

OPPORTUNITIES TO LEVERAGE REMAINING 2015-16 CAP-AND-TRADE AUCTION REVENUES TO EXPAND GREENHOUSE GAS EMISSION REDUCTIONS

Passed in 2006, California's Global Warming Solutions Act seeks to reduce greenhouse gas (GHG) emissions in California to 1990 levels by 2020 – and ultimately, to reduce GHG emissions 80 percent below 1990 levels by 2050. To achieve this goal, the California Air Resources Board (CARB) has set a cap on GHG emissions, and holds quarterly auctions for emission allowances under this program.

In 2014, legislation enacted concurrently with the 2014-15 budget sets aside 60 percent of these annual cap and trade auction revenues to a series of defined categories, including high-speed rail (25 percent of revenues), affordable housing and sustainable communities (20 percent), transit and intercity rail capital (10 percent) and low-carbon transit operations (5 percent). The remaining 40 percent of auction revenues are to be appropriated by the Legislature each year.

In enacting the 2015-16 budget, the Legislature appropriated \$1.2 billion for the continuously appropriated categories, but delayed consideration of \$800 million in annual appropriations for separate legislation to be developed in coming months.

In this proposal, Advanced Energy Economy (AEE) outlines a set of principles and specific recommendations to incorporate opportunities to leverage a portion of the remaining cap-and-trade auction revenues and other sources for 2015-16 to spur market development and attract private capital.

I. Background on the Cap-and-Trade System in California

Enacted under AB 32, California's Global Warming Solutions Act of 2006 seeks to reduce greenhouse gas (GHG) emissions in California to 1990 levels by 2020 – and ultimately, to reduce GHG emissions 80 percent below 1990 levels by 2050. To achieve this goal, CARB has set a cap on GHG emissions, and holds quarterly auctions for emission allowances under this program. The program took effect in 2012, with the first enforceable emissions caps taking place in 2014.

To guide the investment of cap and trade auction revenues, CARB has published a series of plans, including the Climate Change Scoping Plan and the Cap-and-Trade Revenue Investment Plan. Both plans highlight the need to leverage the resources available through the cap-and-trade actions to attract private capital, noting that public funding alone is insufficient to achieve the scale necessary to deploy commercially available technologies. Focusing California's available public energy financing resources to spur market development and attract private capital can accelerate the availability of capital for renewable energy, smart grid, advanced transportation, energy storage, demand response and energy efficiency projects.

In May 2014, ARB approved the First Update to the Climate Change Scoping Plan. The Update contains a section devoted to the investments made using cap-and-trade revenues and the need to coordinate those investments with other regional, state and federal financing programs. Notably, the Update states that “[t]he State has existing, but limited, incentive programs and it is critical to use these resources effectively to leverage private-sector investment and build sustainable, growing markets for clean and efficient technologies.”^{*} The proposed update continues:

Looking forward, the State will need to make targeted, priority investments with the limited funding available. California will need to continue coordinating and utilizing funding sources such as the Greenhouse Gas Reduction Fund 104 (auction proceeds), the Alternative and Renewable Fuel and Vehicle Technology Program (AB 118), Electric Program Investment Charge (EPIC) Program, and the Proposition 39: Clean Energy Job Creation Fund to expand investments in California’s clean economy and further reductions in both GHG emissions and short-lived climate pollutants. For example, the State can use auction proceeds to provide rebates that encourage consumers to purchase zero- and near-zero emission vehicles. This effort can be coordinated with CEC AB 118 investments for the installation of charging infrastructure to help meet the objectives of AB 32 and move the State to the widespread adoption of zero-emission vehicles needed to achieve ongoing climate and air quality goals.[†]

These statements in the Scoping Plan update build on the inclusion of financing strategies as one of eight Investment Principles CARB included in its final Capand- Trade Auction Revenue Investment Plan released in May 2013. In that document, ARB stated that “[f]unding should leverage private and other government investment to the maximum extent possible.”[‡]

II. Current Auction Revenue Proposals

For 2015-16, approximately \$2 billion in cap-and-trade auction revenues was available for appropriation. The recently enacted state budget allocated \$1.2 billion through the statutory allocation formula enacted in 2014, which sets aside 60 percent of annual auction revenues to high-speed rail, affordable housing and sustainable communities, transit and intercity rail capital, and low-carbon transit operations. Specifically, the 2015-16 budget includes the following allocations pursuant to that formula:

High-speed rail	\$500 million
Affordable housing and sustainable communities	\$400 million
Transit and intercity rail	\$200 million
Low-carbon transit operations	\$100 million
TOTAL	\$1.2 billion

The Legislature deferred consideration on the remaining 40 percent of auction revenues, totaling \$800 million, for later in the year. In addition, the Governor’s May revised budget proposal also allocates an additional \$237 million for projects under the cap-and-trade expenditure plan, while the Assembly adds \$417 million and the Senate adds \$732 million.

^{*} California Air Resources Board, “First Update to the Climate Change Scoping Plan: Building on the Framework” (May 2014), p. 105, available at http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

[†] Id. at 119-20.

[‡] California Air Resources Board, “Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16” (May 14, 2013), p. 32, available at http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_investment_plan.pdf.



A number of proposals have been offered on how best to allocate these remaining and additional revenues. The Legislative Analyst's Office highlighted the areas of agreement between the Governor, Senate, and Assembly, as well as areas of difference. Those allocation proposals are as follows (all figures in millions of dollars):

	Governor	Senate	Assembly
Continuously Appropriated Funds (60 Percent of Revenue)	\$1,200	\$1,200	\$1,200
Discretionary Expenditures	1,037	1,532	1,217
Agreement Between Houses			
Incentives for low-carbon transportation	350	350	350
Energy efficiency for low-income households	140	140	140
Forest management and urban forestry	92	92	92
Wetlands and watershed restoration	65	65	65
Transit and intercity rail capital projects	65	6	65
Energy efficiency and renewable energy for UC and CSU	60	60	60
Energy efficiency for public buildings	40	40	40
Rebates for water efficient appliances	30	30	30
Differences Between Houses			
Disproportionately affected communities program	--	500	--
Agricultural water and energy efficiency	40	105 ^a	40
Urban water-energy efficiency	20	-- ^a	20
Water and energy technology research and development	30	-- ^a	30
Agricultural operations and efficiency	25	50	30
Green Bank for energy efficiency financing	--	25	--
Waste diversion	60	10	75
Active transportation grants and expanded transit passes	--	--	50
Biomass power generation grants	--	--	50
Biodiesel refining and biomethane grants	--	--	20
Improved agricultural soil management practices	20	--	20
Property Assessed Clean Energy financing	--	--	10
River revitalization and greenway development	--	--	10
Community outreach to assist disadvantaged communities	--	--	8
Climate change research and outreach	--	--	6
Mosquito vector control activities	--	--	4
Climate adaptation activities	--	--	3
Total Expenditures	\$2,237	\$2,732	\$2,417

^a Senate plan combines water efficiency programs and adds \$15 million to May Revision amounts.



III. Recommendations to Guide Allocation of Cap-and-Trade Auction Revenues

In allocating the remaining cap-and-trade auction revenues for 2015-16, AEE offers the following recommendations to spur market development and attract private capital. Such a strategy builds on California's leadership in energy finance, extends the scope and impact of the cap-and-trade revenues available, and provides an important boost to California's strong and growing advanced energy industry.

A. Align revenue allocation strategies with the State's energy, GHG emission reduction, and water conservation objectives

Through the AB 32 Scoping and Investment Plans, the state has done much of the work of articulating a comprehensive strategy around effective utilization of cap-and-trade auction revenues, and the principles articulated in these Plans should form the cornerstone of legislative revenue allocations. Furthermore, with California now in the fourth year of historic drought, additional measures to address the water crisis – including funding measures to support new, innovative water conservation technologies and programs – should also be incorporated.

Significantly, appropriations should also reflect the language of the Scoping and Investment Plans that calls for the leveraging of private capital to spur market transformation. Even with California's unmatched support for advanced energy, public funding will never be sufficient to match the scale of the challenge. As a result, auction proceeds should be used to accelerate the creation of markets to provide private capital at scale. This is consistent with the inclusion of language within the Cap-and-Trade Auction Revenue Investment Plan that "[f]unding should leverage private and other government investment to the maximum extent possible"; with the call in the Scoping Plan update to "accelerate market transitions", "quickly scale private-sector investment" and "build sustainable, growing markets for clean and efficient energy technologies"; and with the recommendation from the LAO that "auction revenues [should] be invested in a way that maximizes GHG emission reductions for a given level of spending."

In addition, benchmarking program expenditures against metrics tied to the objectives articulated in the Scoping and Investment Plans can help ensure available funds are being used effectively. This issue was also covered in the 2014 LAO report, which recommended that "the Legislature direct ARB to develop metrics for departments to use in order to prospectively evaluate the potential GHG emission benefits of projects, as well as direct the board to establish a set of guidelines for how departments should incorporate these metrics into their decision-making processes."

Specifically, for those funds designated to leverage private capital, it's critical to ensure that the programs are designed to attract participation from private-sector capital providers. Understanding whether financial institutions are participating in programs designed to spur market development would help facilitate maximum program effectiveness, as well as identifying potential changes to assist these private capital providers to meet their regulatory, risk and return requirements.

Finally, in developing programs designed to attract private capital, policymakers and program administrators must recognize that different technologies and stages of deployment require different financing mechanisms. The loan guarantees and other credit enhancements used to encourage the deployment of mature energy efficiency and renewable energy generation technologies may not be appropriate for the earlier-stage, higher-risk



needs of companies working to commercialize water efficiency technologies. Instead, grant programs could be more appropriate for the deployment of such water technology. Lenders and investors have different appetites for risk— and, correspondingly, different expectations around returns – and these differences need to be incorporated into strategies around financial programs and offerings.

B. Coordinate energy efficiency programs around opportunities to spur private capital

Each of the budget proposals from the Assembly, Senate, and Governor contain a number of energy efficiency programs, including agreement on \$240 million for energy efficiency for low-income households, energy efficiency in public buildings, and energy efficiency and renewable energy projects in the University of California (UC) and California State University (CSU) systems. In addition, the Assembly includes \$10 million for Property Assessed Clean Energy (PACE) financing, while the Senate adds \$25 million for a Green Bank focused on energy efficiency lending.

These funds are dispersed amongst a number of existing entities: the UC and CSU systems are responsible for their funds; the Department of Community Services and Development oversees the low income energy efficiency and weatherization funds; and the Governor’s proposal calls for the \$40 million available for energy efficiency in public buildings to be moved from the California Energy Commission to the Department of General Services. (The Senate would keep the funding at the Energy Commission.)

One strategy to ensure proper coordination between the various entities would be to direct the funding to the newly created California Lending for Energy and Environmental Needs (CLEEN) Center, housed within the Infrastructure and Economic Development Bank (IBank). In addition to playing a vital coordination role, housing the funding within the CLEEN Center could lead to opportunities to utilize IBank’s access to capital markets for energy efficiency and other advanced energy projects. This is especially relevant for the funding designated for public buildings, which is a natural fit with the core focus of the IBank, and could assist in resolving the disagreement between the Governor and the Legislature on the appropriate entity to oversee these funds.

In addition, lawmakers should consider dedicating a portion of remaining revenues to “top up” funding under the Clean Energy Jobs Act enacted through Proposition 39 for energy efficiency in schools, and to encourage connections to private capital. Such a strategy is particularly important given that Prop 39 continues to generate substantially less revenue than originally anticipated. Prop 39 is expected to generate \$360.4 million in 2015-16, far less than the original expectation of \$550 million each year.

Furthermore, in each of the first two years of the Clean Energy Jobs Act, the Legislature sought to expand the program’s overall impact by allocating \$28 million for loans and loan loss reserves, despite the fact that such funding was not included in the Governor’s proposed budget. This year, however, the Legislature adopted the Governor’s funding recommendations for Prop 39 without amendment, meaning that for the first year under the program no funding is available for financing programs under the Clean Energy Jobs Act. AEE strongly encourages the Legislature to restore at least the same \$28 million for financing programs.

AEE also supports the utilization of existing statutory authority under the Clean Energy Jobs Act to create credit enhancements to leverage private capital. Providing a 15% loan loss reserve fund could spur \$6.67 in private lending for every \$1 appropriated. AEE further encourages the Legislature to encourage coordination for financing activities under Prop 39 between the California Energy Commission and the CLEEN Center. CLEEN,



and its Statewide Energy Efficiency Program (SWEET), is specifically designed to encourage concerted public and private investments and utilize the IBank's access to capital markets for selected projects. Making use of this existing expertise can create a direct path to private capital, and help ensure greater impact for public funds available under Prop 39.

Finally, policymakers should consider allocation of funds towards covering the cost of energy benchmarking & audits. Making benchmarking information publicly accessible would serve the dual purpose of driving measurable energy efficiency in the non-residential building sector as well as create opportunities for market innovation.

C. Support financing measures for deployment of renewable generation, energy storage, and water efficiency projects

California has a proven record as a leader in using existing public dollars to jumpstart the development of advanced energy markets, ultimately allowing to scale down public support and private lenders and investors to step in. Perhaps the best example of this success is the California Solar Initiative (CSI), which helped facilitate the deployment of nearly 2 GW of solar installations over 10 years. From the start, CSI was designed to facilitate market development, with available incentives declining as deployment increased, helping to ensure a smooth transition from public incentives to private sector financing.

Yet even with this success, a number of markets for renewable energy generation still need public support as they work to address other population segments. Maintaining and expanding the CSI incentives to encourage distributed generation in low-income and disadvantaged communities can facilitate market development in these often hard to serve markets, allowing for additional communities to take advantage of the benefits of solar energy. On the transportation side, targeting incentives and financing to encourage the rapid installation of retrofits for the trucking industry can overcome the same up-front cost barriers that impede progress often seen in other sectors working to incorporate energy efficiency.

For other markets, including energy storage and water efficiency, the focus should be on earlier-stage financial assistance, including increased funding for research, development and deployment for energy storage demonstration projects that can prove the reliability and efficiency of emerging storage technologies, as well as identifying innovative applications of existing storage technologies to provide the same ramping advantages currently offered by conventional peaking plants. These projects, which fit well within the Energy Commission's focus on emerging commercialized technologies, require a different structure than that used for more mature technologies.

Similarly, the area of water efficiency requires a mix of capital focused on early-stage research and development for new technologies, deployment of innovative proven water conservation measures, and providing bridge financing (such as short-term grants) for those areas where a clear need exists but where traditional markets do not yet fully reflect the value of water efficiency. Done strategically, this focus on addressing the full spectrum of capital needs necessary for bringing new water efficiency technologies and infrastructure to market and helping them scale in deployment can foster and accelerate the development of new markets for water efficiency, offering a chance for California to replicate its success with the California Solar Initiative in the critically important and timely area of water efficiency.



IV Conclusion

In allocating the unspent cap-and-trade auction revenues for 2015-16, California policymakers have the opportunity to establish and grow markets that can dramatically expand the mix of public and private capital available for energy, greenhouse gas emission reduction, and water efficiency projects. To make the most of this opportunity, policymakers should consider strategies to align available funding with the State's energy, climate, and water conservation strategies, coordinate energy efficiency investments around opportunities to spur private capital, and adopt a portfolio approach to financing the development of new markets for renewable energy, opportunities to deploy energy storage technologies, and strategies to develop and quickly scale water efficiency measures.

About Advanced Energy Economy

AEE is a national association of businesses and business leaders who are making the global energy system more secure, clean and affordable. Advanced energy encompasses a broad range of products and services that constitute the best available technologies for meeting energy needs today and tomorrow. Our members include companies involved in technology development; component and product manufacturing; project and infrastructure development; equipment installation; and engineering, finance and advisory services, among other activities that help business and residential consumers meet their energy needs in better ways.

