disproportionate exposure to industrial pollution, see Farber, *supra* note 1, at 26 n.106.

111. *See* Boyce & Pastor, *supra* note 2, at 2.

power plant located in a rural area with 600 residents within a six-mile radius, and an oil refinery in Torrance, California with 800,000 residents, and many other polluting facilities, within a six-mile radius. The oil refinery has a higher co-pollutant intensity than the natural gas facility— although both facilities emit the same levels of GHG gases, the oil refinery emits 350 tons of particulates per year, in comparison with 50 tons per year of particulates from the natural gas facility.

Given the greater exposed population, the higher co-pollutant intensity, and the presence of higher cumulative exposures, the co-pollutant risks and benefits at the Torrance facility are much greater than at the La Paloma power plant. If the Torrance facility were to purchase GHG allowances that allowed it to increase emissions, its higher co-pollutant intensity (seven times more particulates per ton of GHGs) would lead to higher associated co-pollutant emissions than would occur from similar allowance purchases at the power plant. Moreover, those co-pollutants would impact many more people (800,000 rather than 600 within a six-mile radius), and the impacted communities would already be exposed to higher baseline levels of pollution from cumulative sources. Thus, a trading program that allows the refinery to maintain or increase emissions and that decreases emissions only at the power plant could exacerbate disparities in co-pollutant exposures.

This is not to say that trading would inevitably lead to increases in co-pollutants in environmental justice communities. The federal Acid Rain Program, for example, did not intensify emissions in environmental justice communities.¹¹² In addition, entities participating in the GHG trading program must still comply with co-pollutant control requirements. Nonetheless, existing air pollution control requirements have failed to achieve healthy air and the additional reductions achieved indirectly through climate policy would provide important new benefits.¹¹³ Moreover, existing regulations do not cover all pollutants; many air toxics are unregulated.¹¹⁴ Nor do existing air pollution control requirements prevent all emissions

112. See e.g., Jason Corburn, *Emissions Trading and Environmental Justice: Distributive Fairness and the USA's Acid Rain Programme*, 28 ENVTL. CONSERVATION 323 (2001); Kaswan, *Climate Change*, *supra* note 90, at 98–99.

113. See Boyce & Pastor, *supra* note 2 at 14; Kaswan, *Climate Change*, *supra* note 90, at 65–69.

114. Boyce and Pastor report that less “than half of the chemicals reported in the USEPA’s annual Toxics Release Inventory . . . are subject to USEPA restrictions on point-source emissions.” Boyce & Pastor, *supra* note 2, at 13.

increases;¹¹⁵ they often control only the rate of pollution emissions, not their absolute quantity.¹¹⁶

The key question is not just the co-pollutant implications of cap-and-trade, but how they compare with other climate policy alternatives. The degree to which more traditional direct GHG regulations would constrain GHG and co-pollutant emissions increases would depend upon how they were designed. If direct GHG regulations imposed facility-specific caps on emissions, then they would not result in the associated co-pollutant increases that are possible in a cap-and-trade program. If, instead, they were designed like many traditional air pollution controls, then they too would permit absolute GHG emissions increases (and co-pollutant increases) so long as the *rate* of GHG emissions per unit of production did not increase.¹¹⁷ Nonetheless, relative to a cap-and-trade approach, direct GHG regulation of GHG emissions rates would bring emissions to a lower baseline, and that would, in turn, lower the starting point for any subsequent increases in operations and emissions.¹¹⁸

As or more importantly, environmental justice advocates seek to maximize co-pollutant reductions and their benefits, not simply prevent co-pollutant increases. A trading program does not ensure that emissions reductions occur where they are most needed: reductions in less polluted areas could enable allowance purchases that maintain emissions in more polluted areas, as would occur if the La Paloma plant reduced emissions and sold the allowances to the Torrance facility. Further, a trading program does not facilitate those GHG reductions that provide the largest

115. Increased emissions trigger regulatory review only when they reflect a modification to the facility that triggers “New Source Review” under the Clean Air Act, not when they reflect purely operational changes. See Kaswan, *Climate Change*, *supra* note 90, at 98; see also Alice Kaswan, *Environmental Justice and Domestic Climate Change Policy*, 38 *Envtl. L. Rep.* 10,287, 10,299–301 (2008) (discussing risk of co-pollutant increases).

116. Most emission controls establish emission-rate limitations: the facility can emit only so much of a pollutant per unit of energy or product created. Absolute emissions can increase as long as the rate of pollutant emissions does not increase. For criteria pollutants, some jurisdictions may, however, include absolute emissions limits in their state implementation plans to achieve national ambient air quality standards.

117. Direct regulation would likely impose energy efficiency requirements that would lower the rate of GHG emissions per unit of energy or product created. Facilities would become more efficient, lowering their baseline emissions. Nonetheless, the emissions rate standard would not prevent them from increasing production, and increasing absolute emissions, so long as they comply with the relevant *emissions rate* limitation.

118. As Professor Farber notes, regulators developing direct regulations take cost and feasibility into account and therefore are unlikely to establish uniform reduction requirements for differing kinds of facilities through direct regulation, so the risk of unequal reductions is present in traditional as well as market-based regulation. Farber, *supra* note 1, at 28–29. Nonetheless, unlike cap-and-trade, regulatory approaches would require at least some level of reduction at most emitting facilities.

associated co-pollutant benefits because facilities with low co-pollutant intensities, like natural gas fired power plants, could reduce emissions and thereby enable facilities with high co-pollutant intensities, like refineries, to continue their emissions.¹¹⁹

Environmental justice advocates contend that the failure to maximize pollution reductions in the state's most polluted areas could continue the legacy of unequal exposure.¹²⁰ As the Environmental Justice Advisory Committee stated in a letter transmitting its comments on the final draft of the Proposed Scoping Plan:

For urban areas of the state, the failure of ARB to include measures to reduce emissions from power plants, refineries, and other industrial sources means that ARB is turning its back on these severely negatively impacted communities. Allowing trading and offsets that will result in continued emissions in exchange for reductions (or tree preservation) elsewhere simply compounds the injury to these communities.¹²¹

Environmental justice advocates recommend that ARB “implement ARB’s goal to maximize co-pollutant reductions for all Industrial Sources including oil refineries [and] [p]rioritize direct, local control (not trading) [of] GHG

119. As Boyce and Pastor state, in light of the evidence that refineries’ co-pollutant intensity is much higher, on average, than power plant co-pollutant intensity, “any carbon-charge system in which refineries en masse buy their way out of cleanup and let most of the carbon reduction come instead from power plants would forego significant health co-benefits.” Boyce & Pastor, *supra* note 2, at 27. In addition, in some cases there are substantial co-pollutant intensity variations within sectors that suggest that targeting emission reductions at the most polluting facilities within sectors could maximize benefits. *Id.* at 31–32. The variation is strong, for example, in the power plant sector, where coal-fired power plants have a much higher co-pollutant intensity than natural-gas fired power plants. *Id.* at 32 n.8.

120. See Title VI Complaint, *supra* note 66, at 17–28 (describing potential disparate impact caused by California’s cap-and-trade program). The Title VI complaint relies heavily on data on the distribution of industry and demographic exposures reported in a study entitled: *Minding the Climate Gap*. See Manuel Pastor et al., *Minding the Climate Gap: What’s at Stake if California’s Climate Law Isn’t Done Right and Right Away*, USC DORNSIFE COLLEGE OF LETTERS, ARTS, AND SCIENCES (2000), <http://dornsife.usc.edu/assets/sites/242/docs/mindingthegap.pdf>.

121. Letter from Angela Johnson Meszaros and Jane Williams, Co-Chairs, EJAC, to Mary Nichols, Chairman, CARB (Dec. 10, 2008), in ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE, RECOMMENDATIONS AND COMMENTS OF THE ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE ON THE IMPLEMENTATION OF THE GLOBAL WARMING SOLUTIONS ACT OF 2006 (AB 32) ON THE PROPOSED SCOPING PLAN (2008), available at <http://www.arb.ca.gov/cc/ejac/proposedplan-ejaccommentsfinaldec10.pdf>.

sources where co-pollutants are significant (including refineries and industrial sources).¹²²

Offsets create an additional concern about the cap-and-trade program's co-pollutant implications. The use of offsets means that the covered sector will not make all of the reductions necessary to reach the cap; in-sector emissions will continue, having been "offset" by out-of-sector reductions. As a consequence, regulated entities, including industry, electric utilities, and transportation fuels, the primary sources of California pollution, will not reduce co-pollutants to the extent they would without offsets,¹²³ and the offset program will reduce the co-pollutant reduction benefits of the cap-and-trade program. Moreover, offsets that meet California standards but are outside California qualify. That means that offset benefits would be provided out-of-state, and possibly in other countries, while in-state pollution remains.¹²⁴

Offset projects may well produce their own environmental co-benefits, including better manure control on farms, protection of the ozone layer, urban and rural forestry protections, and, if and when international offsets are accepted, tropical forest conservation. They are also designed

122. EJAC 2008, *supra* note 22, at 40. As an alternative, the EJAC recommended imposing a 33 percent emission reduction target on refineries and industrial sources as well as numerous additional control measures. *Id.* at 41–42.

123. Letter from EarthJustice to Cal. Air Res. Bd. (Aug. 6, 2013), *available at* <http://www.arb.ca.gov/cc/ejac/meetings/080513/ejac-initial-recommendations-2013.pdf> [hereinafter EarthJustice]. The Environmental Justice Advisory Committee, designed to inform AB 32 implementation, continues to advocate for limits on the use of offsets because they "could diminish direct emission reductions in disadvantaged communities." THE ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE, INITIAL RECOMMENDATIONS TO INFORM DEVELOPMENT OF THE 2013 UPDATE TO THE AB 32 SCOPING PLAN 5 (2013), *available at* <http://www.arb.ca.gov/cc/ejac/meetings/080513/ejac-initial-recommendations-2013.pdf> [hereinafter EJAC 2013].

124. *See* EarthJustice, *supra* note 123, at 2; Global Warming Law (AB32) Shifts Responsibility from Polluters to Communities, PODOMATIC (July 11, 2011), http://postcarbon.podomatic.com/entry/2013-08-24T15_12_10-07_00 (interviewing Brent Newell, General Counsel for the Center on Race, Poverty, and the Environment). Environmental justice groups' arguments are rooted in AB 32 provisions requiring ARB to design its emission reduction program to maximize co-benefits in California. *See* CAL. HEALTH & SAFETY CODE, § 38501 (West 2013) (reduction measures should "maximize[] environmental and economic co-benefits for *California*." (emphasis added).

Although the four protocols adopted to date all envision domestic offsets, ARB has linked its program with Quebec, opening the door to offsets created in Quebec. ARB has also been working with international officials to develop potential forest conservation offsets derived from timber conservation in Mexico and Brazil. *See* Ramo, *supra* note 179, at 23. In anticipation of international offsets, and to limit their role, ARB has promulgated regulations that will allow the use of international offsets in meeting individual entity compliance obligations, but limit their use to 2 percent of the permissible 8 percent in the first two compliance periods (through 2017) and to 4 percent of the permissible 8 percent in the last compliance period (ending in 2020). *Id.* at 24.

to achieve economic benefits by lowering costs, a benefit that favors low-income consumers. The environmental justice community's stance implicitly suggests that sacrificing co-pollutant reduction benefits to achieve offset project benefits is not an appropriate tradeoff.

Clearly, opinions will differ on the relative importance of co-benefits from in-sector reductions versus the co-benefits from offset projects, and on the relative importance of obtaining in-state co-benefits. The offset litigation, and the environmental justice challenges to offsets, put these issues squarely on the table.

b. Do Stationary Source Emissions Matter?

Recent research by Prof. David Adelman has suggested that industrial toxic emissions are such a marginal component of most areas' overall pollution burden that emissions shifts from a GHG cap-and-trade program would have a negligible impact on relative pollution levels.¹²⁵ Accordingly, he argues, potential co-pollutant impacts should not stand as an obstacle to GHG pollution trading.¹²⁶ While Prof. Adelman's research provides important insights on the critical role that non-industrial sources play in toxic pollution, the distributional consequences of cap-and-trade remain relevant.

First, the prevalence of non-industrial pollution sources does not mean that industrial source emissions are irrelevant.¹²⁷ While changes in industrial emissions will not lead to dramatic percentage changes in absolute emissions levels when non-industrial sources constitute the primary contributors, those changes are nonetheless meaningful to impacted communities.¹²⁸ An increase in industrial emissions does not become less harmful or significant just because there are already many

125. David E. Adelman, *The Collective Origins of Toxic Air Pollution: Implications for Greenhouse Gas Trading and Toxic Hotspots*, 88 IND. L. J. 273, 321, 326 (2013).

126. Adelman argues that tailored control mechanisms could be implemented in the few instances where GHG trading could make a significant difference in associated co-pollutant toxic emissions. *Id.* at 327–30.

127. See Alice Kaswan, *GHG Trading and Co-Pollutants: Expanding the Focus*, CPRBLOG (Sept. 9, 2013), available at <http://www.progressivereform.org/CPRBlog.cfm?idBlog=038F9D48-C60E-14A7-E161BD89C2256287> [hereinafter Kaswan, *GHG Trading and Co-Pollutants*].

128. As Boyce and Pastor note, even if emission shifts appear to be “a ripple in a larger ocean of air pollution . . . one person’s ripple is another community’s wave.” Boyce & Pastor, *supra* note 2, at vii.

other sources of industrial emissions. And the potential to achieve decreases in industrial emissions does not become less important by virtue of the presence of many other sources. A key factor in determining the value of pollution reductions is the overall need for reductions, not simply the relative percentage reduction that can be achieved.¹²⁹

Second, as Prof. Adelman acknowledges, most studies evaluate pollutant levels at the county or census tract level, and could therefore fail to reflect “microscale” localized concentrations.¹³⁰ Few studies have monitored actual fence-line pollutant levels,¹³¹ and so Adelman uses emissions release data to predict potential microscale hotspots. Although he identified numerous potential sources that could cause localized impacts,¹³² he ultimately concludes that his census tract and county level studies would capture the relevant impacts of a GHG trading program.¹³³ However, it is not clear that these larger-scale analyses sufficiently capture the highly localized and cumulative impacts that are of immediate relevance to environmental justice communities.

Third, Prof. Adelman’s work concentrated on cancer risks from toxic emissions, not neurological risks from toxics or criteria pollutants. While not a large component of cancer risk, Professors Boyce and Pastor suggest that industrial sources are a significant source of the nation’s neurological risk, particularly in census tracts facing the highest overall risk levels.¹³⁴ Moreover, stationary sources contribute significantly to criteria pollutant pollution, generating 95 percent of SO₂ emissions (largely from coal-fired

129. For example, a 2 percent reduction in emissions could be more important in a heavily polluted and densely populated area than a 10 percent reduction in a less polluted and less densely populated area. See Kaswan, *GHG Trading and Co-Pollutants*, *supra* note 127.

130. See Adelman, *supra* note 125, at 297, 300.

131. The primary existing study was done in Corpus Christi, Texas, and showed relatively low localized emissions. See *id.* at 301–02.

132. With a threshold of twenty pounds per day of air toxics, Adelman predicts 1390 facilities capable of generating microscale hot spots, focusing on OSHA carcinogens. With a threshold of fifty pounds per day, he predicts 750 potential microscale hot spots. *Id.* at 302. Somewhat lower numbers are predicted using a different toxics test. *Id.*

133. Adelman concludes that many of the facilities do not have significant GHG emissions, and so trading would not have a large impact on associated co-pollutant levels. *Id.* at 303. Furthermore, he suggests that those with significant GHG emissions would also be considered significant at the census tract level and are adequately addressed by his census-tract-level data. *Id.*

134. See Boyce & Pastor, *supra* note 2, at 7–8. Point sources contribute 23 percent of neurological risk in the census tracts facing the top 10 percent population risk and contribute 42 percent of neurological risk in the census tracts with the top 1 percent population risk. *Id.* See Boyce & Pastor, *supra* note 2, at 7–8. Point sources contribute 23 percent of neurological risk in the census tracts facing the top 10 percent population risk and contribute 42 percent of neurological risk in the census tracts with the top 1 percent population risk. *Id.* at 8 (Table 3).

power plants), 40 percent of NO_x emissions, and 14 percent of fine particulate emissions.¹³⁵ Thus, while mobile and area sources of toxics may marginalize the relative role of industrial toxic emissions in causing cancer, industrial emissions remain highly relevant to relative neurological toxics risks and exposure to criteria pollutant emissions. Prof. Adelman's work reveals the critical role of mobile and small sources to air toxics pollution, but does not obviate the need for attention to stationary source emissions.

c. ARB's Approach to Cap-and-Trade's Distributional Consequences

As noted above, environmental justice groups' legal challenges to ARB's analysis of the cap-and-trade program's co-pollutant distributional impacts failed. Although not subject to litigation, there are two additional pieces to the environmental justice story: ARB's Adaptive Management Plan and a new law directing allowance auction proceeds to disadvantaged communities.

ARB acknowledged the potential for localized increases in co-pollutant emissions and developed an Adaptive Management Plan to address that risk.¹³⁶ Annually, the agency will monitor facility emissions, ambient air quality data, and facility plans to determine whether any emissions increases have or are likely to occur.¹³⁷ The agency will then assess whether the increases are caused by the cap-and-trade program or, instead, are caused by factors such as economic growth, increased consumer demand, changing industry variables, or independent regulatory requirements.¹³⁸ If the increase is caused by the cap-and-trade program, ARB will assess whether it will have an adverse localized effect.¹³⁹ If the program causes an increase that has an adverse effect, then ARB will develop a response.¹⁴⁰ The plan provides little detail on the nature of the response, and states only that it

135. *Id.* at 8.

136. *Adaptive Management Plan for the Cap-and-Trade Regulation*, CAL. AIR RES. BD., (Oct. 10, 2011), available at http://www.arb.ca.gov/cc/capandtrade/adaptive_management/plan.pdf.

137. *Id.* at 6–18.

138. *Id.* at 24–25; 26–27.

139. *Id.* at 25.

140. *Id.* at 27–28.

could include the adoption of additional regulatory requirements, using funds obtained from the sale of allowances to support local mitigation projects, coordination with other agencies to provide additional incentives for energy efficiency or other emission reduction activities within the community, or modifications to the [Cap-and-Trade] Regulation.¹⁴¹

In addition to the Adaptive Management Plan for the cap-and-trade program, the Air Resources Board, in conjunction with the overarching California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment, is, as of this writing, exploring a new initiative to track the broader impacts of all AB 32 measures on environmental justice communities.¹⁴² This effort includes but is not limited to the data that would be gathered under the Adaptive Management Plan.

Alegria de la Cruz, the Legal Director for the Center on Race, Poverty and the Environment, which has litigated the environmental justice cases, has argued that the Adaptive Management Plan “creates impossibly high hurdles for ARB to jump before it could take any action to protect people’s health as a result of increased emissions.”¹⁴³ She argues that it will be very difficult for ARB to track emissions increases and to determine whether the cap-and-trade program, rather than some other factor, “caused” an emissions increase.¹⁴⁴ The EJAC, in suggestions for the next Scoping Plan, has argued that “[t]he Adaptive Management Plan should provide for proactive solutions when unintended environmental justice impacts are discovered.”¹⁴⁵ More fundamentally, the Adaptive Management Plan is narrowly tailored to addressing trade-induced emissions increases, and does not address the environmental justice advocates’ larger objective of maximizing co-pollutant reduction benefits.

A long-standing environmental justice initiative to direct auction revenues to disadvantaged communities came to fruition in 2012 with the enactment of SB 535, which directs 25 percent of auction revenue to disadvantaged

141. *Id.* at 27.

142. *Discussion Draft, Assessing the Effects of Climate Change Mitigation Programs in Environmental Justice Communities*, CAL. ENVTL. PROT. AGENCY (Oct. 21, 2013), available at <http://www.arb.ca.gov/cc/ejac/meetings/102213/tracking-indicators.pdf>.

143. Global Justice Ecology Project, “*Cap-and-Trade Will Fail*”: *An Interview with Alegria de la Cruz of the Center on Race, Poverty and the Environment*, CLIMATE CONNECTIONS (Nov. 16, 2011), available at <http://climate-connections.org/2011/11/16/cap-and-trade-will-fail-an-interview-with-alegria-de-la-cruz-of-the-center-on-race-poverty-and-the-environment/>.

144. *Id.*

145. See EJAC 2013, *supra* note 123.

communities.¹⁴⁶ The legislative findings acknowledged AB 32’s recognition of “the potential vulnerability of California’s low-income and disadvantaged population to efforts to reduce greenhouse gas emissions,”¹⁴⁷ and enacted SB 535 to continue implementing AB 32 “by achieving additional emission reductions and mitigating direct health impacts on California’s most impacted and disadvantaged communities.”¹⁴⁸ Disadvantaged communities will be identified based on “geographic, socioeconomic, public health, and environmental hazard criteria,” including areas experiencing disproportionate pollution burdens and areas that have low socioeconomic indicators.¹⁴⁹ Ten percent of the proceeds must be invested directly in the targeted communities; the remaining 15 percent need not be directly invested, but must accrue to the communities’ benefit.¹⁵⁰ While the funds are not directly linked to mitigating co-pollutant burdens, such mitigation is one possible use for the funds.

ARB’s Adaptive Management Plan and the auction revenue flow to environmental justice communities do not appear to have allayed environmental justice concerns about the cap-and-trade program, at least in rhetoric. Nonetheless, at present, environmental justice communities are continuing to participate in AB 32 implementation on a variety of fronts, and it is unclear whether they will take additional steps to oppose cap-and-trade.

3. *Community Participation in Facility Emissions Decisions*

Along with distributional justice, participatory justice is a core environmental justice theme.¹⁵¹ A profound difference between market-based and traditional regulatory approaches is that traditional approaches provide a greater role for government and communities in facility emissions decisions than market-based mechanisms.

Under traditional regulatory approaches, the public can engage in the threshold regulatory process as the agency establishes basic program requirements. Thereafter, the public has the opportunity to engage in public

146. See Legis. Counsel’s Digest, S.B. 535, 2011-2012 Leg., Reg. Sess. (Cal. 2012), <http://leginfo.legislature.ca.gov/faces/billSearchClient.xhtml> (search for bill number 535, with session year set as “2011-2012,” and with house set as “Senate”; follow hyperlink “SB-535”).

147. *Id.* § 1(b).

148. *Id.* § 1(h).

149. CAL. HEALTH & SAFETY CODE § 39711 (2013).

150. *Id.* § 39713(b).

151. See Kaswan, *Domestic Adaptation*, *supra* note 1, at 10, 302–03.

hearings in facility-specific permitting proceedings. Although local communities cannot control permitting, facility-specific public hearings provide an opportunity for affected communities to become informed about and offer their input on proposed facility operations. These permit proceedings give community members the opportunity to directly engage the facilities in their midst, providing some measure of informal accountability even in the absence of direct legal control.

Market-based regulatory approaches provide opportunities for public input at the threshold regulatory level; the public can comment on cap-and-trade rules, offset rules, and other program parameters. However, cap-and-trade and other market-based mechanisms allow individual facilities substantial flexibility to make autonomous emissions decisions. Facilities must report their emissions and demonstrate that they hold sufficient compliance instruments to cover their emissions, but there is no public process for determining the level of emissions or the steps they will take to reduce emissions.¹⁵² Facilities have full autonomy to reduce GHG emissions or purchase compliance instruments without prior consultation with government or community members.¹⁵³ As environmental justice advocates have stated: “Trading is undemocratic, secretive, and excludes the public from decisionmaking about whether and how to address greenhouse gas emissions.”¹⁵⁴ The participation deficit should not be

152. AB 32 requires GHG emissions reporting. *See* CAL. HEALTH & SAFETY CODE § 38530. Every three years, covered entities must show that they hold sufficient allowances to cover the preceding three years’ emissions. On an annual basis, they must show that they have accumulated allowances to cover at least 30 percent of the preceding year’s emissions. *See* Brisson et al., *supra* note 28, at 4.

153. Similarly, in a carbon tax context, facilities can autonomously decide whether to reduce emissions or pay the tax.

154. *The Cap-and-Trade Charade for Climate Change*, EJ MATTERS, www.ejmatters.org/docs/Reasons.pdf (last visited Feb. 17, 2014) [hereinafter EJ Matters, *Cap-and-Trade Charade*]. In a declaration against cap-and-trade by environmental justice groups, the groups assert that “carbon trading is undemocratic because it allows entrenched polluters, market designers, and commodity traders to determine whether and where to reduce greenhouse gases and co-pollutant emissions without allowing impacted communities or governments to participate in those decisions.” *The California Environmental Justice Movement’s Declaration on Use of Carbon Trading Schemes to Address Climate Change*, EJ MATTERS, <http://www.ejmatters.org/declaration.html> (last visited Dec. 11, 2013). Professor Sean Hecht suggests that the lack of community input in trading programs “may be the EJ community’s most fundamental objection to trading programs.” *See* Sean Hecht, *Reflections on Environmental Justice and AB 32’s Emissions Trading Program*, Legal Planet (Mar. 23, 2011), <http://legal-planet.org/2011/03/23/reflections-on-environmental-justice-and-ab-32s-emissions-trading-program/>. Prof. Hecht observes that “[i]t is a core belief of EJ advocates that a process lacking in community engagement at the project or plant level cannot lead to a sustainable long-term set of solutions to the environmental inequities they are trying to eradicate,” even if the policies in question provide environmental justice benefits. *Id.*

overstated: to the degree that GHG allowance decisions implicate associated co-pollutants in ways that trigger the need for permit modifications, the public could indirectly become involved. Nonetheless, many GHG decisions, because they concern the degree of reductions, not potential increases, will not trigger co-pollutant permitting processes and will therefore occur without public participation.

Market-based mechanisms' industrial autonomy is an advantage from both government and industry viewpoints: the government does not have to assess operational options and negotiate permits, and industry does not have to engage in time- and resource-intensive permitting processes. From a community perspective, however, industry autonomy comes at the expense of participation.

B. Effectiveness

The environmental justice community's opposition to cap-and-trade has not only been rooted in core environmental justice concerns, but has reflected deep critiques of the effectiveness of cap-and-trade—of its capacity to succeed in reducing GHGs and creating incentives for fundamental shifts in our energy, industrial, and land use infrastructure. In fact, the California environmental justice movement's support of a climate fee, another market-based mechanism that poses all of the distributional and participatory challenges of cap-and-trade, can be at least partly explained by the environmental justice groups' belief that a fee would be a more effective mechanism for reducing emissions than cap-and-trade.¹⁵⁵ Moreover, the environmental justice groups' belief that cap-and-trade is completely dysfunctional helps explain why environmental justice groups brought the lawsuits, notwithstanding their deep concern

155. See *Theory vs. Reality, Debunking the Myths of Cap-and-Trade*, EJ MATTERS, [http://www.ejmatters.org/docs/GHG-Myths_FactsheetFINAL\[1\].pdf](http://www.ejmatters.org/docs/GHG-Myths_FactsheetFINAL[1].pdf) at 6–7 [hereinafter *Theory vs. Reality, Debunking the Myths of Cap-and-Trade*]. This is not to say that a carbon fee (or, in ordinary parlance, a carbon tax) *would* be more effective than cap-and-trade; that is a larger issue beyond the scope of this essay. Other likely reasons for environmental justice groups' support of a tax over cap-and-trade likely relate to deeper structural differences between cap-and-trade and taxes. A cap-and-trade program gives facilities an opportunity to profit from the sale of allowances and otherwise reap the value of allowances. Philosophically, environmental justice groups balk at a pollution control system that becomes a profit-making opportunity for polluting businesses. A tax, in contrast, requires polluters to “pay” for their pollution and ensures that the taxpayers receive the full economic value.

about GHG emissions. Years before bringing suit, they had already stated the principle that “Doing Something Dysfunctional Is Not Better than Doing Nothing at All.”¹⁵⁶

1. Stringency

The capacity of a cap-and-trade program to lead to real emissions reductions depends entirely upon the stringency of the cap. If a cap is stringent enough, then the number of allowances distributed will be less than actual emissions and the regulated sectors will have to reduce their emissions. If the cap is not stringent enough, then the number of allowances in the system could equal or even exceed actual emissions. Under these circumstances, the cap-and-trade program will fail to lead to actual emissions reductions.¹⁵⁷ Environmental justice advocates point to “lax cap” problems in existing GHG trading programs, including the European Union’s Emissions Trading Scheme¹⁵⁸ and the northeastern states Regional Greenhouse Gas Initiative for reducing GHGs from the power sector.¹⁵⁹

Although traditional direct regulatory mechanisms do not set absolute emissions levels and could lead to emissions increases when production levels increase, they, unlike a cap-and-trade program, ensure that GHG emission rates are being reduced regardless of the level of economic activity. Similarly, although a carbon tax does not guarantee a certain level of reductions, it will continue to send a market signal for emissions reduction, whatever the state of the economy. This is not to say that either direct

156. *Id.* at 5.

157. Environmental justice advocates have noted that insufficiently stringent caps result in “over-supply of permits, low credit prices, and no reductions in the amount of pollution released.” EJ MATTERS, *Cap-and-Trade Charade*, *supra* note 154, at 1.

158. *See Theory vs. Reality: Debunking the Myths of Cap-and-Trades*, *supra* note 155, at 1. For more information on the ETS’ lax cap in the first phase of the program, *see* Lesley K. McAllister, *The Overallocation Problem in Cap-and-Trade: Moving Toward Stringency*, 34 COLUM. J. ENVTL. L. 395, 411–12 (2009). With the economic recession in 2008, the ETS surplus has worsened and, at present, the ETS anticipates a surplus of allowances over emissions throughout the 3rd phase of the program, through 2020. *See* European Commission, Report from the Commission to the European Parliament and the Council: The State of the European Carbon Market in 2012 4–6 (2012), *available at* http://ec.europa.eu/clima/policies/ets/reform/docs/com_2012_652_en.pdf.

159. *See Theory vs. Reality: Debunking the Myths of Cap-and-Trade*, *supra* note 155, at 2; *see also* JONATHAN L. RAMSEUR, CONG. RESEARCH SERV., R41836, THE REGIONAL GREENHOUSE GAS INITIATIVE: LESSONS LEARNED AND ISSUES FOR POLICYMAKERS 5–7 (2013) (describing how the RGGI cap has been substantially higher than actual emissions). The RGGI states have agreed in principle to reduce the cap substantially going forward. *Id.* Each state in the program must implement the new cap through state-level adjustments to state programs. *Id.*

regulations or carbon taxes are inherently more stringent; each system presents its own risks of insufficient stringency. Nonetheless, cap-and-trade alternatives avoid the specific risk of a lax cap.

The risks of a lax cap are most evident when caps are based on inflated projections based on either past or expected future emissions. Because California's cap is derived from the legislatively-set goal to attain 1990 emissions levels by 2020, it avoids the risk, experienced in the European Emissions Trading System, of basing the cap on overestimates of future emissions. Nonetheless, the most recent projections for California suggest a lax cap: the number of available allowances, combined with offsets, is expected to exceed the level of actual emissions throughout most of the life of the program.¹⁶⁰ Analysts attribute the low level of existing and projected emissions to the economic recession and the effectiveness of the state's complementary reduction measures (like the Renewable Portfolio Standard and auto emission standards).¹⁶¹ The low level of existing emissions, coupled with the availability of offsets, is likely to result in little demand for allowances (and few program-induced emission reductions) through 2020.¹⁶² The California program will partially constrain the effects of oversupply through a price floor mechanism. If allowance prices fall below the price floor, that mechanism will withhold allowances from quarterly auctions, effectively lowering the short-term cap.¹⁶³

California's cap, and the cap-and-trade program, may therefore do relatively little to achieve emission reductions in California; other programs appear to be generating most of the emissions reductions. That does not mean the cap-and-trade program is useless. The price floor maintains a modest price signal, and the cap acts as a backstop to achieve the state's reduction goals if, in the end, the complementary measures fail to

160. See Press Release, Thomson Reuters, Thomson Reuters Point Carbon Lowers California Carbon Price Forecast by Two Thirds (Sept. 10, 2013), *available at* <http://www.pointcarbon.com/aboutus/pressroom/pressreleases/1.2562573>. Point Carbon analysts state that California emissions are likely to "remain[] below the allowance cap until at least 2017 with offsets subsequently making the market oversupplied through 2019." *Id.*

161. *Id.*

162. *Id.*

163. The price floor for 2012 was \$10/ton, and rises by 5 percent over inflation each year. See CENTER FOR CLIMATE AND ENERGY SOLUTIONS, CALIFORNIA CAP-AND-TRADE PROGRAM SUMMARY 3 (2013), *available at* <http://www.c2es.org/docUploads/calif-cap-trade-01-13.pdf>. Unsold allowances, withheld to maintain the price floor, are placed in an ARB "auction holding account" and sold (to a limited degree) in later auctions. See Brisson, et al., *supra* note 28, at 2910–11. In that way, the number of available allowances will not exceed emissions, retaining at least some incentive for reductions.

sufficiently reduce emissions or if renewed economic growth causes unanticipated emissions increases. Nonetheless, environmental justice advocates have highlighted the challenge of creating a cap that itself drives real reductions.

2. *Innovation and Transformative Incentives*

A weak cap-and-trade program could interfere with another central climate policy goal: generating transformative incentives. While a stringent cap would create strong transformative incentives, a weak cap would not only fail to reduce emissions, as noted above, but also lead to low allowance and offset prices that would fail to create a market signal for investing in energy efficiency or developing innovative technologies.¹⁶⁴ California's price floor prevents the price from bottoming out, but it is an open question whether having allowances prices at the price floor, as is anticipated throughout most of the program, will induce investment and development in low-carbon alternatives.¹⁶⁵

Moreover, environmental justice advocates argue that a cap-and-trade program's price volatility could hamper innovative investments. While cap-and-trade programs are intended to offer relative certainty about emissions levels, they do not offer price certainty: prices can fluctuate with the supply of and demand for allowances. California's cap-and-trade program includes a price floor and price ceiling to control extremes, but it nonetheless permits a certain degree of variation. Environmental justice groups allege that that volatility deters investment because developers want greater certainty that they will achieve an adequate return on their investment.¹⁶⁶

164. Analysts suggest that the RGGI program's lax cap and low allowance prices have failed to induce emissions reductions, although the allowance auctions have generated at least a slight carbon price. See Ramseur, *supra* note 159, at 7. The European ETS' low allowance prices have reportedly failed to discourage the development of coal-fired power. See *Carbon Trading ETS, RIP?*, *The Economist* (Apr. 20, 2013).

165. Allowance prices are likely to remain at the price floor because analysts predict that the number of allowances, plus available offsets, will exceed the cap throughout most of the life of the program, generating little demand for allowance purchases. See *supra* note 160 and accompanying text.

166. See EJ MATTERS, *Cap-and-Trade Charade*, *supra* note 154; EJ MATTERS, *Continuing to Debunk the Myths of Cap-and-Trade, Round 2*, EJMATTERS.ORG, <http://www.ejmatters.org/> (last visited Mar. 2009).

3. Market Manipulation, Fraud, and Windfall Profits

Environmental justice groups also fear that corporate players could manipulate markets.¹⁶⁷ They fear that participants could hoard allowances, creating an artificial shortage, and then sell them when allowance prices are high. Recognizing these risks, California regulators have attempted to prevent market manipulation through controls on allowance purchases and the allowance auction process.¹⁶⁸

The potential for corporate windfall profits, gained at the expense of consumers, have been another environmental justice concern.¹⁶⁹ In the European ETS, utilities subject to the program were given allowances for free but nonetheless responded to the program by raising consumer energy prices, generating millions in company profits while consumers faced higher energy prices.¹⁷⁰ California has attempted to reduce the risk of such profits in its program. Like in the ETS, California is providing allowances to utilities for free. However, California is requiring utilities to use the allowance value for consumer benefits.¹⁷¹

167. See EJ MATTERS, *Cap-and-Trade Charade*, *supra* note 154, at 1 (noting Los Angeles Times' report that the opportunities for profit presented by a trading program "presents opportunities for Enron-style market manipulation"); *Theory vs. Reality: Debunking the Myths of Cap-and-Trade*, *supra* note 155, at 2–3.

168. ARB has established "holding limits" that restrict the number of compliance instruments that regulated entities are allowed to hold at any one time. Brisson et al., *supra* note 28, at 4. The ARB regulations also limit the percentage of total allowances that any one entity can purchase at the quarterly auctions. See *id.* at 5.

169. See EJ Matters, *Cap-and-Trade Charade*, *supra* note 154.

170. See CHRISTIAN EGENHOFER ET AL., CENTRE FOR EUROPEAN POLICY STUDIES, THE EU EMISSIONS TRADING SYSTEM AND CLIMATE POLICY TOWARDS 2050: REAL INCENTIVES TO REDUCE EMISSIONS AND DRIVE INNOVATION? 14–16 (2011), available at <http://www.ceps.eu/ceps/dld/4097/pdf> (describing windfall profits in the European Union).

171. More specifically, California will distribute allowances to utilities for free, but then require them to submit the allowances for sale at the state's quarterly allowance auctions. Sale proceeds must then be dedicated to ratepayer benefit. Brisson et al., *supra* note 28. The California Public Utilities Commission has specified that 85 percent of the proceeds should be returned to residential customers in the form of rate reductions or climate dividends, and that the remaining 15 percent can go to small businesses and industries facing strong competition. See Carolyn Whetzel, *Residential Consumers Get Most of the Revenue from Utilities' Sale of Cap-Trade Allowances*, 44 ENVT REP. 57 (Jan. 4, 2013); see also CALIFORNIA PUBLIC UTILITIES COMMISSION, ALJ/UNC/JHE/ AVS/GD2, DECISION ADOPTING CAP-AND-TRADE GREENHOUSE GAS ALLOWANCE REVENUE ALLOCATION METHODOLOGY FOR THE INVESTOR-OWNED ELECTRIC UTILITIES (2012), available at <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M039/K594/39594673.PDF>.

4. Offsets and Program Effectiveness

As discussed above, the environmental lawsuits against the offset program challenge the agency's methodology for determining whether offsets are "additional," and, ultimately question the program's integrity. Critics have raised other concerns about the offset program's integrity as well. For example, particularly in the forestry context, there are many questions about how to measure projected carbon sequestration.¹⁷² Moreover, trees planted for urban forestry projects must be maintained and monitored for 100 years,¹⁷³ a timeframe far outside the scope of most regulatory obligations and likely to be difficult to enforce. The forestry context raises yet another concern: leakage; that is, that conservation of one area will simply lead to logging elsewhere, generating no "additional" reductions.¹⁷⁴ In addition, if the current planning process for forest offsets from Brazil and Mexico generates acceptable international offsets, advocates fear that the projects will lack integrity, undermine indigenous rights, and be inadequately monitored and enforced.¹⁷⁵

The integrity of offsets has significant implications for the integrity of the cap-and-trade program because offsets can be used to cover a significant percentage of the total expected reductions from the program. Covered facilities can use offsets to fulfill up to 8 percent of their compliance obligation—to cover up to 8 percent of their total emissions.¹⁷⁶ Focusing on the extent to which offsets can be used to offset required emissions reductions, the percentage is much larger, with estimates ranging up to 85 percent.¹⁷⁷ The extent to which offsets could substitute for reductions in

172. See e.g., JONATHAN L. RAMSEUR, CONG. RESEARCH SERV., RL34436, THE ROLE OF OFFSETS IN A GREENHOUSE GAS EMISSIONS CAP-AND-TRADE PROGRAM: POTENTIAL BENEFITS AND CONCERNS 19–20 (2009).

173. See Citizens Climate Lobby, slip op. at 16 (describing longevity requirement in Urban Forest Protocol).

174. See Ramseur, *supra* note 172, at 16.

175. See Letter from Activist San Diego, et al., to Governor Jerry Brown and ARB Chair Mary Nichols, (July 10, 2012), available at libcloud.s3.amazonaws.com/93/ca/b/2271/Letter_to_Governor_and_ARB_re_CA_REDD_final.pdf.

176. See Chapter 6: What Are the Requirements for Offset Credits and How Are They Issued?, CAL. AIR RES. BD., (Dec. 19, 2012), available at <http://www.arb.ca.gov/cc/capandtrade/offsets/chapter6.pdf>.

177. The *New York Times* reported an ARB official's acknowledgement that, under certain scenarios, offsets could cover up to 85 percent of all anticipated reductions. See Anne C. Mulkern, *Offsets Could Make up 85% of Calif.'s Cap-and-Trade Program*, N.Y. TIMES, Aug. 8, 2011. The Environmental Defense Fund contests this assertion, arguing that it rests upon unrealistic assumptions about the practical operation of the program and that in-sector reductions are more likely than full use of allowable offsets. See *The Role of Offsets in California's Cap-and-Trade Regulation, Frequently Asked Questions*, ENVIRONMENTAL DEFENSE FUND (Apr. 2012), <http://www.edf.org/sites/default/files/OffsetsPercentagesFAQFinal%20041612.pdf>.

the covered sectors is a complex and highly contested issue beyond the scope of this essay. Nonetheless, it is worth noting that some estimates go so far as to suggest that facilities could cover all the reductions required by the *cap-and-trade* program itself using offsets.¹⁷⁸ Under this scenario, the covered sectors would make real reductions as a consequence of complementary measures like the Renewable Portfolio Standard, the low-carbon fuel standard, auto standards, consumer efficiency standards and other complementary measures, but the reductions to be induced exclusively by the *cap-and-trade* program could all be covered by offsets rather than met through in-sector reductions.¹⁷⁹ Whatever the precise percentage, the debate makes clear that offsets could play a large role and that any defects in their integrity could have significant impacts on the integrity of the cap-and-trade program as a whole.¹⁸⁰

V. CONCLUSION

What legacy will the environmental justice challenges to AB 32 provide? Will the lawsuits engender enduring resentment and harden divisions among those working to address climate change? Or will they focus public attention on critical issues, like co-pollutants and the efficacy of alternative climate policies? Whatever one's views on the legal merits or political wisdom of the environmental justice litigation, the lawsuits provide an opportunity to deepen our awareness of the connections

178. See Maureen Nandini Mitra & Michael Stoll, *California's Market for Hard-to-Verify Carbon Offsets Could Let Industry Pollute as Usual*, EARTH ISLAND J. (July 3, 2012), http://www.earthisland.org/journal/index.php/elist/eListRead/californias_market_for_carbon_offsets_could_let_industry_pollute_as_usual/. Researchers suggest that offsets could represent “anywhere from 53 percent to 224 percent of required carbon reductions, measured cumulatively through the year 2020.” See *id.*

179. Prof. Alan Ramo explains that the allowance budget for 2020 will be 334.2 MMTCO₂E. Eight percent of that total, the amount that could be covered by offsets, is 26.7 MMTCO₂E. At the same time, ARB's current estimate for the emissions reductions to be achieved by the cap-and-trade program alone (and not induced by complementary measures) by 2020 is 18 MMTCO₂E. Thus, all of the emissions reductions projected to be reduced by the cap-and-trade program itself could be covered by offsets. See Alan Ramo, *The California Offset Game: Who Wins and Who Loses*, 20 HASTINGS W.-N.W. J. ENV. L. & POL'Y 109, 127–29 (2014).

180. See Mitra & Stoll, *supra* note 178 (quoting Brian Nowicki, California climate policy director for the Center for Biological Diversity, who states that: ““The integrity of the offsets is the integrity of the cap-and-trade program, because of how strongly the program is relying on them””).

between climate policy and pollution, and provide a reminder to continually monitor the effectiveness of critical climate change programs.