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L E G I S L A T I V E A N A L Y S T ' S O F F I C E

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Cap-and-Trade Expenditures: Overview of Governor's Budget and Issues for Legislative Consideration

Presented to:
Senate Committee on Budget and Fiscal Review
Hon. Mark Leno, Chair





Background— AB 32 and Cap-and-Trade



The Global Warming Solutions Act of 2006 (Chapter 488 [AB 32, Núñez/Pavley])

- Established the goal of reducing greenhouse gas (GHG) emissions statewide to 1990 levels by 2020.
- Directed the Air Resources Board (ARB) to adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions by 2020.



Cap-and-Trade

- The cap-and-trade regulation places a “cap” on aggregate GHG emissions from large GHG emitters, such as large industrial facilities, electricity generators and importers, and transportation fuel suppliers.
- Capped sources of emissions are responsible for roughly 85 percent of the state’s GHG emissions.
- To implement the cap-and-trade program, ARB issues carbon allowances equal to the cap, and each allowance is essentially a permit to emit one ton of carbon dioxide equivalent. Entities can also “trade” (buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions.



Administration Required to Develop Investment Plan Every Three Years

- With respect to spending auction revenue, the Investment Plan must (1) analyze gaps in current state strategies to meeting the state’s GHG emission reduction goals and (2) identify priority investments that will facilitate the achievement of feasible and cost-effective GHG reductions.



Background— Legal Requirements



State Law Requires Auction Revenue Be Used to Facilitate GHG Reductions

- In addition, to the extent feasible, funds must be used to achieve other goals, such as providing economic, environmental, and public health benefits to the state.
- Chapter 830 of 2012 (SB 535, de León) requires that the Investment Plan allocate at least 25 percent of auction revenue to projects that benefit disadvantaged communities and at least 10 percent to projects located within disadvantaged communities.



State Constitution Likely Requires Revenue Be Used to Reduce GHGs

- Ongoing court case challenging the ARB's authority to collect auction revenue.
- In November 2013, the superior court ruled that ARB had authority to collect auction revenue. This ruling has been appealed, and final decisions from the appellate courts on these issues may take years.
- It is likely that the courts would require the state to target spending to GHG reduction activities since that is the primary goal of AB 32.



Background— Auction Revenues and Expenditures

Cap-and-Trade Expenditures			
<i>(In Millions)</i>			
Program	2013-14	2014-15	2015-16^a
High-speed rail	—	\$250	\$600
Affordable housing and sustainable communities	—	130	480
Transit and intercity rail capital	—	25	240
Transit operations	—	25	120
Low carbon transportation	\$30	200	90
Low-income weatherization and solar	—	75	70
Agricultural energy and operational efficiency	10	25	40
Urban water efficiency	30	20	20
Sustainable forests and urban forestry	—	42	—
Waste diversion	—	25	—
Wetlands and watershed restoration	—	25	—
Other administration	2	10	31
Totals	\$72	\$852	\$1,691

^a Based on LAO projection of \$2.4 billion in revenue in 2015-16. The fund balance is projected to be \$1.6 billion by the end of 2015-16.



Allowance Auctions Generate Billions of Dollars in State Revenue

- The ARB has conducted 13 quarterly cap-and-trade auctions since November 2012—generating roughly \$3.5 billion in state revenue.
- We project the state will generate about \$2.4 billion in auction revenue in 2015-16 and \$2.3 billion in 2016-17.



How Has Auction Revenue Been Spent So Far?

- As shown in the figure above, about \$2.6 billion has been appropriated so far for various activities.



Policy Considerations— Relationship Between Regulation and Spending

- Cap-and-Trade Regulation Intended to Ensure State Meets GHG Goals and Provide Incentive for Cost-Effective Emission Reductions**
 - Overall emissions are limited by the number of allowances issued.
 - Allowance prices provide incentive for cost-effective reductions.

- Generating Additional Revenue Not a Primary Goal of Cap-and-Trade**
 - From an economic perspective, auction revenues are often thought of as a by-product of cap-and-trade programs and not their primary goal.

- Spending on Capped Sources Likely Has No Net Effect on Overall Emissions**
 - As long as the cap is limiting emissions, subsidizing an emission reduction from one capped source will simply free-up allowances for other emitters to use. The end result is a change in the sources of emissions, but no change in the overall level of emissions.

- Spending on GHG Reductions From Capped Sources Likely Increases Overall Costs**
 - The cap-and-trade regulation generally creates a financial incentive for producers and consumers to find the least costly mix of emission reductions. In many cases, using state funds to encourage a different mix of GHG emission reductions would be more costly overall.



Policy Considerations— Options for Promoting Legislative Priorities



Removal of Requirement to Spend on GHG Reductions by Reauthorizing Cap-and-Trade With a Two-Thirds Vote

- Legal requirement limits flexibility to achieve other legislative goals.
- Removing requirement provides maximum flexibility to (1) return funds directly to households and businesses or (2) use revenue to promote highest legislative priorities.
- Might be needed to remove post-2020 legal uncertainty about authority to operate cap-and-trade.



Strategies Under Requirement to Spend on GHG Reductions

- Target emission reductions from uncapped sources to achieve net GHG reductions.
- Target most cost-effective GHG reductions to limit overall costs of GHG emission reductions.
- Prioritize programs that achieve non-GHG benefits, such as improving regional air quality and providing financial benefits to low-income households.
- For more information, see our recent report *Cap-and-Trade Revenues: Strategies to Promote Legislative Priorities*.



Governor's Proposal

Governor's 2016-17 Cap-and-Trade Expenditure Plan

(In Millions)

Continuous Appropriations^a	\$1,200
High speed rail	500
Affordable housing and sustainable communities	400
State transit assistance	200
Transit and intercity rail capital	100
Transportation	1,025
Low carbon vehicles	460
Transit and intercity rail capital	400
Low carbon road program	100
Biofuel production subsidies	40
Biofuel facilities capital support	25
Carbon Sequestration	280
Healthy forests	150
Wetland and watershed restoration	60
Urban forestry	30
Green infrastructure	20
Carbon sequestration in soils	20
Energy Efficiency and Renewable Energy	200
Low-income energy efficiency and solar	75
UC and CSU energy efficiency	60
Energy efficiency for state buildings	30
I-Bank energy financing program	20
Conservation Corps energy efficiency	15
Short-Lived Climate Pollutants	195
Waste diversion	100
Wood stove replacement	40
Dairy digesters	35
Refrigeration unit replacements	20
Local Climate Program	100
Water Efficiency	90
Water efficiency technology	30
Agricultural water efficiency	20
Rebates for efficient clothes washers	15
Low-income household water efficiency upgrades	15
Commercial and institutional water efficiency	10
Total	\$3,090

^a Continuous appropriations based on Governor's \$2 billion revenue estimate.

GHG = Greenhouse gas; CSU = California State University; and UC = University of California.

**2016 Investment Plan Lacks Robust Analysis Needed to Develop Framework for Spending**

- Plan identifies different types of programs that could potentially reduce GHGs, but it does not provide a clear analytical justification for why spending auction revenues on each program is likely to achieve state priorities most effectively.
- Plan does not include an assessment of how spending options interact with cap-and-trade regulation or other regulations.

**Certain Proposals Lack Details**

- Examples: healthy forests, certain water efficiency programs, local climate projects, low carbon road program.
- Programs could have significant merit, but lack of information about which types of projects would be selected makes it difficult to assess the likely outcomes.

**Expected Benefits of Proposals Are Often Unclear or Uncertain**

- Estimating net benefits can be difficult and, in some cases, the science can be somewhat uncertain. However, reliable estimates of net benefits, as well as key uncertainties, is key to informing funding decisions.
- In some cases, the administration does not provide estimates of GHG reductions or other benefits. In other cases, we identify concerns with the methods used to provide estimates of benefits.
- The overall type and level of benefits provided to disadvantaged communities under the Governor's plan is unclear.



LAO Recommendations



Direct Administration to Provide More Robust Estimates of Benefits

- Estimates of GHG and co-benefits associated with each proposal, including methodologies used to produce estimates.
- Estimates of what portion of the benefits will accrue to households located in disadvantaged communities.



Allocate Funds Based on Policy Priorities and Level of Confidence in Outcomes

- Ultimate allocation will depend on Legislature's assessment of expected benefits and relative weight given to GHG reductions versus other benefits.
- There is an inherent level of uncertainty about final outcomes of different programs.
- For programs where expected outcomes are most uncertain, the Legislature might want to consider allocating a relatively small amount of funds and waiting for program outcomes to become available in future years.



Establish a Committee to Develop a More Robust Investment Plan

- Independent advisory committee of mostly economic experts and scientists to assist the administration in developing a more robust strategy for targeting funds.
- Panel could help provide guidance about how to target funds most cost-effectively under existing market and regulatory conditions.
- Committee could also provide recommendations regarding methods for estimating benefits for specific programs or projects.