NEXT 10

USING THE ALLOWANCE VALUE FROM CALIFORNIA'S CARBON TRADING SYSTEM

LEGAL RISK FACTORS, IMPACTS TO RATEPAYERS AND THE ECONOMY

MAY 2012

NEXT 10 IS A NONPARTISAN, NONPROFIT 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, ENVIRONMENT, AND QUALITY OF LIFE ISSUES. WE PROVIDE CRITICAL DATA TO HELP INFORM THE STATE'S EFFORTS TO GROW THE ECONOMY AND REDUCE GREENHOUSE GAS EMISSIONS.

USING THE ALLOWANCE VALUE FROM CALIFORNIA'S CARBON TRADING SYSTEM: LEGAL RISK FACTORS, IMPACTS TO RATEPAYERS AND THE ECONOMY SUMMARIZES FOUR RESEARCH PAPERS COMMISSIONED BY NEXT 10 FROM LEADING ACADEMIC EXPERTS TO PROVIDE AN OVERVIEW OF THE USE OF ALLOWANCE VALUE CREATED UNDER THE STATE'S CAP-AND-TRADE PROGRAM AND DISCUSS DIFFERENT OPTIONS FOR HOW THE ALLOWANCE VALUE CAN BE USED.

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CONTENTS

INTRODUCTION

In an effort to limit the damage climate disruption could do to public health, the environment, and the economy, California enacted AB 32, the Global Warming Solutions Act of 2006. This legislation sets the nation's first legally binding target for curbing climate-disrupting greenhouse gas (GHG) emissions. It calls on the state - the world's 12th-largest emitter of greenhouse gases - to cut GHG emissions to 1990 levels by the year 2020, and it directs the California Air Resources Board (ARB) to find ways to meet that target. The ARB's Scoping Plan, essentially the blueprint for implementing AB 32, outlines a suite of emission reduction measures that when implemented will meet AB 32's goals.

This report seeks to better understand California's cap-and-trade program and different alternatives for how the state can use the allowance value created under the cap-and-trade program. The findings in this report summarize a series of reports commissioned by Next 10 that represent the first extensive analysis on the issue of alternative uses of allocation value and the revenue derived from permit auctions.

2012 RESEARCH ON ALLOCATING ALLOWANCE VALUE

Options for Cap and Trade Auction Revenue Allocation: An Economic Assessment for California by David Roland-Holst is the first macroeconomic study to examine the economic impact of spending revenues generated by the sale of cap and trade emissions allowances. Roland-Host models the Gross State Product (GSP), jobs, and state revenue impact of 18 different possible spending options for cap and trade revenues to be distributed to the state's Air Pollution Control Fund.

California's Cap-and-Trade Auction: Are the Auction Proceeds Fees, Taxes, or Something Else? by Dan Farber and Deborah Lambe offer a legal analysis of different strategies for spending revenues raised through the sale of emissions allowances in California.

For the Benefit of California Electricity Ratepayers: Electricity sector options for the use of allowance value created under California's cap-and-trade program, also by Dallas Burtraw and Sarah Jo Szambelan, examines how California ratepayer utility bills will be impacted by the cap-and-trade program. Allowance value being returned to the electricity sector is greater than the cost imposed independently by the cap-and-trade program. The analysis examines three different proposed strategies of how that value can be used to benefit ratepayers.

A Primer on the Use of Allowance Value Created under the CO2 Cap-and-Trade Program by Dallas Burtraw and Sarah Jo Szambelan examines how the revenues generated by the AB 32 cap-and-trade program might be spent. The authors also explain key aspects of the program including what allowance value is, who will make the decisions about this billion dollar plus revenue source, the timeline for major decisions, and how different Californians might be impacted.

The purpose of this Summary and the expert research commissioned by Next 10 is to help educate Californians about the state's cap-and-trade program and the likely billions of dollars in revenue it will generate over time. In our efforts to summarize this body of research, we use sections of the Primer by Burtraw and Szambelan as an organizing document, and present summaries of the main findings from the other three studies.

BACKGROUND: AB 32'S CAP-AND-TRADE PROGRAM

In 2006, Governor Arnold Schwarzenegger signed AB 32, the nation's first legally binding policy aimed at cutting the emissions that contribute to climate change. The ARB's Scoping Plan, essentially a blueprint for meeting the goals of AB 32, includes a number of strategies including a cap-and-trade program, a Low Carbon Fuel Standard, the Sustainable Communities and Climate Protection Act, a high speed rail project linking San Francisco to Anaheim, California's Million Solar Roofs program, a Refrigerant Management Program, a Renewable Portfolio Standard (RPS), the California Clean Car and Advanced Clean Car Standards (Pavley I and II) and the Title 24 Building Energy Efficiency Standards.[1]

Of all the Scoping Plan measures listed above, the measure arguably attracting the most attention from the media and state leaders is ARB's market-based emissions cap-and-trade program, set to take effect in 2013.

Cap-and-trade has two parts. The first part — the cap — places an overall limit on the total amount of GHG emissions facilities covered by the program can release into the atmosphere. In California's program, power companies, factories, and other large facilities regulated under the cap

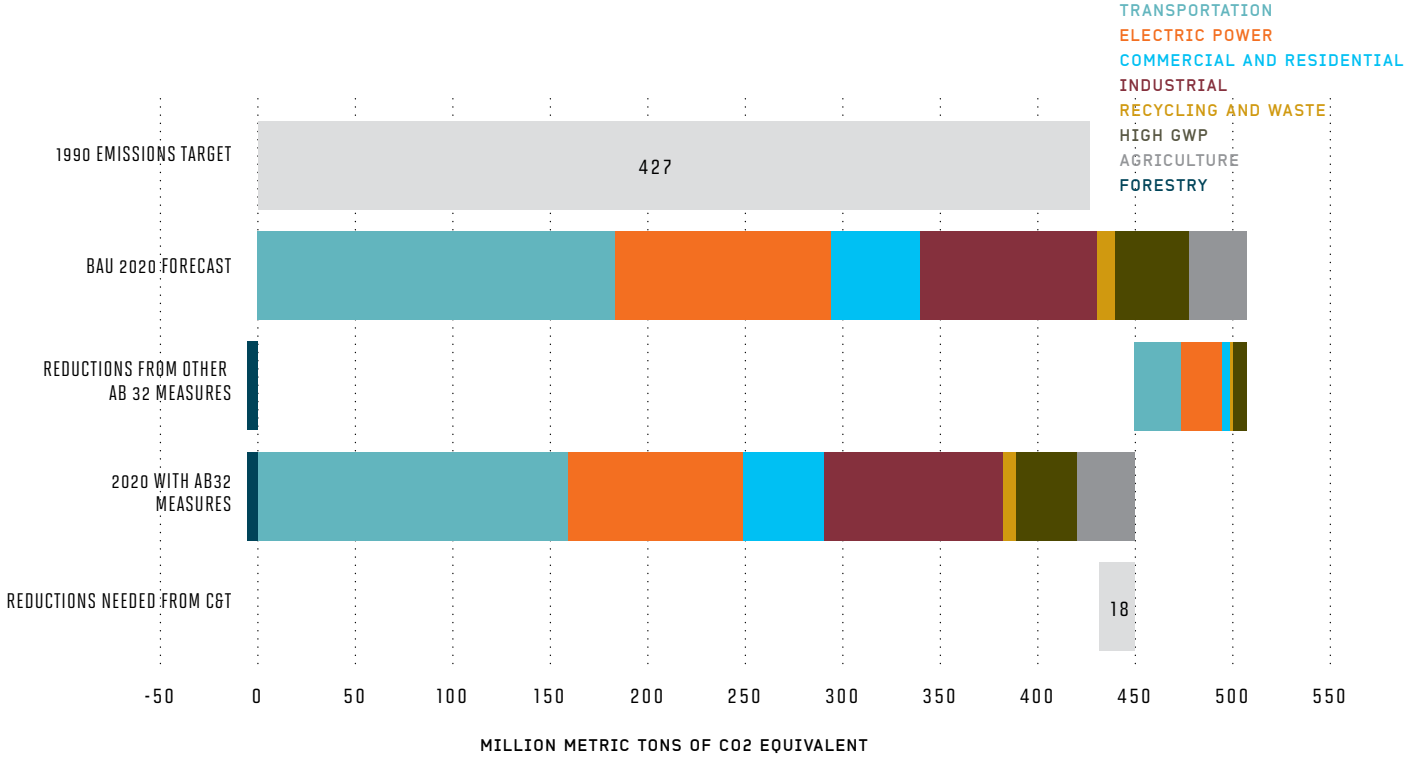
must surrender one allowance for each metric ton of carbon dioxide emissions.

The second part — trade — refers to a market for buying and selling emissions allowances. Under the cap-and-trade program, a plant (or other entity) might choose to meet its obligations under AB 32 either by purchasing emissions allowances or by cutting its emissions through an energy efficiency program or other strategy. There is also a secondary market; a clean-running plant might choose to sell its unneeded allowances (potentially at a profit) to other companies. The ability to trade allowances allows businesses to decide for themselves whether they would rather cut emissions, buy and sell allowances, or implement a plan that includes both strategies. These facilities may choose whichever option makes the most financial sense for them.

Standards and measures already in place are expected to achieve over three-quarters of the goal to cut 80 million metric tons of carbon dioxide equivalent (MMTCO2e) from California's economy by the year 2020. These measures, such as the implementation of a Low-Carbon Fuel Standard, energy efficiency and conservation measures, and the state's 33 percent Renewable Portfolio Standard for electricity generation, are expected to yield 62 MMTCO2e in reductions (See Figure A).[2] Cap and trade provides the assurance that 18 MMTCO2e in further reductions are achieved and that the state moves the rest of the way towards its goal.[3] Once distributed, allowances from the state's cap-and-trade program will cover 85 percent of GHG emissions across California.[4]

While AB 32 requires firms to reduce GHG emissions, it is important to remember that California residents and businesses buy and use the products from these firms, so there is a shared responsibility for who is responsible and how to reduce emissions in the most efficient manner. This report is dedicated to providing information critical to making these choices.

FIGURE A: SOURCES OF GHG EMISSIONS AND EXPECTED REDUCTIONS IN 2020



Sources: Allowance numbers and emissions estimates are based on figures in ARB's Final Regulation Order.
http://www.arb.ca.gov/cc/inventory/data/tables/reductions_from_scoping_plan_measures_2010-10-28.pdf & http://www.arb.ca.gov/cc/inventory/data/forecast.htm

ALLOWANCES IN THE CAP AND TRADE SYSTEM

Billions of dollars are expected to be generated from the sale, allocation, and trading of "emission allowances" under cap and trade. This money could be spent in any number of ways. It could, for example, be used to:

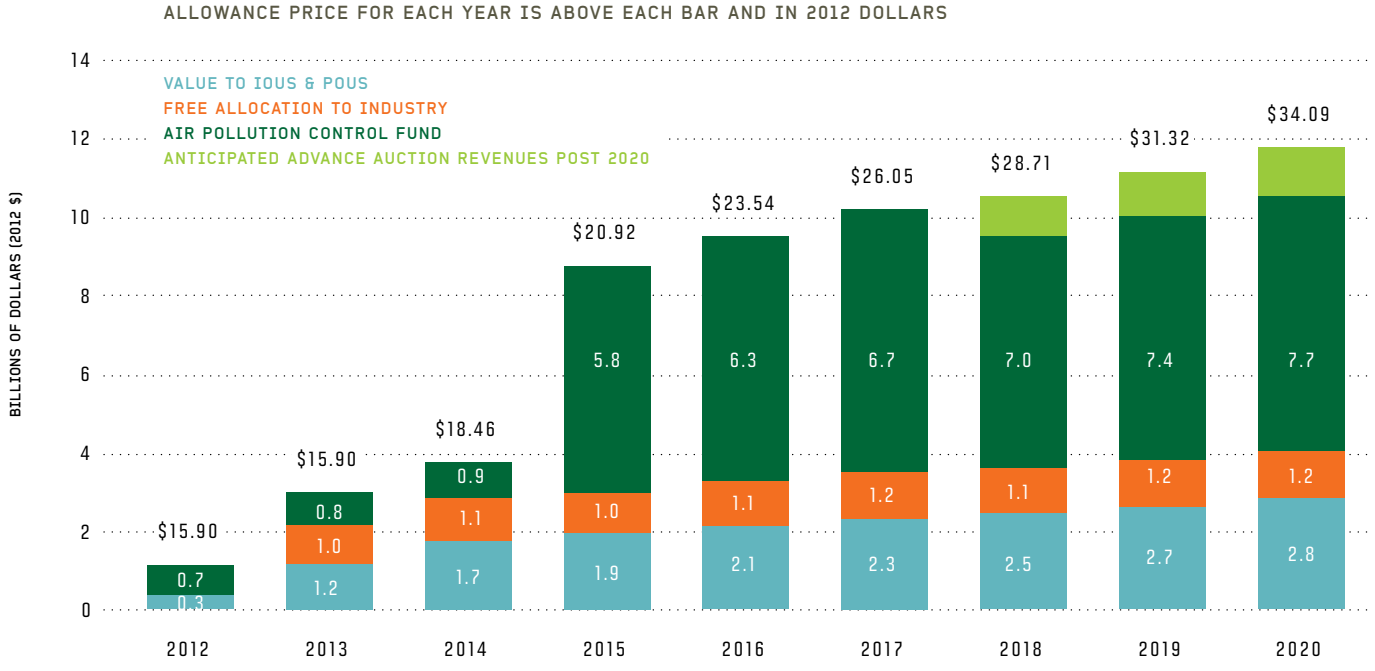
1. Alleviate any potential adverse impacts of AB 32, such as increases in gasoline prices or electricity rates.
2. Fund government programs such as education, infrastructure, or health services.
3. Return money to California families through dividends to the general public.
4. Reduce current taxes or prevent future tax increases.

In its Final Regulation Order, the ARB outlined three general objectives:

1. Revenues generated from the auction of electricity sector allowances should be returned to ratepayers.
2. Some allowance value should be used to protect emissions-intensive, trade-exposed industries within California.
3. Revenues from the general auction of allowances will be deposited into an Air Pollution Control Fund and should be used to advance the objectives of AB 32, the Global Warming Solutions Act.

Auction revenues to be deposited into the Air Pollution Control Fund are estimated to range from $0.6 to $1.8 billion in 2012–2013, mostly from the early auction of allowances for 2015. The fund is expected to grow substantially in 2015, when suppliers of natural gas and transportation fuels are required to begin to purchase allowances to cover their emissions. In 2015, the fund is expected to earn $5.8 billion in revenues, as shown in blue in Figure B, with $4.9 billion generated at the general auction and $0.9 billion at the auction for future years. With billions of dollars spent at auction and deposited in the Air Pollution Control Fund each year, deciding how to use that money is of immense importance to California's economy, budget, its businesses and citizens.

FIGURE B: ALLOWANCE REVENUES ASSOCIATED WITH USES THROUGH 2020



THE IMPACTS OF SPENDING DOLLARS FROM ALLOWANCE SALES

Spending Air Pollution Control Fund Revenue

California is now considering a number of ways the state could spend the dollars generated from the sale of emission allowances. The San Francisco to Los Angeles/Anaheim high-speed rail project is one spending option that has been the focus of much media attention. Other possible spending options are also being discussed, and are especially relevant for the future, beginning in 2015 when the revenue from the auction is likely to grow five-fold. These options include giving the money to California households in the form of a rebate check, spending the dollars on energy efficiency projects, or using the revenue to fund residential renewable energy installations. Each of these spending options would affect the state's emission reduction goals, its GSP, state revenues, jobs, equity, the environment, and the health of Californians.

The following chart from researcher David Roland-Holst's Options for Cap and Trade Auction Revenue Allocation: An Economic Assessment for California identifies 18 alternative strategies for allocating auction revenues from California's cap-and-trade program. Using the University of California at Berkeley's BEAR model, Roland-Holst models what the GSP,

FIGURE C: MACROECONOMIC IMPACTS (CHANGES FROM BASELINE VALUES IN 2020)

	SCENARIO	REAL GSP (2010 $MILLIONS)	EMPLOYMENT (FTE)	STATE REVENUE ($M)
1	REVENUE REBATES TO TAXPAYERS.	486	4,814	46
2	ENERGY EFFICIENCY IMPROVEMENTS ON STATE OWNED BUILDINGS, WHICH COULD OFFSET GENERAL FUND EXPENDITURES.	83	467	6
3	OFFSET GENERAL FUND EXPENDITURES THROUGH CREATIVE FINANCING APPROACHES. (REVENUE IS SPENT ON NON-ENVIRONMENTAL INVESTMENTS WITH ZERO GREENHOUSE GAS REDUCTIONS.)	285	1,710	26
4	ENERGY EFFICIENCY ACTIONS TO UPGRADE RESIDENTIAL LIGHTING.	997	6,902	58
5	ENERGY EFFICIENCY ACTIONS INCLUDING APPLIANCE EFFICIENCY UPGRADES AND REPLACEMENTS.	896	7,328	92
6	ENERGY EFFICIENCY ACTIONS TO UPGRADE RESIDENTIAL BUILDING EFFICIENCY.	875	8,751	56
7	FINANCING PROGRAM FOR RENEWABLE ENERGY INSTALLATIONS AT RESIDENTIAL PROPERTIES.	664	6,765	57
8	INDUSTRIAL ENERGY EFFICIENCY: RETROFITS AND COMPLIANCE INVESTMENTS FOR UTILITIES AND LARGE INDUSTRIAL ACTIVITIES (ENERGY, CEMENT, ETC.).	157	1,364	12
9	COMMERCIAL ENERGY EFFICIENCY AND DISTRIBUTED GENERATION PROGRAMS.	143	1,100	10
10	SMALL BUSINESS ENERGY EFFICIENCY - FINANCIAL AND OTHER SUPPORTING SERVICES TO OVERCOME TECHNOLOGY ADOPTION AND COMPLIANCE HURDLES.	468	6,480	10
11	PROGRAMS THAT PROVIDE FINANCING FOR, OR DIRECTLY FUND CONSERVATION AND ENERGY EFFICIENCY UPGRADES IN LOW-INCOME AND MIDDLE-INCOME DWELLINGS.	838	6,620	102
12	FINANCING PROGRAMS FOR COMMERCIAL, INDUSTRIAL AND MANUFACTURING FACILITIES TO REDUCE GREENHOUSE GAS EMISSIONS BY INVESTMENT IN ENERGY EFFICIENCY, ENERGY STORAGE, AND CLEAN AND RENEWABLE ENERGY PROJECTS.	142	1,162	11
13	ACCELERATED DEPLOYMENT OF ADVANCED TECHNOLOGY VEHICLES.	739	4,157	41
14	LOW-CARBON GOODS MOVEMENT, FREIGHT VEHICLE TECHNOLOGIES, PUBLIC TRANSPORTATION, AND INFRASTRUCTURE DEVELOPMENT.	154	1,156	12
15	BOOKENDS OF THE HIGH SPEED RAIL PROJECT (NOT THE FULL PROJECT).	442	2,651	31
16	IMPROVE WATER SUPPLY THROUGH MORE EFFICIENT STORAGE, CONVEYANCE, AND MANAGEMENT INFRASTRUCTURE.	181	1,962	11
17	FINANCIAL ASSISTANCE FOR LOCAL GOVERNMENTS TO REDUCE VMT IN EFFORTS TO MEET THE GOALS OF SB 375.	305	2,496	18
18	GREEN BANK (LOAN SUPPORT FOR ENERGY EFFICIENCY AND RENEWABLES).	813	5,628	74

Source: Author estimates.
Notes: GDP and state budget impacts in constant (2012) millions of dollars. Employment in FTE headcount. Results are for a $100 million initial revenue allocation and would not generally scale up linearly to billions of dollars.

employment, and state revenue impact will be if the state were to spend $100 million in auction-generated funds per year over the period 2013-2020 on any of these 18 different projects.

In the report Roland-Holst discusses the results of the economic analysis. He notes that the spending options that offset budgetary expenses result in less economic growth comparatively because the original fiscal stimulus effect is absent in these cases. These spending options still contribute to growth because they represent expenditure shifting from those who pay for emission permits to the government or the average taxpayer. The modeled spending options that subsidize efficiency programs and renewables for households generate more GDP and employment growth, directly and indirectly, than doing so in the public or private enterprise sectors. This is because household efficiency measures are more distributed and therefore more job intensive, and when households save money on energy, their spending on alternative goods and services is about 16 times more job intensive than the energy fuel supply chain. Finally, the report notes that because all the alternatives promote economic growth, they will all raise new long-term revenue for the state.

To make the alternative strategies modeled comparable, this analysis assesses the impact of spending all allowance dollars on only one project. In reality, the state may spend revenues generated by the AB 32 cap-and-trade program on a combination of several spending options. It is important to also note that the results are not scalable, as there may be diminishing returns with additional revenues spent. This assessment of each policy option and its individual impacts provides insight, albeit limited, into how each spending choice might impact California's economy. From a macroeconomic perspective, the most important considerations for policymakers reviewing revenue allocation alternatives, as well as observers across the state, are:

1. How will the revenues be used?
2. Who will benefit directly from the revenues?
3. What will be the ultimate benefits for the state economy as a whole, including employment, GSP, and additional state revenues?

All these standards are important criteria for effective and responsible use of any new state revenue source.

In assessing the impact of these spending options, Roland-Holst concludes that:

1. California has a wide array of options for recycling revenues from auctions for GHG emission permits, each of which can contribute to long-term economic growth and job creation.
2. Many of the allocation options considered return more to economic growth than their cost, and in the process increase state revenue, but net benefits differ significantly.
3. The most pro-growth options invest auction revenue in expanded household-level energy efficiency and renewable technology diffusion, and these generate additional new state revenue.
4. Allocations that merely offset existing fiscal commitments, while still fostering some growth, do not yield benefits comparable to committing new revenues to efficiency measures.[5]
5. New employment benefits generally increase with GDP, but vary depending on the demand patterns affected by the policy. Again household efficiency promotion is the most employment-intensive allocation strategy.

REVENUE GENERATED BY ALLOWANCE SALES TO UTILITIES

Because AB 32 puts a price on carbon, activities related to emitting carbon, like electricity generation, become more expensive. In For the Benefit of California Electricity Ratepayers: Electricity sector options for the use of allowance value created under California's cap-and-trade program, researchers Dallas Burtraw and Sarah Jo Szambelan model future cost increases for residential consumers. The below chart reflects the average monthly expected increases before accounting for dollars generated by the cap-and-trade program that, under the law, must be used for the benefit of ratepayers.

FIGURE D: THE GROSS COST OF CAP-AND-TRADE FOR RESIDENTIAL CUSTOMERS BEFORE ACCOUNTING FOR ALLOWANCE VALUE

		SUMMER			WINTER		
		AVERAGE MONTHLY USE (KWH)	AVERAGE BILL ($/ MONTH)	ESTIMATED GROSS COST OF C&T ($/ MONTH)	AVERAGE MONTHLY USE (KWH)	AVERAGE BILL ($/ MONTH)	ESTIMATED GROSS COST OF C&T ($/ MONTH)
BASIC SERVICE	PG&E	415 TO 1024	$77 TO $189	$2.24 TO $5.52	504 TO 753	$93 TO $139	$2.71 TO $4.06
	SCE	504 TO 2429	$46 TO $221	$2.28 TO $10.98	498 TO 609	$45 TO $55	$2.25 TO $2.75
	SDG&E	531 TO 908	$96 TO $165	$2.43 TO $4.15	559 TO 764	$99 TO $135	$2.56 TO $3.49
ALL-ELECTRIC	PG&E	504 TO 1301	$93 TO $240	$2.71 TO $7.01	787 TO 1587	$125 TO $251	$2.31 TO $4.65
	SCE	553 TO 2363	$50 TO $215	$2.50 TO $10.68	759 TO 1536	$55 TO $112	$1.86 TO $3.78
	SDG&E	542 TO 1079	$99 TO $196	$2.48 TO $4.94	777 TO 1335	$126 TO $217	$1.93 TO $3.32

Four highlights emerge from this research:

1. Allowance value directed back to ratepayers could offset all of the costs introduced by cap and trade for electricity consumers.
2. How the allowance value is directed to ratepayers will affect the distribution of costs among customers, and it could affect the efficiency of the cap-and-trade program.
3. If allowance value is returned on electricity bills, consumers will perceive that electricity is relatively less expensive. If it is returned in a separate envelope, consumers will perceive higher electricity bills but household budgets would be compensated. This decision will affect the political perception of the program.
4. Rate increases resulting from other AB 32 policies, such as the Renewable Portfolio Standard may be substantial and will occur independently of cap and trade.

It is important to note the California Air Resources Board has allocated at least enough allowance value to utilities to cover their customer's total projected cost burden. In its final regulation order, the Board directed that the value of allowances allocated to utilities must be used for the benefit of ratepayers, consistent with the goals of AB 32. Just how that revenue will benefit ratepayers is still up for debate.

Under the cap-and-trade program, electric utilities including both investor-owned and publicly owned utilities will receive a free allocation of allowances totaling 97.7 MMTCO2e in 2013, declining to 84.9 MMTCO2e in 2020.[6] In the second (2015-2017) and third (2017-2020) phases of the cap-and-trade program, when transportation and natural gas are included, electricity's share of the total value of allowances will fall to 22 percent of the total value of allowances.

Investor-owned utilities (IOU) will be required to sell their allowances at quarterly cap-and-trade auctions, the first of which is expected in November 2012. To meet their own compliance obligation, IOUs will then need to purchase allowances in the auction or in the secondary market. The provision requiring IOUs to sell their allocation in an auction

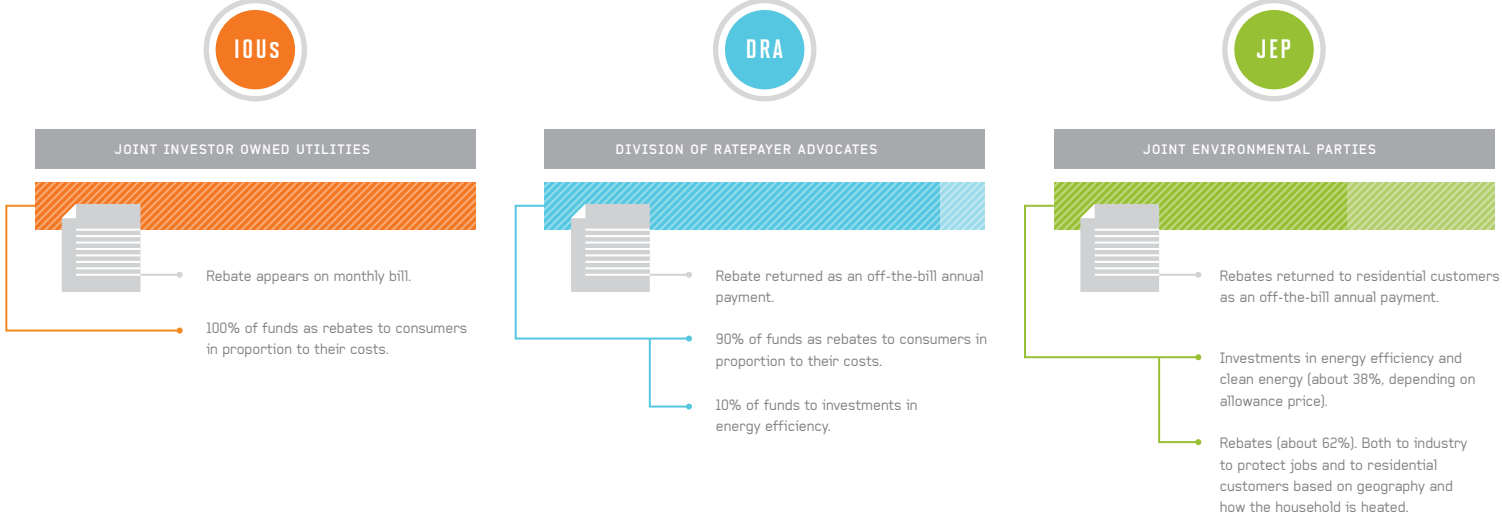
and then buy back what they need for compliance is intended to guarantee liquidity in the allowance market and to help set an allowance price.

Publicly-owned utilities (POUs), on the other hand, are not required to sell their allowances at auction. They may choose to simply keep the allowances they were allocated by the state in order to meet their compliance requirements.

As stated above, the allowance value generated from the sale of allowances by IOUs must be used for the benefit of ratepayers under the law. The California Public Utilities Commission (CPUC) and ARB's Executive Officer are working together to develop a plan for using these revenues. A final decision about how to return electricity allowance value is expected in June 2012.

In recent proceedings before the CPUC several parties have proposed options for the use of allowance revenues:

1. **One approach** (presented by the three largest investor-owned utilities in California) would be to direct allowance value to the benefit of ratepayers by reducing electricity bills in the form of a reduction in utility bills or a monthly rebate check to ratepayers. Using this method, ratepayers would be compensated in proportion to their electricity consumption and the allowance value would fully offset any increase in electricity bills under the cap-and-trade program.
2. **A second option** (presented by the California State Division of Ratepayer Advocates, the independent consumer advocacy division of the California Public Utilities Commission) suggests that the state use 90 percent of funds as rebates in proportion to customer costs. Importantly, instead of applying the rebates on the electricity bill, this proposal would return the rebates to ratepayers as an annual off-the-bill payment. Hence, customers would see their utility bills go up but their annual household budget would be held approximately harmless. Under this plan the remaining 10 percent of funds would go to investment in energy efficiency programs through a Consolidated Finance Program.
3. **A third option** (presented by the Joint Environmental Parties, a group of environmental, science, economic, law, and consumer protection focused non-profit organizations) is to use an estimated 47 percent of the allowance value in 2013 for energy efficiency, clean energy technologies, and renewable generation investment programs. The plan also calls for rebates to be provided to emission-intensive trade exposed industries in order to make it more attractive for firms to stay in California. The plan calls for the remaining allowance value to be given to residential ratepayers in the form of a rebate check. Payments should vary by household based on geography and whether a household heats with electricity.



Burtraw and Szambelan model the economic impacts on ratepayers of each of the above three strategies. The following table summarizes the economic benefit to ratepayers as well as the net change in customer costs when allowance value is returned to ratepayers. The authors conclude that when allowance value is taken into consideration, ratepayers are held harmless under the AB 32 cap and trade system under the IOU and the DRA plans, and costs are slightly higher under the Joint Environmental Parties plan (before accounting for the benefits of investments under that plan):

FIGURE E: NET COST OF CAP AND TRADE FOR AVERAGE RESIDENTIAL CUSTOMERS ACROSS TERRITORIES AFTER ACCOUNTING FOR ALLOWANCE VALUE

	UTILITY	CREDIT (BENEFIT FROM AUCTION REVENUES) PER CUSTOMER ($/MONTH)			NET CHANGE IN CUSTOMER COSTS AFTER CREDIT (%)		
		IOUs	DRA	JEP	IOUs	DRA	JEP
SUMMER							
BASIC SERVICE	PG&E	$2.25 TO $5.56	$2.03 TO $5.00	$1.19 TO $2.94	0.0%	0.3%	1.4%
	SCE	$2.31 TO $11.13	$2.08 TO $10.01	$1.22 TO $5.88	-0.1%	0.4%	2.3%
	SDG&E	$2.41 TO $4.11	$2.17 TO $3.70	$1.27 TO $2.17	0.0%	0.3%	1.2%
ALL-ELECTRIC	PG&E	$2.32 TO $4.69	$2.09 TO $4.22	$1.23 TO $2.48	0.0%	0.2%	0.9%
	SCE	$2.53 TO $10.82	$2.28 TO $9.74	$1.34 TO $5.72	-0.1%	0.4%	2.3%
	SDG&E	$2.46 TO $4.89	$2.21 TO $4.40	$1.30 TO $2.58	0.0%	0.3%	1.2%
WINTER							
BASIC SERVICE	PG&E	$2.73 TO $4.09	$2.46 TO $3.68	$1.44 TO $2.16	0.0%	0.3%	1.4%
	SCE	$2.28 TO $2.79	$2.05 TO $2.51	$1.20 TO $1.47	-0.1%	0.4%	2.3%
	SDG&E	$2.53 TO $3.46	$2.28 TO $3.12	$1.34 TO $1.83	0.0%	0.3%	1.2%
ALL-ELECTRIC	PG&E	$2.32 TO $4.69	$2.09 TO $4.22	$1.23 TO $2.48	0.0%	0.2%	0.9%
	SCE	$1.89 TO $3.83	$1.70 TO $3.44	$1.00 TO $2.02	0.0%	0.3%	1.6%
	SDG&E	$1.92 TO $3.29	$1.72 TO $2.96	$1.01 TO $1.74	0.0%	0.2%	0.7%

Based on this modeling, the research concludes that allowance value created by the sale of IOU allowances can offset all or nearly all increased costs to ratepayers. However, insulating ratepayers from any increase in electricity bills might prevent the achievement of California's climate change goals in the long run because it would mask the actual cost of their electricity consumption. On the other hand, allowing bills to rise and returning the allowance value through a direct payment would raise the visibility of the cap-and-trade program, with policy and political consequences. Facing these trade-offs is an important issue that should be of concern to all Californians and will be closely observed by political leaders across the globe.

WHO DECIDES HOW THE MONEY WILL BE USED?

The figure below provides a timeline of revenue decisions related to allowance value that are still underway. Decisions regarding allowance revenue directed to electricity consumers of investor owned utilities (IOUs) will be taken by the Public Utilities Commission in June, and taken by the governing boards of the publicly owned utilities in the near future. The large remaining decision concerns allowance revenue that will accrue in the Air Pollution Control Fund. This decision will take effect in the next fiscal year.

Air Pollution Control Fund Revenues

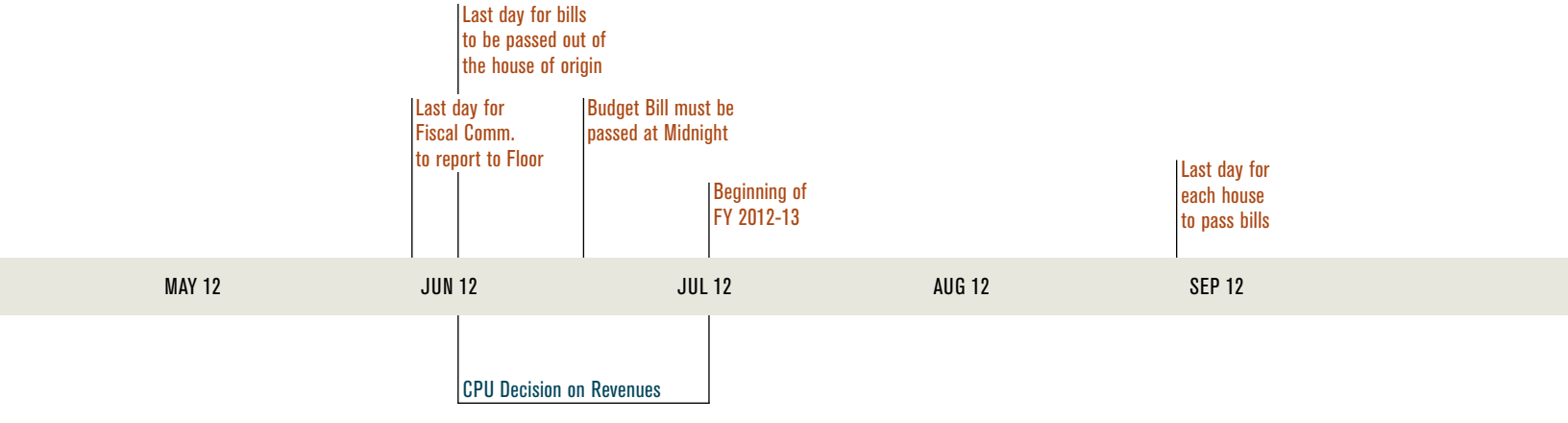
In the legislature, SB 1572 (Pavley) and AB 1532 (Perez) offer criteria and legislative oversight provisions that would mandate how the governor and state agencies could appropriate revenues in the Air Pollution Control Fund. These bills are currently working their way through environmental and fiscal committees in the Senate and Assembly. If they go to a full vote of the legislature, each must be passed by a simple majority vote by August 31, 2012. (Important dates in this process are detailed in Figure F.)

Both bills would create a Greenhouse Gas Reduction Account within the Air Pollution Control Fund, and would grant the legislature the power to decide how the revenue can be spent, as well as the power to appropriate the money. But the state budget must be approved much sooner — by June 15. The trailer bill attached to the budget would also create a Greenhouse Gas Reduction Account within the Air Pollution Control Fund, would grant the executive branch appropriation power, and would require that the legislature have a minimum of 30 days to review any spending plans. Note that until the budget has been enacted, the legislature cannot send the governor any bill appropriating funds for the same fiscal year.[7]

Before September 12, the governor and the legislature will have to agree on how money from the fund will be deposited, controlled, and spent. ARB and other state agencies will likely carry out expenditure plans that fall within their jurisdiction.

The decision regarding the pending budget is important, especially because it will have implications for how the fund is managed in the long run. The real issue however, is how allowance revenues will be used in 2015 and beyond. Annual revenues coming into the fund are expected to grow from to $5.8 to $7.7 billion from 2015 to 2020 (using 2012 dollars).

FIGURE F: AIR POLLUTION CONTROL FUND AND ELECTRIC UTILITY REVENUE DECISION TIMELINE



Other Allowance Revenue

The ARB has already approved rules for using revenues to protect energy-intensive industries that are subject to out-of-state competition. The ARB identified these industries and established rules for allocating free emission allowances in its Initial Statement of Reasons, released in October 2010. The ARB held public comment periods and workshops to solicit input from industries across the state, and a final rule was approved in December 2011.

LEGAL LIMITATIONS FOR ALLOWANCE SPENDING

There are legal and practical limitations that must be considered when deciding how proceeds generated from the sale of emission allowances can be used in California. In California's Cap-and-Trade Auction: Are the Auction Proceeds Fees, Taxes, or Something Else? authors Dan Farber and Deborah Lambe consider the different legal frameworks under which California courts may classify the proceeds as a regulatory fee, some other fee, an unlawful tax or something else. This legal classification is an important one because the different classifications impact how dollars raised through the cap and trade program may be spent. The study also provides a legal risk analysis of the 18 alternatives for allocating auction revenues that were reviewed previously in the Roland-Holst analysis.

Are the Auction Proceeds Taxes, Fees, or Something Else?

Proposition 13, approved by the voters in 1978, amended the California Constitution to require that tax increases be approved by a two-thirds majority of each of the two houses of the Legislature. AB 32 was approved by a simple majority. Therefore, a key legal issue for the cap-and-trade program is whether the auction proceeds can legally be classified as "fees," "illegal taxes," or something else. The law in this area is untested (an auction allowance does not fall under the legal definition of a typical fee scheme), so what the courts will do is uncertain.

Proposition 26, passed by the voters in 2010, modifies Proposition 13 to expand how a "tax" is defined under California law. Prop. 26 mandates that state laws that result in any taxpayer paying a higher tax must be approved by two-thirds vote of each house of the Legislature. Farber and Lambe reviewed the text of the original proposition and their analysis concludes that there is some ambiguity about the application of Proposition 26 to AB 32.

In their report the authors present three arguments that outline why they believe auction proceeds from the state's cap and trade program cannot be classified as a "tax" under Proposition 13:

- The auction proceeds, if spent for adaptation or mitigation measures consistent with the regime established by the California Supreme Court in Sinclair Paint[8], may be considered a regulatory fee rather than a tax.
- The compliance instruments which allow regulated entities to emit greenhouse gasses constitute a governmental privilege and thus are equivalent to a development fee rather than a tax.
- The primary purpose of CARB, AB 32, and the cap-and-trade program is not fiscal, so Proposition 13 does not apply.

Courts considering the question of how to classify allowance value will consult the leading case on the subject of regulatory fees- Sinclair Paint. The Sinclair Paint case concerned the Childhood Lead Poisoning Prevention Act, which provided evaluation, screening and medical follow-up services to children at risk of lead poisoning. The program was entirely supported by fees on entities that contributed to environmental lead poisoning. The court found the program to constitute a "regulatory fee" and not a tax because, (1) there was a causal connection between the product regulated and its adverse effects, (2) the money raised was limited to the reasonable cost of mitigating the adverse effects, and (3) there was a reasonable relationship between the allocation of costs among payers and the burdens imposed by the payer.

In order to prevent successful legal challenges to AB 32, the authors believe the most conservative legal approach to spending dollars generated by the cap-and-trade program would be to use the auction proceeds in a way that is consistent with the legal precedent sent by the Sinclair Paint case.

The authors further conclude that Proposition 26, which imposes additional limits on taxation in California, will not apply to the AB 32 revenues. AB 32 was adopted before the effective date of Proposition 26, which is thus unlikely to be found to apply.

It may seem that how the proceeds from the cap-and-trade program could be classified by the courts might be a minor or academic point. However, just how these proceeds are classified could actually determine whether or not California could proceed with implementing the program without further action by the legislature.

In addition to the research by Faber and Lambe, both UCLA and the California's nonpartisan Legislative Analyst Office (LAO) recently analyzed how Props 13 and 26 could potentially apply to the AB 32 cap and trade program. Both UCLA and the LAO concluded that under the law, the auction proceeds generated by the cap and trade program would be considered a "regulatory fee" (and a "tax") by the courts. Both also concluded that, under the law, the proceeds would likely need to be spent on programs that reduce or mitigate greenhouse gas emissions. In the following Table, the authors present their legal risk assessment of the 18 revenue allocation alternatives along side the macroeconomic impacts presented earlier in this report by Professor David Roland-Holst.

COSTS OF CAP AND TRADE

Because AB 32 and its cap-and-trade program places a cost on emitting carbon, creates greater value in being efficient, and generates new revenue for the state, Californians will experience some shifts in the overall economy and potentially their day-to-day lives. Putting a price on carbon in California will impact electricity rates, natural gas rates, and transportation fuels. However, Californians also stand to benefit from the use of allowance revenues, whether

Prop 13: From and after the effective date of this article, any changes in State taxes enacted for the purpose of increasing revenues collected pursuant thereto whether by increased rates or changes in methods of computation must be imposed by an Act passed by not less than two-thirds of all members elected to each of the two houses of the Legislature, except that no new ad valorem taxes on real property, or sales or transaction taxes on the sales of real property may be imposed. Cal. Const. Act. XIIIA §3

Prop 26: From and after the effective date of this article, any changes in state taxes enacted for the purpose of increasing revenues collected pursuant thereto **Any change in state statute which results in any taxpayer paying a higher tax** whether by increased rates or changes in methods of computation must be imposed by an Act **act** passed by not less than two-thirds of all members elected to each of the two houses of the Legislature, except that no new ad valorem taxes on real property, or sales or transaction taxes on the sales of real property may be imposed.

Sinclair Paint Regime: Sinclair Paint is the leading case on the subject of regulatory fees, where the court deemed the regulatory fee to be not a tax because, (1) there was a causal connection between the product regulated and its adverse effects, (2) the money raised was limited to the reasonable cost of mitigating the adverse effects, and (3) there was a reasonable relationship between the allocation of costs among payors and the burdens imposed by the payer.

FIGURE G: LEGAL RISK AND MACROECONOMIC IMPACTS (MACROECONOMIC CHANGES FROM BASELINE VALUES IN 2020)

	SCENARIO	REAL GSP (2010 $MILLIONS)	EMPLOYMENT (FTE)	STATE REVENUE ($M)	LEGAL RISK
1	REVENUE REBATES TO TAXPAYERS.	486	4,814	46	HIGH
2	ENERGY EFFICIENCY IMPROVEMENTS ON STATE OWNED BUILDINGS WHICH COULD OFFSET GENERAL FUND EXPENDITURES.	83	467	6	LOW TO MEDIUM
3	OFFSET GENERAL FUND EXPENDITURES THROUGH CREATIVE FINANCING APPROACHES. (REVENUE IS SPENT ON NON-ENVIRONMENTAL INVESTMENTS WITH ZERO GREENHOUSE GAS REDUCTIONS.)	285	1,710	26	HIGH
4	ENERGY EFFICIENCY ACTIONS TO UPGRADE RESIDENTIAL LIGHTING.	997	6,902	58	LOW
5	ENERGY EFFICIENCY ACTIONS INCLUDING APPLIANCE EFFICIENCY UPGRADES AND REPLACEMENTS.	896	7,328	92	LOW
6	ENERGY EFFICIENCY ACTIONS TO UPGRADE RESIDENTIAL BUILDING EFFICIENCY.	875	8,751	56	LOW
7	FINANCING PROGRAM FOR RENEWABLE ENERGY INSTALLATIONS AT RESIDENTIAL PROPERTIES.	664	6,765	57	LOW
8	INDUSTRIAL ENERGY EFFICIENCY: RETROFITS AND COMPLIANCE INVESTMENTS FOR UTILITIES AND LARGE INDUSTRIAL ACTIVITIES (ENERGY, CEMENT, ETC.)	157	1,364	12	LOW
9	COMMERCIAL ENERGY EFFICIENCY AND DISTRIBUTED GENERATION PROGRAMS.	143	1,100	10	LOW
10	SMALL BUSINESS ENERGY EFFICIENCY — FINANCIAL AND OTHER SUPPORTING SERVICES TO OVERCOME TECHNOLOGY ADOPTION AND COMPLIANCE HURDLES.	468	6,480	10	LOW
11	PROGRAMS THAT PROVIDE FINANCING FOR, OR DIRECTLY FUND CONSERVATION AND ENERGY EFFICIENCY UPGRADES IN LOW-INCOME AND MIDDLE-INCOME DWELLINGS.	838	6,620	102	LOW
12	FINANCING PROGRAMS FOR COMMERCIAL, INDUSTRIAL AND MANUFACTURING FACILITIES TO REDUCE GREENHOUSE GAS EMISSIONS BY INVESTMENT IN ENERGY EFFICIENCY, ENERGY STORAGE, AND CLEAN AND RENEWABLE ENERGY PROJECTS.	142	1,162	11	LOW
13	ACCELERATED DEPLOYMENT OF ADVANCED TECHNOLOGY VEHICLES.	739	4,157	41	LOW
14	LOW-CARBON GOODS MOVEMENT, FREIGHT VEHICLE TECHNOLOGIES, PUBLIC TRANSPORTATION, AND INFRASTRUCTURE DEVELOPMENT.	154	1,156	12	LOW
15	HIGH SPEED RAIL PROJECT — SPECIFIC TO THE BOOKEND PROJECTS.	442	2,651	31	LOW TO MEDIUM-LOW
16	IMPROVE WATER SUPPLY THROUGH MORE EFFICIENT STORAGE, CONVEYANCE, AND MANAGEMENT INFRASTRUCTURE.	181	1,962	11	LOW TO MEDIUM-LOW
17	FINANCIAL ASSISTANCE FOR LOCAL GOVERNMENTS TO IMPLEMENT THEIR SUSTAINABLE COMMUNITY STRATEGIES DEVELOPED TO MEET THE GOALS OF SB 375.	305	2,496	18	LOW
18	GREEN BANK.	813	5,628	74	LOW

Note: legal risk level reflects a *Sinclair Paint* analysis

these revenues are spent on projects designed to benefit Californians, or if households receive the revenues directly in the form of rebate checks. These direct and indirect benefits are designed to offset any increases in energy costs.

Electricity

Under most of the proposals under consideration, ratepayers would see lower electricity costs or nearly neutral cost differences. Low-income families enrolled in California Alternative Rates for Energy and low-consumption households are explicitly protected from rate increases.[9] A central issue is whether the allowance value that is available to offset the potential increase in cost is used to prevent increases in electricity bills, or if bills will be allowed to rise and the allowance value is returned to customers through a direct payment.

Fuel Costs

The ARB estimates that any gasoline (or other fuel) price increases related to the cap-and-trade program will depend on how effective other programs prove to be. If energy efficiency measures, the Renewable Portfolio Standard and other policies are implemented effectively, they will reduce emissions and help keep allowance prices low. If these measures are not executed effectively, allowance prices will rise.

By 2020, the ARB projects a rise in gasoline prices of 6 percent from cap and trade, assuming offsets and measures to reduce emissions in the electricity and transportation sectors meet stated goals.[10] If those measures don't meet stated goals, gas prices could rise higher. By 2020, gas prices could increase by between $0.18 and $1.45 per gallon (in 2007 dollars) and diesel could increase by between $0.24 and $1.87 per gallon (in 2007 dollars) due to the cap-and-trade program.[11]

Lower Income Households

Overall, lower-income households spend a higher portion of their incomes on energy, leaving them vulnerable if cap and trade results in higher energy costs. One option to offset this risk is to funnel some of the money raised through the cap-and-trade program directly to California families in the form of rebate checks. If the state decides to implement this strategy, it is expected that most households would receive payments that would exceed any increased out-of-pocket expenses for higher energy costs.

Lower income communities and communities of color often face greater economic and health impacts related to toxic emissions. In Minding the Climate Gap: What's at stake if California's climate law isn't done right and right away, a study that examines how climate policy in California will impact disadvantaged communities and communities of color, the authors note the importance not only of cutting carbon emissions, but also of ensuring that emissions are reduced in all communities. The authors write, "In California, children in poverty, together with all people in poverty, live disproportionately near large facilities emitting toxic air pollution and greenhouse gases."[12] The researchers document how at risk communities could suffer additional health and economic consequences if the state fails ensure that emissions are reduced in at-risk communities.

How the state decides to allocate revenues from the cap-and-trade program could begin to address this disparity. As noted previously, the LAO estimates that in 2012-13 cap and trade auction revenues could range from $660 million to over $3 billion. The LAO and others also discuss that these revenues must be used to mitigate GHG emissions or the harm caused by GHG emissions.[13] Many of the alternatives we analyzed in this research will indeed mitigate GHG emissions or the harm caused, but to varying degrees

HEALTH AND ENVIRONMENTAL BENEFITS OF AB 32

AB 32 requires the California Air Resources Board to evaluate the overall societal benefits of implementing the law, including reductions of air pollutants (outside of carbon emissions), and possible other benefits to the environment, the economy, and public health.[14] While expert research commissioned by Next 10 and summarized in this document

provides an economic and legal analysis of different alternatives for allocating cap-and-trade revenues, the research does not fully consider the range of investments and related environmental and health co-benefits from these alternatives uses of revenues.

For instance, investments may also include natural resource protection to reduce emissions and sequester more carbon. As the third largest state, California is home to nearly 100 million acres of land, which is used and maintained for agriculture production, parks, timber, grazing, and open space. Collectively, these resources help clean our air and water, provide food and fiber, and supply habitat for California's diversity of fish and wildlife. Investments in natural resources could therefore help California meet its emission reduction goals while promoting a number of other benefits to the environment, economy and public health consistent with AB 32 goals.

In addition to the benefit of reducing CO2 emissions, many of the cap-and-trade revenue allocation alternatives will, to varying degrees, also reduce other toxic pollutants, including ozone, particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide. Reductions in these known contributors to asthma, chronic obstructive pulmonary disease, respiratory illnesses, cardiovascular disease, premature death, and other adverse health impacts will improve public health in California. Cutting these pollutants will also result in improvements in labor productivity as there will be fewer lost workdays and a healthier work environment.[15]

Overall, it is not possible to estimate the co-benefits from alternative uses of allowance revenues without more specific information about how and to whom the revenues will be distributed. What is clear is that there are substantial co-benefits from measures that improve energy efficiency, lower vehicle miles traveled and improve the fuel-efficiency of vehicles. An approximate measure of the co-benefits can be gauged from the Public Health Analysis Supplement for the Draft Scoping Plan[16]. This report estimates the reductions in NOX (56 tons per day) and PM2.5 (12 tons a day) from some of the direct scoping plan measures related to vehicle and energy efficiency and the deployment of renewable energy, and also shows the associated health benefits. It should be noted that seventeen of the eighteen scenarios examined in the research commissioned by Next 10 and summarized in this report result in GHG emission reductions through energy efficiency improvements and/or replacing carbon-emitting energy sources with renewable energy sources.

Another recent analysis of the value of co-benefits from AB 32 related measures is the analysis reported by the American Lung Association's report on 'The Road to Clean Air', May 2011.[17] The California vehicle standards envisioned as part of the Scoping Plan will reduce vehicle GHG emissions by 45-52 percent, reduce smog-forming emissions by 75-85 percent, and reduce premature deaths and illnesses by 65-75 percent. Overall there will be between $7.2 and $8.1 billion in avoided health, global warming, and societal costs.

The Clean Air Act, enacted in 1970, provides us with another example of how an environmental law at the national level can achieve economic and public health benefits. The Office of Management and Budget estimated the benefits from the period 1992-2002 to be approximately $121 to $193 billion for the U.S., with costs to be $23 to $27 billion. That translates into $4 to $8 in benefits for each dollar invested in clean air.[18]

WHAT IS NEXT?

The first cap-and-trade carbon permit auction in California is set for November 2012.

Money raised from the auction of emission allowances related to generating electricity will go to utilities for the benefit of their customers. Exactly how this distribution to customers will occur will be decided by the Public Utilities Commission by June of 2012 for privately owned utilities, and by the governing boards of publicly owned utilities sometime this year.

A second portion of emission allowances will be given to industrial companies, as long as those businesses maintain jobs and economic activity in the state. California families benefit from this allocation if it prevents jobs from leaving the state. But if the free allocation of allowances is too generous, it could lead to windfall profits for industry. The ARB will evaluate this issue over time.

The third portion is the revenue generated from auctioning allowances. In the next fiscal year, revenues will amount to $0.6 to $1.8 billion, and will grow five-fold by 2015, when natural gas and transportation fuels come under cap and trade. In the long run, the largest effect on households will hinge on the decision about how to use these revenues.

In summary, emission allowances in AB 32's cap-and-trade program represent billions of dollars in value for Californians - value that will not leave the state's economy. Over the next several months, the California Public Utilities Commission, California Air Resources Board, state lawmakers and Governor Brown will decide how to spend this money. These are vitally important decisions that should be of interest to all Californians.

PREVIOUS RESEARCH BY NEXT 10

Previous research published by Next 10 and commissioned from a number of expert authors examined cap and trade more broadly, explaining how the program would be designed.

In this previous work, Designing the Allocation Process for California's Greenhouse Gas Emissions Trading Program: The multi-billion dollar question, macroeconomic results from Roland-Holst indicate that auctioning revenues is preferable, and shows that the dividend approach performs well in macroeconomic terms as compared to the tax reduction. USC Research Professor Adam Rose's companion research illustrates the value of free allocation if that process protects consumers from cost increases.

Previous studies from Burtraw and Parry review the reasons economists prefer using allowance value to cut tax rates. If a dividend approach were chosen, they offer the idea of creative approaches to using the stream of expected future rebate payments as collateral in loans for clean tech investments. Morgenstern and Moore focused their research on the industrial sector, and found in their short-run analysis, the impacts to California's energy intensive and trade exposed industrial sectors would be small. Free allocation largely handles any negative cost.

ENDNOTES

1 Additional details about these programs can be found in A Primer on the Use of Allowance Value Created under the CO2 Cap-and-Trade Program

2 http://www.arb.ca.gov/cc/inventory/data/tables/reductions_from_scoping_plan_measures_2010-10-28.pdf

3 http://www.arb.ca.gov/cc/inventory/data/tables/reductions_from_scoping_plan_measures_2010-10-28.pdf

4 Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (p. 6)
http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf

5 Note that the economic analysis did not look at some of the options discussed by the Economic and Allocation Advisory Committee (EAAC), including using auction revenues to avoid future tax increases or restoring spending on state programs like education.

6 CARB Final Regulation Order, California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, (§95870(d) p.97) available at http://www.arb.ca.gov/cc/capandtrade/finalregorder.pdf.

7 California Constitution Article 4 Section 12; http://www.leginfo.ca.gov/.const/.article_4.

8 Sinclair Paint Co. v. State Bd. of Equalization, 15 Cal 4th 866 (1997).

9 In California, electricity rates are tiered using a baseline quantity of electricity consumed. The baseline is calculated using climate, season, and the electricity usage within a given "climate zone." A household consuming at or below the baseline quantity in a given month is in Tier 1. However if a household consumes over 100 percent of baseline, they fall into the upper tiers. The cost of electricity consumed in each additional tier is higher, to encourage conservation and to keep rates low for households who do not use much electricity or who require low-cost electricity based on medical needs or poverty thresholds.

10 Air Resources Board, "Updated Economic Analysis of California's Climate Change Scoping Plan," March, 2010.

11 Air Resources Board, "Updated Economic Analysis of California's Climate Change Scoping Plan," March, 2010.

12 Morello-Frosch, Sadd, Scoggins, Minding the Climate Gap.

13 LAO, The 2012-13 Budget: Cap and Trade Auction Revenues, February 16, 2012.

14 AB 32 language

15 Public health and environmental benefits of draft scoping plan measures

16 Climate Change Draft Scoping Plan: Public Health Analysis Supplement.
http://www.arb.ca.gov/cc/scopingplan/document/executive_summary_publichealth.pdf

17 American Lung Association, The Road to Clean Air, May 2011.
http://www.lung.org/associations/states/california/assets/pdfs/advocacy/clean-cars-campaign/the-road-to-clean-air.pdf

18 The clean air act's economic benefits, past, present and future. Small Business Majority, the Main Street Alliance. October 2010.

NEXT 10

USING THE ALLOWANCE VALUE FROM CALIFORNIA'S CARBON TRADING SYSTEM: LEGAL RISK FACTORS, IMPACTS TO RATEPAYERS AND THE ECONOMY

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