



# ALLOCATING AB 32 ALLOWANCES AND FEES: PERSPECTIVES & FINDINGS

JULY 2009



The California Air Resources Board's (CARB) implementation plan for California's Assembly Bill 32 -- the Global Warming Solutions Act of 2006 -- includes a broad "cap-and-trade" system for greenhouse gas (GHG) allowances. Next 10 with the International Council on Clean Transportation convened a small, informal workshop on April 16, 2009, bringing together experts, decision makers and stakeholders with a broad range of perspectives around the question of how California will use resources from GHG allowances and fees. California can learn about varying options for GHG allowance allocations from the experience of the European Union (EU) and other regions of the world that have implemented various carbon/GHG emission pricing schemes.

**Some of the key economic lessons are:**

- Companies will charge for the "opportunity cost" of allowances to the extent that they have the ability to do so, regardless of whether they pay for allowances through an auction or receive them for free. This led to windfall profits in the European Union.
- The value of allowances will far exceed the cost of reductions for many years, providing an important resource that can support the objectives of AB 32.
- Auctioning allowances with a pre-determined price floor prevents price collapse and therefore creates greater stability in GHG emission allowance markets.



**Some of the key lessons regarding AB 32 objectives are:**

- The workshop discussions highlighted that in most cases AB 32 objectives related to allocations are not in conflict. Differences are more likely to emerge when discussing which policy options are most effective at achieving the highest priority AB 32 objectives.
- Equity is a key priority that can be addressed in different ways. States participating in the Regional Greenhouse Gas Initiative (RGGI) in ten eastern states have acted on the expectation that, generally speaking, funding energy efficiency provides greater benefits to consumers than direct rebates.
- Allocation decisions intended to subsidize energy rates (such as cents per kilowatt-hour) can conflict with the goals of encouraging efficiency and conservation.
- Investments in energy efficient buildings, transportation, and industry and RD&D into low and zero carbon technologies not only maximize environmental benefits, but the end result can coincide with the AB 32 objective of maximizing economic benefits and minimizing economic costs.
- Perhaps the most effective way California can play a leadership role with AB 32 is to provide a model of how to grow the economy while simultaneously curbing carbon and other GHG emissions.

# INTRODUCTION

The California Air Resources Board's (CARB) implementation plan for California's Assembly Bill 32 -- the Global Warming Solutions Act of 2006 -- is intended to reduce state carbon dioxide (CO<sub>2</sub>) and other GHG emissions to 1990 levels, a roughly 25 percent decrease from business-as-usual, by 2020. In addition to GHG performance standards, the plan includes a broad "cap-and-trade" system for greenhouse gas (GHG) allowances, as well as emission fees on certain non-CO<sub>2</sub> GHG. Under a cap-and-trade regulatory model, firms that emit greenhouse gases must obtain "allowances" -- essentially tradable pollution permits -- to comply with a statewide cap, thereby allowing the market to allocate reductions efficiently.

California's Market Advisory Committee, Economic and Technology Advancement Advisory Committee and Environmental Justice Advisory Committee have recognized the importance of how allowances and potential fees and/or revenues from possible GHG allowance auctions are allocated. The AB 32 Scoping Plan recognizes a range of allowance policy suggestions without recommending a specific allocation method. As noted by CARB Chair Mary Nichols at this April 16, 2009 workshop in Sacramento, CARB will provide a set of recommendations to the California Legislature on allowance allocations by the end of 2009. In addition, the newly formed Economic and Allocation Advisory Committee will also consider various allowance allocation options for designing a cap-and-trade program in California.

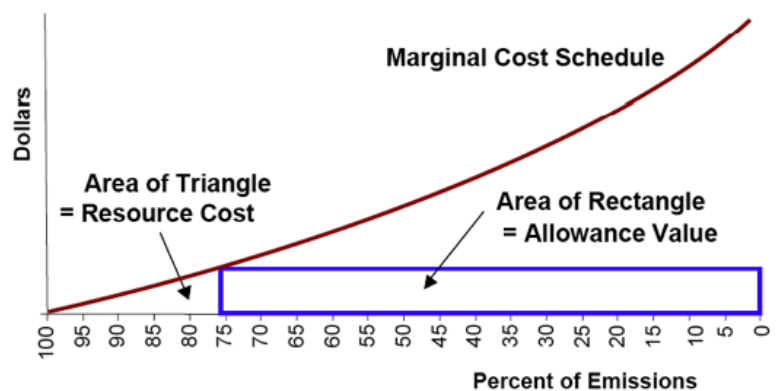
This report summarizes the findings of a workshop designed to bring together a small group of experts, policymakers, and stakeholders representing a diverse range of perspectives to learn from past experience, and discuss the objectives of AB 32 and corresponding potential GHG allowance and fee allocation policy choices. We believe that lessons learned from this workshop will help inform decisions at the state level, and will also be helpful to policymakers addressing similar questions at the federal level.

# KEY MESSAGES

The workshop opened with remarks from Dallas Burtraw, Resources for the Future ([www.rff.org](http://www.rff.org)), an expert in market-based approaches to regulating environmental challenges; and Franz Litz, World Resources Institute ([www.wri.org](http://www.wri.org)), a well-respected authority on global environmental trends and solutions. Burtraw and Litz provided presentations on existing allocations experience. The following summary highlights key points raised during their presentations and ensuing workshop discussions. The full presentations are available at [www.next10.org](http://www.next10.org).

It is clear from the presentations that California can learn about varying options for GHG allocation allowances from the experience of the European Union (EU) and other regions of the world that have implemented various carbon/GHG emission pricing schemes.<sup>1</sup> As depicted in the hypothetical graph below, the total resource cost of a 25 percent reduction in GHG emissions (Area of Triangle) -- comparable to AB 32's goal for 2020 -- is significantly smaller than the total allowance value (Area of Rectangle) even before considering that CARB expects that many measures will achieve net cost savings. This illustrates that the value of the allowances will far exceed the costs, and in theory, GHG emission reductions will only occur at costs up to or below the price of available allowances.<sup>2</sup> (Over time, marginal resource costs will likely increase as more difficult mitigation measures are implemented to meet tightening GHG emission reduction targets.)

**FIGURE 1**  
Hypothetical Cap and Trade Cost Curve through 2020



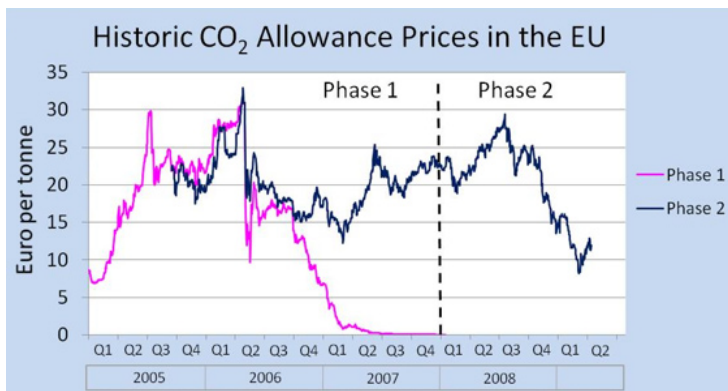
(Source: Resources for the Future)

Burtraw explained that companies will charge for the “opportunity cost” of allowances to the extent that they have the ability to do so, regardless of whether they pay for allowances through an auction or receive them for free. Companies are obligated to maximize shareholder profits. For example, a gasoline supplier would likely still charge market rates for gasoline even if supply was obtained at no cost.

“States participating in the RGGI have acted on the expectation that, generally speaking, funding energy efficiency provides greater benefits to consumers compared to direct rebates or dividends.”

The EU Emissions Trading System (ETS) initially “grandfathered” virtually all allowances, leading to large windfall income transfers from consumers to producers. In the EU electricity sector, windfall profits came about because electricity generators were able to pass along the cost of allowances. (The sector is particularly insulated from competitiveness concerns.) Workshop participants pointed out that in some instances, free allocations to steel manufacturers under the ETS exceed those needed to cover actual emissions, a different pathway to excess profits than in the electricity sector. This resulted in a \$1.5 billion windfall from selling free allocations at a profit.<sup>3</sup> Participants also noted that electric utilities in California that are regulated by the California Public Utilities Commission (CPUC) would likely not be allowed to pass such windfall profits through to their shareholders.<sup>4</sup>

**FIGURE 2**  
**Historic Prices in European Union Emissions Trading System** (1 Euro = approximately 1.4 USD)



(Source: Point Carbon)

Burtraw explained that prices for allowances are not determined by an “equilibrium” between normal supply and demand cost-curves because allowances, unlike typical goods or services, have no inherent embedded costs. This feature allows their price to fall all the way

down to zero if there is more supply than demand, unlike a traditional product, where production costs create a type of floor under commodity prices. (Note that the price for allowances that could be used during EU ETS Phase I was

nearly zero for much of 2007.) Auctioning allowances with a pre-determined price floor prevents price collapse and therefore creates greater stability in GHG emission allowance markets.

Franz Litz of the World Resources Institute reported that the Regional Greenhouse Gas Initiative (RGGI) currently underway in ten eastern states (see *Figure 3*) is another allowance model that California can learn from. RGGI states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont) chose to auction the vast majority of allowances (with a price floor) and then distribute the proceeds to consumers in the form of subsidies for energy efficiency upgrades or investments in new renewable energy generation.

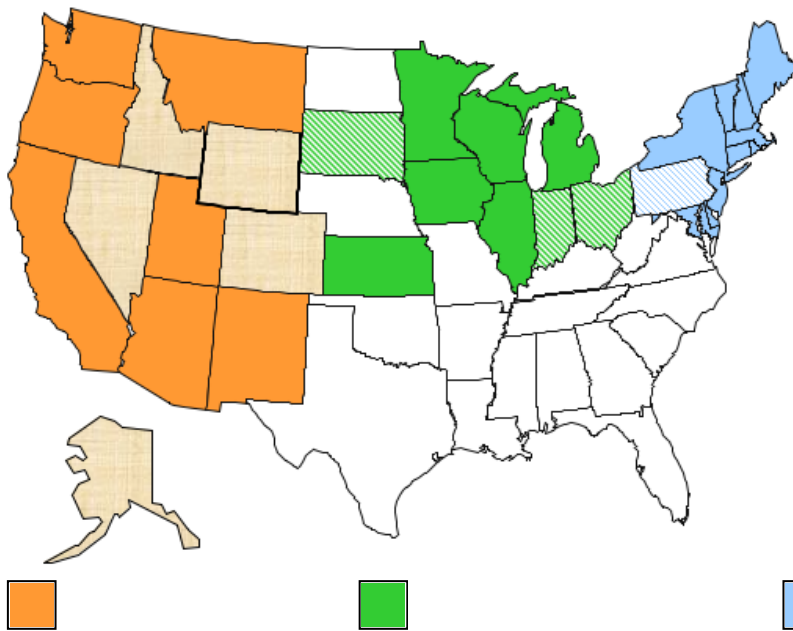
Following the principle that entities that pollute should pay for their allowances, the RGGI model stands in stark contrast to the initial EU free allocation model. The RGGI model was also designed based on the principal of distributing allowance value to benefit the group that in the end bears compliance costs. States participating in the RGGI have acted on the expectation that, generally speaking, funding energy efficiency provides greater benefits to consumers compared to direct rebates or dividends.<sup>5</sup> Modeling analysis showed that using the majority of anticipated auction revenues on energy efficiency would avoid using the most expensive sources of electrical generation.

### FIGURE 3

#### U.S. Regional Emissions Trading Initiatives

33 States Involved in Emissions Trading Program; 23 Active States

(Source: World Resources Institute)



Western Climate Initiative  
(and observers)

Midwest Cap-and-Trade Accord  
(and observers)

Regional Greenhouse Gas Initiative  
(and observers)

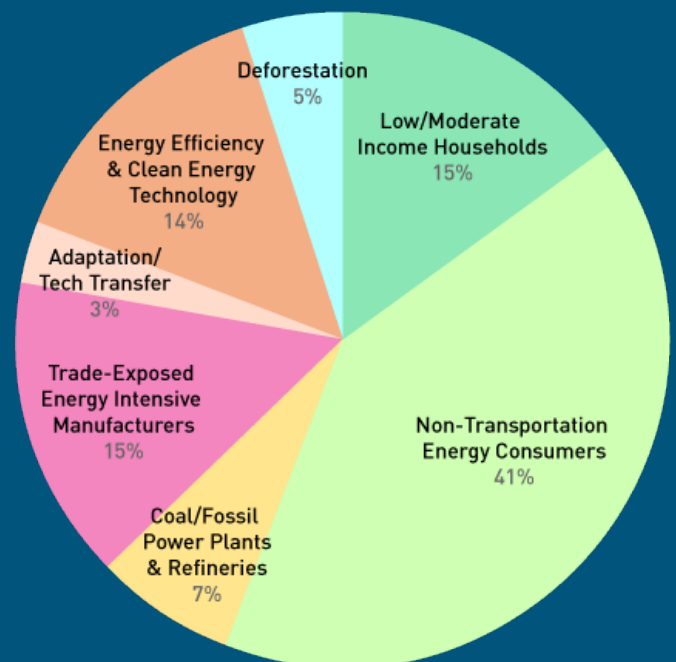
“In addition to the electricity sector, the proposed cap for California would extend to the transportation sector, which is the source of approximately 40 percent of the state’s GHG emissions. California’s carbon cap will also cover direct industry GHG emissions, which may create a political issue as some industries may claim they cannot pass on these mitigation costs to consumers in the face of national and international competition.”

## WAXMAN-MARKEY

Workshop organizers note that subsequent to the workshop the Waxman-Markey climate bill (H.R. 2454) passed the U.S. House of Representatives on June 26, 2009. The bill would allocate the value of allowances as shown in this pie chart for 2020 (see proposed new Clean Air Act section 782), with changes over time. For instance, allocations to energy consumers and energy producers are scheduled to phase-out between 2026 and 2030; allocations to manufacturers could also be phased-out between 2025 and 2035. Allocations to public purpose programs such as adaptation, reducing deforestation, and international technology transfer are scheduled to increase over time. States would oversee important decisions about how allowances are allocated for the benefit of energy consumers, such as whether subsidies for increasing energy consumption could be avoided, and would also play an important role investing funding for energy efficiency and renewable energy.

### FIGURE 4

Waxman-Markey Allocations in 2020



(Source: The ICCT)

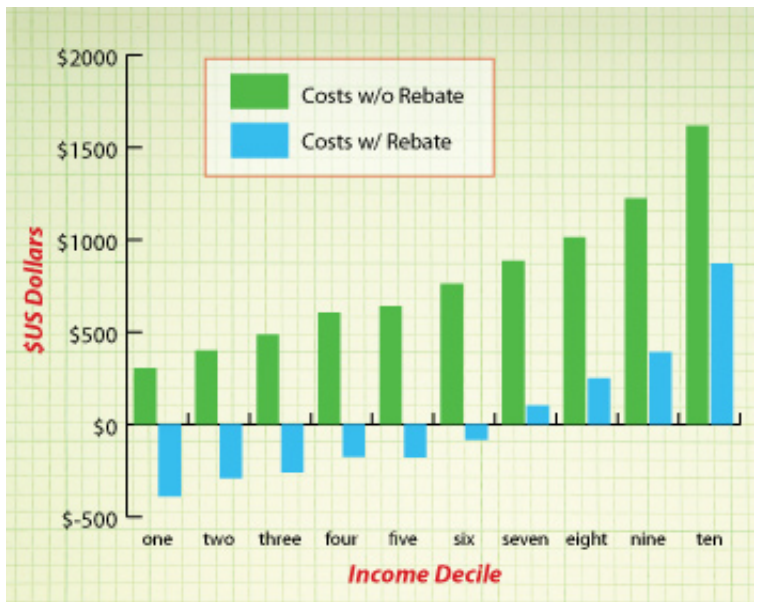
Litz also identified some differentiating state-specific circumstances California stakeholders and policymakers should also consider. Unlike RGGI, the proposed cap for California would extend to the transportation sector,

“The cost impacts on California consumers of a cap-and-trade system instituted at the federal level with a full allowance auction and a per capita rebate would be cost neutral overall.”

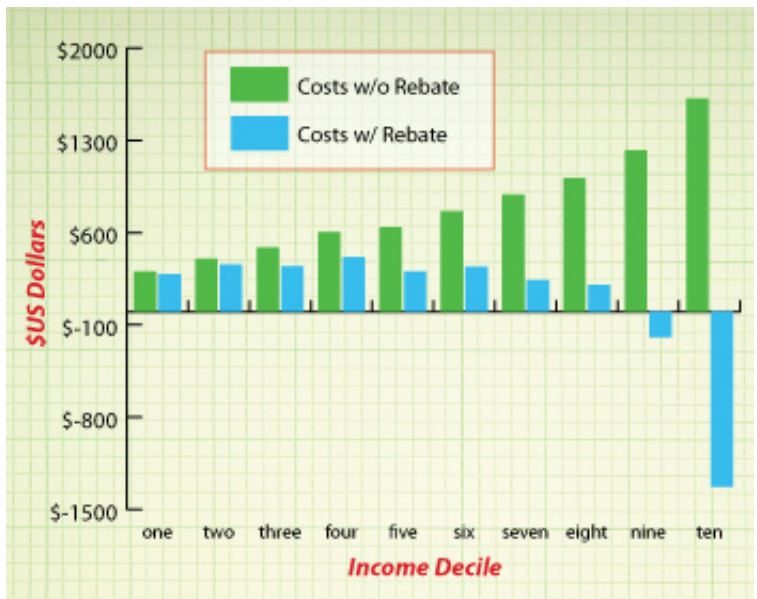
which is the source of approximately 40 percent of the state’s GHG emissions. (In-state electricity production and electricity imports represent roughly only 20 percent of California’s GHG emissions inventory.) The potential for fairly inelastic demand in the transportation sector makes arguments for investments (and complementary measures) even more compelling for this sector than for the electricity sector. Also, unlike RGGI, California’s carbon cap will also cover large industrial point sources (like cement), which are less clearly insulated than the electricity sector. This may create a political issue as some industries may claim they cannot pass on these mitigation costs to consumers in the face of national and international competition.

Burtraw also noted that under a federal cap-and-trade system, California consumers will face greater impacts from indirect higher costs “embedded” in state goods and services than any direct energy cost increases. The cost impacts on California consumers of a cap-and-trade system instituted at the federal level with a full allowance auction and a per capita rebate would be cost neutral overall and would specifically benefit low-income households as a group, as shown in *Figures 5 and 6* on the right.

**FIGURE 5**  
Annual California Consumer Costs, by Income Bracket, if 100% of Allowances Auctioned (\$21/ton) Under Federal Cap-and-Trade Legislation are Returned as Per Capita Rebate



**FIGURE 6**  
Annual California Consumer Costs, by Income Bracket, if 100% of Allowances Auctioned (\$21/ton) Under Federal Cap-and-Trade Legislation are used to Reduce Federal Income Tax



(Source: Resources for the Future)

# AB 32 OBJECTIVES

Workshop participants offered their views through a survey distributed prior to the workshop and small and large group discussions. These views are presented below. Note that participants were not asked to reconcile competing viewpoints or to endorse all of the views expressed at the workshop.

One key observation is that workshop participants rarely considered an AB 32 objective unimportant although they may prioritize some over others. Thus, it appears that the challenge in front of policymakers is to assess how well the policy options optimize a variety of desirable outcomes, and to assess the relative priority given to each of these laudable policy goals.

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## Promote Leadership

*While workshop participants focused on the importance of this AB 32 goal, they did not identify distinct policy choices separate from policies designed to achieve other AB 32 policy objectives.*

- California will be seen as a leader by achieving AB 32 goals, and will likely not be seen as a leader if it does not meet these climate change challenges and the corresponding AB 32 goals.
- Leadership is key because California cannot solve global warming alone and historically, Washington D.C. has looked to California for leadership on environmental and energy issues.
- Perhaps the biggest way California can play a leadership role with AB 32 is to provide a model of how to grow the economy while curbing GHG emissions.

## Policy Options to Promote Equity

*Equity is a broadly shared value and AB 32 requires that any distribution of allowances is “equitable.” AB 32 also stipulates that regulations adopted to implement the goal of climate change mitigation do not “disproportionately impact low-income communities.”*

- There was significant discussion among workshop participants of ways to prevent the transfer of wealth from consumers to producers (note discussion of windfall profits on **p. 2** of this summary). Proposed mechanisms to ensure equity include auctioning allowances to give consumers rebates/dividends and/or to fund energy efficiency improvements.
- Low-income consumers pay a higher share of their annual income on energy than other consumers, and thus are more vulnerable to price increases caused by AB 32 implementation.

A potential metric for defining low-income groups is 150 percent of the federal poverty line, with the cost of living per region an important consideration. Burtraw offered a number of options available to protect low-income groups.

- Other recommendations to address equity issues include opportunities for more efficient use of energy and steering economic development to disadvantaged communities through investments in expanded mass transit, targeted rebates, job training and offering micro-credit for small businesses and households.
- Another policy option that also boosts environmental quality is focused development of pollutant mitigation co-benefits and avoiding “hot spots.” One way to make sure that disadvantaged groups share the benefits of investments in reducing GHG emissions and other air pollutants is allocating a certain percentage (such as 20 percent) of allowance resources for their benefit.
- Some utility customers currently enjoying lower-cost but higher carbon content electricity sources may perceive higher rate increases as inequitable. Utility customers currently paying higher costs for lower carbon content electricity supply may perceive differential rate impacts as correcting an existing inequity. Providing limited transitional assistance to utilities with higher carbon content supply portfolios -- including supplemental energy efficiency funding -- is one policy option. Allocating allowances based on power consumption plus consumption avoided through demand reductions is a competing policy choice.

## Policy Options to Maximize Environmental Benefits

*Maximizing GHG and traditional pollutant benefits is identified as a key goal of AB 32 and received significant discussion at the workshop.*

- In general, whenever possible, policy options should fund projects that integrate efforts to achieve both GHG emissions and air pollution reduction targets.

These policies can recognize the two following principles: (1) some projects reduce multiple pollutants and thus contribute separately to both climate change and air pollution reduction targets; and (2) black carbon and ozone contribute to both challenges.

“Investments in energy efficient buildings, transportation, and industry and RD&D into low and zero carbon technologies not only maximize environmental benefits, but the end result can coincide with policy options for maximizing economic benefits and minimizing economic costs.”

- Investments in energy efficient buildings, transportation, and industry and RD&D into low and zero carbon technologies not only maximize environmental benefits, but the end result can coincide with policy options for maximizing economic benefits and minimizing economic costs.
- Funding for climate change adaptation strategies was recognized as a public health issue, with participants citing an increasing need for vector control and community “cooling” centers. However, these ideas may be constrained by potential legal limits on how “fees” (including GHG emission allowance auction revenues) collected under AB 32 need to be tied to specific purposes identified in this legislation. They may also be in conflict with concerns over spreading limited AB 32 funds too thinly.
- If long-term GHG emission cuts are to be achieved, there will be a need to upgrade infrastructure including transportation. Smart mass transit and integrated community development plans will also be necessary to achieve near- and long-term climate change response goals (as well as other economic and community development goals).

- A potential worry for some participants was the fact that the revenue stream from auctioning off GHG allowances to fund investments in climate change response programs may not be reliable. (After all, the value of allowances dropped to zero in 2007 in the EU.) California can auction allowances with a price floor to avoid this problem and also encourage investment in GHG reductions by creating a more stable price signal (although the effectiveness of this policy would depend on the level of the floor); a carbon fee or tax is an alternative. Any of these options could create revenue stability to support AB 32 objectives including environmental benefits by providing greater stability for business decision-making.

## Policy Options to Maximize Economic Benefits and Minimize Costs

*This AB 32 objective is identified as a general goal of AB 32 and as well as a criteria for the distribution of GHG emission allowances and received considerable attention at the workshop.*

- One promising approach is to look at potential investment strategies that would maximize clean air benefits, justify investments based on their returns, and then distribute the remaining value to California consumers.
- Job creation is a key consideration for policy options. Participants noted that there were different ideas about the best way to go about maximizing economic benefits and minimizing costs. The most direct route is traditional public works. Another theme raised was “Build it Here.”
- Auctioning off allowances would minimize overall and distributional cost effects of AB 32 if compared to the grandfathering of allowances that took place in the EU. A competing view was that California should avoid allowance auctioning unless other western businesses are subject to similar limits or use allowance revenues to compensate for “expensive mandates” regarding renewable energy.



- A hot topic that emerged during discussions was whether financial burdens or cost increases can be offset with auction revenues without undermining the environmental benefits of charging for GHG emissions. Utility bill rebates that do not increase with increased energy consumption were identified as a potential vehicle to return revenues to electricity and natural gas consumers without encouraging consumption (and could potentially be administered by electric utilities for that sector) when compared to using allocations to subsidize the price of electricity and natural gas.
- Successfully minimizing costs of climate change mitigation programs, while accelerating the pace of GHG emission reductions, will increase broad public acceptance of the viability of the green economy, and boost the reputation of California as a national leader.

“Utility bill rebates that do not increase with increased energy consumption were identified as a potential vehicle to return revenues to electricity and natural gas consumers without encouraging consumption.”

### Policy Options to Promote Innovation

*Promoting innovation is a California tradition. Complying with AB 32 can be seen as a way of helping to maximize environmental and economic benefits while minimizing overall program costs over the long-term.*

- One viewpoint is that pricing carbon will be one way to promote innovation in a host of power, transportation and building technologies. On the other hand, if cap-and-trade programs primarily capture “low-hanging fruit” it will leave even more opportunities for other policy choices to encourage innovation and long-term benefits.<sup>6</sup> Regardless, the need for innovation in both the short- and long-term and the role of innovation in displaying leadership was duly noted by workshop participants.
- Policy options for investing revenues derived from allowance auctions included RD&D, perhaps matching potential public funds with private venture capital. These activities could include focused attention on energy supply, the transportation sector and technology areas with high probabilities of locking in large GHG emission reductions beyond “business-as-usual” estimates. The need for a non-political process for investment was

identified, which may be an important challenge for creating such incentives and other types of potential government investments described at the workshop. There was also a concern expressed about picking specific “winners” and “losers” when promoting technology.

- Incentives for business leaders to generate significant carbon reductions are another policy option.

### Policy Options to Encourage Early Actions

*Encouraging early actions to reduce GHG emissions is one of the top goals of AB 32. California has long been at the forefront of innovation. This desired outcome can also be seen through the lens of leadership (discussed above) and how California can set an example for federal legislation now being debated in Congress.*

- Auctioning off all allowances is a policy option recommended by a number of participants for encouraging early action.
- Incentives for energy efficiency and other demand reductions -- both near- and long-term -- were also identified as policy options. These early actions can also maximize environmental benefits and minimize economic costs.

### Policy Options to Promote Community Investment

*Strategies designed to meet this AB 32 objective dovetail with policy imperatives to meet the objectives of equity and environmental benefits. One way to make sure that communities and small businesses most in need are not forgotten would be to ensure that community investment criteria be built into policy options to achieve other AB 32 policy objectives described earlier.*

### Policy Options to Promote Long-Term Goals Beyond 2020

*This broad AB 32 objective harmonizes with all of the above policy goals, but particularly with the need to maximize both environmental benefits and rapid innovations. From the perspective that a cap-and-trade allowance program will have the greatest effect on off-the-shelf technologies, investments in long-term GHG emission reductions become even more important, especially when aiming to foster innovation. Long-term behavioral changes were identified as an aspect of state leadership.*

**FIGURE 7**

Examples of Positive (●) and Negative (●) Relationships Between AB 32 Objectives and AB 32 Policy Choices<sup>7</sup>

AB 32 Objective	Policy Choice	Equity	Max Enviro Bene	Min \$ Cost Max Bene	Targeted Community Investment
Equity	Rebates/dividends	●			
Equity	Targeted energy efficiency	●	●	●	●
Equity	Targeted transit	●	●		●
Equity	Targeted job-training	●			●
Equity	Targeted micro-loans	●			●
Equity	Transition assistance to high GHG electricity utilities/customers	● ●	●	● ●	
Equity	Subsidize energy prices	● ●	●	●	
Equity	Set-asides for disadvantaged communities	●			●
Environment	Recognize both GHG and other air pollutants		●	●	
Environment	Building & transportation energy efficiency		●	●	
Environment	R&D into low/zero carbon alternatives		●	●	
Environment	Adaptation for public health	●	●		●
Environment	Upgrade infrastructure/transport		●		
Environment	Price stability options	●	●	●	
Economic	Invest when justified based on expected returns		●	●	
Economic	Auction allowances	*	●	*	
Economic	Don't auction allowances	*	●	*	
Economic	Allocate allowances based on consumption + emissions avoided through efficiency	● ●		● ●	
Early Action	Auction allowances	*	●	*	
Early Action	Invest in incentives		●		
Early Action	Invest in energy efficiency/conservation		●	●	
Innovation	Match RD&D investments with private capital		●	●	
Innovation	Incentives for business leadership		●		

*\*Free allocations based on past emissions have created very large equity and economic inefficiency concerns, while using free allocations to support AB 32 objectives can have different results.*

# CONCLUSION

The workshop organizers believe that the program showed that groups representing a diverse range of interests can work together constructively to try and answer the question, “What are the best ways to use allocations to achieve the objectives of AB 32?” The discussions highlighted that AB 32 objectives are not in conflict. In fact, due to their interconnected nature, policy choices designed to meet AB 32’s objectives will typically advance more than one of the other AB 32 goals.

That said, there are tensions between policy options and mixes that are better at achieving certain AB 32 objective(s) than others and there are a few policy options that may achieve one AB 32 objective at the expense of others. Thus, it will likely be valuable to examine in greater detail how a number of the policy options identified at the workshop can be integrated with each other to best achieve the objectives of AB 32. In the end, ICCT and Next 10 agree that California will continue its history of leadership on environmental and energy issues by getting this decision right.



# ENDNOTES

1) Note that a background summary report prepared for this workshop contains information on the EU Emission Trading System experience; the United Kingdom “carbon levy” approach to financing GHG emission reductions; the Regional Greenhouse Gas Initiative (RGGI) in eastern U.S. states; and British Columbia rebates. This report can be found at [www.next10.org](http://www.next10.org).

2) **Figure 1** may understate the differential between resource and allowance costs given that the California Air Resources Board’s AB 32 Scoping Plan found that many emission reduction measures will have a positive, rather than a negative, impact on bottom lines.

3) <http://uk.reuters.com/article/latestCrisis/idUKL9933905>

4) The California Public Utilities Commission regulates the electricity rates charged by investor-owned electric distribution utilities. It does not have regulatory jurisdiction over the profits of “merchant” electric power generating plants.

5) Note that some relevant resources include 1) “The Role of Energy Efficiency Spending in Maryland’s Implementation of the Regional Greenhouse Gas Initiative”, October 2008, at [http://www.cier.umd.edu/RGGI/CIER\\_RGGI\\_Energy\\_Efficiency\\_Spending\\_Study\[1\].pdf](http://www.cier.umd.edu/RGGI/CIER_RGGI_Energy_Efficiency_Spending_Study[1].pdf); 2) “Energy Efficiency’s Role in a Carbon Cap-and-Trade System: Modeling Results from the Regional Greenhouse Gas Initiative”, May 2006 available at <http://aceee.org/pubs/e064.pdf?CFID=3835926&CFTOKEN=24045169>; and 3) Draft Analysis of Measures to Meet the Requirements of California’s Assembly Bill 32, September 27, 2008, available at <http://piee.stanford.edu/cgi-bin/docs/publications/PreCourt%20Institute%20AB%2032%20Draft%20Report.pdf>.

6) The Economic and Technology Advancement Advisory Committee and others have noted that a price signal alone is not always sufficient to achieve cost effective reductions. See for instance p. 1-4 of the February 2008 ETAAC report at [www.etaac.org](http://www.etaac.org).

7) The matrix on **p. 8** highlights some of the strongest connections between policy options and corresponding AB 32 objectives, and does not necessarily represent a consensus view of all participants. Policies to achieve the AB 32 objective of long-term GHG reductions are listed under policy options to maximize environmental benefits, while Leadership is over-arching over all of the AB 32 objectives.

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**Next 10** is an independent, nonpartisan organization that educates, engages and empowers Californians to improve the state's future. Next 10 is focused

on innovation and the intersection between the economy, the environment, and quality of life issues for all Californians. Next 10 employs research from leading experts on complex state issues and creates a portfolio of nonpartisan educational materials to foster a deeper understanding of the critical issues affecting our state. Visit us online at [www.next10.org](http://www.next10.org).



**The International Council on Clean Transportation (ICCT)** is a nonprofit organization. The goal of the ICCT is to dramatically reduce conventional pollution and

greenhouse gas emissions from personal, public, and goods transportation in order to improve air quality and human health, and mitigate climate change. The Council is made up of leading government officials and experts from around the world that participate as individuals based on their experience with air quality and transportation issues. The ICCT promotes best practices and comprehensive solutions to improve vehicle emissions and efficiency, increase fuel quality and sustainability of alternative fuels, reduce pollution from the in-use fleet, and curtail emissions from international goods movement. For more information, please see our website at [www.theicct.org](http://www.theicct.org). **The ICCT would like to acknowledge the generous financial support of the Climate Works Foundation, the Energy Foundation, and the William and Flora Hewlett Foundation.**

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