

**COMMENTS OF ENVIRONMENTAL DEFENSE
On ETAAC Discussion Draft Report**

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Overview

Thank you for considering the comments of Environmental Defense on the Economic and Technology Advancement Advisory Committee's Discussion Draft Report (report) released on November 15, 2007. Environmental Defense is a leading national nonprofit organization representing more than 500,000 members. Since 1967, we have linked science, economics and law to create innovative, equitable and cost-effective solutions to society's most urgent environmental problems.

Environmental Defense is encouraged by the recommendations in the report and its focus on incentive-based policies, including cap-and-trade, that will inspire early action by innovators and that systematically, continuously and speedily seek low-cost solutions over the long term. We also appreciate the solution-oriented clarity of the report structure that highlights GHG reductions potential, ease of implementation, mitigation requirements, responsible parties and co-benefits potential.

In the interest of brevity, we focus on major critical comments after highlighting particularly promising recommendations. Our quick turn to critical comments should not undermine our strong support for a recommendation that forms a core of the report's "overriding themes":

- Augment existing financial incentives with innovative programs (pg. 2-3), such as feebates (pg. 2-17), that lead to GHG reductions via regulated entity and consumer choices.
- Incorporate and develop a multi-sector cap-and-trade program that:
 - o includes "as many different sectors of the economy as possible" to encourage all sectors to act in the "most cost effective manner" (pg. 8-2)
 - o disburses allowances using auctions (pg. 8-3), and that uses quickly auction revenues to "achieve the same goals as GHG mitigation" (8-4)
 - o takes advantage of environmental justice co-benefits (pg. 8-4)
 - o creates "financial vehicles and programs" (pg. 8-4) to catalyze private and public investment in clean technology.
 - o supports the creation of offsets opportunities (pg. 8-5)

In the following discussion Environmental Defense provides detailed comments on the industrial, transportation, forestry, agriculture and electricity sectors, as well as cap-and-trade program design recommendations. Prior to doing so, we identify significant additional guidance that would be helpful to include in the report.

Missed Opportunities in the ETAAC Recommendations

In addition to the valuable contribution constituted in the report recommendations, there are some important missed opportunities. Environmental Defense supports a position that GHG mitigation with cap-and-trade and offsets must not result in further burdening of EJ communities. Further, market mechanisms should allow market actors to obtain a return on investments that implement sustainable solutions within EJ communities and make co-benefits a priority.

ETAAC has thus far missed the opportunity to provide clear guidance on how market mechanisms and a California Carbon Trust can be focused to achieve the co-benefits of criteria and air pollutant reductions in EJ communities. The report indicates that the California Carbon Trust will “support Environmental Justice” goals of empowering communities and reducing criteria and toxic pollutants” but then provides no clear mechanisms to do so. Most notably, there is no suggestion for connecting local objectives with state-level decision-making. Environmental Defense suggests that the ETAAC solicit detailed recommendations from the Environmental Justice Action Committee as it develops recommendations about market mechanisms and cap-and-trade program design features to achieve GHG mitigation and EJ goals.

We suggest ETAAC encourage CARB to develop recommendations for local public outreach, education and planning processes that provide EJ community members opportunities to understand the sources of GHG emissions and associated mitigation strategies, as well as potential benefits and risks of strategies in terms of criteria and toxic air pollutant emissions, and then gives communities opportunities to influence investments. In short, ETAAC provides no convincing reason why EJ communities should believe that Clean Tech investments will benefit their communities.

The EJAAC report misses the opportunity to make several important linkages. There is no discussion in the Industrial section of how cap-and-trade policy might be used in unison with performance standards and incentives for fuel switching. Also omitted is a clear connection between a cap-and-trade program and offsets within the agricultural and forestry sectors. Finally, the report should go further with its transportation-related recommendations to call for a statewide indirect source rule, improved regional planning that emphasizes smart growth and Tailored Mass Transit, and requires developers to minimize and mitigate the GHG impacts of their projects.

Cap-and-trade Program Features

Environmental Defense is pleased that the report recommends several of the cap-and-trade features that we deem needed for a robust and efficient market for carbon credits, including:

- Broad, multi-sector program that includes as many sectors as possible.
- Auctions to serve as the predominant means to disperse allowances
- Banking to incentivize early action, innovation and the use of low-cost GHG mitigation strategies. We highlight the need to provide banking rules that do not allow for a net loss in overall reductions of GHG and co-pollutant emissions, and that avoid co-pollutant emissions or other environmental risks in EJ communities.
- Establishing a framework to manage auction revenues
- A “market-maker” for cost containment rather than an artificial and hard-to-quantify or justify “safety valve” price ceiling. We do support the need for a price floor, but again prefer a public market maker to a predetermined value.

Environmental Defense recognizes that there are limitations associated with relying too heavily on cost-effectiveness decision criteria. We think the report ought to clearly identify additional criteria and to suggest methods to use them in decision-making. Cost-effectiveness has limited utility because it is difficult to quantify broad, long-term social benefits accurately and completely. Also, cost-effectiveness metrics cannot provide information about the equity dimensions of decisions, such as who pays, who benefits, and if the risks and benefits are located in the same place and time. Similarly limiting is the use of cost-effectiveness criteria to compare investments in social processes that don't show direct, near-term GHG (or co-pollutant) reductions, and thus have unfavorable cost-effectiveness quotients, because they build the capacity for other investments to succeed. Two obvious examples are programmatic funds for environmental organizations and research institutions, such as universities, and investments in youth education.

Environmental Defense supports policies that provide incentives for investments of offsets. Specific goals pertaining to agricultural and forestry sector offsets are discussed in more detail below. We highlight ETAAC's acknowledgement of the potential need to develop geographic or quantity limits on offsets (pg. 8-5) though the final decision is premature in absence of other market design components in place.

Electricity Sector

Environmental Defense agrees that it is a good idea to provide credit for early action. Our only caution is that we do not believe it is necessary to associate emission reductions with "property rights" as suggested in the report. Ultimately emission reductions are legal/regulatory obligations that regulated entities are required to undertake and are thus distinct from legal rights, such as property ownership. Associated property rights to emissions reductions may create constitutional issues pertaining to compensation and unlawful takings.

Environmental Defense agrees with the report recommendation for unifying standards for climate related programs. It should be a goal of the state to have more synthesis and less duplication between various GHG emissions reduction programs. We note that there is an ongoing proceeding at the California Public Utilities Commission in which Environmental Defense has supported the creation of a California Climate Institute that could potentially play an important role in providing unifying standards. Later in the chapter, the report mentions renewable energy sources, Smart Grid, and carbon capture and storage (CCS) as possible strategies that should also be investigated and pursued in the overall framework for a unified standard for climate programs.

Environmental Defense agrees that Renewable Energy Zones are worth pursuing.

Environmental Defense agrees that there are several technologies, including electricity storage, plug-in vehicles providing electricity storage, LEDs, CCS, Smart Grid, that have the potential to be important "game changers" or at least make substantial contributions toward our climate and other environmental goals. Our only caution is to ensure that a regulatory and financial setting be created that does not discriminate against the emergence of certain technologies and thus ensures technology neutrality.

Environmental Defense supports the idea of feebates or other incentive-based financial mechanisms. We supported a feebate bill last year (Ruskin AB 493) that would have levied a fee on higher polluting cars and redirected the proceeds to incentivize the purchase of lower polluting vehicles through the feebate mechanism.

Industrial Sector

Several report recommendations for the industrial sector merit highlighting:

- Improving governance around climate change rules, information sharing, and general business knowledge. Generally, low-cost solutions are best implemented when the marketplace has complete information, so we support the idea of increasing information exchange between and amongst businesses and government agencies.
- Avoiding regulations that lead businesses to relocate out of California into more emissive and less energy efficient areas.
- Increasing incentives and programs to improve energy efficiency and to develop GHG reduction activities, such as private financing opportunities, government/industry partnerships, funds for demonstration projects, modifying working hours, etc.
- Creating programs to implement known technologies, such as rebates for load reduction, better policies for more expansive use of combined heat and power.
- Creating waste reduction (and waste emissions reduction) programs and policies.
- Creating and improving programs to increase energy efficiency in buildings.
- Creating standards to increase energy efficiency of combustion devices.

Environmental Defense suggests that this report provide an opportunity to address several additional recommendations, including:

- Discussing of how a cap-and-trade program is an attractive mechanism to achieve GHG reductions in the industrial sector. The report acknowledges the need for the California policies to be cost-effective and to thus reduce incentive for businesses to relocate operations out of the state, but does not make the link to low-cost benefits of cap-and-trade policy.
- Providing a recommendation for energy efficiency “backstop” performance standards for combustion devices that have been traditionally left out of regulatory programs. Though it is likely that these devices will be addressed through cap-and-trade programs because they are low cost strategies (often with positive short-term payback), performance standards may be necessary to get at emissions reduction from all sizes of businesses, including small operators that are not likely to participate actively in permit trading.
- Noting that loan assistance programs, information sharing, and government/private partnership creation all are excellent ways to disseminate information and improve technology deployment. These will help business to overcome economic hurdles and shouldn’t interfere with cap-and-trade dynamics.
- Acknowledging that mandatory waste reduction and gas capture requirements for landfills are regulatory measures already being implemented in California.

To the extent that there are other direct regulatory measures for reducing GHG emissions within the industrial sector, the report remains silent. Rather, the comments dealing with (1) efficiency standards for combustion sources, and (2) landfill gas capture are the only areas where the report ventures into direct regulation. Additional report recommendations for performance standards in high GHG-emitting industries, such as refineries and cement plants, ought to be more explicitly developed. In developing these recommendations, the ETTAC should acknowledge the need to consider to the myriad benefits, such as technology-forcing policy and co-benefits, that might not be readily apparent if using only the cost-effectiveness criteria presented at the front of the section.

Environmental Defense would like to see explicit recommendations toward promotion of widespread fuel switching away from fossil fuels toward electricity or biogenic sources.

Finally, as discussed above, the section is silent on recommendations for how a cap-and-trade programs will facilitate the goal of achieving industrial sector innovation and emissions reductions as the lowest possible cost.

Transportation Sector

The report introduction mentions that the decisions that California makes now can affect energy use far into the future, noting the example of energy plants (pg 1-7). The report should also emphasize this connection for transportation and land use infrastructure choices. Choosing to build a freeway, or provide growth-related infrastructure such as sewers, for example, can cause communities to develop in sprawl patterns that increase vehicle miles traveled and GHG emissions rather than more favorable smart growth patterns.

Because of this long-term development impact, it is essential that the environmental costs of infrastructure that increases low-density development patterns not be borne by the public. The report focuses on creating good development and mentions tying infrastructure decisions to funding (pg. 3-19). The report should also include specific recommendations to reduce the infrastructure that leads to low-density development, or to ensure that the public does not bear the costs, including the environmental costs, of that infrastructure. One such policy would be a requirement that scarce state and local funds not be devoted to infrastructure that supports sprawling development patterns, but rather be devoted to projects that are expected to reduce greenhouse gas emissions, such as infill projects located near services and public transit.

On the topic of smart growth, the report recognizes the difficulty of putting policies in place in some regions (pg. 3-17). This difficulty reflects that localities often do not take into account externalities that are apparent on the state or regional level. A statewide indirect source rule for GHG emissions mitigation would overcome these barriers by requiring developers to take into account the GHG emissions from vehicle and energy use that result from their project design decisions. The report should include a statewide indirect source rule in its recommendations, along with its recommendations for improved planning.

The report often emphasizes the importance of internalizing externalities by putting a price on vehicle miles traveled (VMT). We support this general proposition. Tools such as pay-as-you-drive insurance, road/congestion pricing, and parking programs help accomplish this. We support ETAAC's pricing policies in these areas, but feel that additional parking programs should be recommended. For example, localities should price street parking at market rate to reduce cruising for parking and to encourage carpooling and alternative forms of transportation. To increase options and avoid inequity, ETAAC should recommend that any pricing policies that are put in place include improved opportunities for alternative transportation and that revenues collected are funneled into alternative transportation.

With or without VMT pricing policies, mass transit options must be improved to become competitive with personal auto use. These improvements should include much more than bus rapid transit (pg. 3-12) and high-speed rail (pg. 3-21), which are emphasized in the report. The report should more broadly recommend Tailored Mass Transit (TMT), which assertively matches transit options (BRT, conventional buses, shuttles, jitneys, vanpools,

etc.) to need and demand. It also emphasizes individualized transportation marketing to ensure the public is aware of and knows how to use available transportation options. Additionally, the report should note that investment in bus rapid transit and high speed rail must occur only when the potential for these modes to increase sprawl is very low or mitigated.

The report recognizes the importance of low-speed modes of transportation, such as bicycles (pg. 3-23). It recommends that funding for bike lanes, etc., be a priority. However, it fails to recommend that local governments require “complete streets” in all new developments, so that this infrastructure retrofit problem does not continue into the future. ETAAC should recommend requiring complete streets.

Policies that reduce VMT are essential and should be coupled with technology improvements. The report recommends methods by which new technology will be created and gain market share. For example, we support the report recommendation to strengthen requirements for fleets to improve the market penetration of lower GHG technologies. We also share ETAAC’s concern about the land use impacts of certain technologies (pg. 3-29) and recommend that ETAAC emphasize that any new technology should be environmentally sustainable, in terms of land use, criteria pollutants, and displaced impacts.

Agricultural Sector

Agricultural lands and associated operations in California offer strong potential for both reducing GHG emissions and sequestering carbon dioxide in vegetation and soils. For many cropping systems in California, additional research is necessary to determine more precisely the magnitude of potential carbon sequestration and management practices that will capitalize on this potential. Environmental Defense strongly supports the report recommendations for a strong public commitment to enhance knowledge of GHG emission reduction and carbon sequestration strategies in the agriculture sector.

Agricultural offsets: Carbon sequestration in soils and other carbon sequestration and GHG emission reduction strategies in the agricultural sector should be considered for inclusion as an offset opportunity in a multi-sector cap-and-trade program. An agricultural offset program should be built upon strong measurement and verification protocols and on a strong scientific understanding of dynamics in agricultural systems. As a guideline, we recommend that CARB look closely at the recently published manual for GHG offset project entitled *Harnessing Farms and Forests in the Low Carbon Economy* (Duke University Press, 2007).

Farm and rangeland protection: The state should strengthen significantly efforts to protect farm and rangeland from unplanned development including increased funding for agricultural conservation easements, and strengthening and expanding the Williamson Act.

Farm engines: Farm vehicles and stationary engines represent a significant source of GHG emissions. Regulatory and incentive-based measures to reduce emissions and enhance the efficiency of these engines will have a significant climate benefit. Quantifying that benefit will require more detailed data (and reporting) about engine type and usage than are currently available. CARB is already planning a rule to reduce emissions of criteria pollutants associated with in-use on-farm vehicles and should incorporate reductions in GHG into this rule. Toward this end, ETAAC should recommend that CARB consider ways to encourage increased fuel efficiency and use of alternative/low carbon fuels in farm equipment. ETAAC should also recommend strategies to convert stationary diesel engines (e.g. irrigation pumps) to electric pumps.

Biofuels: Environmental Defense supports efforts to develop new technologies to better utilize agricultural residue for fuels. Considerable care must be taken to avoid negative environmental side effects from a major expansion of dedicated biofuel crops.

Nitrous Oxide emissions and fertilizer-use: Environmental Defense supports the report recommendation that considerable effort be applied to understanding how to modify fertilizer application to reduce nitrous oxide emissions. Nitrous oxide (N₂O) is a potent greenhouse gas and, like methane, has been given less attention in GHG mitigation strategies. Considerable research is needed to understand precisely how nitrogen behaves in agricultural systems in California and we support the report recommendation to devote public resources to improving our knowledge in this area. In addition to potential reductions in N₂O, strategies to apply and use nitrogen more efficiently offer considerable environmental co-benefits associated with reduced nitrogen in the environment.

Riparian Restoration and Farmscape Sequestration: Environmental Defense strongly supports the report recommendations related to enhancing sequestration on farm buffers and corridors. Such activities will provide significant environmental co-benefits and will engender strong public support.

Forestry Sector

Environmental Defense supports a strong role for forests in implementation of AB32 in recognition of forests' role as potential carbon sinks and sources of carbon emissions. Globally, the forest sector accounts for approximately 20% of GHG emissions so significant efforts are needed limit emissions and incentivize appropriate carbon sequestration.

Policies to accomplish these objectives must take into account the ecological complexity of forests. This is particularly important in California where a wide diversity of forest types support globally distinctive biodiversity and provide a range of ecosystem functions, most notably the provision of clean water.

The report suggests the following theme to guide policy choices: “enhance gain, avoid loss.” Yet in so doing, ecological values and attributes of forests may be compromised and therefore Environmental Defense suggests this theme statement must be qualified

with the following phrase: "... while enhancing the ecological integrity of forested landscapes." Policy choices made to address climate concerns must be screened for their ecological impact to ensure that the wide range of forest values are enhanced, including the provision of clean water and habitat for wildlife.

A policy approach driven by an overarching concern for the ecological integrity of California forests must consider a long time horizon. California has some of the longest lived trees and oldest forests in the world and our policies must be able to accommodate actions on the ground that at smaller scales and over shorter time frames yield negative results if accounted for only in the units of carbon dioxide equivalents. For example, in order to increase resilience to fire and improve ecological integrity of mixed conifer forests on the west slope of the Sierra Nevada, prescribed fire and some degree of forest thinning is often necessary. In the short term (i.e., 10 to 20 years), such a treatment will likely yield net GHG emissions. But in the context of a forest type that doesn't reach maturity for 200 to 250 years, these treatments will result in a more resilient forest that sequesters significant carbon and provides a wide range of forest ecosystem services as compared with a similar forest that did not benefit from these remedial treatments.

Given this context, we offer the following specific comments and recommendations:

- A starting point for concerted action in the forest sector is the creation of strong accounting standards. Toward this end, we bring to ETAAC's attention a new manual, entitled Harnessing Farms and Forests in the Low Carbon Economy (hereafter, The Duke Standard), which includes specific recommendations for developing an accounting system for the forest sector. The recently adopted California Climate Action Registry (CCAR) forestry protocols are generally compatible with the approach outlined in the Duke Standard but improvements should be made to strengthen the application of forest carbon accounting to the entire forest sector.
- The state should set an emission reduction target for the forest sector. The target should be based on a detailed inventory and ecological assessment of forests by subregion and forest type. Some forests are amenable to additional carbon sequestration and others are not (i.e., overstocked forests subject to catastrophic fire risk and insect/disease damage). The inventory and assessment would provide a scientific basis for setting a reasonable net emission reduction target for the forest sector.
- Environmental Defense supports the creation of opportunities to generate GHG emission reduction offsets in the forest sector as part of a multi-sector cap-and-trade program. An offset program should be built upon strong measurement and verification protocols and on a strong scientific understanding of forest dynamics.
- Environmental Defense supports implementation of a suite of incentive-based programs to encourage private landowners to engage in forest management that sequesters carbon and enhances the ecological integrity of forests. Specifically, we

recommend that programs such as the California Forest Improvement Program (CalFire) that provide technical and financial assistance to private landowners be greatly enhanced, with funding at levels substantially higher than at present. Incentive programs at the state level should be coupled with federal incentive programs (e.g., Farm Bill conservation programs) to the greatest extent possible.

- The report makes several mentions of “reducing wildfire emissions.” This concept must be sensitive to the reality that fire in California forests is inevitable and essential to the enhancement of ecological integrity. Our forest policies as leavened with sensitivity to global climate change must allow for appropriate use of fire as a management tool. This includes well-developed concepts in the area of Wildland Fire Use, a set of techniques that embrace wildfire as a management tool under very specific circumstances and generally in remote forested regions.
- The report section entitled “Reforestation and Forest Management for Enhanced Carbon Storage” wades into highly complex and controversial territory yet lacks specific on-the-ground policy recommendations. Environmental Defense recommends that this section be removed from the report unless significant modifications are made.

In this section, the concept of “reforestation” is presented as a universally accepted best management practice when in fact the science and forestry community have been engaged in a vigorous debate in recent years about the appropriate utilization of reforestation techniques and practices, particularly following fire events on public lands. The concept of a “reforestation backlog”, for example, is not universally accepted. The report states that “multiple ecosystem and economic benefits [arise] from reforestation...” and that “active planting with native tree species would provide watershed improvement, wildlife habitat diversity, erosion stabilization, and forest health.” These sweeping and unqualified statements ignore current scientific debates and disagreements in the forestry community and will inflame passions rather than engender solutions. Promotion of these concepts without greater sensitivity to site specific ecological conditions, land use designations, and landowner objectives threatens to further erode public confidence in forestry and diminish the likelihood of forests playing a significant role in AB32 implementation.

The same degree of nuance should accompany recommendations related to the modification of management on existing forests (i.e. forests that have not been harvested or subject to catastrophic disturbance). ETAAC should acknowledge that modifications to forest management must be made on a site-specific basis with full consideration given to landowner objectives and ecological conditions. Some forest sites are amenable to increased stocking whereas others are not.