1-1-2014

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The California Offset Game: Who Wins and ?

Alan Ramo*

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Abstract

California is implementing the most comprehensive global warming regulatory program in the United States. A key part of this program is its cap-and-trade system. Integral to the cap-and-trade requirements are provisions for offsets, whereby companies, to meet their caps, can purchase credits from certain unregulated entities whose activities are deemed to have resulted in real and additional emission reductions. California has attempted to avoid the Kyoto Protocol’s project-by-project lengthy and problematic review of offsets with a performance standard approach for domestic offsets and a sector approach for international offsets. Offsets,

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even if done right, raise serious environmental justice questions as to who will benefit and who will be harmed as offsets are granted. California’s approach, however, also raises questions about how real these offsets will be, which has already lead to litigation. International offsets are even more troublesome. California needs to reconsider its approach and further limit the availability of these offsets if the program is to have integrity, achieve its goals and avoid environmental justice concerns.

I. Introduction

California is implementing the most comprehensive global warming regulatory regime in the United States, the California Global Warming Solutions Act of 2006, commonly known by its bill name, AB 32. The program’s short-term goal is to return California’s greenhouse gas emissions to 1990 levels by 2020.

A noteworthy and key part of this regime is its precedent setting cap-and-trade system. Like most carbon cap-and-trade systems, California provides for the creation of offsets by third parties that can be sold to capped facilities to use in lieu of required emission reductions or expensive allowances obtained at auction from the government or by purchase from other capped sources. If those offsets are real, they can enhance regulation by encouraging emission reductions from unregulated activities and reduce costs to regulated businesses. If they are unreal, they can undermine the entire program by blocking actual emission reductions.

California has a two-prong approach to offsets. Domestically, California allows offsets category by category using performance standards to determine if offsets are real. Internationally, California relies upon other countries to execute a geographical sector approach if California determines these other countries have sufficient systems in place to assure the offsets are reliable.

The biggest danger to cap-and-trade programs has been the ease with which the rules can be gamed. The original cap is set too high, delaying emission reductions for years. Or a glut of tradable permits, sometimes called credits or allowances, produce the appearance of compliance without any actual reductions. Or available phantom offsets cause the price of carbon to plummet, defeating the fundamental goal of cap-and-trade to put

1. See CAL. HEALTH & SAFETY CODE §§ 38500-38599 (Deering 2013).

2. The author uses the phrase “cap-and-trade” because the ARB describes its program as cap-and-trade. As discussed below, the ARB’s trading program incorporates offsets, making it technically a “hybrid” cap-and-offset program. See DAVID M. DRIESEN, ENVIRONMENTAL LAW, A CONCEPTUAL AND PRAGMATIC APPROACH, 310 2nd Edition, 2011.
a price on carbon and promote innovation and produce real pollution reductions.

California believes it has avoided these problems. However, the California offset game has just officially begun with cap-and-trade effective January 1, 2012. One lawsuit has already been filed challenging the legality of the offset program, and its ultimate fate now rests with a California Court of Appeal. Meanwhile, California is establishing linkages with provinces of other countries, beginning with Quebec, extending its offset program internationally. Whether the rules are fair and effective is very much in play.

II. California’s Global Warming Solutions Act

California’s cap-and-trade program is actually a small part of a larger regulatory initiative to address climate change. California’s AB 32 program is a collection of policies with one single goal, the reduction of California’s emissions to its 1990 levels of emissions. The lead agency is the California Air Resources Board ("ARB"). The ARB estimated that achieving emission reductions to 1990 levels would mean a 30% reduction from what would have been business as usual in 2020, a 15% reduction from 2008 levels.

However, achieving 1990 levels does not necessarily mean that the actual emissions in California alone will be at 1990 levels in 2020. Emission reductions outside of California will count towards the 1990 goal if they meet the program’s offset requirements that are more fully discussed below.

Having at least this 1990-related target, the California initiative has encompassed a variety of programs. These programs created by statute were gathered into a “Scoping Plan”, adopted in late 2008, to assure the meeting of the emissions limit in a manner that achieves “the maximum technologically feasible and cost-effective reductions.” The Legislature provided ARB a wide berth of discretion in picking emissions reduction tools:

The plan shall identify and make recommendations on direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and nonmonetary incentives for sources and categories of sources that the state board finds are necessary or desirable to facilitate the achievement of the maximum feasible

3. CAL. HEALTH & SAFETY CODE § 38550 (Deering 2013).
4. CAL. HEALTH & SAFETY CODE § 38510 (Deering 2013).
6. CAL. HEALTH & SAFETY CODE § 38561 (Deering 2013).
and cost-effective reductions of greenhouse gas emissions by 2020.\textsuperscript{7}

ARB then had full authority to “adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions from sources or categories of sources, subject to the criteria and schedules set forth in this part.”\textsuperscript{8} The regulations were to be adopted by January 1, 2011, for implementation beginning January 1, 2012.\textsuperscript{9}

ARB’s authority was constrained by nine policy considerations “to the extent feasible.”\textsuperscript{10} These considerations in general implemented a number of the legislature’s concerns that the program: (a) be consistent with environmental justice (e.g., “do not disproportionately impact low-income communities”\textsuperscript{11}); (b) minimize costs and maximize benefits (e.g., “consider cost-effectiveness”\textsuperscript{12}); and (c) be effective in achieving greenhouse gas reductions (e.g., “minimize leakage”\textsuperscript{13}).

In the 2008 Scoping Plan, the largest single category of reductions was originally to come solely from the cap-and-trade program, around 34.4 million metric tons of carbon dioxide equivalent (MMTCO\textsubscript{2}E), almost 20% of the 174 MMTCO\textsubscript{2}E sought to reach 1990 levels.\textsuperscript{14} That figure has more recently been adjusted to about 18 MMTCO\textsubscript{2}E, about 10% of the needed reductions.\textsuperscript{15}

As a result, the largest reductions now are from automobile requirements, 31.7 MMTCO\textsubscript{2}E, about 18% of the needed reductions. AB 42823 (2002) required the so-called Pavley standard,\textsuperscript{16} which the Obama

\begin{itemize}
\item \textsuperscript{7} CAL. HEALTH & SAFETY CODE § 38561(b) (Deering 2013).
\item \textsuperscript{8} CAL. HEALTH & SAFETY CODE § 38560 (Deering 2013).
\item \textsuperscript{10} CAL. HEALTH & SAFETY CODE § 38562(b) (Deering 2013).
\item \textsuperscript{11} CAL. HEALTH & SAFETY CODE § 38562(b)(2) (Deering 2013).
\item \textsuperscript{12} CAL. HEALTH & SAFETY CODE § 38562(b)(5) (Deering 2013).
\item \textsuperscript{13} CAL. HEALTH & SAFETY CODE § 38562(b)(8) (Deering 2013).
\item \textsuperscript{14} SCOPING PLAN, supra note 5, at 17, Table 2.
\item \textsuperscript{15} See CALIFORNIA AIR RESOURCES BD., FINAL SUPPLEMENT TO THE AB 32 SCOPING PLAN FUNCTIONAL EQUIVALENT DOCUMENT 12, TABLE 1.2-3 (2011), available at http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf.
\item \textsuperscript{16} CAL. HEALTH & SAFETY CODE § 43018.5 (Deering 2013).
\end{itemize}
administration affirmed upon taking office, contain some trading elements, but is primarily a command and control program intended to reduce through greenhouse gases, engine design, and automobile pollution controls.

The next largest category is energy efficiency measures, at 26.3 MMTCO₂E. Appliance efficiency, solar water heating and cogeneration are included in this category. It represents around 15% of the goal.

The third largest category is the Renewable Portfolio Standard, accounting for 21.3 MMTCO₂E. This program now requires investor owned utilities to derive 33% of their electricity from renewable sources by 2020. Already, California’s utilities have reached or will soon reach 20%. This represents about 12% of the goal.

The fourth category is “High Global Warming Potential Gas Measures.” Directed at refrigerant gases, these represent 20.2 MMTCO₂E, over 11% of the emission reductions necessary to reach 1990 levels.

Now fifth are the additional reductions required for capped industries that must come through the cap-and-trade program. While the Scoping Plan estimated that 85% of emission sources were covered by the cap, as indicated above only 10% of the emission reductions were anticipated to come from the cap-and-trade mechanism alone.

The sixth largest category is the low carbon fuel standard. This standard again contains some trading elements, but is primarily a command and control program. Anticipated to produce 15 MMTCO₂E of reduction, it represents almost 9% of the program.

Thus, cap-and-trade is projected as a relatively small part of what remains primarily a command and control program. Yet it has become the high-profile element of the program, and its most controversial one. There are many reasons for the focus on cap-and-trade, and these reasons make it important that the program work correctly for the entire regulatory initiative to succeed.

First, California’s program represents the United States’ most comprehensive venture into cap-and-trade for greenhouse gases and therefore could be the model for future regulation. Prior to this program,

18. CAL. PUB. RES. CODE § 25740 (Deering 2013).
20. The Regional Greenhouse Gas Initiative (RGGI) of Northeast and Mid-Atlantic States is the first market-based greenhouse gas regulatory program but is limited to the power industry. See http://www.rggi.org (last visited on Oct. 9, 2013).
the United States' record was one of playing with the concept and then backing off. First there were the negotiations over the 1998 Kyoto Protocol that set forth the international carbon control and trading regime, where the United States advocated for cap-and-trade and then refused to sign the treaty. Later, in 2009, the House of Representatives, while still in Democratic hands during the first years of the Obama administration, passed the Waxman-Markey cap-and-trade bill only to watch it die in the Senate.

Now California is implementing its program. As stated by an economist with the Environmental Defense Fund, the organization that coined the phrase “cap-and-trade”:

California’s law is one of the largest and boldest efforts to limit emissions on the planet. Until now, in the U.S. a carbon law has been hypothetical, theoretical. California has an opportunity to show that this works in practice. It can work as a lab for the rest of the country.

Secondly, cap-and-trade has become an ideological target and rallying cry. Cap-and-trade, as eventually implemented in the federal Acid Rain


Program, originated with the mainstream Environmental Defense Fund collaborating with a Republican administration. It has since become identified with the carbon tax as it indirectly prices carbon based upon the cost of allowances, and it is still a Washington imposition of pollution controls in a manner that triggers Tea Party outrage. At the same time, environmental justice activists see cap-and-trade as an extension of the pay to pollute principle with an added twist that those suffering will be concentrated in minority or low-income communities. This politicization affects California’s program, because if indeed its cap-and-trade program amounts to merely a carbon tax, with little trading and innovation among capped industries, or its gains come at the expense of low-income communities or communities of color, it could discredit the program for years to come.

The third reason the program is important is its practical relationship to the rest of California’s regulatory regime. Emission reductions from the “capped” industries are expected to achieve more than two-thirds of the reductions, 146.7 MMTCO2E. While most of these reductions are anticipated from other measures as discussed above, if these measures fail to be fully or partially implemented, cap-and-trade becomes an important backstop that complements these other measures. Given the attack on the low carbon fuel standard under the commerce clause in state and federal courts, that backstop is important.

29. Richard Toshiyuki Drury, Michael E. Belliveau, J. Scott Kuhn & Shipra Bansal, Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 DUKE ENVTL. L. & POL’Y F. 231, 235 (1999) (“Pollution trading in Los Angeles has led to concentrated toxic air emission hot-spots that have shackled low-income and minority communities with the region’s air pollution.”).
30. SCOPING PLAN, supra note 5, at 31 (“By setting a limit on the quantity of greenhouse gases emitted, a well-designed cap-and-trade program will complement other measures for entities within covered sectors.”).
Full-blown cap-and-trade, as originally suggested by Ackerman and Stewart in "Reforming Environmental Law," was seen as a program involving "tradable permits." As Tyler McNish points out, "The early cap-and-trade programs did not have offset programs comparable to those used by carbon cap-and-trade programs . . . ." Indeed, the most successful cap-and-trade program, the federal Acid Rain program, "did not use offsets.

The idea was that the "government establishes a cap on the total emissions of a certain pollutant from a set of regulated sources over a fixed compliance period." Pollution sources would have a declining cap on their emissions, but were free to meet that cap by reducing their emissions in any manner they wished, or to buy tradable permits to pollute (now known as credits or allowances) from similarly capped sources who had reduced their emissions below their cap. As Ackerman and Stewart put it:

"Our basic reform would respond to these deficiencies by allowing polluters to buy and sell each other’s permits—thereby creating a powerful financial incentive for those who can clean up most cheaply to sell their permits to those whose treatment costs are highest."


33. Tyler McNish, Carbon Offsets Are a Bridge Too Far in the Tradable Property Rights Revolution, 36 HARY. ENVT'L. REV. 387, 398 (2012). See David Dreisen, supra note 32, at 3 n.3 ("A pure cap-and-trade program only allows facilities with capped emissions to purchase credits from other facilities subject to caps.").


36. Ackerman and Stewart, supra note 32, at 1341.
In this manner, those who could reduce most efficiently would be rewarded for their innovation, and those who would find it most expensive could avoid that expense by buying cheaper credits. The result would be a flexible program that would reduce the marginal costs of emissions reduction to the lowest possible.\(^{37}\) The argument by cap-and-trade adherents is that this approach would be far superior to a command and control program where emission reductions were prescribed by regulators, imposed generally across the regulated community, and defined by concepts such as a one size fits all best available control technology which might neither be the best nor available, at least cost effectively.

Cap-and-trade seemed to be a revolutionary idea, but its execution has been haphazard. Defining the initial cap turned out to be a hotly contested and easily flawed process. If a cap was initially set too high, then reductions were easily achieved but were meaningless as no real additional reductions beyond what would have happened anyway would occur for years, such as with the federal Acid Rain Program.\(^{38}\) When the cap eventually declines to a level that requires real reductions, companies would be unprepared, and would ask for exceptions or be opted out of the program. This appears to have happened with the Southern California RECLAIM cap-and-trade program.\(^{39}\)

If the cap were not adjusted to undermine its effectiveness, companies would lobby for free emission credits or allowances. Under the Acid Rain program, Congress handed out allowances for early reductions, the use of certain technologies and other measures.\(^{40}\) Under Kyoto, allowances were in effect given to Eastern European countries by adjusting their base line up to reflect what they might have produced if not under harsh Soviet control. There were justifications offered in each case. For example, for certain Acid Rain capped facilities, it was to make up for early adoption of controls. In the case of Eastern Europe, the intent was not to punish the countries for having an abnormal low level of emissions due to the constraint of the Soviet system.\(^{41}\) But the end result was that in its early years a cap could be rendered meaningless. The same kind of cap problems aggravated by the recent recession undermined the European carbon market causing a glut in tradable permits.\(^{42}\)

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\(^{37}\) See id. at 1342.

\(^{38}\) See McAllister, supra note 35, at 413.

\(^{39}\) McAllister, supra note 35, at 403-406.

\(^{40}\) See id. at 399-400.

\(^{41}\) See Chris Wold et al., supra note 22, at 232.

California believes it has learned its lessons from these other programs. This article focuses on offsets, not the California cap, so it will assume California’s cap has been properly done. However, given how treacherous cap setting has been, even in California with the RECLAIM program, it is all the more reason for assuring that the offset program is credible.

In California, the ARB established a cap reducing emissions from the 596 MMTCO₂E business-as-usual scenario to 422 MMTCO₂E in 2020. It covers a broad array of state pollution sources: manufacturers producing products such as cement, glass, paper, steel, refined petroleum\(^{43,44}\), electricity generators or importers\(^{45}\); and natural gas, fuel and carbon dioxide suppliers.\(^{46}\)

These capped sources have an “Allowance Budget” that corresponds to the declining cap necessary to meet 1990 emission limits.\(^{46}\) This budget is being implemented in two phases, with the first compliance period affecting electricity deliverers, and then the rest of the capped facilities in the second compliance period.\(^{47}\) The first phase begins in 2012 and the second phase begins in 2015.\(^{48}\) Each facility has to provide an allowance, which is equal to one MCO₂E, for each ton of its emissions.\(^{49}\) ARB distributes allowances for free for each compliance period in a complicated schedule that attempts to initially cover 90% of prior emissions, subject to various rules that may adjust the percentage.\(^{50}\) For example, various industries facing a high threat of leakage that would likely transfer their pollution out of state to avoid penalties receive a 100% of their assigned allowances for free through 2020.\(^{51}\) Others receive a declining number of allowances, having to make up the rest through purchasing allowances at a state run auction, from third parties or through offsets.\(^{52}\) An auction is held quarterly for the remaining 10% of the capped emissions to create a minimum price for carbon releases, with a

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43. CAL. CODE REGS. tit. 17, § 95811(a) (2013).
44. CAL. CODE REGS. tit. 17, § 95811(b) (2013).
45. CAL. CODE REGS. tit. 17, § 95811(c)-(g) (2013).
47. See CAL. CODE REGS. tit. 17, § 95851 (2013).
48. See SCOPING PLAN, supra note 5, at 31.
50. See SCOPING PLAN, supra note 5, at 34.
51. See CAL. CODE REGS. tit. 17, § 95870, Table 8-1 (2013) (included are facilities such as petroleum extraction, steel mills and paper mills).
52. See CAL. CODE REGS. tit. 17, § 95870, Table 8-1 (2013).
minimum bid of $10.71 per allowance. The first few auctions have been sold out between the minimum price and up to $14 per allowance.\textsuperscript{53}

As cap-and-trade developed, a new concept was grafted on to the original trading idea, creating a hybrid approach. Borrowing from the Clean Air Act’s new source review offset program,\textsuperscript{54} and EPA’s use of netting or bubbles,\textsuperscript{55} it was recognized that there might be cheaper emission reduction measures at facilities or activities that are not covered directly by the program and subject to a cap and whose emission reduction could be turned into a commodity called an offset. The Kyoto Protocol, discussed below, features an offset program, as does the European response to Kyoto, the European Union Emission Trading System.\textsuperscript{56}

Offsets play a key role in reducing the overall cost of GHG regulations and achieving reductions in uncapped sectors. The cost containment aspects work in two ways. First, offsets projects, especially those involving land use activities, are often less expensive to implement than emissions reductions by regulated entities. Second, in a market-based program with a strict cap on emissions, offset credits from uncapped sectors create an option for increasing the supply of compliance instruments.\textsuperscript{57}

As will be discussed below in reference to the Kyoto Protocol version of cap-and-trade and the California program, forestry is the most prominent of these activities, but other examples like destruction of refrigerants that are greenhouse gases and control of methane from various activities, but especially in agriculture, are not allowed. If these activities were credited for their emission reductions, and were cheaper than measures resulting in reductions in the capped sector, then these credits could be sold to capped sources that could then more easily and more cheaply meet their caps. This would minimize emissions in the cheapest fashion, expand the reach of the program into areas not subject to regulation, and drive innovation in new areas.


\textsuperscript{54} 42 U.S.C. § 7503(a), (c) (2012).


\textsuperscript{56} See MARKET ADVISORY COMMITTEE, supra note 34, at 103.

At least that was the idea. The practice has been more challenging than expected as explained below.

III. The Kyoto Offset Problem

The world’s nations that began to work together to develop a global regime to address climate change seized upon market mechanisms, principally cap-and-trade, as its core strategy. At first, in the United Nations Framework Convention on Climate Change, effective in 1994, the signatories including the United States only sketched the broad outlines of what a regime should be. The program among other goals should:

1. Achieve a “level that would prevent dangerous anthropogenic interference with the climate system”;

2. Over a time period slow enough “to enable economic development to proceed in a sustainable manner”;

3. Be “precautionary” yet “cost effective so as to ensure global benefits at the lowest possible cost”;

4. “[W]ith the aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide”;

5. The developed countries “shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties.”

All of these goals speak to the promise of cap-and-trade. Cap-and-trade starts with a cap that declines to a level agreed upon in advance. Yet it does so over a period of time, allowing companies flexibility to choose between innovation or buying credits. The goal can be a health-based standard that is precautionary (or in California’s case, an interim step in greenhouse gas reduction), yet with trading that allows reductions at the marginally cheapest cost. Interim steps in the cap can be identified, such as the 1990 level of emissions. And for our discussion, offsets can provide a vehicle where developed countries can reduce emissions at a cheaper cost.


59. Id. at art. 2.

60. Id.

61. Id. at art. 3.

62. Id. at art. 4.2(b).

63. Id. at art. 4.5.
in developing countries, thus encouraging investment and the transfer of technology.

When the world’s nations gathered in Kyoto, Japan, to finalize a protocol implementing the goals of the Framework Convention, the United States was able to promote cap-and-trade, pointing to its success in addressing Acid Rain in the United States, and its consistency with the Framework Convention. As doubts were overcome, and with many nations as it turned out fruitlessly believing cap-and-trade would be essential for United States participation, the Kyoto Protocol eventually included cap-and-trade as its core idea with a cap that would be the equivalent of an average 5% below 1990 levels for each nation by 2012.

Linked to this cap-and-trade program would be the idea of offsets. The Kyoto Protocol established its Clean Development Mechanism (CDM). Intended for developing countries, the CDM provides “certified emission reductions” on a project-by-project basis that developed countries could use to demonstrate compliance with their caps.

The CDM has suffered serious problems. Determining whether emissions have actually increased is easy if you have continuous and automatic emissions monitoring that can be verified. In a developing country where one relies upon records that may not exist, and testing technology that may be inadequate or fraudulent, it can be difficult if not impossible. Assuring that any real emission reductions will continue due to the force of law is also difficult if the country’s legal regime is weak or vulnerable to corruption, as in Libya, Mali, or Mexico.

Beyond these challenges is the issue of what would have happened anyway. A developing country is so-named because it is economically underdeveloped and is hopefully making economic and social progress. In that climate, how does one distinguish between an emission reduction that would have happened anyway and one that is happening only or in part because of the encouragement of the offset program and the potential to sell a credit for a profit?

The CDM Executive Board and forty-one U.N.-chartered Designated Operational Entities (DOEs), governmental, nonprofit, or private consultants who review offset applications, oversaw Kyoto countries attempting to address these issues on a project-by-project approach. The results have been mixed and heavily criticized for awarding credits for projects that

64. See Chris Wold et al., supra note 22.
65. See Kyoto Protocol, supra note 21, at art. 3 and 17.
66. Id. at art. 12.3.
would have happened anyway.\textsuperscript{68} Perhaps to overcome these criticisms, the CDM engages in what project proponents consider to be a too burdensome review, greatly increasing costs for both proponent and the reviewing agency.\textsuperscript{69} A recent review of CDM cost studies by Tyler McNish in the Harvard Law Review found estimates that transition costs would drain from a CDM investment anywhere from \(\text{€0.04} \) to \(\text{€16} \) per TCO2,\textsuperscript{70} but he argues that the best estimate of all relevant costs is 36% is drained from a CDM investment.\textsuperscript{71}

In the first case to litigate the legality of California’s offset program, the numbers clearly disturbed the ARB and the Judge. In that case, \textit{Citizens Climate Lobby v. California Air Resources Board,}\textsuperscript{72} the Judge noted studies suggesting the “initiation of a project costs between $80,000 and $230,000 with an annual cost of $20,000 to $35,000 in the first year and $15,000 to $25,000 in subsequent years.”\textsuperscript{73}

When it was done well, the transition costs of assuring a project would accomplish its goals were quite significant, providing a strong disincentive to developing an offset. However, when the review was not done well, even more troubling is whether the offsets are “additional,” that is, would they have occurred anyway and therefore do not really provide a “real” reduction from what was going to happen anyway.

The CDM uses three approaches to assure offsets are real: (1) the barrier analysis (cost, policy barriers practically prevent the project without a CDM incentive); (2) the investment analysis (an alternative would be cheaper); and (3) a common practice analysis (it just is not common for this project to be done).\textsuperscript{74} These approaches are all problematic. One analysis found that 43% of the projects reviewed did not provide or mention evidence for the barriers, and 30% of the projects using an investment analysis had key information lacking.\textsuperscript{75} Another survey was even more alarming.

\begin{itemize}
  \item \textsuperscript{68} \textit{Id. at 390 n.12.}
  \item \textsuperscript{69} \textit{See id. at 391.}
  \item \textsuperscript{70} \textit{Id. at 411, Table 1.}
  \item \textsuperscript{71} \textit{See id. at 414, Table 2.}
  \item \textsuperscript{73} \textit{Id. at 10.}
  \item \textsuperscript{75} \textit{Id.}
\end{itemize}
In a Delphi survey, 71% of the participants agreed with the statement that “many CDM projects would also be implemented without registration under the CDM” and even 86% of the participants affirmed that “in many cases, carbon revenues are the icing on the cake, but are not decisive for the investment decision.”

This kind of analysis was particularly persuasive to the Citizens Climate Lobby Judge. The Judge also noted that it “can take between two and two-and-a-half years to issue the first credit after commencing a project. These bottlenecks and delays are caused by the inability of the CDM’s administrative structure to handle the high number of proposed projects due to the length and complexity of the administrative process, as well as the shortage of available emission verifiers.”

IV. California Offset Program

Unsurprisingly, California attempted to avoid the CDM offset problems. AB 32 allows for offsets in a market-based strategy, but it does so recognizing the potential hazards of an offset program. The statute explicitly requires that offsets be “real, permanent, quantifiable, verifiable, and enforceable by the state board.” They also must be “in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur.”

The Legislature also wanted to assure that market trading systems would not exacerbate environmental justice, requiring ARB to consider local impacts of air pollution and the potential for direct, indirect and cumulative impacts. In particular, ARB was to avoid any increases in toxic or criteria air pollutants in local communities.

The Legislature’s requirements are crucial as offsets by definition displace the emission reductions that would normally occur in the capped industries. When the ARB adopted the Scoping Plan, it explicitly promised Californians secondary health benefits of its program in addition to greenhouse gas reductions:

76. Id. at 9.
77. Statement of Decision, supra note 72, at 9-10.
78. Id. at 10.
80. CAL. HEALTH & SAFETY CODE § 38562(d)(2) (Deering 2013).
81. See CAL. HEALTH & SAFETY CODE § 38570(b) (Deering 2013).
Our analysis indicates that implementing the Scoping Plan will result in a reduction of 15 tons per day of combustion-generated soot (PM 2.5) and 61 tons per day of oxides of nitrogen (precursors to smog). These reductions in harmful air pollution would provide the following estimated health benefits in 2020, above and beyond those projected to be achieved as a result of California’s other existing public health protection and improvement efforts:

- An estimated 780 premature deaths statewide will be avoided
- Almost 12,000 incidences of asthma and lower respiratory symptoms will be avoided
- 77,000 work loss days will be avoided.\(^{82}\)

The ARB noted the potential problem of overusing offsets in the Scoping Plan:

While some offsets provide benefits, allowing unlimited offsets would reduce the amount of reductions of greenhouse gas emissions occurring within the sectors covered by the cap-and-trade program. This could reduce the local economic, environmental and public health co-benefits and delay the transition to low-carbon energy systems within the capped sectors that will be necessary to meet our long term climate goals.\(^{83}\)

However, beyond the statutory concerns about market programs and those applying to all AB 32 regulations discussed above, ARB had full discretion in implementing its offset program. ARB defined an offset consistent with the statute and an allowance as being “a tradable compliance instrument issued by ARB that represents a GHG reduction or GHG removal enhancement of one metric ton of CO\(_2\)E. The GHG reduction or GHG removal enhancement must be real, additional, quantifiable, permanent, verifiable, and enforceable.”\(^{84}\)

ARB’s definition of “additional”, however, opened up the door to all of the Kyoto CDM problems with offsets. It linked an offset to a comparison to a “conservative business-as-usual scenario”:

\(^{82}\) Scoping Plan, supra note 5, at ES 11-12.

\(^{83}\) Id. at 37.

“Additional” means, in the context of offset credits, greenhouse gas emission reduction or removals that exceed any greenhouse gas reduction or removals otherwise required by law, regulation or legally binding mandate, and that exceed any greenhouse gas reductions or removals that would otherwise occur in a conservative business-as-usual scenario.\(^85\)

Identifying a business-as-usual scenario proved with the Kyoto CDM to be a complicated resource intensive process, prone to uncertainty and error, if not fraud. ARB’s rather abstract definition of “Business as Usual Scenario” hardly solved the problem:

Business-as-Usual Scenario” means the set of conditions reasonably expected to occur within the offset project boundary in the absence of the financial incentives provided by offset credits, taking into account all current laws and regulations, as well as current economic and technological trends.\(^86\)

Nor did its definition of “conservative” in reference to the scenario provide much specificity, merely requiring that the estimated greenhouse gas reductions be “more likely than not” to be “understated”:

“Conservative” means, in the context of offsets, utilizing project baseline assumptions, emission factors, and methodologies that are more likely than not to understate net GHG reductions or GHG removal enhancements for an offset project to address uncertainties affecting the calculation or measurement of GHG reductions or GHG removal enhancements.\(^87\)

Instead, the ARB provided that it would administratively create “offset protocols” that would provide the methodology for determining whether emission reduction activities would qualify for offsets.\(^88\) ARB hoped to sidestep Kyoto’s project by project issues by relying upon uniform threshold performance standards within categories of offset projects that would “Establish the eligibility and additionality of projects using standard criteria, and quantify GHG reductions and GHG removal enhancements using standardized baseline assumptions, emission factors, and monitoring

\(^ {85} \) CAL. CODE REGS. tit. 17, § 95802(a)(4) (2013)

\(^ {86} \) CAL. CODE REGS. tit. 17, § 95802(a)(34) (2013)

\(^ {87} \) CAL. CODE REGS. tit. 17, § 95802(a)(58) (2013)

\(^ {88} \) CAL. CODE REGS. tit. 17, §§ 95971-95972 (2013)
methods. The threshold performance standards would act as nonrebuttable presumptions that the activity would be real and additional. The ARB hoped these performance standards could shortcut project approval, minimize the intensity of project-by-project review yet assure the integrity of an offset award.

The ARB has now approved four protocols for separate categories of offsets: Ozone Depleting Substances Projects, Livestock Projects, Urban Forest Projects and U.S. Forest Projects. Each protocol describes offset standards and the method of exacting the correct amount of credits. These protocols are primarily directed towards domestic California and other states’ activities.

ARB, however, has broader international ambitions with offsets. This ambition is based in the Global Warming Solutions Act itself:

The state board shall consult with other states... and other nations... to facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs.

How these linkages were to be made to other states and nations was left to the ARB until recently. The Legislature in 2012 provided the following requirements:

A state agency, including, but not limited to, the State Air Resources Board, shall not link a market-based compliance mechanism established pursuant to [California Health and Safety Code Section 38500] with any other state, province, or country unless the state agency notifies the Governor that the agency intends to take such action and the Governor, acting in his or her independent capacity, makes all of the following findings:

1. The jurisdiction with which the state agency proposes to link has adopted program requirements for greenhouse gas reductions, including, but not limited to, requirements for offsets, that are equivalent to or stricter than those required by Division 25.5 (commencing with Section 38500) of the Health and Safety Code.
2. Under the proposed linkage, the State of California is able to enforce Division 25.5 (commencing with Section 38500) of the Health and Safety Code and related statutes, against any entity subject to regulation under those statutes, and against any entity

located within the linking jurisdiction to the maximum extent permitted under the United States and California Constitutions.

(3) The proposed linkage provides for enforcement of applicable laws by the state agency or by the linking jurisdiction of program requirements that are equivalent to or stricter than those required by Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

(4) The proposed linkage and any related participation of the State of California in Western Climate Initiative, Incorporated, shall not impose any significant liability on the state or any state agency for any failure associated with the linkage.

(g) The Governor shall issue findings pursuant to subdivision (f) within 45 days of receiving a notice from a state agency, and shall provide those findings to the Legislature. The findings shall consider the advice of the Attorney General. The findings to be submitted to the Legislature shall not be unreasonably withheld. The findings shall not be subject to judicial review. 92

To demonstrate that offsets would meet these requirements, particularly the (f)(1) requirement that linked offsets be subject to equivalent requirements as well as enforceable under (f)(2) and (f)(3), is not an easy task. The ARB is actively considering linking to provinces in Mexico and Brazil for forestry offsets (and has now linked with Quebec). 93 The ARB, anticipating linkages for forestry offsets from developing countries, has adopted provisions for “sector” offsets in addition to its individual protocol offsets. 94 These offsets allow developing countries or subnational jurisdictions within those countries to receive credits from carbon removed or sequestered from the atmosphere by a specific sector (e.g., reducing emissions from deforestation and forest degradation known as REDD plans) within a particular jurisdiction. 95 The idea is that if in a large geographical area overall degradation or deforestation is reduced with plans to assure leakage and fraud are avoided, credits will be allowed.

ARB's backstop for any problems with offsets is limiting the amount of offsets that could be used for a facility's compliance. Total offsets may be

94. S e e C A L . C O D E R E G S. t i t. 1 7, § 9 5 9 9 1 (2 0 1 3).
95. S e e i d.
no more than 8% of a facility’s allowed emissions. 96 Sector offsets may be
more no more than 2% of a facility’s emissions during the first two
compliance periods, and no more than 4% during the third compliance
period ending in 2020. 97 Note these limits are of a facility’s total emissions,
not the amount of emissions that each facility is expected to reduce under
the program.

While this seems to be a very cautious limitation on offsets, in fact
offsets by 2020 could cover all of the expected reductions from cap-and-
trade when the cap is at its most stringent, and presumably, able to achieve
the most benefits for Californians.  As indicated above, in 2008, the ARB
estimated this additional reduction from cap-and-trade to account for 34
MMTCO₂E by 2020. 98 However, in light of the recession, and thanks to a new
environmental review required by a successful court challenge to the
environmental analysis of the Scoping Plan under the California
Environmental Quality Act, ARB now believes cap-and-trade need only
achieve 18 MMTCO₂E of reduction. 99

Meanwhile, ARB’s final regulations set the 2020 allowance budget at
334.2 MMTCO₂E. Under the 8% offset cap described above, the total amount
of offsets that are allowed in 2020 are therefore about 27 MMTCO₂E. 100
Under the 4% international offset cap, half of that amount may be allocated
to international offsets, that is, about 13.5 MMTCO₂E, by 2020. Thirteen
and one-half MMTCO₂E of international offsets is 75% of the 18 MMTCO₂E of
reductions now anticipated under cap-and-trade to come from power plants,
refineries and the other capped sources. Domestic offsets from farms,
forests, and City tree planting and other approved sources of domestic
offsets could completely eliminate any reductions from the capped sources
expected to come from cap-and-trade. In effect, offsets could be more than
the entire cap-and-trade ballgame, and if a significant number are not real,
they would jeopardize the program’s effectiveness.

The ARB has also pledged to keep offsets below 49% of all of AB32’s
reductions. 101 However, given that the total reductions from capped sectors
amount is approximately 146.7 MMTCO₂E, 102 this provides no additional
restriction beyond what the 8% limit accomplishes.

96. See CAL. CODE REGS. tit. 17, § 95854(b) (2013).
97. See CAL. CODE REGS. tit. 17, § 95854(c) (2013).
98. See SCOPING PLAN, supra note 5, Table 2 at 17.
99. See FINAL SUPPLEMENT TO THE AB 32 SCOPING PLAN FUNCTIONAL EQUIVALENT
DOCUMENT, supra note 15, at 12, Table 1.2-3.
100. See ROW RECOMMENDATIONS, supra note 93, at 18, Figure 1.5.
101. See SCOPING PLAN, supra note 5, at 37.
102. See id. at 21, figure 3.
Thus, even if offsets are real and additional, which is questionable as discussed more fully below, the contribution made by cap-and-trade to the secondary health benefits promised in the Scoping Plan may be displaced or eliminated. As discussed below, this use of offsets for the capped facilities raises serious civil rights issues.

V. Offsets, Civil Rights, and Environmental Justice

To the extent cap-and-trade reductions are to come from refineries, power plants and other industrial sources, allowing these facilities to "offset" required emission reductions or shield emission increases of greenhouse gases raises serious civil rights and environmental justice concerns. As the ARB noted in the Scoping Plan, as described above, AB 32 provides significant co-benefits by reducing greenhouse gases and their co-pollutants at industrial facilities. Offsets by displacing these benefits have the potential to reduce these benefits.  

Moving emission reductions from industrial to nonindustrial activities such as forestry management are especially troublesome, as Professor Alice Kaswan has pointed out:

For example, under an offset program, a timber company could plant or preserve trees that would sequester carbon. The timber company could then sell credits representing the sequestered carbon to an industrial facility that would use them to offset its carbon emissions. Assuming that the carbon sequestration project had environmental integrity, the GHG emission benefits would be the same. The co-pollutant benefits would differ, however, because allowing facilities to use non-industrial offsets instead of industrial allowances would result in fewer GHG and co-pollutant emission reductions from the controlled industrial sectors.

The California Legislature therefore required the ARB to "[e]nsure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities." Further the Board must “[e]nsure that activities undertaken . . . complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.”

103 See Scoping Plan, supra note 5, at 80-81.
104 Alice Kaswan, Climate Change, the Clean Air Act, and Industrial Pollution, 30 UCLA J. ENVTL. L & POL’Y 51, 105 (2012).
105 CAL. HEALTH & SAFETY CODE § 38562(b)(2) (Deering 2013).
106 CAL. HEALTH & SAFETY CODE § 38562(b)(4) (Deering 2013).
Adversely affecting minority and low-income communities or denying them the benefits of a program would constitute violations of federal and state civil rights statutes.\textsuperscript{107}

Consistent with these laws, AB 32 mandates benefits to disadvantaged communities:

The state board shall ensure that the greenhouse gas emission reduction rules, regulations, programs, mechanisms, and incentives . . . direct public and private investment toward the most disadvantaged communities in California and provide an opportunity for . . . community institutions to participate in and benefit from statewide efforts to reduce greenhouse gas emissions.\textsuperscript{108}

The major stationary sources of air pollution in California are disproportionately located in minority or poor communities.\textsuperscript{109} A recent evaluation by the California Environmental Protection Agency using a multi-factor analysis of pollution found that among the top 10\% of the worst zip codes, the percentage of Hispanics jumps from their statewide average of 37.6\% to 63.8\%; African Americans jump from 5.8\% to 9.5\%.\textsuperscript{110} Similar results have been found on a national level.\textsuperscript{111}

\noindent 107. \textit{See} Federal Civil Rights Act, 42 U.S.C. § 2000d (2012); \textit{see also} \textit{CAL. GOV'T CODE} § 11135 (Deering 2013) (prohibiting the state from carrying out programs that adversely impact communities of color or low-income communities or deny them the benefits of a program).

\noindent 108. \textit{CAL. HEALTH & SAFETY CODE} § 38565 (Deering 2013).

\noindent 109. \textit{See} Manuel Pastor, Rachel Morello-Frosch, James Sadd & Justin Scoggins, \textit{Minding the Climate Gap: What’s At Stake if California’s Climate Law Isn’t Done Right and Right Away} at 3 (2010) [hereinafter What’s at Stake], available at http://dornsife.usc.edu/pere/documents/mindingthegap.pdf; \textit{See also} Manuel Pastor, Jr., Rachel Morello-Frosch, and James Sadd, \textit{Still Toxic After All These Years: Air Quality and Environmental Justice in the San Francisco Bay Area} at 2 (2007) [hereinafter Still Toxic], available at http://citc.ucsc.edu/docs/bay_final.pdf.


\noindent 111. \textit{See} U.S. \textit{ENVIRONMENTAL PROTECTION AGENCY}, EPA 230-R-92-008, \textit{REDUCING RISK FOR ALL COMMUNITIES} 3 (1992) (“There are clear differences between racial groups in terms of disease and death rates . . . . Racial minority and low-income populations experience higher than average exposures to selected air pollutants, hazardous waste facilities, contaminated fish and agricultural pesticides in the workplace.”); for more
Environmental Justice activists are concerned about the loss of co-benefits within a cap-and-trade system with offsets. They doubt that a program that will facilitate payments for offsets and emission reductions moving from industrial based communities that are disproportionately populated by people of color to rural communities that are predominantly white actually directs “public and private investment toward the most disadvantaged communities in California,” as AB 32’s section 38565 requires:

Cap and Trade is an ineffective system because it does not require major polluters to reduce their carbon emissions. Cap and Trade allows major emitters of greenhouse gases to buy “reductions” from other polluters instead of reducing their own pollution. Polluters may also avoid reducing their emissions by purchasing “offsets.” Offsets can be bought from a source nearly anywhere in the world and go to fund ecofriendly projects. So while trees are being planted in Canada, corporations can continue to pollute back home in California at levels equal to or even greater than they did before AB 32. Cap and Trade deprives nearby residents from the benefits of toxic, smog, and particulate matter pollution reductions that would accompany local greenhouse gas reductions. Environmental justice communities burdened by huge industrial concentrations of pollution would

recent data, see also Robert D. Bullard, Paul Mohai, Robin Saha & Beverly Wright, Toxic Wastes and Race at Twenty: Why Race Still Matters After All Of These Years, 1978-2007 at 398-399 (2007), available at http://www.sph.umich.edu/symposium/2010/pdf/bullard1.pdf (“In 2000, people of color and the poor thus continue to be particularly vulnerable to the various negative impacts of hazardous waste facilities. Moreover, the present findings show that this is the case for African Americans, Hispanics and Asians/Pacalifornia Islanders.”). Two more recent studies in 2008 and 2009 using new EPA databases assessing risks in neighborhoods around major industrial sources found that “African Americans and Hispanics were the first or second most pollution-burdened racial groups in more than half of the metropolitan areas studied” and “average exposures for minorities . . . are two to three times those of whites.” David E. Adelman, The Collective Origins of Toxic Air Pollution: Implications for Greenhouse Gas Trading and Toxic Hotspots, 88 Ind. L.J. 273, 285-286 (2013), available at http://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=11041&context=ilj. According to Adelman, both studies agreed “African Americans had a higher likelihood of being exposed to disparate health risks from industrial air toxics and for the risks to be greater than those of other groups.” Id. at 287.
likely see no benefits when major polluters buy, instead of reduce, their pollution.\textsuperscript{112}

The California Legislature was especially concerned that market mechanisms may cause environmental injustice. Thus, the legislature in AB 32 reprised its cautionary language applicable to the entire program\textsuperscript{113} when setting out the parameters for the use of market mechanisms:

Prior to the inclusion of any market-based compliance mechanism in the regulations . . . the 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.

(2) Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants.\textsuperscript{114}

The importance of assuring that the benefits of AB 32 are shared and that adverse impacts, particularly to disadvantaged communities, are avoided, is reflected in the process leading to ARB’s Scoping Plan\textsuperscript{115}:

This plan reflects the input of Californians at every level. Our partners at other State agencies, in the legislature, and at the local government level have provided key input. We’ve met with members of community groups to address environmental justice issues, with representatives of California’s labor force to ensure that good jobs accompany our transition to a clean energy future, and with representatives of California’s small businesses to ensure that this vital part of our state’s economic engine flourishes under this plan. We’ve heeded the advice of public health and environmental experts throughout the state to design the plan so that it provides valuable co-benefits in addition to cutting greenhouse gases. Scoping Plan, p. ES-3.

\textsuperscript{112} Eileen Gauna, Environmental Law, Civil Rights and Sustainability: Three Frameworks for Environmental Justice, 19 J. ENVTL. & SUSTAINABILITY L. 34, 57 n.70 (Summer, 2012) (quoting Center on Race, Poverty & Environment).

\textsuperscript{113} See \textit{CAL. HEALTH \\& SAFETY CODE} §§ 38562(b)(2), 38562(b)(4) (Deering 2013).

\textsuperscript{114} \textit{CAL. HEALTH \\& SAFETY CODE} § 38570(b) (Deering 2013).

\textsuperscript{115} Available at http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.
As concerning as these environmental justice implications are about domestic offsets, it would be even more alarming if the offsets are not fully real or additional. That would mean that health benefits are not merely being relocated or redistributed in a manner that impacts certain communities, but are actually eliminated for anyone in California. As discussed below, environmental justice organizations, human rights organizations, litigants in a pending lawsuit and at least one California legislator are now raising serious questions about the effectiveness of these domestic and international offset provisions, and their legality.

VI. Domestic Offsets Litigation

On March 27, 2012, the Citizens Climate Lobby and Our Children’s Earth Foundation filed a complaint in San Francisco Superior Court challenging the offset protocols that ARB had adopted for their reliance upon the performance standard approach to offsets.116 In this case, which has been adjudicated in the trial court and is now on appeal at the time of the drafting of this article, the plaintiffs contended that the performance standard approach would not assure that the greenhouse gas reductions signified by the offset were in fact “additional” for each offset project. The plaintiffs argued that the ARB’s approach appears to be problematic, given that it defined “additional” as requiring reductions beyond “any greenhouse gas reduction or removals otherwise required by law, regulation or legally binding mandate, and that exceed any greenhouse gas reductions or removals that would otherwise occur in a conservative business-as-usual scenario (emphasis added).”117

The conservative business-as-usual scenario, described previously, already seemed to have its own problems. The purported offset reductions would be compared to a business-as-usual scenario that only required a “conservative” “more likely than not” assurance that emissions were understated in the business as usual scenarios. To put it another way, if there were a 49% chance that the business-as-usual scenario was overstated, there was a significant chance the offsets would be partially or completely unreal, or not additional. Now, adding protocols based upon performance standards that make broad assumptions about whether the offset activity would occur without offset revenue would seem to only magnify the risks with offsets.


The development of the particular protocols suggests the plaintiff’s concerns were more than theoretical. The ARB has now approved four offset protocols. Each one utilizes a threshold performance standard that assumes if an activity occurs, the activity must be in addition to the more-likely-than-not business-as-usual scenario and a result of the offset credit incentive.

For example, the Livestock Protocol awards offsets to dairy and swine farms for containing methane emissions from manure. Anaerobic digesters trap the methane and then destroy them through flaring or harness them to create heat and electricity. There was no dispute that employing these techniques would be useful to reduce the potent greenhouse gas methane from the atmosphere.

The issue, however, was whether the use of a biogas control system is a business-as-usual practice. The trial court noted that a report to the ARB “determined that 0.07% of all dairy farms and 0.02% of all swine farms in the United States use anaerobic digesters to dispose of manure.” The ARB then simply assumed that if a farmer were to use this technology then it would only be due to its offset protocol and therefore be additional.

Plaintiffs pointed to a U.S. Dept. of Agriculture Report that suggested that these digesters could be profitable:

We know that anaerobic digesters that convert animal manure into electricity are a powerful renewable resource. One 700 head dairy herd can power 200 homes with electricity. Yet, currently the United States is only utilizing dairy power on 2% of the farms that serve as candidates for profitable and sustainable sources of energy.

118. CAL. CODE REGS. tit. 17, §§ 95802(a)(3), (36), (60), (93); §§ 95970-97 (2013).
120. Statement of Decision, supra note 72, at 12.
121. Methane is 23 times more potent than CO₂ over 100 years. See CHRIS WOLD, ET AL., supra note 22, at 7.
122. Statement of Decision, supra note 72, at 13. A later EPA report found that the percentage was 1.9% of dairy and swine farms where it is technically feasible to install them. Id.
The U.S. Department of Agriculture announced that the dairy industry had pledged a 2% reduction in their greenhouse gases by 2020, years before ARB’s protocol was adopted and implemented. The USDA actually already financially supported some farms, and indeed, later the U.S. EPA and the U.S. Department of Agriculture formed a strategic initiative to encourage digesters.\textsuperscript{124}

The ARB, nevertheless, based simply upon the fact that anaerobic digesters were not “common practice,” determined that installation of anaerobic digesters was a sufficient performance standard to qualify as an offset.\textsuperscript{125} However, that surely begs the question, is a new digester a result of the federal initiative, the dairy industry’s commitment, the particular circumstances of a farm where converting methane may be profitable, or the impact of the offset protocol? And if the answer is murky, would not that be true of the validity of the offset?

A similar question arises with each of the protocols. With the Ozone Depleting Substances Projects, the ARB staff again found that destruction of these chemicals used in appliances or building foam or in refrigerant equipment was not “common practice.”\textsuperscript{126} Thus, under the rule, it is assumed that destruction of the specific chemicals regulated (those where import or production are banned but not their use in the US under other laws such as the Montreal Protocol) is additional. The ARB does make a general assessment of how likely each chemical would have been released, reducing the credit, but if it is destroyed it is entitled to an offset notwithstanding what the particular owner or manufacturer might have done in the absence of the offset program.\textsuperscript{127}

The two forestry protocols face notable difficulty in assuring that all reductions are beyond “any” that would result from the business-as-usual scenario. The Urban Forests protocol applies “tree planting and maintenance activities in urban areas along streets, in parks, on educational

\textsuperscript{124} See EPA Administrator and Agriculture Secretary Team Up to Promote Farm Energy Generation Agreement Will Help Cut Greenhouse Gas Emissions, \textit{UNITED STATES ENVTL PROT. AGENCY}, May 3, 2010, available at \url{http://yosemite.epa.gov/opa/admpress.nsf/e77fdd4f5af8ca3852576b3005a604f/eddc8a628ce5e9b285257718006c2d31OpenDocument}.

\textsuperscript{125} \textit{CAL. AIR RES. BD., STAFF REPORT AND COMPLIANCE OFFSET PROTOCOL LIVESTOCK MANURE (DIGESTER) PROJECTS 5 (2010).}

\textsuperscript{126} See Statement of Decision, \textit{supra} at note 72, at 30.

\textsuperscript{127} See \textit{AIR RESOURCES BD., CAL. ENVTL PROT. AGENCY, STAFF REPORT AND COMPLIANCE OFFSET PROTOCOL U.S. OZONE DEPLETING SUBSTANCES PROJECTS 4-7 (2010), available at \url{http://www.arb.ca.gov/regact/2010/capandtrade10/cappt3.pdf}}.
campuses, and in utility service areas.” The protocol’s performance standard is a “Net Tree Gain.” The ARB is assuming that any city or college or municipality that plants more trees than die is doing so because of the offsets. Further, it is assumed upon the entity’s agreement that this will continue for 100 years, until annual reporting indicates otherwise. This requirement makes sense, in that there is ultimately no gain from a tree absorbing carbon if it is ultimately cut down and carbon is then released. However, it also means that for ten, or twenty, or thirty years credits could be generated that would be illusory if trees are cut down or die at any point before one hundred years.

Utilities do not even have to show a net tree gain:

Most utilities do not have tree planting programs that go beyond replacing trees removed during line clearance operations. While some have programs specifically aimed at storing carbon and conserving energy in residential households, on average utilities are planting fewer than 400 trees annually in these types of programs. All trees planted under these types of programs are considered additional and therefore are designated as eligible project trees.

The implication in the ARB’s discussion of its utility protocol is that some utilities already have tree-planting programs. Would other utilities have proceeded accordingly? Do the ones that do have programs get credit for what they are already doing, presumably so. The trial court’s decision points to a survey of urban cities showing “that a third of surveyed cities have a net tree loss and many others have a tiny net tree gain.” But what of the other cities that experience above a minimal net gain? Is it really the case that California’s cities have no incentives to expand the number of trees in their cities without the offset protocol?

The last protocol is for U.S. Forest Projects addressing “forest management activities . . . designed to increase removals of CO₂ from the atmosphere, or reduce or prevent emissions of CO₂ to the atmosphere . . .

129. Id. at 5.
130. Id. at 6.
through increasing and/or conserving forest carbon stocks.”

For reforestation projects, a developer “must demonstrate that the land has been out of forest cover for 10 years.” Projects are assumed to continue for 100 years, but if subsequent monitoring and reporting demonstrates a termination of the project, at least the ARB requires that additional trees be maintained as a buffer system of contributed or deducted credits from the offset award that creates in effect an insurance system. The sufficiency of this insurance system, that is, will enough additional trees be maintained to counter failures in tree credits, will be unknown for decades to come.

From a policy standpoint, the performance standard approach to offsets raises serious questions, particularly as offsets could potentially dominate the reductions expected from cap-and-trade as discussed above. If offsets are 25% illusory because they partially award credits for activities that were already occurring, then that would mean that 25% of the reductions that would have produced health co-benefits and made progress towards greenhouse gas reduction goals would be foregone in lieu of the offsets.

The role of a court, however, is to determine the legality of regulations that are challenged, not necessarily their wisdom. The San Francisco trial court’s approach and analysis is interesting, not only from a legal standpoint but from its greenhouse gas policy standpoint.

California’s case law on administrative review of regulations is sometimes vague. “The appropriate degree of judicial scrutiny in any particular case is perhaps not susceptible of precise formulation, but lies somewhere along a continuum with nonreviewability at one end and independent judgment at the other.” This deference is fundamentally a two-step process. First, in the words of a statute codifying the case law, the regulation must be “consistent and not in conflict with the statute . . . .” The standard of review is normally de novo, though there are exceptions where the courts use an arbitrary and capricious standard. Then in the words of the statute, the regulation must be “reasonably necessary to effectuate the purpose of the statute.” The test here is the arbitrary and

133. Id. at 6.
134. See id. at 8.
137. Yamaha, 19 Cal. 4th at 16 (Mosk, concurring).
capricious standard, which asks if the agency’s action was “arbitrary, capricious, or without reasonable or rational basis.”

ARB’s discretion, as described above, is quite sweeping. The San Francisco trial court appropriately focused upon the performance standard approach. However, the court sliced the two-step analysis in an interesting fashion. While some courts look at the specific regulation to determine if it was consistent with the statute, the trial court looked at the concept of the regulation to determine if it was consistent with the statute. The trial court considered the content of the particular performance standard in each protocol to be merely the exercise of ARB’s discretion, and if it were reasonable, then it was permitted.

In theory, a performance standard is quite appealing given the drawbacks of Kyoto’s project-by-project approach. The experience of the Kyoto CDM process drove the ARB and later the trial court’s reasoning in supporting the performance standard approach. Yet, the first step does not disappear once one reviews the specific regulation. If the specific regulation is contrary to law, it is still invalid, and that is subject to a de novo review.

For example, in the Communities for a Better Environment case, the court examined a number of guidelines (deemed regulations) under the California Environmental Quality Act (CEQA). One of the regulations has to do with “Thresholds of Significance: Use of Regulatory Standards to Determine Significant Environmental Effect.” CEQA requires an environmental impact report for a project if it “may have a significant effect on the environment.” At the beginning stage of a CEQA process, the standard for determining whether a project may have a significant effect is whether “it can be fairly argued on the basis of substantial evidence that the project may have significant environmental impact.”

On the other hand, in a section that was not disputed in the Communities for a Better Environment case, the Guidelines also allow for local agencies to adopt “thresholds,” akin to performance standards, that generally provide a standard for any project to determine significance, that is, “a quantitative or qualitative standard, or set of criteria, pursuant to

139. Id.
141. Guidelines, supra note 140, at § 15064(h).
142. CEQA, supra note 140, at §§ 21151, 21100(a), 21080(d), 21082.2(a).
143. No Oil, Inc. v. City of Los Angeles, 13 Cal.3d 68, 75 (1974).
which the significance of a given environmental effect may be
determined.”144

The Court of Appeal decision had little trouble finding this Guideline
to be contrary to the statute’s insistence upon a fair argument being
sufficient to force a full environmental impact report, “regardless of whether
other substantial evidence supports the opposite conclusion.”145 However,
the CBE court did so after having gone way beyond the concept of a
threshold being useful for an agency in its first appraisal, which again, no
party disputed. It considered the specific language of the regulation and
what might potentially happen if a party made a fair argument in an actual
case. “It ignores the real issue here—the application of an established
regulatory standard in a way that forecloses the consideration of any other
substantial evidence showing there may be a significant effect.”146

The trial court in the offset case addresses the idea of a performance
standard as an abstract de novo issue, and then considers the actual
protocol with the actual performance standard as an arbitrary and capricious
standard issue. This practice seems to be inconsistent with the Communities
for a Better Environment case approach. There, the appellate court delved into
the particular wording of the regulation to determine if it could be contrary
to the statute. For offsets, the San Francisco Superior Court ignored the
actual performance standard in determining statutory compliance and then
evaluated the actual protocol adopted only as to whether it was arbitrary.

As result, the trial court failed to fully grapple with the implications
of these protocols. The trial court noted that all parties agree that the statute
required that “each and every reduction must be additional.”147 The court
then states that “it is not . . . easy to precisely determine whether a
reduction is additional.”148 In fact, according to the trial court, “Determining
additionality is difficult, and it is impossible to precisely delineate between
additional and non-additional projects.” It further discusses the baseline or
business-as-usual scenario:

By including the term “more likely than” this definition admits
that GHG reductions might not be understated, that they could
be overstated or include non-additional reductions.149

144. Communities for a Better Environment v. California Resources Agency,
145. Id. at 110, 114.
146. Id. at 114.
147. Statement of Decision, supra note 72, at 23.
148. Id.
149. Id. at 24.
The court then concedes that the offset program will give credits to actual projects that are not additional:

Petitioners attempt to show the Legislature did not intend for Respondent to use a standards-based approach by pointing to a handful of digesters, ODS programs, urban forest projects, and U.S. forest projects. They contend that these few projects are non-additional but will receive offset credits prove the failure of Respondent’s Protocols. Whether a particular digester, ODS program, or tree is additional has no bearing on whether the Legislature delegated to respondent the power to use a standards-based approach.\textsuperscript{150}

The Trial Court may be right that in the abstract, the ARB can use a standard-based approach, but if the standard allows projects that are not additional, it would contradict the statute. As the court had previously admitted, no one disputes that every offset project must be additional.

Once the court gets by its de novo review of performance standards in general, it was easy for the court to sustain the protocols as not arbitrary. For the Livestock protocol, the court found evidence supporting ARB’s determination that the use of digesters is “above and beyond common practice,” with one report estimating that “[s]ixty-nine anaerobic digesters, out of the 8,000 that could be installed, would be installed without offset credits.”\textsuperscript{151}

It similarly found evidence based on a study that the destruction of refrigerant ODS without incentive from the carbon market is not a common market activity.\textsuperscript{152} When the petitioners asked the court to look behind the conclusion of the study to see if they were supported by the evidence, the court stated: “[U]nder an arbitrary and capricious standard, it is not for this court to reweigh the evidence. When treading into the murky waters of statistical analysis and scientific studies, the Court defers to Respondent’s expertise, experience, and sweeping grant of law-making powers.”\textsuperscript{153}

For the Urban Forest Protocol the court relied on that survey showing only that a third of the surveyed cities have a net tree loss and many others have a tiny net tree gain, dismissing evidence that urban tree programs were alive and well at various cities across the country, including its home town.
in San Francisco.  The court noted the significance of the protocol’s requirement that trees be maintained for 100 years—an admittedly problematic likelihood in today’s urban world; however, the court ignored the similar likelihood of any regulatory regime lasting 100 years in a state that is barely more than 150 years old. In the end, the court hid behind the arbitrary and capricious standard: “[a] regulation is not arbitrary or capricious if Respondent has considered all relevant factors and demonstrated a rational connection between those factors, the choice made, and the purposes of the enabling statute.”

The court noted that the U.S. Forest Protocol was developed “in lengthy consultations with industrial and non-industrial forest managers, experts from California and federal forest agencies, environmental organizations, forest landowners, and forestry scientists.” Again, the Court found that the ARB had “considered all relevant factors and has demonstrated how its choices support the purposes of the Act.”

The Court refused to apply any higher standard of review to the Protocols:

Any higher standard makes no practical sense as this Court would have to quickly acquire the skill and expertise necessary to adroitly examine the anaerobic digester market, the ODS destruction market, the common practices of urban forest planting, and management practices for forests across the United States.

The broad scope of ARB’s authority to pick and choose its strategies for addressing climate change, and the trial court’s own admitted lack of expertise clearly influenced the trial court.

154 See Petitioners’ Reply Brief, Citizens Climate Lobby and Our Children’s Earth Found. v. California Air Res. Bd. (San Francisco County Superior Court, Cal., Case No. CGC-12-519554, October 9, 2012) at 37.
156 Id. at 31.
157 Id. at 32.
158 Id. at 33.
159 Id. at 25.
160 Id. at 23 (“The Legislature granted Respondent vast discretion to promulgate any type of GHG reduction measure.”).
161 Id. at 30 (“When trading into the murky waters of statistical analysis and scientific studies, the Court defers to the Respondent’s expertise, experience, and sweeping grant of law-making powers.”).
Pursuant to this case’s appeal, the Court of Appeal will consider whether the trial court properly applied the standard of review for administrative regulations. And it is, to use the ARB’s offset lexicon, more likely than not that the trial court will be sustained, as the California appellate courts seem unduly deferential to the ARB in carrying out this new program. In the first case squarely addressing the implementation of AB32, the First District Appellate Court reviewed a challenge to the Scoping Plan because the “ARB ‘made no attempt to analyze potential disproportionate public health impacts to communities living closest to the facilities eligible to participate in the cap and trade system,’” among other reasons. The Appellate Court dismissed this concern, citing a health study of a minority community inundated with refineries, power plants and other industrial and commercial operations. The validity of the study, based upon facts with conclusions supported by the evidence, was not discussed, barely assuring the “hard look” required by federal and state courts in environmental review cases.

However, regardless of the ultimate decision in this case on the offsets’ legality, from a policy perspective California will still have an offset program that does not assure additionality and by definition, may only provide as little as a 50.1% (more likely than not) confidence level that an offset represents a real reduction from a true business-as-usual scenario. This statistic remains alarming for a program that the trial court noted could displace “85% of all potential reductions.”

The trial court, after considering the Kyoto CDM flaws and the uncertainty in performance standards, could only throw up its hands and state:

[The ARB] would have to abandon any use of offsets, and perhaps the entire cap-and-trade program, if this Court found that the Act’s ambit was transgressed every time a credited reduction was potentially non-additional.

The court may be indulging in “realpolitik” decisionmaking to save cap-and-trade. However, if an essential part of a market is that offsets are “additional,” California’s program may have a serious flaw. Whether that

164 Statement of Decision, supra note 72, at 6 n.5.
165 Id. at 24.
flaw will actually be exploited by offset developers remains to be seen. This flaw may be even more important with the advent of international offsets.

**VII. The International Linkage Problem**

California’s desire to link its cap-and-trade program with other countries raises additional unique issues. The issues of additionality and permanence would play out in an arena where ARB has no authority and minimal ability to monitor. It raises even more pronounced environmental justice issues because at least in theory the reduction of greenhouse gases through domestic offsets offers some potential of other co-benefits that might reach disadvantaged communities if the wind blows the right way. With international offsets, there is no question that offsets for activities in another country will come at the expense of disadvantaged communities that are disproportionately located near capped industries such as power plants and refineries.

**A. The Possible Benefits of Linkage and Offsets with Acre and Chiapas**

In describing the potential issues with international offsets, it is important to recognize certain benefits from the proposed linkages to other nations. Climate change is a critical global issue, as well as a national issue, that profoundly affects disadvantaged communities. Reducing greenhouse gas emissions anywhere is a benefit for the United States, California and all of its communities.

The Intergovernmental Panel on Climate Change in its Fourth Assessment Report in 2007, the United States in its Global Climate Change Impacts in the United States report, and the World Bank in its Turn Down The Heat report have well documented what climate change means for the world, the United States and for the State of California. The government of California argued strenuously in successfully advocating for a permissible waiver from the Clean Air Act’s preemption of state automobile rules, articulating that its automobile greenhouse gas rules were particularly

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important for California. The state cited the effect of global warming on its coast, its snowpack in the Sierras and related water issues, and noted how its metropolitan areas were vulnerable to climate change aggravated smog conditions.\textsuperscript{169}

The Program for Environmental and Regional Equity at USC has further documented in its Climate Gap report\textsuperscript{170} that impacts to low-income communities and communities of color in California from climate change will be particularly severe. Climate change is an environmental justice issue for local communities as it is for communities around the globe.

Deforestation in particular plays a large role in contributing to climate change. “From 1850 to 1998, approximately one-third of man-made GHG emissions into the atmosphere came from releases due to land-use changes, mostly through deforestation.”\textsuperscript{171} Forested areas have decreased 20% during the past 140 years.\textsuperscript{172} The Kyoto Protocol has long recognized that addressing deforestation may be a critical part of any strategy to address climate change.\textsuperscript{173}

Further, indigenous people have suffered dramatic injustice, especially when it comes to the environment. Thus, indigenous people are the subject of the United Nation’s Declaration of the Rights of Indigenous Peoples.\textsuperscript{174} The island of Tuvulu\textsuperscript{175} and the Village of Kivalina\textsuperscript{176} are just two examples of the many indigenous victims of climate change.

It has also been well documented and not necessary to repeat in depth the role of developing nations in the battle against climate change. Their ability to develop their nations without using the carbon energy sources that western nations used for their development is a key problem in any climate strategy. Thus, the Kyoto Protocol and subsequent post-Kyoto meetings have addressed the use of green funds and technology transfer to facilitate


\textsuperscript{170} Rachel Morello-Frosch, Manuel Pastor, James Sadd & Seth Shonkoff, The Climate Gap (May 2009), available at http://dornsife.usc.edu/pere/documents/The_Climate_Gap_Final_Report_FINAL.pdf.

\textsuperscript{171} CHRISS WOLD ET AL., supra note 22, at 9.

\textsuperscript{172} CHRISS WOLD ET AL., supra note 22, at 8 (quoting INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, LAND-USE CHANGE, AND FORESTRY at 26-27).

\textsuperscript{173} See Kyoto Protocol, supra note 21, at art. 3, para. 3.


\textsuperscript{176} See Native Village of Kivalina v. ExxonMobil Corp., 696 F.3d 849 (9th Cir. 2012).
development without carbon.\textsuperscript{177} In this regard, devising mechanisms to shift climate change resources south to developing nations is a positive step to take.\textsuperscript{178}

Offsets in particular provide an opportunity to leverage California’s program to achieve reductions in sectors or nations that are not currently under the AB 32 regulatory program and have not been well served by the Kyoto process. Advocates of this approach believe sector offsets will lead to new programs and techniques to address greenhouse gases without difficult to enforce mandates. The resulting innovations may then later serve as a basis for future regulation:

\[T\]heir successful implementation could greatly multiply the global impact of AB 32 by sending a signal to [countries linked to California] that their hard work and political leadership in mitigating climate change will be recognized and rewarded and by providing a critical learning opportunity for other emerging cap-and-trade programs as they consider whether to adopt similar provisions . . . \textsuperscript{179}

California’s use of a sector approach to develop offsets to reward efforts to reduce deforestation is intended to avoid the problems with the Kyoto Clean Development Mechanism that focused on a project-by-project approach. According to California’s offset regulations:

“Sector” or “Sectoral,” when used in conjunction with sector-based crediting programs, means a group or subgroup of an economic activity, or a group or cross-section of a group of economic activities, within a jurisdiction.\textsuperscript{180}

As explained by its advocates: “These sorts of jurisdictional programs . . . have the potential to generate emissions reductions at much larger scale and lower cost than the traditional project-based model.”

Further, the project approach makes “leakage,” the movement or transfer of emission causing activities, to another off-project site inevitable and difficult to track, and requires an extensive investigation of reference levels or the business-as-usual scenario which, as described above, is

\begin{itemize}
  \item \textsuperscript{177} See Kyoto Protocol, supra note 21, at art. 10(c).
  \item \textsuperscript{178} The Green Climate Fund was established at the Cancun meeting under the United Nations Framework Convention on Climate Change. See Green Climate Fund, \textsc{United Nations Framework Convention on Climate Change}, http://unfccc.int/cooperation_and_support/financial_mechanism/green_climate_fund/items/5869.php.
  \item \textsuperscript{179} ROW Recommendations, supra note 93, at 3.
  \item \textsuperscript{180} Cal. Code Regs. tit. 17, § 95802(a)(256) (Deering 2013).
\end{itemize}
vulnerable to miscalculation if not fraud. Sector offset advocates believe the sector approach better avoids these issues:

By defining performance across the entire jurisdiction for the two main types of emissions (forest conversion to lower-carbon land uses such as crops and pasture, and forest degradation through forest fires, logging, and other human-induced activities), risks of performance reversal and leakage at the project level can be absorbed into state-wide performance and accounting, appropriately directing attention to the large-scale changes in the rural development that are the essential foundation of permanent emissions reductions.  

For all of these reasons, it is worthwhile to consider how a linkage that provides offsets for California’s program from reducing deforestation in Central and South America can be achieved in coordination with the AB 32 framework. This effort is consistent with AB 32’s requirement for exploring linkages with other states and countries.

The question is whether international linkages can be done credibly, assuring that offsets are rewarded for real, additional and permanent reductions. There are serious issues as to whether California will be able to provide that kind of assurance.

B. The Problem with International Offsets

1. International Offsets Raise Serious Civil Rights Issues

As discussed above with domestic offsets, for every ton of an international offset acquired by a power plant or refinery, there is one less ton of reduction of greenhouse gas at the facility, or even worse, permission to increase emissions by one ton, with all of the co-pollutants or co-hazards that go along with foregone emission reductions. These facilities are disproportionately located near low-income communities and communities of color.

Similar to domestic offsets, international offsets pose an environmental justice and civil rights problem. Internationally, the issue is starker, as there is no question that the reductions in emissions do not

181 ROW RECOMMENDATIONS, supra note 93, at 4.
182 See CAL. HEALTH & SAFETY CODE § 38564 (Deering 2013).
183 See SCOPING PLAN, supra note 5 at 80-81.
184 See, e.g., What’s at Stake, supra note 109, Still Toxic, supra note 109; U.S. ENVIRONMENTAL PROTECTION AGENCY, supra note 111; Robert D. Bullard et al., supra note 111; David E. Adelman, supra note 111.
affect California’s residents. Moving emission reductions to Brazil or Mexico, for example, with money flowing out of California to purchase the offsets, clearly denies communities near power plants and refineries the co-benefits and investment promised in the scoping plan.

2. **International Offsets in Developing Countries Pose Special Problems in Assuring that They Will Be Real, Permanent, Quantifiable, Verifiable, Additional, and Enforceable Emission Reductions**

With domestic offsets, the offset developer and capped source purchaser are within the ARB’s jurisdiction. Regulations have been adopted that assure that if an offset is false, fails or otherwise is inadequate that the ARB can take enforcement action. The ARB can rely upon existing monitoring, inspections and other tools that an enforcement agency has available to it.

An international offset in a developing country is inevitably dependent upon the host country or third parties to validate the activities giving rise to the offset. Corruption at any stage in the development of the offset, from the initial reporting to the verification and monitoring will undermine the offset.

Corruption is a serious problem in developing countries. A brief review of the first two developing countries bidding to participate in the AB 32 program is a reminder of how serious this issue is. According to Transparency International, Brazil ranks 69th in its corruption index. Mexico ranks 105th. For comparison, Canada, whose province Quebec is the first international linkage approved under AB 32, ranks ninth, and the United States ranks 19th.

The Heritage Foundation in its 2013 Index of Economic Freedom ranks Brazil at 100. Brazil’s freedom of corruption score is 38, a low score, with the foundation stating “Despite some progress, corruption continues to be

Mexico’s freedom from corruption score is even worse, with a score of 30. For comparison, the United States is ranked tenth in the world and its freedom of corruption score is 71. Recent news articles about Brazil’s corruption trials and potential new investigations support these perceptions. Also, recent alarming stories about massive protests over corruption in Brazil indicate the extent of Brazil’s corruption problem.

Admittedly, there is technology today that would aid in the discovery and avoidance of fraudulent offsets, including satellite images. Whatever technology is used, however, the issue is the interpretation of data and the problem that there may be conflicts of interests in the verification of offsets. If the ARB is taking a passive role in assessing offsets, as suggested in its reliance upon international forestry programs known as REDD (“Reducing Emissions from Deforestation and forest Degradation”) in its regulations, satellite images, for example, are not enough to guard against corruption and manipulation of data. This issue is thoroughly discussed by the U4 Anti Corruption Resource Center in its briefing paper, “Corruption and REDD+ Identifying Risks and Complexity”:

Corruption in the implementation of REDD+ is linked to fraud in the collation and interpretation of data that will determine financial rewards. REDD+ generates incentives for dishonest measurements and reporting on reforestation achievements, avoided deforestation and good forest stewardship. Funds may be paid for projects that have not taken place, that have not been as successful as claimed, for achievements that would have occurred anyway (the problem of ‘additionality’), or are reversed after payments have been made (the problem of ‘permanence’). It is also possible that beneficiaries of REDD+ payments may attempt to exert undue influence or offer illicit financial


194 ROW RECOMMENDATIONS, supra note 93, at 42-43.

195 CAL. CODE REGS. tit. 17, § 95993(a) (2013) (“Sector-based credits may be generated from . . . REDD plans.”).
payments to agencies responsible for data production and analysis. The profits in doing so may be substantial.\textsuperscript{196}

Corruption is a difficult problem to measure because of its pervasiveness and secrecy, and this problem is exacerbated when measured on an international scale. For an international offset to provide some measure of assurance, the ARB would have to be proactively involved in a manner similar to what it does with domestic offsets. However, the ARB does not have the international tools that the federal government has, for example, a State Department. Even if it did, the ARB’s authority would be limited by international law if it tried to interfere with another nation’s sovereignty.

Beyond the issue of corruption, the technical problems of assuring that reductions are additional and permanent are quite complex. The key to any cap-and-trade and related offset program is that the baseline or reference level for offsets is set to assure that any emissions reductions are additional to what would happen without the program.

Otherwise, the program is foregoing additional reductions to what would occur without the program, making the program irrelevant.

The main motivation in encouraging offsets in developing countries is the enhancement of forests. The question becomes, what is the business-as-usual scenario in a situation when deforestation, the destruction of forests, is business as usual? If a lowering of the rate of deforestation is considered an emissions reduction, all that means is that less trees are being cut down. This is a far cry from the ARB’s domestic Urban Forest Protocol using a performance standard of a net gain in trees. Until there is actually an increase in trees, the ability to remove carbon continues to decline and yet offsets can be rewarded.

Even if one accepts the pragmatism of rewarding a declining rate of deforestation, determining whether to award credits still requires determining the appropriate baseline. If one bases the rate on a multiyear analysis, then it is possible that simply maintaining the same rate of deforestation of the prior year, if less than the multiple year period, would lead to the award of credits. Then the question becomes, how many years does one include in the baseline, and why was there a lower rate in the most recent of those many years. Was it an aberration, or had conditions changed in the forestry market or due to pests or other economic factors such that a lower deforestation rate would have happened anyway? Soon parties will be jockeying to adjust baselines and rate measurements to maximize the offset

and obscure the proper baseline. To make matters worse, the ARB will have to sort this out thousands of miles away.

The problem is not merely theoretical, as the leading province for linkage is believed to be Acre, in Brazil. Acre has a declining yearly deforestation rate and it will be below its 10-year average deforestation rate even if it doubles the rate of deforestation from 2011.\textsuperscript{197} If the rate were based upon a 3-year period, it could still merely maintain its rate of deforestation and get credits, though far fewer. Even if the 10-year average is a rolling average, it would be well beyond 2020 before any offsets awarded would actually be additional.

It would seem imperative if these reductions are to be additional to what is already occurring without AB 32 offsets that the baseline level be adjusted to capture the decline in deforestation rates over the last 10 years prior to the commencement of the linkage. Otherwise, Acre will have no incentive to continue with its progress and real and verifiable emission reductions in California will be foregone with no additional benefit in Acre, or in similar circumstances, Chiapas.

One suggested remedy for what would be a regulatory nightmare for a distant ARB is to rely upon third parties for regulatory oversight. The REDD Offset Working Group (ROW), a group of state representatives and technical experts who are developing recommendations for California, Chiapas and Mexico for how to implement linkage, have included in their recommendations numerous references to the use of third parties for the most important tasks of assuring these offsets are real. “California should recognize credits issued by Partner Jurisdictions or approved third-party programs that meet California’s requirements.”\textsuperscript{198} “California should rely on independent third-party certification and auditing of these programs rather than attempting to perform its own regulatory oversight.”\textsuperscript{199}

A third-party regulatory program, displacing the California Air Resources Board’s primary role under AB 32 as the chief implementer and regulator of the cap-and-trade program is not a trivial suggestion. How are these third parties accountable? How are conflicts of interest avoided? What is the role of the public in decisions made by third parties? In a situation where corruption is commonplace and the methodological issues are not transparent and are easily gamed, the checks and balances available to U.S. governmental agencies to offset validation would seem to be essential.

\textsuperscript{197} See ROW Recommendations, \textit{supra} note 93, at 14, Figure 1.3.
\textsuperscript{198} Id. at 5. See pages 7, 8, 24, 28, 30, 32, 46, and 58.
\textsuperscript{199} Id. at 58.
VIII. Can Offsets Be Made Credible?

Regulatory programs have incorporated offsets for decades without the issues presented in the ARB’s approach, and without the problems documented for the Kyoto CDM process. Principally, the Federal Clean Air Act has relied upon offsets in its New Source Review Program. ²⁰⁰

The differences between the offsets provided in the federal Clean Air Act and the ARB’s approach are substantial. Federal offsets are required for new major sources of pollution in areas failing to achieve health standards. ²⁰¹ The offsets must be enforceable and provide emission reductions that are otherwise not required. ²⁰² Under the federal Clean Air Act the offsets are approved on a project-by-project basis, either at the time they were banked or during the permit process for a new or modified source that seeks to use them. “Offsets are emission reductions, generally obtained from existing sources located in the vicinity of a proposed source.” ²⁰³ They are usually regulated sources, ²⁰⁴ subject to inspections and monitoring, within the jurisdiction of an air pollution agency, to assure there is no fraud. There are numerous opportunities for public involvement. ²⁰⁵ To the extent these sources are controlling beyond their permitted levels, there is at least some assurance that indeed the reductions are real. ²⁰⁶

The ARB’s offset program veers into unregulated areas and makes short-cut assumptions as to what would be a suitable baseline. The advantage is that areas beyond its immediate regulatory authority may contribute to reducing global warming, hopefully at a cheaper price than reductions at industrial sources. However, this regulatory scheme may lead

²⁰⁰ See 42 U.S.C. § 7503(a), (c) (2012).
²⁰² Natural Res. Def. Council v. S. Coast Air Quality Mgmt. Dist., 651 F.3d 1066, 1069 (9th Cir. 2011).
²⁰⁴ See Alice Kaswan, Climate Change, the Clean Air Act, and Industrial Pollution, 30 UCLA J. ENVTL. L. & POL’Y 51, 108-109 (2012).
²⁰⁶ Admittedly, on the state level, states have used EPA’s approval of Economic Incentive Programs to broaden traditional offsets to incorporate various trading schemes with traditionally unregulated activities. To the extent states have done this, they face the same environmental justice issues as ARB’s AB 32 offsets. See Drury et al., supra note 29; see also Nicklas A. Akers, New Tools For Environmental Justice: Articulating A Net Health Effects Challenge To Emissions Trading Markets, 7 HASTINGS WEST NORTHWEST J. OF ENVTL. L. & POL’Y 203 (2001).
to errors in the performance standards for specific projects or activities, resulting in a substantial risk that some of the resulting reductions may not be real.

If offsets are substantially unreal or not additional, it would mean that the promised emission reductions from cap-and-trade will not occur. That would not necessarily doom the entire AB 32 program because, as discussed above, it is a small part of the entire program. Even then, to the extent allowances are no longer passed out for free but must be purchased, carbon will have a price, though with cheap unreal offsets the price will inevitably be low. At that point cap-and-trade is functionally like a carbon tax, and like all carbon taxes, if they are too low it will not significantly change polluter behavior. At that point, the program will simply fund the government, who may be selling the allowances at auctions, and the offset developers, who may or may not be engaged in activity that is additional and beneficial.

Nevertheless, as discussed in the earlier part of this article, reducing cap-and-trade to essentially a tax that has no real effect on greenhouse gases will irretrievably discredit greenhouse gas regulation. And to the extent it delays needed reductions with their health co-benefits, it raises profound environmental justice issues. It is therefore crucial to get it right.

The discussion above suggests that the ARB might have been wiser to limit its offset program for emission reductions from stationary sources already regulated under state and federal air pollution laws, albeit not included in the AB 32 cap. Overcompliance would entitle a source to contribute an offset if it was permanent. These sources could be easily monitored and documented.

An alternative to a complete ban of nontraditional offsets that are from sources not regulated under state and federal air pollution laws is a far tougher limit on how many offsets could be purchased. The ARB by regulation has allowed offsets to potentially overwhelm all of the reductions from cap-and-trade, as discussed above. If nontraditional offsets were generally more limited, then the program as a whole would have credibility and these experimental offsets would be a true pilot program, at least through 2020. It would give the agency time to develop its expertise and methodology without undue harm to the program. If there are concerns about tighter offset limits leading to unduly high allowance costs, Professor Kaswan has suggested the ARB could increase the number of allowances available only to the extent needed to return to reasonable costs.\footnote{See Alice Kaswan, Comments on Supplemental Functional Equivalent Document, in \textit{California Air Resources Board, Responses to Comments on the Supplement to the AB 32 Scoping Plan Functional Equivalent Document} 46-9 (2011), \textit{available at} http://www.arb.ca.gov/cc/scopingplan/response_to_comments_on_supplement_to_fed.pdf. Professor Kaswan suggested in her comment limiting offsets to no more than 4\%, rather than 8\% of total emissions by 2020. The ARB did not specifically respond to...}
Professor David E. Adelman has suggested still another proposal to assure that non-traditional offsets do not lead to toxic hot spots in industrialized neighborhoods. He suggests identifying certain industrial facilities, such as steel mills, normally located in toxic hot spots and discounting the value of any offsets they purchase, or putting a premium on their price, and requiring enhanced monitoring. The advantage of this approach is that it does not bar offsets completely, allowing some flexibility and cost-control; however, it creates the problem of finding the sweet spot of the discount so that it is strong enough to limit offsets without curtailing them completely. It would seem a firm limit on such offsets would be more reliable than guessing at the market effect of a premium.

Even a well-regulated offset program from nonregulated sources has the potential to cause environmental justice issues as described above. This problem could at least be mitigated by directing that some of the proceeds from an offset sale be directed towards the Greenhouse Gas Reduction Fund, which based upon SB 535 (2012) has a portion targeted specifically to disadvantaged communities.

If the ARB wishes to explore the world of international forestry, it cannot assign out its governmental responsibilities to third parties. It needs to do its own evaluation of the appropriate baseline and avoid the use of performance standards. A sector approach for international offsets might be promising, but it needs to assess all of the circumstances including short term and long term trends and establish sufficient agreements to allow it to monitor and inspect as well as rely upon satellite data to understand whether a reduction in deforestation is really something new resulting from the prospect of being awarded an offset credit or just business as usual.

this suggestion, just noting in general that existing permits, regulatory controls, and enforcement actions makes adverse air pollution impacts “unlikely.” Id. at 46-39. The author suggests focusing in on the nontraditional and international offsets and more aggressively reducing them to perhaps 4% of the “emission reductions” anticipated in the Scoping Plan, truly a pilot program that will not swamp the anticipated program benefits.

208. David E. Adelman, supra note 111.


210. California State Senator Ricardo Lara has proposed eliminating international offsets entirely, in a bill that is supported by the Coalition for Clean Air and the State Building Trades Council of California and opposed by the California
By minimizing offsets from unregulated pollution sources, abandoning a generalized performance standard for a holistic case by case or sector by sector approach, refusing to farm out its responsibilities to third parties and mitigating environmental justice concerns, the ARB could salvage in principle its greenhouse gas offset program. It could also hope that while there are theoretical flaws that could allow the program to be gamed, that for most offsets the performance standards will on average in practice end up identifying real offsets in most cases. ARB seems to rely on the latter strategy. It is effectively rolling the dice with odds only more likely than not that it will succeed—a little better than flipping a coin and calling heads.

The test of whether the ARB’s pragmatic strategy will work will be in the actual data from the operation of AB 32. Auction prices should rise as free allowances are phased out and the cap decreases. If the prices do not rise, capped companies are possibly innovating and thereby reducing their emissions. Alternatively, an oversupply of cheaper offsets may be available. If offsets are plentiful enough to fully meet the amount allowed under AB 32 by 2020, then possibly, they are too easy to come by. The selling price of offsets in the period after the market settles and companies become experienced with the program would also be a signal of the supply of offsets. The allowance auction price, the number of offsets being created and used and their price will be important data points to watch.

Still, the complete answer will require a careful audit of the offsets. Have rates of deforestation fundamentally changed in California and in developing countries linked to the program? Are rates of destroyed refrigerants and farm biogas digesters increasing throughout the US even for those entities outside the program? The answers to these questions and the relevant data points of the program will demonstrate whether the ARB has


211. A senior analyst at Thompson Reuters Point Carbon now predicts that California carbon prices will be reduced by two-thirds from initial forecasts due to reduction of emissions from other AB 32 programs and the supply of allowances and offsets, an ominous sign. Thomson Reuters Point Carbon lowers California carbon price forecast by two thirds, POINT CARBON (Sept. 9, 2013), http://www.pointcarbon.com/aboutus/pressroom/pressreleases/1.2562573.
been wise in its approach. It will also determine who has won the offset game and who has lost.

IX. Conclusion

Cap-and-trade's initial promise was that two sources, under obligations to comply with regulations, could choose the cheapest method of reducing emissions to meet an overall cap on emissions at the least cost via market mechanisms. By trading its right to pollute created by reducing emissions, a source could monetize its innovation and, for a price, help another source avoid doing more expensive reductions. California threatens to have a cap-and-offset program, instead of cap-and-trade, with offsets that may be illusory. On paper it may achieve its goals of reducing emissions, but in reality, the system fails to reduce global emissions of greenhouse gases while assuring environmental justice for all of its residents.