

Semi-Annual Report to the
Joint Legislative Budget Committee
on Assembly Bill 32
(Chapter 488, Statutes of 2006)
The California Global Warming Solutions Act of 2006

July 2014

*Fulfills the Requirements of:
Supplemental Report of the 2012 Budget Act (Item 3900-001-0001 Air Resources Board)
Senate Bill 1018 (Statutes of 2012)*

California Environmental Protection Agency

 **Air Resources Board**

This page intentionally blank

Semi-Annual Report to the Joint Legislative Budget Committee
on Assembly Bill 32
(Chapter 488, Statutes of 2006)
The California Global Warming Solutions Act of 2006

CONTENTS

	<u>Page</u>
Introduction	1
Section 1: Semi-Annual AB 32 Program Update.....	3
I. Greenhouse Gas Emission Reduction Measures.....	4
II. ARB Activities to Support AB 32.....	27
III. Greenhouse Gas Emissions and Reductions.....	48
Section 2: Semi-Annual Update on Western Climate Initiative, Inc.....	51
I. Background.....	51
II. Update.....	52

This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

To obtain this document in an alternative format, please contact the Air Resources Board ADA Coordinator at (916) 322-8168.

This report can be viewed at: <http://www.arb.ca.gov/mandrpts/mandrpts.htm>. To order a hard copy of this report, please contact Ms. Jennifer Gress at (916) 322-8520 or via email at JGress@arb.ca.gov.

INTRODUCTION

Assembly Bill 32 (AB 32), The California Global Warming Solutions Act of 2006 designates the Air Resources Board (ARB or Board) as the State agency charged with monitoring and regulating sources of greenhouse gas (GHG) emissions. AB 32 set a goal for California to reduce GHG emissions to 1990 levels by 2020, and to maintain and continue reductions beyond 2020. The law tasked ARB with quantifying this goal, implementing a mandatory emissions reporting system, and adopting a Scoping Plan that describes the measures and other actions planned to achieve the target.

AB 32 also highlights the need to continue greenhouse gas reductions beyond 2020. In March 2012, Governor Brown signed Executive Order B-16-2012 establishing zero emission vehicle benchmarks and affirming a long-range climate goal for California to reduce GHG emissions to 80 percent below 1990 levels by 2050.

Legislative Direction. The Supplemental Report of the 2012 Budget Act Item 3900-001-0001 requires ARB to provide the Joint Legislative Budget Committee (JLBC) with multiple reports on its activities and resources to implement AB 32. These requirements include:

- (1) Semi-annual AB 32 update on key climate programs, including recent developments and upcoming milestones;
- (2) Annual AB 32 fiscal report for the prior fiscal year summarizing fees and proceeds coming in, and expenditures going out; and
- (3) Annual AB 32 resource reports – one prospective and one retrospective – showing staffing and operations, plus contract expenses, by major program area.

Senate Bill 1018 (Budget and Fiscal Review), Chapter 39, Statutes of 2012, also requires ARB and the Secretary for Environmental Protection to submit reports to the JLBC on the Western Climate Initiative, Incorporated (WCI, Inc.):

- (4) Semi-annual report on any actions proposed by WCI, Inc. that affect California State government or entities located within the State, as well as advance notification of any planned ARB payments to WCI, Inc. over \$150,000.

This report provides the required semi-annual updates to items 1 and 4 above in two sections. Section 1 includes the semi-annual update to ARB's AB 32 Program and Section 2 includes the semi-annual report on actions proposed by WCI, Inc. This document covers ARB's implementation of AB 32 and does not include the activities and resources of other State agencies to implement AB 32. The 2014 Annual Report covering all four items listed above was completed in January and it, along with previous AB 32 reports, may be downloaded from ARB's website at <http://www.arb.ca.gov/cc/jlbcreports/jlbcreports.htm>.

The State Agency Greenhouse Gas Reduction Report Card published by the California Environmental Protection Agency (CalEPA) details the activities of each agency and department to reduce GHG emissions. For more information on the Report Card, please see:

http://www.climatechange.ca.gov/climate_action_team/reports/2013_CalEPA_Report_Card.pdf.

SECTION 1:

SEMI-ANNUAL AB 32 PROGRAM UPDATE (January - June 2014)

This report is required semi-annually by the Supplemental Report of the 2012-13 Budget¹ to highlight significant developments in the last six months and identify upcoming milestones in the next six months in ARB's implementation of AB 32. The upcoming milestones in this semi-annual report focus on the second half of 2014. The report format follows the Budget directive, beginning with major regulatory measures, followed by supporting programs, then a discussion of the current funding in the Greenhouse Gas Reduction Fund, and concludes with the GHG emission reductions.

While this program update focuses on the high profile regulations and supporting programs identified in the Supplemental Budget Report, they represent a subset of ARB's activities and resources to address climate change. Additional activities include research, air monitoring, and preparing the emissions inventory (including the Mandatory Reporting Regulation), as well as the development, implementation, and enforcement of over 20 regulations that reduce GHGs as a primary objective or as a co-benefit. These other regulations affect a wide range of activities and facilities, including: passenger vehicles (including their tires and air conditioners); heavy trucks and the trailers they pull; ships at berth; and sources of high global warming potential (GWP) gases like semi-conductor manufacturing, appliance recycling, and consumer products.

¹ "The California Air Resources Board (CARB) shall submit to the Legislature an AB 32 program update every six months summarizing key program activities. Each update should highlight developments since the previous update, provide advance notice of anticipated major milestones, and include current statewide greenhouse gas (GHG) emission updates. These developments may include, but are not limited to, board hearings and release of significant documents, key support contracts, lawsuits, compliance milestones, and other actions that have the potential to substantially affect the success and effectiveness of the program.

The scope of the program updates should include: significant activities related to CARB's GHG reduction measures (for example, cap-and-trade, low-carbon fuel standard, or advanced clean cars), including an analysis of which programs are having the greatest impact in terms of GHG reductions per dollar spent; key developments on supporting activities such as updates to the AB 32 Scoping Plan, cap-and-trade auction fund regulations, coordination with entities outside of California like the Western Climate Initiative, and SB 375 sustainable communities plans; and the amount of cap-and-trade auction funds deposited into the Greenhouse Gas Reduction Fund and the current balance in that fund."

I. ARB GREENHOUSE GAS EMISSION REDUCTION MEASURES

This section focuses on the activities of three major ARB regulatory programs to reduce GHG emissions: Cap-and-Trade, Low Carbon Fuel Standard, and Advanced Clean Cars. We also discuss the landfill methane regulation mentioned in the supplemental budget language as well as developments related to reducing emissions from oil production and natural gas operations.

A. Cap-and-Trade

1. *Background*

California's Cap-and-Trade Regulation (Regulation) is the nation's first comprehensive market-based approach to reducing GHG emissions, and is one of the key measures identified in the AB 32 Scoping Plan. The Regulation was finalized and adopted by the Board in October 2011. Given the complexity of this Regulation and the use of many unique concepts in its design, we provide a lengthier background description below to aid the reader's understanding of these program updates.

Emissions Cap. The Regulation provides a firm declining limit, or cap, on 85 percent of California's GHG emissions. Beginning on January 1, 2013, the cap includes GHG emissions from electricity and large industrial sources. Beginning on January 1, 2015, GHG emissions from transportation fuels, and residential and commercial burning of natural gas and propane will be included in the cap. Coverage of the emissions from combustion of these fuels assures that California will achieve the AB 32 target of reducing GHG emissions to 1990 levels by 2020.

The cap is designed to continue those reductions thereafter, thus maintaining GHG emissions at 1990 levels. The Regulation will reduce GHG emissions by about 23 million metric tons (MMT) in 2020, about 30 percent of the total needed to achieve the AB 32 target for that year. Further, the Regulation plays a key role in assuring the 2020 target is met by complementing other GHG emission reduction measures. For example, in the event that the anticipated reductions from other measures are not realized, the Regulation with its cap serves as a backstop for meeting the AB 32 emission reduction target.

Compliance. To comply with the Regulation, entities subject to the Regulation (facilities and other sources that emit 25,000 metric tons or more of carbon dioxide equivalent (CO₂e) per year), termed "covered entities," must submit compliance instruments (i.e., allowances or offset credits) equal to their emissions. Each allowance or offset credit is equal to one metric ton of CO₂e emissions.

Allowances. Allowances are issued by ARB. A portion of the allowances is allocated for free to covered entities, some allowances are placed in a cost containment reserve, and the remaining portion is auctioned. Each year, the number of allowances declines in proportion to the cap, ensuring that the Regulation achieves intended emission

reductions. Covered entities that aggressively reduce their emissions can trade their surplus allowances to firms that find it more expensive to reduce their emissions.

In the early years of the Regulation, ARB will be allocating most allowances for free to industrial covered entities to provide transition assistance and minimize leakage, and to electrical utilities to protect ratepayers from program costs.

Leakage refers to a reduction in GHG emissions within the State that results in an increase in GHG emissions outside the State. Risk of leakage is highest for industries in which production is highly “emissions intensive” (leading to high compliance costs) and trade exposed (i.e., that face competition from out-of-State producers). Over the past several years, ARB determined leakage risk for industrial sectors based on an evaluation of industry emissions and trade exposure. The results of this analysis informed the allocation of additional allowances to reduce compliance costs and maintain industry production in California.

One of the factors that ARB utilizes to calculate the number of free allowances for each industrial covered entity is GHG emissions efficiency. ARB uses emissions performance standards that evaluate the efficiencies for similar operations in the same industrial sector. This evaluation results in more efficient facilities within a sector receiving a larger percentage of their estimated compliance obligation for free as compared to less efficient facilities in the same sector. This process recognizes early investments to improve efficiency at facilities within the covered industrial sectors.

ARB staff developed two distinct types of allocation methodologies: (1) product-based, which is tied to production activity and applies to specific industry sectors listed in the Regulation, including the oil and gas extraction and refining sectors; and (2) energy-based, which is tied to fuel use and applies to those industry sectors without a product-based benchmark, including the food processing sector.

In addition to allocation, a number of allowances were placed in the allowance price containment reserve. This account was established to provide a safety valve to the allowance price and help to mitigate potential volatility in allowance prices. The account holds a specified number of allowances removed from the pool of allowances at the beginning of the program. Covered entities may purchase reserve allowances at specified prices during direct quarterly reserve sales. Covered entities can access the Reserve if prices are high or entities expect prices to be high in the future.

Offsets. Offset credits are another type of tradable compliance instrument. Offset credits represent GHG emission reductions or avoidance from activities outside of the capped sectors (i.e., reductions in sectors not subject to the Cap-and-Trade Regulation). Covered entities can use ARB-issued offset credits to meet up to eight percent of their compliance obligation for each compliance period. For example, if a covered entity has 100,000 metric tons of covered emissions they submit no fewer than 92,000 allowances and no more than 8,000 ARB-certified offset credits in order to meet

their compliance obligation. The ability to use offset credits is an important mechanism for cost-containment under the Regulation.

Offset projects are quantified under regulatory protocols that are approved by the Board and must meet the AB 32 offset criteria of being real, additional, quantifiable, permanent, verifiable, and enforceable. ARB has approved offset protocols for five project areas: forestry, urban forestry, mine methane capture, livestock digesters, and the destruction of ozone depleting substances. ARB accredits third-party verifiers to independently verify all offset project reports. Accredited third-party verifiers have extensive backgrounds in related areas, including appropriate field and auditing experience, as well as the scientific and engineering knowledge required for verification. Third-party verifiers must work through ARB accredited verification bodies and must complete ARB's training and pass a specialized test.

ARB can also approve voluntary offset registries that meet regulatory criteria to help administer the program. Offset project registries provide general offset project guidance, reporting, and other support for verification activities, as well as issue voluntary offset credits and list voluntary offset projects. ARB does not delegate any of its oversight or enforcement authority to the verifiers or approved registries. ARB does not currently issue or accept offset credits that originate from projects located outside of the United States.

Electronic Compliance System. The Compliance Instrument Tracking System Service (CITSS) is a software program developed to hold and retire compliance instruments (ARB allowances and offset credits) and to record transactions regarding compliance instruments (e.g., purchases, trades between account holders).

Market Oversight. ARB continues to put a priority on market oversight to ensure success in reducing emissions and the integrity of the California carbon market. ARB also established a team focused on monitoring and oversight of market activity and market participants. ARB monitors the auctions during the three-hour bidding window and reviews submitted bids to determine if there are any indications of anti-competitive behavior. In addition to engaging in ongoing analysis and modeling, ARB is collaborating with several organizations including: the U.S. Commodity Futures Trading Commission; the Federal Electricity Regulatory Commission; the California Independent System Operator; and the State Attorney General's Office, to anticipate, detect, and respond to market manipulation. The Regulation imposes holding limits and auction purchase limits, as well as other restrictions on auction and trading activity, to prevent participants from acquiring undue market power.

Fuels in Cap-and-Trade. Beginning in 2015, transportation fuels and residential and commercial burning of natural gas and propane will also be covered by the Cap-and-Trade Program, resulting in a broad program scope covering approximately 85 percent of California's GHG emissions. Including fuels will help achieve the objective of reducing emissions not only by 2020, but also help to drive the long-term transition to cleaner fuels well into the future.

Broad Cap-and-Trade Program coverage spreads the compliance obligation across many sectors, increasing the certainty that the overall AB 32 target will be met. This also allows for capped entities to obtain the lowest cost GHG emission reductions, which in turn minimizes the overall impact of the Cap-and-Trade Program. Fuels under the cap will also provide significant air quality co-benefits, by providing reductions in criteria emissions.

The Low Carbon Fuels Standard and Cap-and-Trade are complementary; the two programs work together to encourage the development, deployment, and demand for clean fuels. Investments made to comply with one program will result in reduced compliance requirements for the other program, ensuring the price impact on wholesale fuels is not additive.

2. Recent Developments – January through June 2014

New ARB activities to support the Cap-and-Trade Program during the first half of 2014 included: continued development and Board adoption of proposed amendments to the Regulation, continued development and adoption of a new compliance offset protocol, allowance auctions, ongoing issuance of compliance offset credits, and progress on linkage with Québec. These activities are described in more detail below, along with a discussion of litigation and contracts to support the Cap-and-Trade Program.

Adoption of Proposed Regulation Amendments. To enhance implementation and oversight of the Cap-and-Trade Program, respond to Board direction, and address stakeholder concerns, staff proposed regulatory amendments on September 4, 2013, which were first considered by the Board on October 25, 2013. Pursuant to Board direction following the October 25, 2013 hearing, staff proposed further amendments in early 2014, and presented them to the Board for final consideration on April 25, 2014. At that time, staff also presented further amendments to the offset protocol related to mine methane capture that will provide an additional supply of compliance instruments to the market within the existing eight percent offset limit. The Board adopted the amendments and new offset protocol through Resolution 14-4. The rulemaking documents, including the newly adopted offset protocol for mine methane capture and Board Resolution 14-4, are available at <http://www.arb.ca.gov/regact/2013/capandtrade13/capandtrade13.htm>. Staff submitted the final rulemaking package to the Office of Administrative Law (OAL) on May 16, 2014. Upon OAL approval, the regulation amendments and mine methane capture protocol become legally effective July 1, 2014.

The following are the most significant changes to the Regulation:

- A provision to extend 100 percent transition assistance to covered entities in the industrial sector through 2017 in light of not-yet-completed research on leakage to ensure regulatory certainty while studies are completed.

- A methodology to provide transition assistance to generators of electricity and useful thermal output who have legacy contracts that do not allow for the pass-through of carbon costs.
- A mechanism to address "But-For CHP" entities that are subject to the Regulation only because GHG emissions from combined heat and power (CHP) operations put these entities over the 25,000 metric tons of GHG emissions threshold during the first compliance period.
- A methodology to provide allowances to new industrial sources.
- A methodology to provide allowances to upstream natural gas suppliers for the benefit of ratepayers.
- Provisions to reduce leakage risk by updating benchmarks and that will provide additional free allowances to existing sectors during the second compliance period.
- Amendments to clarify and enhance market rules for auctions and transfers in the tracking system, and to enhance market security.
- A methodology for providing transition assistance to public universities and public service facilities.
- Clarification of resource shuffling provisions.
- Changes to improve the methodology for providing allowances to petroleum refineries.
- A provision for additional price containment to address the risk of higher than anticipated future emissions, while maintaining environmental integrity.
- A mechanism to exempt waste-to-energy facilities through 2015.
- Further processes to ensure clarity in offset implementation.
- A continued exemption from the Regulation for the military by deleting the existing sunset date.

The Mine Methane Capture compliance offset protocol (Mine protocol) includes quantification methodologies for the capture and destruction of fugitive methane from active and abandoned mines that would otherwise be vented to the atmosphere. There are no federal or State regulations regarding the capture and destruction of fugitive methane that must be vented from mines for health and safety reasons. California has about a dozen abandoned mines, but no active mines that could potentially support offset projects under the proposed Mine protocol. The Mine protocol has the potential to supply approximately 60 million metric tons of offset credits for the Cap-and-Trade Program.

While the Mine protocol is expected to potentially add significant supply to the offset pool, the existing and proposed protocols are not enough to supply the number of offsets that are allowed for under the Cap-and-Trade Regulation. ARB will work with stakeholders to identify potential new protocols that are applicable in California and nationally that would meet the rigorous AB 32 offset criteria. The biggest challenge in identifying offset protocols that are applicable in California is ensuring the offsets are additional per AB 32 requirements. Because California directly regulates many emissions sources for public health and environmental reasons, there are few

opportunities to develop in-State offset protocols. The Fiscal Year (FY) 2014-15 budget includes new resources for ARB to expand development of protocols for in-State emission reductions, including offsets.

Auctions. Current and future vintage allowances are sold in separate auctions that are held on the same day at the same time. Current vintage auctions offer current year allowances from the State and those consigned by electric distribution utilities (utilities). Advance auctions offer only State-owned allowances three years subsequent to the current calendar year. The most recent auctions were held February 19 and May 16, 2014, and included 2014 vintage allowances for the current auction and State-owned 2017 future vintage allowances for sale at the advance auction. Prior to the certification of each auction, ARB staff and the Market Monitor carefully evaluated the auction, and determined that the auction process and procedures complied with the requirements of the Cap-and-Trade Regulation.

The funds raised by the sale of allowances consigned by utilities are to be returned to ratepayers in accordance with rules set by the California Public Utilities Commission² (CPUC) or their governing boards. The remaining funds received for the sale of State-owned allowances are deposited into the State's Greenhouse Gas Reduction Fund, to be allocated in accordance with the Cap-and-Trade Auction Proceeds Investment Plan and State Budget. In sum, about \$734 million was raised by the sale of State-owned allowances at the first seven auctions. More information on Cap-and-Trade auction proceeds is provided in Section II. D. of this report. Detailed results from the auctions are available at: <http://www.arb.ca.gov/cc/capandtrade/auction/auction.htm>.

Reserve Sale. Reserve sales are scheduled to occur each quarter. No covered entities or opt-in entities indicated an intent to bid for allowances by the bid guarantee deadlines for the reserve sales held through April 2014. Therefore, all reserve sales scheduled to date were not held.

Offsets. ARB continues the steps necessary to support carbon offsets, which reduce the costs of compliance with the Regulation, and encourage investments in sustainable practices throughout the Nation's economy. As of June 30, 2014, ARB has: (1) accredited 94 specially trained third-party offset verifiers, and certified 18 verification bodies to serve as partners in evaluating the quality of offset projects submitted for approval; (2) continued to oversee and coordinate with the two existing approved offset project registries that help evaluate compliance-grade carbon offset projects under the Regulation; (3) updated the listing of additional early action projects to bring the total to 86, and additional compliance projects to bring the total to 71 (listing signifies these projects are moving toward potential issuance of ARB compliance offset credits); and (4) audited either in-person or through a desk review 100 percent of the compliance

² In Decision D1212033 (Decision Adopting Cap-and-Trade Greenhouse Gas Allowance Revenue Allocation Methodology for the Investor-Owned Electric Utilities), the CPUC directed the utilities to distribute the auction proceeds to ratepayers.

offset protocol project verifications to date. At this time, ARB only issues compliance offset credits for verified offset projects developed using the five approved offset protocols and located within the continental United States. ARB issues compliance credits for those projects that comply with the full requirements set forth in the Regulation and applicable offset protocol. To date, ARB has issued over 8.5 million compliance offset credits. ARB will continue to audit a large percentage of verifications to assure verification activities are conducted accurately and according to the Regulation.

On May 29, 2014, ARB announced it was investigating if offset credits issued for the destruction of ozone depleting substances at the Clean Harbors Incineration Facility in El Dorado, Arkansas may have been generated while the facility was not in compliance with provisions of its operating permit issued under the federal Resource Conservation and Recovery Act. While ARB believes the greenhouse gas reductions represented by the offsets are real, quantified, and verified emissions reductions, the Cap-and-Trade Program requires that all offset project activities and implementation be in accordance with all local, state, and federal laws to ensure that offset projects do not result in unintended consequences. The results of this investigation should be available in fall 2014.

Linkage. On January 1, 2014, the Cap-and-Trade Programs of California and Québec became linked. Linkage expands the carbon market and its associated emissions reductions by allowing for the mutual use and recognition of compliance instruments (allowances and offsets) issued under California and Québec's programs. Linkage also furthers California's effort to address climate change by acting as a catalyst for action throughout the world, while positioning California's economy to benefit from investment in clean energy technologies. It also increases the efficiency of the market and provides greater opportunity for California businesses to seek out and achieve the most cost-effective emission reductions. More information on linkage can be found at: <http://www.arb.ca.gov/cc/capandtrade/linkage/linkage.htm>.

On June 3, 2014, California and Québec announced plans to conduct a practice auction for the California Cap-and-Trade Program and the Québec Cap-and-Trade System. A successful practice auction will pave the way to holding the first joint auction of GHG allowances by the two programs in November 2014. Auction notices are posted to the jurisdiction websites 60 days prior to each auction, as called for in the California Cap-and-Trade Program Regulation and the Government of Québec Regulation respecting a cap-and-trade system for greenhouse gas emission allowances. The Notice for the practice auction will be posted on Tuesday, July 29, 2014, and the practice auction application period will open in the Auction Platform. More information on the practice auction can be found at: http://www.arb.ca.gov/cc/capandtrade/auction/joint_auctions.htm.

Cap-and-Trade Litigation. In the first half of 2014, there was activity on two of the three cases against ARB regarding the Cap-and-Trade Program. This section describes those two cases and future reports will cover the third case, *Citizens Climate Lobby and*

Our Children's Earth Foundation v. California Air Resources Board, if there are significant developments.

On November 13, 2012, the California Chamber of Commerce filed a lawsuit, *California Chamber of Commerce et al. v. California Air Resources Board et al.*, in Sacramento Superior Court to challenge ARB's authority to conduct an auction under the Cap-and-Trade Program. Alternatively, the California Chamber of Commerce alleges that if the court finds that authority exists in AB 32 for the auction, then the court should find that the auction and the sale of allowances by the State at auction constitute an unconstitutional tax. The lawsuit asks the judge to issue a decision prohibiting ARB from conducting future auctions, and asks for judicial declarations that the auction provisions of the Regulation are invalid and unenforceable, and impose an unconstitutional tax. ARB maintains that AB 32 provided it with authority to develop a Cap-and-Trade Program, including an auction, and that the auction does not constitute a tax. A hearing on the merits of the petition was held on August 28, 2013.

On April 16, 2013, Morningstar Packing Company filed a similar suit to the California Chamber of Commerce case noted above, *Morningstar Packing Company et al. v. California Air Resources Board et al.* The primary difference between this case and the California Chamber of Commerce case is that Morningstar adds claims that AB 1532 (Pérez, Chapter 807, Statutes of 2012), SB 535 (De León, Chapter 830, Statutes of 2012), and SB 1018 (Budget and Fiscal Review Committee, Chapter 39, Statutes of 2012) pursuant to the provisions of Proposition 26, cannot act to save the auction provisions of the Cap-and-Trade Program from tax challenges because these bills were not passed with a super-majority vote. Morningstar asserts that to the extent these bills (AB 1532, SB 535, and SB 1018) were designed to authorize, ratify, or otherwise adopt the auction provisions of the Cap-and-Trade Regulation, these bills would be considered unconstitutional taxes under Proposition 26. ARB filed an answer to the petition on May 29, 2013, denying the claims in the petition. This case was deemed "related" to the California Chamber of Commerce case and thus was also heard on August 28, 2013.

On November 12, 2013, the court issued a joint decision on both the California Chamber of Commerce and Morningstar Packing Company cases, denying the two petitions and finding in favor of ARB on all counts. Specifically, the Court found that "the sale of allowances is within the broad scope of authority delegated to ARB in AB 32." The judge upheld ARB's auction provisions, noting the extensive public outreach and stakeholder engagement throughout the Cap-and-Trade Program development. He also held that the Legislature's passage of several bills in 2012 directing the use of auction proceeds helped to "ratify" the Legislature's original grant of authority in AB 32. With respect to the taxation issue, the judge found that "on balance," the auction operates "more like traditional regulatory fees than taxes" because its primary purpose is regulatory in nature. In support of this finding, the judge relied on the restrictions imposed by the 2012 legislation requiring auction proceeds to "be used to further the regulatory purposes of AB 32." He noted that existing cases are not on point, as the auction is different from other fees that have been assessed. However, he

found that the amount charged for allowances bears a “reasonable relationship with the covered entities’ (collective) responsibility for the harmful effects of GHG emissions.”

The court’s decision became final on December 20, 2013. The California Chamber of Commerce and National Association of Manufacturers filed their notices of appeal on February 19 and March 7, 2014, respectively, in the Third District Court of Appeal, which has found the appeal unsuitable for mediation. Petitioners and ARB have proposed to the appellate court a briefing schedule that would conclude near the end of 2014.

Cap-and-Trade Program Contracts. Academia and private contractors are helping ARB achieve the goals of AB 32 while minimizing the impact of the Cap-and-Trade Program on California industry. Current contracting efforts are directed at conducting the auctions and reserve sales, monitoring the carbon market, measuring and monitoring the potential for GHG emissions leakage, helping ARB develop emissions efficiency benchmarks in order to allocate allowances to minimize leakage, implementing the forest offset protocol, developing a new compliance offset protocol for methane reduction from rice cultivation, and monitoring the biological impacts of forest projects. Key on-going contracts are discussed in recent developments, and contracts in development are discussed in the upcoming milestones sections below.

Cap-and-Trade Program Administration Contracts:

As part of collaborating with other jurisdictions, administrative support functions for the Cap-and-Trade Program have been transitioned to WCI, Inc. WCI, Inc.’s approach to coordinating administrative support is to have each jurisdiction specify its administrative requirements, and then for WCI, Inc. to provide support that meets these specifications. Coordinating administrative support through WCI, Inc. benefits California and the other jurisdictions. Coordinated support ensures that all cap-and-trade programs in the participating jurisdictions use the same highly secure infrastructure, including the allowance tracking system and auction platform. Coordinated support also ensures that analyses performed to support market monitoring in each jurisdiction are conducted consistently and effectively for the entire compliance instrument market across all the programs. Finally, coordinated support enables the programs to share the cost of developing and maintaining program infrastructure, thereby reducing the costs for each jurisdiction. The following four program administration contracts were initially established by ARB to initiate California’s Cap-and-Trade Program; the work has been transitioned to WCI, Inc.-administered contracts.

- WCI, Inc. entered into a contract with Markit Group Limited for the purpose of enabling and conducting linked auctions and jurisdictional reserve sales of California and Québec greenhouse gas emission allowances. This work builds upon the effort by California to implement allowance auctions and reserve sales for its Cap-and-Trade program. This work is currently focusing on updates to the auction platform to conduct linked auctions.

- WCI, Inc. entered into a contract with Deutsche Bank National Trust Company for the purpose of providing escrow services for California and Québec as they link their cap-and-trade programs. This work builds upon the effort by California for financial services of its Cap-and-Trade Program.
- WCI, Inc. entered into a contract with Monitoring Analytics LLC for the purpose of enabling multi-jurisdictional monitoring for California and Québec linked auctions and linked markets in greenhouse gas compliance instruments and related derivatives. This work builds upon the effort by California for market monitoring of its Cap-and-Trade Program, and enables the additional work required to expand the monitoring effort for California to include Québec and to monitor the market as a whole.
- WCI, Inc. entered into a contract with SRA International to provide continued technology development and support to bring CITSS to maturity as well as to provide hosting services for CITSS.

Other Cap-and-Trade Program Contracts:

- ARB entered into an agreement with the University of California Energy Institute at the University of California at Berkeley to obtain expert analysis and advice on Cap-and-Trade Market design, operation, and monitoring. As part of this agreement the Emissions Market Assessment Committee (EMAC), formerly the Market Surveillance Committee, was formed and funded. The EMAC provided advice and analysis for ARB in important program areas, including the potential implementation of a price containment ceiling, the release of market information, the potential modification of holding limits, and ways to modify the auction to increase market transparency. The EMAC submitted its final recommendations to ARB and concluded its work in March 2014. More information on EMAC and the final report can be found at: <http://www.arb.ca.gov/cc/capandtrade/emissionsmarketassessment/emissionsmarketassessment.htm>.
- ARB entered into an agreement with the University of California Energy Institute on April 1, 2012 to establish a market simulation group (MSG) to help ARB staff identify opportunities for program improvement. MSG held meetings with stakeholders to identify market rules or situations that might lead to market disruptions that could be investigated through simulation analysis. MSG has completed the simulation analysis and provided results and recommendations to ARB in Spring 2014. ARB posted the final report on its website on July 7, 2014. More information on the MSG and the final report can be found at: <http://www.arb.ca.gov/cc/capandtrade/simulationgroup/simulationgroup.htm>.
- In collaboration with economic researchers from Resources for the Future and the University of California at Berkeley, ARB continued leakage research efforts to establish a baseline for how industries have historically responded to energy price changes and to identify metrics to evaluate future leakage risk. Any changes in

leakage risk determinations would require regulatory amendments, which would need to be in place before industrial allocation occurs for the third compliance period in Fall 2017.

- ARB initiated a study with the California Polytechnic University in San Luis Obispo and the University of California (UC) to analyze the ability of the food processing sector to pass on regulatory costs to consumers and to the agricultural sector. The analysis will be used to assess leakage risk, which will inform the allocation of allowances for the sector in the third compliance period. Researchers are currently collecting facility data and anticipate providing preliminary results in 2015.
- In conjunction with its contractors Ecofys US, Inc., and the University of California, Berkeley, ARB completed surveying several industries to collect data that enabled ARB staff to establish new benchmarks and modify certain existing benchmarks. The results of this work informed development of the revised product-based benchmarks in the regulatory amendments adopted by the Board on April 25, 2014.
- ARB has contracted with the University of California at Davis to develop recommendations for a monitoring system for unanticipated adverse biological impacts caused by the U.S. Forest Protocol. This work supports ARB's efforts to use an adaptive management approach to address unanticipated forest impacts that could occur as part of the implementation of the Cap-and-Trade Program. The draft report containing the UC Davis recommendations is scheduled to be released for public comment in late 2014.
- ARB has contracted with California Polytechnic State University, San Luis Obispo, to provide technical forestry support to ARB staff, taking into account programmatic, policy, biometric, modeling, biology, and harvest management activities. The contract will support development of guidance to simplify highly complex calculations, and increase the understanding and accessibility of protocol requirements under ARB's compliance offset protocol for forestry projects.
- ARB has contracted with Michigan State University to update software to facilitate reporting of the required data and streamline calculation of emission reductions from adoption of eligible farming practices under the proposed rice methane protocol. This contract will aid in keeping project costs down and limit the time farmers have to spend complying with protocol requirements.
- ARB has a contract in place with Lawrence Berkeley National Laboratory to conduct a scoping study on existing carbon capture and storage quantification methodologies appropriate for California's specific geology and hydrology. The goal is to move towards development of a monitoring, verification, and accounting methodology that is appropriate for incorporation into the Cap-and-Trade Program and Low Carbon Fuel Standard Program.

3. Upcoming Milestones – July through December 2014

Below is a brief summary of some of the upcoming milestones ARB is working to achieve during the second half of 2014. More information on ARB activities and upcoming public meetings related to the Cap-and-Trade Program can be found at: <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>.

- ARB will continue to hold its own quarterly auctions as scheduled in the Regulation until a joint auction with Québec is ready to be held later this year.
- ARB began implementing a linked program with Québec starting January 1, 2014. Linkage allows entities in both jurisdictions to transfer compliance instruments with one another. Joint auctions will not be held until the joint auction platform has been completely tested and a successful joint practice auction has taken place. ARB staff continues to work with Québec staff towards a linked auction in the second half of 2014.
- ARB is developing a multi-phase proposal to assess the effects (benefits and potential impacts) of AB 32 programs on disadvantaged communities. The key objective is to introduce a quantitative mechanism to gauge the effectiveness of AB 32 programs with respect to disadvantaged communities. This effort will be integrated with the Cap-and-Trade Adaptive Management process, and ARB aims to present this proposal at public meetings anticipated to be held in 2014. ARB's approach is described in Chapter 6, Section C of the First Update to the Climate Change Scoping Plan, on ARB's website at <http://www.arb.ca.gov/cc/scopingplan.scopingplan.htm>.
- ARB continues to work on a new offset project protocol for avoided methane emissions from changes in rice cultivation practices, for Board consideration in the second half of 2014.
- The first surrender obligation under the Cap-and-Trade Regulation will occur on November 1, 2014. Covered entities must submit compliance instruments sufficient to cover thirty percent of their 2013 emissions by that date.

B. Low Carbon Fuel Standard

1. Background

ARB approved the Low Carbon Fuel Standard Regulation (LCFS) in 2009 with requirements to reduce the carbon intensity (CI) of gasoline and diesel fuels by at least 10 percent by 2020. This standard sets declining annual targets between 2011 and 2020. The LCFS will reduce GHG emissions from the transportation sector in California by about 15 MMT in 2020. These reductions account for almost 19 percent of the total GHG emission reductions needed to achieve the State's mandate of reducing GHG emissions to 1990 levels by 2020.

The LCFS requires regulated parties to electronically submit all quarterly progress and annual compliance reports to ARB. To this end, ARB developed the LCFS Reporting Tool, a secure, interactive, web-based system, through which all regulated parties are required to report data on fuel volumes and CI. Through these reports, providers of transportation fuels must demonstrate that the mix of fuels they supply meets LCFS CI standards for each annual compliance period. Each fuel in the mix is assigned a CI value, based on the “life cycle” GHG emissions associated with the production, transportation, and use of fuels in motor vehicles. Each fuel's complete life cycle, from "well-to-wheels" (or from "seed-to-wheels" for biofuels made from crops), represents that fuel's "fuel pathway." To date, there are nearly 250 individual fuel pathways that regulated parties can use to describe the GHG emissions associated with their fuels.

Pursuant to the Board's direction, ARB continues to collaborate with stakeholders on evaluating CI for crude oils, and other technical assessments related to low-energy-use refining. Also, ARB continues to analyze and recommend for approval, numerous lower CI fuel pathways for which fuel producers have applied--confirming that innovations are occurring in the fuel sector. Also of note, California is attracting significant investments in the development of advanced biofuels. In order for advanced biofuels to be available in sufficient quantities, investment in these fuels needs to occur. ARB has been monitoring investment in biofuels and has seen a slow, but steady, increase in investment. This is true both in California and nationwide. Private equity investments into low-CI fuel projects in North America total \$4.85 billion since 2007.³ In 2012, active, low-carbon fuel projects received \$1.45 billion in new private equity investments.⁴ Of these funds, approximately \$2.3 billion, or 47 percent, has been invested in California biofuels companies.⁵ As of January 2014, there are approximately 2.62 million “excess” credits in the system—that is, more total credits than deficits. This excess means that regulated parties are over-complying with the LCFS, generating additional LCFS credits that can be used for future compliance when the standard becomes more stringent. In addition to banking credits, regulated parties have begun trading credits. Both of these developments are positive indicators that the LCFS is functioning as intended.

Despite these positive indicators, the petroleum refining industry is concerned about compliance with the LCFS in future years when the standard becomes more stringent. Specifically, the petroleum refining industry believes that lower-CI liquid biofuels they prefer to blend with conventional gasoline and diesel fuel are not being developed quickly enough in commercial quantities and will not be available. Staff continues to believe that the availability of these advanced biofuels will grow sufficiently to meet demand. Additionally, liquid biofuels are just one of several paths that refiners can take

³ E2 “[Advanced Biofuel Market Report 2013](#)”.

⁴ Ibid. Annual investment data collected from August 2012 – August 2013.

⁵ Data from PricewaterhouseCoopers/Data by Thomson Reuters, Cleantech, and Collaborative Economics. Investment data tracked from 2006.

to comply with the LCFS. They can also purchase LCFS credits in the marketplace from producers of lower-CI fuels, such as electricity, natural gas, biogas, and hydrogen, or they can invest in the production of these fuels to generate their own LCFS credits.

In December 2009 and early 2010, three lawsuits were filed against ARB over the LCFS—two in federal court and one in State court. The federal lawsuits were brought by trade associations of ethanol producers and refiners who claim that the LCFS is preempted under the federal Energy Independence and Security Act (EISA) of 2007 and violates the dormant Commerce Clause of the U.S. Constitution (either because the LCFS impermissibly regulates activities beyond California's borders or because it discriminates against out-of-State corn ethanol by assigning corn ethanol from the Midwest a CI value higher than that of corn ethanol made in California). Plaintiffs claim that corn ethanol will eventually be excluded from the California market in favor of more advanced biofuels that have a lower CI value. In contrast, ARB showed that many corn ethanol producers from the Midwest have in fact registered fuels with ARB CI values well below gasoline and, indeed, even less than California corn ethanol. The LCFS program allows for a determination of individualized CI numbers for each facility, provided that certain criteria are met.

In December 2011, the lower court ruled against ARB on the dormant Commerce Clause claims and issued a preliminary injunction against ARB but did not address the federal EISA preemption issue. In April 2012, the Ninth Circuit granted ARB's request for a stay of the preliminary injunction, which allowed ARB to resume enforcement of the LCFS regulation during the pendency of the lawsuit.

On September 18, 2013, a three-judge panel of the Ninth Circuit ruled that the ethanol provisions in the LCFS are not facially discriminatory and remanded the case for the district court to determine whether the ethanol provisions discriminate in purpose or effect. Furthermore, the Ninth Circuit ruled that the LCFS crude oil provisions do not discriminate either facially or in purpose or effect. The Court left the LCFS in place. The plaintiffs filed for *en banc* hearing with the Ninth Circuit which the court subsequently denied. The U.S. Supreme Court acted on June 30, 2014, denying three petitions for certiorari. The denial was without comment; the practical effect was to leave standing the Ninth Circuit Court of Appeals decision.

In August 2011, a State court case alleged that ARB did not fully comply with the Administrative Procedure Act and the California Environmental Quality Act when adopting the LCFS. In November 2011, the State Superior court ruled in favor of ARB on all fourteen causes of action raised by the plaintiffs. The plaintiffs appealed the case, and on July 15, 2013, the Court of Appeal (Fifth District, Fresno) issued its opinion, finding that ARB had committed some procedural violations in adopting the Regulation but holding that the LCFS would remain in effect and that the ARB can continue to implement and enforce the LCFS while ARB corrects certain aspects of the procedures by which the LCFS was originally adopted. Accordingly, ARB staff is continuing to implement and enforce the LCFS while preparing for the Board's consideration in 2015 a consolidated regulation package that responds to the Court's

decision and contains additional amendments important for the continued success of the LCFS program. Meanwhile, the 2013 LCFS standards, which represent a 1.0 percent decrease in carbon intensity from the 2010 baseline values for gasoline and diesel, will remain in effect through 2015.

2. Recent Developments – January through June 2014

LCFS Litigation. On March 20, 2014, the plaintiffs in the federal lawsuit asked the U.S. Supreme Court to review the Ninth Circuit's opinion sending the consolidated cases back to the trial court. The Supreme Court has discretion whether to take the case. On May 27, 2014, ARB filed a brief opposing the request for Supreme Court review. On June 30, 2014 the Court denied certiorari; the case will be taken up by the district court to address the remaining issues.

The State lawsuit has returned to the Superior Court, which commanded ARB to set aside its prior approval of the LCFS and reconsider the regulation pursuant to the Administrative Procedure Act and the California Environmental Quality Act. To address procedural deficiencies found by the Court of Appeal, the reconsideration must be by a single decision maker (ARB) that considers the regulation, the environmental analysis, and the comments thereon before adopting any regulation. On February 4, 2014, ARB filed a response setting forth its intended schedule during 2014 and 2015 for reconsidering the LCFS together with a companion measure relating to alternative diesel fuels.

LCFS Rulemaking. In the first six months of 2014, ARB staff has conducted eight public workshops related to the proposed re-adoption of the LCFS, including proposed amendments to the LCFS regulation currently in place. Proposed amendments include:

- Revised compliance schedule
- Cost containment mechanism
- Revised indirect land use (ILUC) values
- Electricity credits for mass transit and electric forklifts
- Low-energy-use refineries provision
- Refinery GHG reduction credit provision
- Amended innovative technologies for crude oil production
- Additional fuel pathways
- Amended fuel pathway protocol
- Miscellaneous revisions for clarity and enhancement

LCFS Contracts. ARB is working with various universities to update the ILUC values for corn ethanol, sugarcane ethanol, and soy biodiesel, while also developing ILUC values for palm oil, canola oil, and sorghum. Recommendations on ILUC values will undergo independent academic review. Because the LCFS is at the forefront of life cycle assessments—taking into account the GHG emissions related to the production, transport, and use of transportation fuels— it has required significant technical

assistance from academia and private contractors. Most of the contracts that support LCFS implementation are directed at estimating ILUC for numerous alternative fuels.

In order to place these contracts in context, it is helpful to consider how ILUC occurs. An ILUC impact is initially triggered when an increase in the demand for a crop-based biofuel begins to drive up prices for the necessary feedstock crop. This price increase motivates farmers to devote a larger proportion of their cultivated acreage to that feedstock crop. Supplies of the displaced food and feed commodities subsequently decline, leading to higher prices for those commodities. The lowest-cost way for many farmers to take advantage of higher commodity prices is to bring non-agricultural lands into production. Converting open space to agriculture releases carbon sequestered in soils and vegetation. This land use conversion causes an “indirect” impact by contributing to increasing carbon dioxide emissions.

While there is general consensus that ILUC occurs, there is uncertainty regarding the size of the impact, which is modeled because it cannot be directly measured. The model used to estimate ILUC has undergone numerous revisions, and there are many assumptions that must be made when considering the inputs to the model. Because of the complexity of the model and the uncertainties associated with ILUC, ARB has contracted with academic institutions, including the University of California at Berkeley, the University of California at Davis, Purdue University, and the University of Wisconsin, to assist with these analyses.

Alternative Diesel Fuel Regulation. Because of the incentives provided by both the LCFS and the federal renewable fuel standard, the California fuels market is experiencing an increase in innovative motor vehicle fuels that are produced from renewable sources and have lower carbon intensity, relative to conventional fuels. Most notably, diesel fuel alternatives (such as biodiesel and dimethyl ether) are becoming more prevalent and as fuel proponents endeavor to bring these fuels to market, they face a complex set of federal and State regulations. To help facilitate this growing trend of diesel fuel alternatives, staff is developing a new regulation that can provide a systematic and clear process that will ensure environmental protections, while supporting rapid deployment of these fuels.

In 2013, staff held three public workshops to solicit comments from stakeholders regarding a proposed regulation that will govern the commercialization of new alternative diesel fuels for on-road motor vehicles. Two more workshops were held in 2014 to further discuss updated regulation proposals. In the Fall of this year, staff plans to release a proposed regulatory package to be considered for adoption by the Board.

This rulemaking effort follows several years of research and analysis to determine the air emissions and other environmental impacts of both renewable diesel and biodiesel as viable petroleum diesel fuel replacements. These two fuels are both currently used in blends containing conventional petroleum-based diesel fuel, and as they become more prevalent in the market will serve to displace petroleum-based diesel fuel. Renewable diesel is chemically indistinguishable from petroleum diesel and thus subject

to the current petroleum diesel regulations; it is not covered by the Alternative Diesel Fuel Regulation. Conversely, biodiesel is chemically different than petroleum diesel fuel and staff's current proposed regulation will establish it as the first alternative diesel fuel.

In general, the proposed regulation contains a three-stage process for new alternative diesel fuels to enter the commercial market: (1) the identification of any pollutants of concern associated with new alternative diesel fuels, (2) the significance level at which emissions may increase, and (3) appropriate mitigation measures to be required to ensure current air quality protections. In addition to the three-stage commercialization process, the proposed regulation also contains specific provisions for biodiesel to address potential nitrogen oxides (NOx) increases associated with its use.

3. *Upcoming Milestones – July through December 2014*

Below is a brief summary of some of the upcoming milestones for LCFS and related programs during the second half of 2014. More information on staff's activities and upcoming public meetings related to the LCFS can be found at:

<http://www.arb.ca.gov/fuels/lcfs/lcfs.htm>.

ARB staff is continuing to implement and enforce the LCFS, while developing a new consolidated regulation package that responds to the Fifth Circuit Court of Appeal's decision and provides additional amendments important for the continued success of the LCFS program. In the second half of 2014, staff will continue conducting public workshops to discuss proposed revisions to the current LCFS, culminating in a Board hearing scheduled for February 2015 to hear testimony on re-adoption of the LCFS with staff's proposed amendments. Staff will update the Board in July 2014 on the progress achieved to date.

The Board will consider the Alternative Diesel Fuel Regulation at the same hearing it considers the re-adoption of the LCFS regulation.

C. Advanced Clean Cars

1. *Background*

ARB developed the Advanced Clean Cars Program to reduce emissions from the transportation sector that achieve California's long-term climate goals, and to provide a comprehensive approach to further reduce criteria and GHG emissions from light-duty vehicles beyond 2016. This recent Program closely aligns the Low Emission Vehicle, Zero Emission Vehicle (ZEV), and GHG light-duty vehicle standards to lay the foundation for the next generation of ultra-clean vehicles. Specifically, the Advanced Clean Cars Program includes more stringent GHG emission standards, tighter criteria pollutant standards, and increased ZEV production requirements for 2017-2025 passenger cars and trucks. This suite of regulations furthers California's progress towards near- and long-term climate goals, as well as aiding attainment of ambient air quality standards.

Zero Emission Vehicles. In January 2012, ARB approved the Advanced Clean Cars Program through rulemaking. The ZEV Program was amended as part of the rulemaking, increasing the zero emission vehicle requirements over time to about 15 percent of new car sales in 2025. The ZEV Program focuses attention on commercialization of battery electric vehicles, hydrogen fuel cell electric vehicles, and plug-in hybrid electric vehicles. The ZEV mandate will continue as a distinct but complementary program in California and the ten states that have also adopted it. The mandate is a critical element toward meeting the 2050 GHG emission goal established by Executive Order B-16-2012 which sets a target to reduce GHG emissions for the transportation sector by 80 percent below 1990 levels.

GHG Light-Duty Vehicle Standards. More stringent GHG emission standards were developed through a joint effort with the United States Environmental Protection Agency (U.S. EPA) and the National Highway Traffic Safety Administration (NHTSA) that evaluated available and emerging GHG emission reduction technologies for light-duty vehicles. These requirements will reduce new car carbon dioxide emissions by about 36 percent and new truck carbon dioxide emissions by about 32 percent during the model years 2016 through 2025. In October 2012, U.S. EPA finalized similar GHG emission standards while NHTSA finalized fuel economy standards, which will each yield similar GHG emissions reductions. Subsequently, in November 2012 the Board approved amendments to the Advanced Clean Cars regulations that allow vehicle manufacturers to demonstrate compliance with ARB regulations based on compliance with the federal standards, providing a path for vehicle manufacturers to meet a single set of national GHG emission standards through the 2025 model year. On December 27, 2012, U.S. EPA approved ARB's request for a waiver under the Clean Air Act, giving California the "green light" on its Advanced Clean Cars package of regulations.

2. Recent Developments – January through June 2014

Multi-State ZEV Memorandum of Understanding (MOU). On May 21, 2014, representatives from California and the seven other signatory states (Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont) released the Multi-State ZEV MOU Action Plan, a collection of ten action items to help support the commercialization of plug-in hybrid electric vehicles (PHEV) and ZEVs. This Multi-State Plan identifies several areas of needed coordination and cooperation between states, and will act as a template for many states to develop their own ZEV Action Plan.

Incentives for Introduction of ZEVs and Fueling Stations. In addition to ZEV regulatory efforts, ARB works with the California Energy Commission (CEC) and local administrators to provide financial incentives that further encourage market adoption of clean vehicles and equipment via the Air Quality Improvement Program and, starting in FY 2014-15, Low Carbon Transportation investments from the Greenhouse Gas Reduction Fund. In June 2014, the Board approved the proposed *FY 2014-15 Funding Plan for the Air Quality Improvement Program and Low Carbon Transportation*

Greenhouse Gas Reduction Fund Investments, which authorizes a total of \$116 million for consumer rebates for the purchase of ZEVs, and plug-in hybrid funding under the Clean Vehicle Rebate Project (CVRP). CEC has allocated an additional \$5 million for the CVRP in its *2014-2015 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program*, bringing the total funding to \$121 million. The Funding Plan also authorizes several pilot projects aimed at increasing the use of cleaner technology vehicles in lower-income households and disadvantaged communities.

To date, the CVRP has provided over \$120 million to incentivize the purchase or lease of about 60,000 ZEVs and plug-in hybrids for use on California's roadways. The CVRP has experienced rapid growth in consumer demand, with nearly 40,000 of these rebates issued in FY 2013-14.

On September 28, 2013, Governor Brown signed AB 8 (Perea, Chapter 401, Statutes of 2013), which extends until 2024 the fees that support ARB's Air Quality Improvement Program and CEC's corresponding Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) that provides advanced technology vehicle and infrastructure funding. Additionally, AB 8 secured up to \$20 million annually in funding from ARFVTP for hydrogen fueling infrastructure, until at least 100 publicly available hydrogen-fueling stations are operating in California.

CEC complements ARB's investment in advanced technology vehicles by providing funding for electric vehicle charging stations and hydrogen fueling stations through ARFVTP. In April 2014, CEC approved its *2014-2015 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program*, which allocates \$15 million to electric vehicle charging infrastructure, \$20 million for hydrogen fueling stations, and \$5 million for CVRP. In May 2014, CEC announced \$46.6 million in proposed awards to fund 28 new hydrogen stations in California, adding to the 9 existing stations and 17 stations currently under development. Thus, it is anticipated that California's network of hydrogen fueling stations will be up to 50 stations by the end of 2015.

Advanced Clean Cars Contracts. ARB continues to pursue several contracts to support overall implementation of the Advanced Clean Cars Program and the midterm review due in 2018.

- ARB has contracted with UC Davis to conduct research on the ZEV market. The objective is to capture statewide data on consumer attitudes, barriers, and motivators toward purchasing ZEVs. The purpose of the research is to identify the factors that influence new-vehicle purchase decisions and the areas where additional policies, incentives, or outreach could be implemented to facilitate greater adoption rates of cleaner cars. The project is called, "New Car Buyers' Valuation of Zero Emission Vehicles."

- ARB has contracted with UC Davis to conduct research on household-level plug-in electric vehicles usage and charging behavior in order to quantify emission benefits. The project is called, “Advanced Plug-in Electric Vehicle Travel and Charging Behavior.”
- ARB has selected University of California at Los Angeles to evaluate trends in the emerging ZEV market relative to policy and market factors. The project is called, “Examining Factors That Influence ZEV Sales in California.”
- ARB has contracted with Control-Tec to evaluate the potential for road load reduction strategies (e.g. aerodynamics, rolling resistance, and mass reduction) to contribute to GHG emission reductions. The project is called, “Technical Analysis of Vehicle Load-Reduction Potential for Advanced Clean Cars.”

3. Upcoming Milestones – July through December 2014

Below is a brief summary of some of the upcoming milestones for Advanced Clean Cars during the second half of 2014. More information on staff’s activities and upcoming public meetings on this program can be found at:

http://www.arb.ca.gov/msprog/consumer_info/advanced_clean_cars/consumer_acc.htm.

- ARB staff continues its work on the mid-term review of the Advanced Clean Cars Program, with consultation from the Board. In conjunction with U.S. EPA and NHTSA, ARB is assessing the technology used, compliance rates, and costs associated with the greenhouse gas emission standards for light-duty vehicles. Additionally, California is reviewing the adopted particulate matter (PM) standards and the ZEV regulation, as well as market uptake of ZEVs and PHEVs.
- ARB staff will continue implementing the CVRP and will start developing pilot projects to increase the deployment of advanced technology vehicles, including ZEVs, in disadvantaged communities.

D. Other Regulations – Landfill Methane

1. Background

On June 25, 2009, the Board approved a regulation that reduces emissions of methane from municipal solid waste (MSW) landfills. The landfill methane control measure is a discrete early action measure. The Landfill Regulation, which became effective in June 2010, requires owners and operators of certain MSW landfills to install gas collection and control systems. It also requires owners of landfills with existing and newly installed gas collection and control systems to operate them in an optimal manner.

ARB originally estimated that there would be a reduction of about 0.4 MMT of CO₂e as a result of bringing 14 MSW landfills into compliance with the Regulation by 2020. The implementation and enforcement of this measure for the remaining estimated 204 affected MSW landfills (including those with gas collections systems already installed) is expected to result in an additional estimated emission reduction of 1.1 MMT of CO₂e in 2020. ARB is working with the California Department of Resources Recycling and Recovery to further refine the estimated emission reductions from the measure as additional studies become available.

The Landfill Regulation allows the local air districts to voluntarily enter into an MOU with ARB to implement and enforce the regulation, and to assess fees to cover their costs. ARB developed the MOU template in consultation with representatives from the California Air Pollution Control Officers Association. Upon signing the MOU, primary enforcement authority is transferred to the local air district. ARB retains its right to enforce the Landfill Regulation, if necessary.

Having local air districts participate in the enforcement process capitalizes on their expertise (many of them regulate other types of emissions from the landfills), takes advantage of their physical location closer to the sources, and reduces the State's cost of implementing the Landfill Regulation. This collaboration is an example of a partnership between ARB and the local air districts, working together to achieve the goals of AB 32.

2. Recent Developments – January through June 2014

During the first half of 2014, ARB worked to increase enforcement activities with inspections, audits, and compliance assistance training. More information on ARB activities and any upcoming public meetings can be found at: <http://www.arb.ca.gov/cc/landfills/landfills.htm>.

- To date, 22 air districts have signed the MOU. ARB continues to work with the remaining local air districts to encourage their participation in the MOU.
- ARB has provided training to 15 local air districts that have signed the MOU to assist them in implementing and enforcing the Regulation. Several local public works agencies were also present at the training sessions. Other air districts expressed interest in training within their regions.

3. Upcoming Milestones – July through December 2014

- ARB plans to offer additional training sessions to interested local air districts, and to make available a modified version of this training to landfill owners and operators and interested governmental agencies.
- ARB will continue conducting audits through inspections, reviewing documents, and coordinating with local air districts to ensure compliance with the Landfill Regulation.

- ARB will continue to focus enforcement activities on landfills located in districts that have not signed an MOU because these landfills have a greater potential for elevated methane emissions.
- ARB will explore modifying the Landfill Regulation to streamline recordkeeping and reporting requirements and will also evaluate the effectiveness of the current surface methane emission limits.
- In 2014, to implement the First Update to the AB 32 Scoping Plan, ARB will continue to coordinate with the California Department of Resources Recycling and Recovery on improving the quantification of emission reductions attributable to this Regulation. This process may help to identify additional opportunities for securing GHG reductions from the waste sector through regulations and/or incentives.

E. Other Regulations – Crude Oil and Natural Gas Production, Processing, and Storage

1. Background

The original Scoping Plan proposed the development of a measure to reduce venting and fugitive GHG emissions associated with oil and gas production, processing, and storage. These primarily methane emissions come from various sources, such as storage tanks, compressor seals, and leaking components such as valves, flanges, and connectors. In 2009, ARB undertook a survey of the industry to improve the emissions inventory for this sector. The survey results show that about 1.3 million metric tons of CO₂e come from vented and fugitive sources in the oil and natural gas production, processing, and storage sector. Vented emissions are intentional, and fugitive emissions are unintentional, releases of gases to the atmosphere.

This effort was not originally envisioned with well stimulation, which includes hydraulic fracturing (or fracking) in mind. However, with the passage of SB 4 (Pavley, Chapter 313) in 2013, ARB plans to expand its investigation to consider and reduce methane and air toxics emissions resulting from well stimulation activities. Pursuant to SB 4, ARB staff will be working with the local air pollution control and air quality management districts, as well as with the Department of Conservation's Division of Oil, Gas, and Geothermal Resources (DOGGR) and other relevant State agencies, to coordinate efforts and maximize the effectiveness of measures to address well stimulation emissions.

2. Recent Developments – January through June 2014

In order to begin understanding the air emissions coming from hydraulic fracturing and other well stimulation activities in California, ARB entered into a contract in August 2013 with a testing contractor to measure GHG, Volatile Organic Compound (VOC), and toxic air contaminant emissions from these activities at a very limited number of sites. In the

first half of 2014, ARB and the contractor finalized a test plan that identifies the type of emission points from which to sample, the sample collection techniques that will be used, and the type of analytical tests to be run. Testing began during this period.

- ARB began working with air districts' staff to discuss possible methane control strategies, as well as implementation and enforcement approaches.
- ARB began working with DOGGR and air districts to develop a memorandum of agreement (MOA) to outline respective authorities regarding well stimulation, pursuant to SB 4.
- ARB received additional resources in the FY 2014-15 budget to support these efforts.

3. Upcoming Milestones – July through December 2014

- In Summer 2014, ARB plans to begin holding public workshops as part of the regulatory development for the Crude Oil and Natural Gas Production, Processing, and Storage regulation. The initial workshops will discuss GHG emission estimates, preliminary regulatory concepts, and preliminary emission reductions. Subsequent workshops will discuss estimated cost-effectiveness of control approaches and draft regulatory language.
- ARB, air districts, and DOGGR will continue to work on the SB 4 MOA, with a goal of completion before the end of the year.
- Most of the limited emissions testing from hydraulic fracturing and other well stimulation activities should be completed.
- ARB expects to hire a contractor to measure methane leak concentrations and flow rates at California oil and natural gas facilities, develop methane concentration to flow rate correlation factors, and evaluate different types of methane leak detection equipment.

II. ARB ACTIVITIES TO SUPPORT AB 32

This section focuses on major AB 32 support activities identified in the supplemental budget language: the Update to the AB 32 Scoping Plan, coordination with entities outside California, implementation of SB 375 sustainable communities plans, and the use of Cap-and-Trade auction proceeds. Also included is information on the development of the Sustainable Freight Strategy, which will drive further actions to provide significant benefits for climate, regional air quality and localized health risk reduction.

A. Scoping Plan

1. *Background*

AB 32 requires ARB to take the lead, in close coordination with other State agencies, to prepare and adopt a Scoping Plan that describes how the State will reduce GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in December 2008, and contained a range of GHG emission reduction actions that could be taken. These actions include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade program, and an AB 32 program implementation fee to fund the program.

AB 32 requires that the Scoping Plan be updated every five years. ARB began efforts to update the Scoping Plan in 2012. The development of the first Update to the Scoping Plan (Update) involved ARB staff work within three spheres – analysis internal to ARB, coordination with other State agencies, and consultation with other stakeholders in government, industry, community/environmental groups, and academia. The breadth of the effort required significant ARB staff resources, drawing from staff and management who deal with issue areas such as: climate policy and regulation, energy, industrial sources, vehicles, freight transport, fuels, waste, water, agriculture, natural resources, research, emissions, economics, environmental analysis, federal planning, sustainable communities, and incentives.

Under the auspices of the Climate Action Team, led by Secretary for Environmental Protection Matthew Rodriguez, ARB and other State agencies collaborated to identify and explore opportunities for securing additional reductions of GHGs and short-lived climate pollutants in six focus areas:

- Transportation (including fuels, land use, and associated infrastructure)
- Energy
- Waste
- Water
- Agriculture
- Natural and Working Lands

State agency focus area workgroups were created in 2013 to conduct focus area evaluations. Various State agencies took lead roles. For example, CEC took the lead for the energy sector and ARB took the lead for transportation. Each workgroup developed a working paper which formed the foundation upon which the agencies, with stakeholder input, identified recommendations for policy or program priorities for the next five years.

The Update summarizes the scientific advancements concerning the understanding of climate change and its impacts. It also highlights California's accomplishments to date (including State, regional and local climate initiatives) to reduce GHG emissions. The Update quantifies progress toward meeting the 2020 GHG emissions goal, examines the economic impacts of actions taken to support that goal, identifies opportunities to pursue additional measures as appropriate (such as uncovered sectors and short-lived climate pollutants), and lays the foundation for the research and policy work needed to map the path to post-2020 climate goals.

ARB also reconvened the Environmental Justice Advisory Committee (EJ Committee) to advise ARB in the development of the Update. AB 32 directed ARB to convene an EJ Committee of at least three members by July 1, 2007, to advise ARB in developing the initial Scoping Plan and any other pertinent matter in implementing the bill. ARB first convened an EJ Committee in January 2007, to provide advice on the development of the initial Scoping Plan.

Following an initial general public workshop and a Southern California Regional Workshop in June of 2013, ARB held two more public meetings in July 2013 regarding the Update, in collaboration with local air districts. One meeting was located in the San Francisco Bay Area, and the other was in the San Joaquin Valley.

ARB presented a Discussion Draft at the October 24, 2013 Board Meeting. Representatives of industry, environmental groups, other government agencies, members of the public, and Board members provided comments on the Discussion Draft.

In late 2013, the California Air Pollution Control Officers' Association provided an expansive summary of local and regional actions to reduce GHG emissions in response to ARB's request. This summary is included in the Update.

2. *Recent Developments -- January through June 2014*

The Scoping Plan Update was developed by ARB in collaboration with the Climate Action Team and reflects the input and expertise of a range of State and local government agencies. The Update reflects public input and recommendations from business, environmental, environmental justice, and community-based organizations provided in response to the release of prior drafts of the Update.

The Update lays out a set of new actions that will move the State further along the path to a low-carbon, sustainable future, including specific recommended actions with lead agency assignments and anticipated due dates. Some of the actions are near-term, while others are focused on longer-term efforts that will provide major benefits well into the future.

The Update identifies a need to establish a State mid-term GHG emission reduction target. A mid-term target, informed by climate science, will be critical in helping to frame the additional suite of policy measures, regulations, planning efforts, and investments in clean technologies that are needed to continue driving down emissions. Every major economic sector in the State will need to play an increasing role in this effort. Success will require the creation of new policies in some sectors, and the expanding and refining of existing policies in other sectors. California also must continue working to find the right combination of policies and incentives to accelerate commercial markets for clean energy and efficiency.

Furthermore, the Update recommends that ARB develop a short-lived climate pollutants plan. This plan should outline the measures that have been taken to reduce emissions of these pollutants and measures that are underway, as well as efforts to develop additional strategies. New research has proven the importance of these potent climate forcers on near-term climate effects.

The Board reconvened the EJ Committee to provide advice on the development of the Update. The EJ Committee met four times from June 2013 to April 2014 to discuss the Update. The EJ Committee focused discussion on each sector identified in the Scoping Plan and developed comprehensive recommendations that ARB considered in drafting the Update.

ARB also convened a panel of economic experts to serve as advisors during the development of the Update and provide recommendations for evaluating the economic impacts associated with AB 32. ARB consulted with the economic advisors on the best means of assessing economic impacts to date, and about estimating future impacts of existing or new emission reduction strategies.

In addition, a group of distinguished scientists with expertise in observed climate change in California, in projection of future climate change impacts, and in short-lived climate pollutants, provided input on the latest climate science discussion in the Update.

The Update summarizes the advancements concerning the understanding of climate science that underscores the urgent need to accelerate GHG reductions to avoid the most severe impacts of climate change. It also highlights California's accomplishments to date (including State, regional and local climate initiatives) to reduce GHG emissions.

- On February 10, ARB released a draft Proposed Update and presented it to the Board for discussion at its February 20, 2014 meeting. At that meeting, the Board directed staff to make specific changes to the draft report.

- On March 14, ARB released a draft environmental analysis of the draft Proposed Update for a 45-day public comment period.
- On April 10 and 11, the EJ Committee met to finalize recommendations on the Update.
- On May 15, ARB staff released the first Update and the final environmental analysis, along with the summary of comments received on the draft environmental analysis and ARB's responses to those comments.
- On May 22, the Board approved the first Update, along with the finalized environmental documents.

3. Upcoming Milestones – July through December 2014

The Update includes several actions that begin to implement the recommendations contained in the Update, expected to be completed this year. These actions include:

- Develop measures to control fugitive methane and carbon dioxide emissions from oil and gas production, processing, and storage tanks.
- Convene an interagency workgroup whose purpose is to: (1) establish agriculture-sector GHG reduction planning targets for the mid-term time frame and 2050; (2) develop a California-specific agricultural GHG tool to estimate GHG emissions and sequestration potential from all on-farm sources; (3) develop strategies to reduce GHG emissions associated with energy in agricultural water use, and (4) limit land conversion of both agricultural and natural and working lands.
- Convene an interagency work group to begin development of a Forest Carbon Plan. A kick-off meeting for the interagency workgroup is scheduled for mid-July.
- Develop actions to address cross-California agency and federal permitting and siting challenges associated with composting and anaerobic digestion.
- Identify improvements to the procurement of recycled-content materials through the State Agency Buy Recycled Campaign reform.
- Develop a plan for an ex post assessment of realized cost and benefits of AB 32.
- In a public process, define and discuss an appropriate approach to assess the effects of AB 32 programs on disadvantaged communities, which will lead to an update to the Board at the end of 2014.

More information on ARB activities and upcoming public meetings on Scoping Plan implementation can be found at:

<http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>.

B. Coordination with Other Entities Outside of California

1. *Background*

AB 32 requires ARB to “consult with other states, the federal government, and other nations to identify the most effective strategies and methods to reduce greenhouse gases, manage greenhouse gas control programs, and to facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs.” Pursuant to this requirement, and in the spirit of expanding international action to address global climate change, ARB engages with interested jurisdictions outside of California.

ARB works closely with other entities at the local, State, regional, national, and international levels to ensure that the rigorous standards established by California are understood and potentially implemented by other jurisdictions. Where other states and nations are developing or implementing their own GHG reduction programs, ARB looks to coordinate with committed partners to expand action to tackle global climate change by sharing California’s programs, policies and best practices so that their program designs complement California’s efforts and benefit the State to the maximum extent feasible.

One focus of ARB’s efforts has been with partner jurisdictions in the Western Climate Initiative (WCI) to build an integrated, regional carbon market and expand cost-effective emission reduction opportunities. These efforts have included developing the administrative support activities managed by the Western Climate Initiative, Inc. (WCI, Inc.).

ARB has worked with Québec to link cap-and-trade programs. After satisfying the requirements of Senate Bill 1018 (Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012), and completing the Linkage Readiness Report requested by the Governor, the California and Québec cap-and-trade programs were linked on January 1, 2014. This linkage enables compliance instruments to be transferred among participants in the two programs. Linkage also enables allowance auctions to be conducted jointly.

Governor Brown, ARB and other agencies have also been working with several entities in China to advance their efforts to reduce GHG emissions and combat air pollution. China is the world’s leading emitter of GHG emissions and critical to addressing global climate change. Similarly, many cities in China are suffering from hazardous air pollution, some of which drifts across the ocean to California. Sharing California’s leading expertise on reducing air pollution can provide mutual benefits to China, California and global climate. Accordingly, California and China entered into a number

of agreements in 2013 and have undertaken several activities to implement these agreements. These activities are summarized in the International section of this report and in previous annual and semi-annual reports to the JLBC.

2. *Western Climate Initiative (WCI)*

The WCI is a collaboration of independent jurisdictions working together to identify, evaluate, and implement policies to tackle climate change at a regional level. WCI was originally established by 5 states and grew to 11 states and provinces including: Washington, Oregon, Montana, Utah, New Mexico, Arizona, California, British Columbia, Ontario, Manitoba, and Québec. California participated in the WCI as part of the effort to carry out the requirements of AB 32.

Following extensive consultation with stakeholders, the WCI jurisdictions released comprehensive recommendations for designing and implementing an emissions trading program. As a result of California's coordination efforts, the WCI recommendations are consistent with the design of the ARB Cap-and-Trade Program. This consistency will help facilitate opportunities for linking California's Program with other jurisdictions in the future.

No WCI activities were conducted in the first half of 2014. Further information on WCI can be found at: <http://www.westernclimateinitiative.org>.

3. *Western Climate Initiative, Inc.*

Throughout the WCI collaboration, the WCI jurisdictions discussed the concept of having regionally coordinated administrative support for the jurisdictions' emissions trading programs. In November 2011, WCI, Inc. was created to fulfill this administrative role.

WCI, Inc. is a non-profit corporation that focuses solely on administrative support, and is separate from WCI. WCI, Inc. coordinates administrative services to cap-and-trade programs developed and implemented by states and provinces. The Board of Directors for WCI, Inc. includes officials from the provinces of Québec and British Columbia, and the State of California. The services provided by WCI, Inc. can be expanded to support jurisdictions that join in the future.

The coordinated administrative support from WCI, Inc. benefits California and the other programs in several ways:

- Coordinated support ensures that all the linked programs use the same highly secure program infrastructure, including the allowance tracking system and auction platform.

- Coordinated support ensures that analyses performed to support market monitoring in each jurisdiction are conducted consistently and effectively for the entire compliance instrument market across all the linked programs.
- Coordinated support enables the linked programs to share the cost of developing and maintaining program infrastructure, thereby reducing the costs for each jurisdiction.

WCI, Inc.'s approach to coordinating administrative support is to have each jurisdiction specify its administrative requirements, and then for WCI, Inc. to provide support that meets these specifications. Currently, British Columbia, California, and Québec participate in WCI, Inc. California and Québec are currently implementing cap-and-trade programs to reduce GHG emissions.

Most of the administrative support provided by WCI, Inc. is highly technical or specialized and has been developed through the use of contractors. WCI, Inc. is undertaking the following activities:

- Coordinating the development and administration of the Cap-and-Trade Compliance Instrument Tracking System Service (CITSS);
- Coordinating the development and administration of an allowance auction platform. The auction platform is used by California and Québec to auction emission allowances under their cap-and-trade programs and conduct reserve sales;
- Coordinating the performance of analyses to support market monitoring performed by each jurisdiction of allowance auctions and allowance and offset certificate trading; and
- Coordinating auction and reserve sale financial administration, which includes evaluation of bid guarantees and settlement (transferring the payments from the auction and reserve sale purchasers to the sellers).

Whereas WCI has focused on collaboration on emissions trading policies, WCI, Inc. is solely administrative in nature. All policymaking and regulatory authority for each jurisdiction's program is retained by each jurisdiction. According to the WCI, Inc. bylaws, its administrative activities must "...conform to the requirements of State and Provincial programs..." The requirements are defined by the participating jurisdictions, such that WCI, Inc. must execute its administrative role in conformance with the requirements established by ARB and the other jurisdictions.

Section 2 of this report provides the semi-annual update to the Legislature on the activities of WCI, Inc. Please see this section for further information.

4. Other Federal and State Governments

ARB coordinates with entities at the state, federal, and international level that have or are developing program elements similar to California's to ensure that important provisions are as consistent as possible, where appropriate. This coordination ensures that the State's and stakeholders' investment in developing California regulations facilitates future broadening of policies to other jurisdictions and strengthens California's ability to compete globally.

ARB works closely with federal agencies including: U.S. EPA, the U.S. Department of State, the U.S. Agency for International Development, the Commodity Futures Trading Commission, and the Federal Energy Regulatory Commission, on climate change issues.

The Mandatory Reporting Regulation for GHG emissions is modeled on, and periodically updated to maintain consistency with, U.S. EPA's GHG reporting rule. In 2013, ARB continued to work with U.S. EPA on further consolidating reporting systems to both reduce regulatory burden on reporting entities and increase data accuracy and integrity. The CITSS compliance system for California's Cap-and-Trade Regulation was built in cooperation with U.S. EPA on the framework used in other cap-and-trade systems, including the federal Acid Rain Program and the Northeast states' Regional Greenhouse Gas Initiative. The industrial emissions benchmarking methodology used in California's Cap-and-Trade Program was developed in coordination with partners in other U.S. states, Canadian provinces, and the European Union. In 2013, ARB continued coordinating with the Commodity Futures Trading Commission and Federal Energy Regulatory Commission to strengthen carbon and related energy market monitoring, oversight, and enforcement.

In his June 2013 memorandum, President Obama called on U.S. EPA to build on the leadership that many states, cities, and companies have already shown in reducing carbon pollution from the power sector as U.S. EPA develops its own GHG emission standards under section 111(d) of the Clean Air Act. U.S. EPA subsequently asked states to provide feedback on specific issues, including state experiences with carbon pollution reduction programs. In December 2013, ARB, along with CPUC, CEC, CAISO, and air districts, provided recommendations to U.S. EPA on the most effective strategies for achieving GHG reductions in the electric sector. The California agencies encouraged U.S. EPA to establish an approach that is rigorous and equitable, achieves significant carbon pollution reductions, and utilizes the flexibilities inherent in the power grid to support cost-effective compliance. The agencies also encouraged U.S. EPA to establish a standard that recognizes the significant progress made by many states, including California, and provides states with the authority to reach emissions targets through a variety of compliance options.

On June 2, 2014, U.S. EPA released the Clean Power Plan proposal, which for the first time cuts carbon pollution from existing power plants, nationwide. Power plants account for roughly one-third of all domestic GHG emissions. With the Clean Power Plan,

U.S. EPA is proposing guidelines that build on trends already underway in states and the power sector. By 2030, U.S. EPA's plan will result in reducing carbon emissions from the power sector by 30 percent below 2005 levels nationwide, which is equal to the emissions from powering more than half the homes in the United States for one year. It will also cut emissions that lead to smog and soot by more than 25 percent, which will better protect public health, while reducing energy bills. The Clean Power Plan will be implemented through a state-federal partnership under which states develop plans to identify either current or new electricity production and pollution control policies to meet the goals of the proposed program. State plans to meet the proposed compliance goals are due to U.S. EPA in June 2016, with an additional two years allowed if states submit a multi-state compliance plan. Preliminary evaluation of the proposed rule indicates that California's existing programs to increase energy efficiency, encourage renewable energy and reduce climate changing emissions from the power sector put the State in a strong position to meet the proposed goal. ARB will work closely with U.S. EPA to ensure that investments made by California entities to comply with AB 32 are fully credited under U.S. EPA's final rule.

On June 23, 2014, the U.S. Supreme Court ruled on litigation involving U.S. EPA in the case of *Utility Air Regulatory Group v. EPA*. The court considered whether EPA had authority to determine that its motor vehicle GHG regulations automatically triggered permitting requirements under the Clean Air Act for stationary sources that emit GHGs. The ruling stated that U.S. EPA could not require facilities to obtain permits based solely on their GHG emissions, but upheld U.S. EPA's authority to regulate large stationary sources of GHG emissions when those sources also trigger permitting for other pollutants such as NO_x and PM₁₀. The practical effect of the ruling means most large sources of GHG emissions will continue to be regulated under the existing permitting programs.

U.S. EPA and ARB routinely coordinate on advanced transportation and fuels, including the relationship between the federal Renewable Fuels Standard and the California Low Carbon Fuel Standard. Furthermore, ARB's work with U.S. EPA and its federal partners is instrumental to the success of the Advanced Clean Cars Program.

ARB has also been working with other states and provincial governments on low carbon fuels issues to share insights gained from developing and implementing California's LCFS. To facilitate the use of consistent methodologies, staff continues to work closely with Oregon and British Columbia on ARB's web-based LCFS Reporting Tool. Regulated parties use the Reporting Tool to report the volumes and carbon intensities of the transportation fuels that they have introduced into the California fuels market; therefore, it is used for both reporting and compliance purposes. ARB signed software License Agreements in 2013 with both jurisdictions, which enabled Oregon and British Columbia to begin using the LCFS Reporting Tool for data collection in their jurisdictions. Work continues with these governments regarding the technical details of making elements of the Reporting Tool available, including security, program maintenance, and update capabilities.

ARB has also been engaging in discussions with other governmental agencies outside of California to share information and experiences about the design of programs aimed at reducing emissions from deforestation and forest degradation (REDD), and to begin evaluating whether and how such REDD programs could potentially be included in California's Cap-and-Trade Regulation in the future. ARB does not currently accept any offset credits from outside of the United States, and any future inclusion would require new rulemaking.

In October 2013, Governor Brown signed the Pacific Coast Action Plan on Climate and Energy with Governor John Kitzhaber of Oregon, Governor Jay Inslee of Washington, and Premier Christy Clark of British Columbia. Among other activities, the agreement commits each jurisdiction to reduce GHG emissions by putting a price on carbon, transforming markets for energy efficiency, and adopting low carbon fuel standards.

To further the objectives of the Action Plan, ARB staff has been collaborating with staff in British Columbia, Washington, and Oregon on their LCFS programs. ARB has shared the LCFS Reporting Tool computer code with British Columbia and Oregon, and is in the process of developing an agreement with Washington for that code. ARB staff and Executive Office members have met with their counterparts within the Pacific Coast Collaborative to discuss the design elements and challenges of a low carbon fuel standard. Finally, staff participates in a bi-weekly conference call with Washington staff on their development of an LCFS.

5. *International*

California has advanced several other strategic national and international partnerships in the first half of 2014, including discussions with Mexico regarding an agreement for cooperation on emissions trading systems (ETS) and forest management, as well as vehicles, air quality, and wildfires. Significant activities with Mexico on such an agreement are expected during the second half of 2014.

Already this year, ARB staff have been invited by the World Bank to a consultation in Mexico City on the possible development of an ETS and renewable portfolio standard in Mexico. Other participants included the Partnership for Market Readiness, a consultant on the Chinese pilot ETS programs, and Mexican government officials. ARB staff has also participated in events hosted by the Mexican Federal Government to support technology and policy solutions for efficient, low carbon and low pollution vehicles.

ARB is also participating in the India-California Air Pollution Mitigation Program (ICAMP), a World Bank-sponsored project to reduce black carbon emissions from the transportation sector in India. Further work with India, including through ICAMP and on climate change more broadly, is anticipated during the second half of 2014.

Last year, California formalized working relationships with China on climate programs. Activities in the first half of 2014 include:

- On January 16, 2014, ARB staff met with eleven Chinese government officials for a full day of information exchange on the details of California's Cap-and-Trade Program and the seven Chinese pilot ETS programs, in Sacramento.
- On February 7, 2014, CalEPA Secretary Rodriguez, ARB Chairman Nichols, and CEC Chairman Weisenmiller met with China's National Development and Reform Commission officials in Los Angeles.
- On March 28, 2014, ARB staff met with an official of the Chinese Ministry of Finance's Clean Development Mechanism Fund Management Center to discuss California's ZEV program.
- On April 18, 2014, ARB staff traveled to Beijing to participate in an event on ZEV programs organized by the China Automotive Technology and Research Center.
- In June 2014, Secretary Rodriguez and ARB staff met with representatives of China's pilot emissions trading programs in Shenzhen to review the progress of the pilot programs and to share experience from California's Cap-and-Trade Program.

ARB has also received a number of visiting delegations from other countries interested in California's climate change policies. During the first half of 2014, ARB received 10 foreign delegations to discuss climate change policies. At least as many are expected to visit during the second half of 2014, with three already scheduled for July and August.

ARB has also participated in meetings of the Partnership for Market Readiness, a multilateral World Bank initiative that brings together more than 30 developed and developing countries to share experience and build capacity for climate change mitigation efforts, particularly those implemented using market instruments.

California's climate change policies and programs have generated strong interest from other states, countries and subnational jurisdictions. Many governments are adopting or looking to adopt their own climate-related policies in recognition of the real threat of climate change, and in preparation for the international climate change negotiations towards a new global climate treaty that will take place in 2015.

As California's programs have continued to gain international attention and recognition, requests to host delegations, visit other states and countries, and enter into partnerships have continued and increased. The Governor has recently signed MOUs with Peru and Israel, and more countries and jurisdictions have expressed interest as well. As a result, the number of strategic international partnerships and initiatives is anticipated to increase in the second half of 2014.

C. SB 375 – Sustainable Communities Plans

1. *Background*

SB 375 (Steinberg, Chapter 728, Statutes of 2008), also known as the Sustainable Communities and Climate Protection Act, reduces GHG emissions from passenger vehicles through improved regional transportation and land use planning. SB 375 directs regions to integrate development patterns and transportation networks in a way that achieves passenger vehicle GHG reductions while addressing housing needs and other regional planning objectives.

ARB is required to set regional GHG emission reduction targets for passenger vehicles for 2020 and 2035 for the State's federally designated Metropolitan Planning Organizations (MPO). Each MPO is then required to adopt and submit to ARB a sustainable communities strategy (SCS) that uses land use and transportation strategies to reduce the region's passenger vehicle GHG emissions. ARB's statutory responsibility under SB 375 is to then accept or reject an MPO's determination that its SCS would, if implemented, meet the targets. An MPO must develop an alternative planning strategy if its SCS fails to meet ARB targets.

In 2010, ARB set the regional GHG emission reduction targets required under SB 375. In the four most heavily populated regions of the State, the Board-approved targets (See Table 1-1) are expected to achieve per capita GHG emission reductions of 7 to 8 percent by 2020, and between 13 and 16 percent in 2035, compared to 2005 levels. Achieving these targets means statewide GHG reductions of over 3 MMT in 2020 and 15 MMT in 2035. The regions include Southern California, the Bay Area, San Diego, and the Sacramento Metropolitan Area.

Under the law, ARB has specific statutory responsibility to determine whether the SCS, if implemented, would achieve the GHG emission reduction targets. In July 2011, ARB staff released to the public a methodology that details how ARB will evaluate MPO SCSs in order to fulfill its responsibility under the law. ARB's methodology can be found at http://www.arb.ca.gov/cc/sb375/scs_review_methodology.pdf.

Table 1-1: ARB Greenhouse Gas Emission Reduction Targets for Major Regions under SB 375		
Metropolitan Planning Organization (MPO) Region	Targets *	
	2020	2035
Southern California Association of Governments (SCAG)	-8	-13
Metropolitan Transportation Commission (MTC)	-7	-15
San Diego Association of Governments (SANDAG)	-7	-13
Sacramento Area Council of Governments (SACOG)	-7	-16
8 San Joaquin Valley Councils of Governments	-5	-10
Tahoe Metropolitan Planning Organization	-7	-5
Shasta Regional Transportation Agency	0	0
Butte County Association of Governments	+1	+1
San Luis Obispo Council of Governments	-8	-8
Santa Barbara County Association of Governments	0	0
Association of Monterey Bay Area Governments	0	-5

* Targets are expressed as percent change in per capita GHG emissions relative to 2005.

Of the major MPOs, San Diego’s SCS was adopted by the San Diego Association of Governments in October 2011, followed by the Southern California Association of Governments’ and the Sacramento Area Council of Governments’ plans in 2012, and the Metropolitan Transportation Commission’s plan in 2013. Staff presented status updates to the Board on the development of these plans. Based on staff’s evaluation, ARB’s Executive Officer accepted all four SCSs through Executive Orders on behalf of the Board. In December 2012, the Tahoe and Butte MPOs adopted their respective plans and in August 2013 the Santa Barbara region adopted its plan. The Board approved resolutions accepting these three SCSs.

2. Recent Developments – January through June 2014

The remaining MPOs are now in the process of developing and adopting their first SCSs as part of their next Regional Transportation Plan updates. Among these are the eight single-county MPOs in the San Joaquin Valley, and the MPOs for the Monterey Bay region, San Luis Obispo region, and Shasta County. In January 2014, staff briefed the Board on the status of SB 375 implementation, including an update on SCSs adopted to date, the status of SCSs under development, and next steps in implementation.

In April 2014, staff conducted a roundtable discussion with a diverse group of stakeholders on the need for and timing of a future update of the regional targets.

In May 2014, staff provided an informational briefing to the Board on the development of the eight SCSs of the MPOs in the San Joaquin Valley. Staff informed the Board that the technical evaluations of these SCSs will be completed in Fall of 2014.

Sustainable Communities Contracts. ARB is providing funding for several research efforts that are contributing critical data and information that will help strengthen the technical foundation of SB 375 and identify important data gaps and research needs. One set of contracts with University of California researchers is focused on identifying the impacts of key transportation and land use policies on vehicle use and GHG emissions based on the existing scientific literature. The results of the literature reviews can be found on ARB's website at <http://arb.ca.gov/cc/sb375/policies/policies.htm>.

Another set of contracts is focused on the modeling tools used by regional governments to quantify the impacts of different land use and transportation strategies on regional travel characteristics. A contract with Smart Mobility, Inc. is currently underway and will provide a comprehensive review of various state-of-the-practice activity-based and land use models that are either currently in use or under development in California.

In addition, ARB is providing funding for several research projects on land use and transportation planning, including: the economic benefits and costs of smart growth strategies, effects of complete streets on travel behavior, quantifying the effects of local government action on vehicle miles travelled, the role of land use planning in reducing residential energy consumption and GHG emissions, modeling household vehicle and transportation choice and usage, the relationship between transit-oriented development and displacement of low-income residents, and the impact of light rail transit on travel behavior in Southern California. In addition, ARB is funding two research projects aimed at finding solutions to the exposure of sensitive land uses to near-roadway pollution. More details on these research projects as well as information on completed and future research may be found on ARB's website at: <http://www.arb.ca.gov/research/sustainable/landuse.htm>.

3. Upcoming Milestones – July through December 2014

As each additional MPO adopts an SCS, ARB staff will evaluate the plan to determine whether the SCS, if implemented, would achieve the GHG emission reduction targets. ARB will periodically report to the Board on these actions. More information on staff's activities and upcoming meetings can be found at: <http://www.arb.ca.gov/cc/sb375/sb375.htm>.

- In Fall 2014, ARB staff will complete its technical evaluation of the eight final SCSs from the San Joaquin Valley MPOs, and will release a written report prior to returning to the Board with staff recommendations.
- ARB staff will begin review of the SCSs from the Monterey Bay and San Luis Obispo regions once they are submitted to ARB.
- ARB staff will continue to meet with the stakeholder group that has been invited to provide input on the need for and timing of a future update of the regional targets. The group's input will inform staff's recommendations to the Board in October 2014 regarding a target update process.

- ARB staff will work with the Strategic Growth Council (SGC) to develop guidelines and implementation criteria for SGC's Affordable Housing and Sustainable Communities Program funded through the Greenhouse Gas Reduction Fund.

D. Cap-and-Trade Auction Proceeds

1. *Background*

A portion of the allowances required for compliance with the Cap-and-Trade Regulation are sold at quarterly auctions and reserve sales. The auctioned allowances are a mix of State-owned allowances and allowances consigned to auction by electric utilities. The Legislature and Governor will approve the expenditure of the State's portion of these auction proceeds (which does not include the proceeds from allowances consigned to auction by the utilities) to invest in projects that support the goals of AB 32. Strategic investment of proceeds will further AB 32 implementation, including support of long-term, transformative efforts to improve public and environmental health and develop a clean energy economy.

In 2012, the Legislature passed and Governor Brown signed into law three bills—AB 1532 (Pérez, Chapter 807), SB 535 (De León, Chapter 830), and SB 1018 (Budget and Fiscal Review Committee, Chapter 39)—that established the Greenhouse Gas Reduction Fund (GGRF) to receive the State's portion of the auction proceeds and provided the framework for how those auction proceeds will be allocated. This legislation established the broad categories of GHG emission-reducing projects that may be funded, including investments in:

- Clean and efficient energy;
- Low-carbon transportation;
- Natural resource conservation and management and solid waste diversion; and,
- Sustainable infrastructure and strategic planning.

In addition to reducing GHG emissions in California, the implementing legislation established the following goals for this funding, where applicable and feasible:

- Maximize economic, environmental, and public health benefits;
- Create jobs;
- Complement efforts to improve air quality;
- Invest in projects that benefit disadvantaged communities;
- Provide opportunities for businesses, public agencies, nonprofits, and others to participate in efforts to reduce GHG emissions; and,
- Lessen the impacts and effects of climate change.

At least 25 percent of program funding is to be directed to projects that provide benefits to disadvantaged communities and at least ten percent of program funding must be

spent on projects located in disadvantaged communities. CalEPA is required to identify these communities for investment purposes.⁶

AB 1532 established a two-step process for allocating proceeds from the sale of State-owned allowances. The two-step process involves developing an investment plan and then appropriating the funds through the annual Budget Act, in accordance with that investment plan.

1. *Three-Year Investment Plan:* Finance, in consultation with ARB and other State agencies, developed and submitted to the Legislature the first three-year Cap-and-Trade Auction Proceeds Investment Plan (Investment Plan)⁷ identifying priority programs for investment of proceeds to support achievement of the State's GHG emission reduction goals.
2. *Annual Budget Appropriations:* Funding is appropriated by the Legislature and Governor through the annual Budget Act, consistent with the Investment Plan.

For allowances allocated to utilities, the Cap-and-Trade Regulation requires that utilities use their allocation exclusively for the benefit of their retail ratepayers (e.g., residential or commercial ratepayers) as consistent with the goals of AB 32. This requirement applies to both allocated allowances, and to any proceeds generated from the sale or auctioning of any allocated allowances. The CPUC decision D1212033 (passed pursuant to SB 1018) further directed the investor-owned utilities (IOUs) to return the proceeds generated from the sale of their allocated allowances to benefit ratepayers. The decision directed IOU revenues to be distributed in the following order: (1) compensation to emissions-intensive and trade-exposed entities, (2) adjustments in the electricity rates of small businesses, (3) volumetrically calculated rate adjustments on residential electricity rates, and (4) a semi-annual, on-bill credit of all revenues to residential customers on an equal per residential account basis after accounting for the revenues allocated pursuant to the prior three uses.

2. Recent Developments – January through June 2014

ARB and CalEPA activities in the first half of 2014 included:

- The Governor's January 2014 Proposed State Budget for FY 2014-15 included a proposed appropriation of Cap-and-Trade auction proceeds to several State agencies.

⁶ CalEPA and the Office of Environmental Health Hazard Assessment identify disadvantaged communities based on a tool called the California Communities Environmental Health Screening Tool (CalEnviroScreen). For more information on CalEnviroScreen: <http://oehha.ca.gov/ej/ces042313.html>

⁷ The first three year Cap-and-Trade Auction Proceeds Investment Plan can be found here: <http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm>

- On April 21, 2014, the Office of Environmental Health Hazard Assessment, on behalf of CalEPA, announced the availability of the draft Communities Environmental Health Screening Tool: CalEnviroScreen Version 2.0. CalEnviroScreen is the screening methodology CalEPA will use to identify disadvantaged communities for purposes of GGRF investments. CalEnviroScreen Version 2.0 is expected to be finalized in Summer 2014.
- On April 30, 2014, the Administration provided preliminary information to respond to the Legislature's request for the likely range of GHG emission reductions expected to be achieved by the projects proposed for funding with FY 2014-15 monies and the timeframe when these reductions are likely to be achieved. This included a summary table that presented the best estimates on the potential benefits in each investment area. In response, the Legislature and the Legislative Analyst's Office requested the references or research available to support the GHG emission estimates and the key underlying assumptions.
- ARB coordinated with administering agencies to update the table and develop the supporting documentation for the emission reductions estimates. ARB provided this document to the Legislature and the Legislative Analyst's Office on May 20, 2014.
- Utility Auction Proceeds: For the auctions held through the end of FY 2013-14, the IOUs have received a total of \$1,103,617,565 from the sale of allocated allowances and publicly-owned utilities have received a total of \$101,208,104 from the sale of allocated allowances.
- Consistent with the CPUC's decision and SB 1018, investor-owned utilities began providing a credit to ratepayers on utility bills. This credit will appear on utility bills twice per year.
- On March 1, 2014, Governor Brown signed Chapter 2, Statutes of 2014, which amended the Budget Act of 2013 to provide \$70 million in GGRF monies to projects that improve water use efficiency and reduce GHG emissions associated with water conveyance.
- On June 20, 2014, Governor Brown signed the FY 2014-15 Budget Act (Budget). The Budget appropriated approximately \$832 million in GGRF monies to 11 agencies for projects that reduce GHG emissions and provide benefits to the State's most disadvantaged communities. Three of these agencies, SGC, Caltrans, and the High Speed Rail Authority (HSR), received continuous appropriations. See Table 1-2.

Table 1-2: Appropriations for Greenhouse Gas Reduction Fund Programs (as of July 1, 2014)		
Program and State Agency	FY2013-14	FY2014-15
	Millions	Millions
High Speed Rail (HSRA)		\$250
Transit and Intercity Rail Capital Program (Caltrans/California Transportation Commission)		\$25
Low Carbon Transit Operations Program (Caltrans to local agencies)		\$25
Affordable Housing and Sustainable Communities (SGC and member agencies)		\$130
Low Carbon Transportation (ARB)	\$30	\$200
Weatherization Upgrades/Renewable Energy (Department of Community Services and Development)		\$75
Energy Efficiency in Public Buildings (CEC)		\$20
Agricultural Energy and Operational Efficiency (California Department of Food and Agriculture)	\$10	\$15
Water-Energy Efficiency (Department of Water Resources)	\$30	
Wetlands and Watershed Restoration (Department of Fish and Wildlife)		\$25
Sustainable Forests (CAL FIRE)		\$42
Waste Diversion (CalRecycle)		\$25
Total Program Funding	\$70	\$832

- The Legislature approved two budget requests from ARB that provide staff resources to enhance the quantification, consistency and reporting of benefits for all projects. These new resources will: (a) develop and update calculation methodologies and support the administering agencies, and (b) develop and implement overarching program guidance for all GGRF investments (including meeting the disadvantaged community requirements) and provide a consolidated, online project reporting system for use by all agencies.

3. Upcoming Milestones – July through December 2014

- The next two Cap-and-Trade auctions for FY 2014-15 are scheduled to take place on August 18, 2014 and November 19, 2014.
- In Summer 2014, the Secretary of CalEPA will propose the identification of disadvantaged communities per SB 535. CalEPA and ARB will hold workshops on

CalEPA’s proposed identification of disadvantaged communities and ARB’s preliminary guidance to State and local administering agencies to ensure investments maximize benefits to disadvantaged communities. CalEPA will then finalize its identification of disadvantaged communities, and ARB staff will release preliminary guidance for use in administering FY 2014-15 proceeds.

Greenhouse Gas Reduction Fund

GGRF was created via SB 1018 as a special fund in the State Treasury. ARB is responsible for the fiscal management of the Fund, with expenditures authorized by the Legislature and the Governor through legislation. Table 1-3 shows the proceeds deposited from the auctions (from the sale of State-owned allowances).

Table 1-3: Proceeds from the Sale of State-Owned Allowances Deposited in the Greenhouse Gas Reduction Fund (as of July 1, 2014)	
November 2012 Cap-and-Trade auction 1	\$55,760,000
February 2013 Cap-and-Trade auction 2	\$83,923,548
May 2013 Cap-and-Trade auction 3	\$117,580,484
August 2013 Cap-and-Trade auction 4	\$138,494,503
November 2013 Cap-and-Trade auction 5	\$136,799,446
February 2014 Cap-and-Trade auction 6	\$71,140,023
May 2014 Cap-and-Trade auction 7	\$130,706,470
State auction proceeds total	\$734,404,474

In 2014, \$500 million was transferred from the GGRF to the General Fund as a loan, as part of the FY 2013-14 State Budget. The loan will be repaid with interest.

E. Sustainable Freight Strategy

1. *Background*

The trucks, locomotives, ships, harbor craft, aircraft, cargo handling equipment, and transport refrigeration units that carry and move freight in California are significant sources of air pollution. Freight transport equipment and associated facilities like ports, railyards, airports, freeways, distribution centers, and border crossings contribute over ten percent (and growing) of the GHG emissions in the State, as well as a significant portion of the black carbon emissions that also contribute to climate change. The diesel engines that power these freight sources are responsible for about two-thirds of the diesel soot that increases the health risk in nearby communities, and nearly half of all nitrogen oxide emissions that form regional ozone and fine particles in California.

ARB has adopted a series of regulations to reduce the diesel pollution and health risk near freight facilities over the last decade. U.S. EPA and other federal agencies have promulgated national emission standards and supported international agreements for cleaner ships, ship fuels, and aircraft. The State's largest ports have developed their own plans to cut air pollution. The railroads have implemented voluntary emission reduction agreements to bring the cleanest locomotives to California. Businesses and government have made substantial investments in lower-emission technology and fuels. The combined impact is dramatic – a 40-70 and 70-80 percent reduction in diesel soot from California's highest risk railyards and largest ports, respectively, since 2005.

Despite this progress, California will need to transform the freight transport system to further reduce the localized health risk around freight facilities, meet State and federal air quality standards, and achieve the long-term climate goals. The cancer risk to residents living near major freight hubs will remain elevated without further action. In 2016, ARB will be submitting an Ozone State Implementation Plan (SIP)⁸ to U.S. EPA as required by the Clean Air Act in response to the recent tightening of the health-based air quality standard for ozone. ARB's 2012 *Vision for Clean Air: A Framework for Air Quality and Climate Planning* showed that meeting ozone health-based standards and climate goals will require similar transformative emission reduction strategies. The success of the SIP will depend on a successful transition of the current California freight system to one with zero or near-zero emissions over the long-term. In addition, the initial Scoping Plan included a measure for more efficient freight transport to cut GHG emissions.

In 2012, ARB formed the Sustainable Freight Section, which is responsible for coordinating the effort to develop a sustainable freight strategy for California. Outreach began with freight industry representatives; local, State and federal government agencies; and community and environmental advocates to discuss the need for transformation and to seek input on a collaborative process. The California Department of Transportation began complementary activities, with a focus on infrastructure, to support development of a Freight Mobility Plan and meet new federal directives for freight planning. The Southern California Association of Governments adopted a 2012 Regional Transportation Plan that reflects many of the objectives and near-term steps to support a zero/near-zero emission freight system. ARB is pursuing opportunities to coordinate or integrate these efforts.

2. Recent Developments – January through June 2014

A broad coalition of interests is needed to develop a California vision for a sustainable freight transport system, define the system changes (logistics, infrastructure,

⁸ Federal clean air laws require areas with unhealthy levels of criteria air pollutants (e.g., ozone and inhalable particulate matter) to develop State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain national ambient air quality standards (NAAQS). The 1990 Amendments to the federal Clean Air Act set deadlines for attainment based on the severity of an area's air pollution problem.

equipment) needed to implement the vision, secure support and public/private funding, and build/deploy the system. This approach offers the potential to meet the State's air quality, energy, and economic needs for a clean freight system that aligns with and supports a competitive logistics industry and the associated jobs.

ARB activities in the first half of 2014 include:

- On January 23, 2014, ARB staff presented to the Board a description of the activities underway as well as the elements of a sustainable freight strategy for Board and public comment.
- ARB staff participated in the development of the California Freight Mobility Plan through the California Freight Advisory Committee and the California Transportation Plan 2040 through the Policy and Technical Advisory Panel.
- ARB staff participated in two National Freight Advisory Committee meetings to share California and ARB perspectives regarding freight and air quality.
- ARB staff met with focus groups representing community health and environmental interests, air quality and transportation agencies, cargo owners, cargo carriers (shipping, rail, trucking, air freight), ports, technology developers, labor, economic/business leaders, government and others to seek input on concepts, strategies, needs and a vision for a sustainable freight system.
- On May 5, 2014, ARB conducted a public forum providing an opportunity for open, interactive discussions between ARB and attendees on opportunities and obstacles for system efficiencies, economics, funding, and jobs; technology assessments; and freight transportation planning.
- On June 26, 2014, the Board approved the AB 118 Air Quality Improvement Program Funding Plan and Low-Carbon Transportation GGRF Investments for FY 2014-15 which include funding for zero- and near-zero emission truck deployment and other advanced technology freight demonstrations.

3. *Upcoming Milestones – July through December 2014*

- Staff will continue the collaborative effort to develop a sustainable freight strategy.
- ARB staff will continue extensive engagement with all freight stakeholders including environmental justice groups.
- ARB staff will continue coordination with other transportation planning efforts and participate in public workshops on the draft California Freight Mobility Plan.

- In Fall 2014, ARB staff will release initial sustainable freight strategy concepts and seek public input through multiple workshops.
- In late 2014, ARB staff will release a discussion draft of the Sustainable Freight Strategy and seek public and Board input at the December 2014 meeting.

III. GREENHOUSE GAS EMISSIONS AND REDUCTIONS

ARB periodically updates its estimates of GHG emissions in California, which change as the science advances, growth forecasts are revised, and California makes progress in reducing emissions. Since the last AB 32 report to the Joint Legislative Budget Committee, ARB and international climate change organizations have agreed to begin using the scientifically updated global warming potential (GWP) values developed by the Intergovernmental Panel on Climate Change (IPCC), which includes updated GWP values for GHGs.⁹ ARB expresses the emissions of multiple GHGs in terms of CO₂e, which factors in how long the GHG remains in the atmosphere and how strongly it absorbs energy relative to carbon dioxide.

ARB adjusted the 2020 statewide GHG emissions limit based on the updated GWP values and the level of 1990 emissions. As a result, the 2020 emissions limit is now 431 MMT of CO₂e. ARB currently estimates that GHG emissions in 2020 would be 509 MMT of CO₂e in a “business as usual” scenario without the State’s actions to reduce GHGs.

⁹ The initial Scoping Plan relied on the IPCC’s 1996 Second Assessment Report to assign the GWPs of greenhouse gases. Recently, in accordance the United Nations Framework Convention on Climate Change, international climate agencies have agreed to begin using the GWP values in the IPCC’s Fourth Assessment Report that was released in 2007. These more recent GWP values incorporate the latest available science and are therefore regarded as more accurate than the prior values.

ARB maintains and updates the statewide GHG emission inventory to track California’s progress toward the 2020 statewide emissions limit. To determine if California is on track to achieve the AB 32 emission reduction goal, ARB takes the forecasted 2020 “business as usual” (BAU) emissions and subtracts the estimated reductions from adopted and anticipated measures in 2020 to determine if the 2020 limit is within reach (see Table 1-4). California’s Cap-and-Trade Program provides a firm cap, ensuring that the 2020 emission limit is not exceeded.

To meet the target, the climate program must reduce 78 MMT of CO₂e emissions by 2020. California is on track to achieve this AB 32 goal. Table 1-4 shows the expected GHG reductions from sector-based measures.

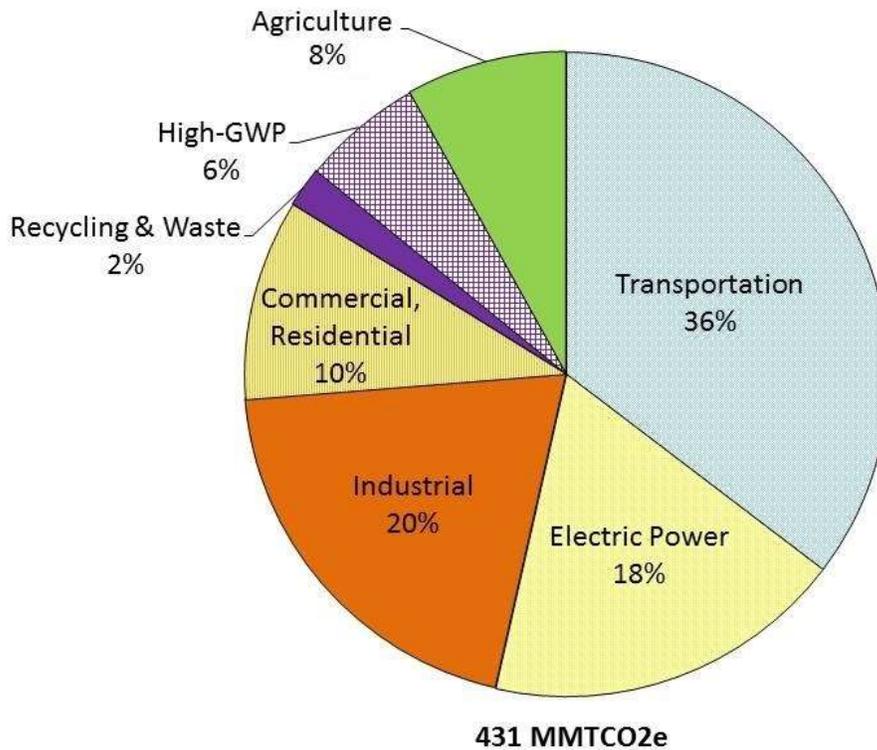
Table 1-4: Meeting the 2020 Emissions Target	
Category	2020 (MMTCO₂e)**
AB 32 Baseline 2020 Forecast Emissions (2020 BAU)	509
Expected Reductions from Sector-Based Measures	
Energy	25
Transportation	23
High-GWP	5
Waste	2
Cap-and-Trade Reductions	23*
2020 Limit	431

*Cap-and-Trade emission reductions depend on the emission forecast.

**Based on IPCC Fourth Assessment Report GWP values.

Figure 1 shows how the 2020 emissions are likely to be spread across the sectors after compliance with the AB 32 target. The Scoping Plan Update focuses on key areas with potential for further emission reductions after 2020. These include transportation, energy, waste, water, and agriculture.

Figure 1
2020 Greenhouse Gas Emissions By Sector
With Adopted Regulations and Programs



ARB regulations and programs providing the greatest GHG reductions align with where ARB is putting its resources (funded primarily by the AB 32 Cost of Implementation Fee). The Cap-and-Trade and LCFS Programs are the two single largest contributors to meeting the 2020 emission reduction target. These two programs continue to account for over half of ARB's staff resources for climate-related activities.

SECTION 2:

**SEMI-ANNUAL UPDATE ON
WESTERN CLIMATE INITIATIVE, INC. ACTIVITIES
(January – June 2014)**

This report is required by the provisions of Senate Bill 1018 (Chapter 39, Statutes of 2012)¹⁰, which requires advance notice of any Air Resources Board (ARB) payments to the Western Climate Initiative, Incorporated (WCI, Inc.) over \$150,000 and semi-annual updates on the actions proposed by Western Climate Initiative, Inc. (WCI, Inc.) that affect California government or entities. This update focuses on recent WCI, Inc. actions, as ARB provides separate notices to the Joint Legislative Budget Committee prior to any transfer or expenditure to WCI, Inc. over \$150,000.

I. BACKGROUND

WCI, Inc. is a non-profit corporation that focuses solely on providing administrative support for jurisdictions' cap-and-trade programs, and is separate from the Western Climate Initiative (WCI). WCI, Inc. was formed in 2011 to coordinate administrative services to cap-and-trade programs developed and implemented by states and provinces. The Board of Directors for WCI, Inc. includes officials from the provinces of Québec and British Columbia, and the State of California. The administrative support provided by WCI, Inc. can be expanded to support jurisdictions that join in the future.

The coordinated administrative support from WCI, Inc. benefits California and the other participating programs.

- Coordinated support ensures that all the linked programs use the same highly secure computer program infrastructure, including the allowance tracking system and auction platform.
- Coordinated support ensures that analyses performed to support market monitoring in each jurisdiction are conducted consistently and effectively for the entire compliance instrument market across all the linked programs.

¹⁰ Government Code, Section 12894(d) "The Chairperson of the State Air Resources Board and the Secretary for Environmental Protection, as the California voting representatives on the Western Climate Initiative, Incorporated, shall report every six months to the Joint Legislative Budget Committee on any actions proposed by the Western Climate Initiative, Incorporated, that affect California state government or entities located within the state."

- Coordinated support enables the linked programs to share the cost of developing and maintaining program infrastructure, thereby reducing the costs for each jurisdiction.

WCI, Inc.'s approach to coordinating administrative support is to have each jurisdiction specify its administrative requirements, and then for WCI, Inc. to provide support that meets these specifications. Currently, British Columbia, California, and Québec participate in WCI, Inc. California and Québec are currently implementing cap-and-trade programs to reduce GHG emissions.

Most of the administrative support provided by WCI, Inc. is highly technical or specialized and has been developed through the use of contractors. WCI, Inc. is undertaking the following activities:

- Coordinating the development and administration of the Cap-and-Trade Compliance Instrument Tracking System Service (CITSS);
- Coordinating the development and administration of an allowance auction platform, used by California and Québec to auction emission allowances under their cap-and-trade programs and to conduct reserve sales;
- Coordinating the performance of analyses to support market monitoring performed by each jurisdiction of allowance auctions and allowance and offset certificate trading; and
- Coordinating auction and reserve sale financial administration, which includes evaluation of bid guarantees and settlement (transferring the payments from the auction and reserve sale purchasers to the sellers).

Whereas WCI has focused on collaboration on emissions trading policies, WCI, Inc. is solely administrative in nature. All policymaking and regulatory authority for each jurisdiction's program is retained by each jurisdiction. According to the WCI, Inc. bylaws, its administrative activities must "...conform to the requirements of State and Provincial programs..." The requirements are defined by the participating jurisdictions, such that WCI, Inc. must execute its administrative role in conformance with the requirements established by ARB and the other jurisdictions.

II. UPDATE

A. Introduction

This report describes the activities of WCI, Inc. from January 2014 through June 2014, and presents WCI, Inc.'s anticipated activities in the second half of 2014.

Highlights of recent activities include:

- An independent audit of WCI, Inc.'s 2013 financial statements was performed and presented to the WCI, Inc. Board. The auditor did not find any significant or relevant issues regarding WCI, Inc. oversight of the financial reporting process.
- Federal and State tax forms were completed and filed.
- The WCI, Inc. Board approved a funding agreement with ARB.

In the second half of 2014, WCI, Inc. anticipates continuing to coordinate administrative support to the California and Québec programs.

B. Corporate Governance

WCI, Inc. is governed by a Board of Directors according to its bylaws and the policies adopted by the WCI, Inc. Board. The bylaws and policies are posted on the WCI, Inc. website: <http://www.wci-inc.org/documents.php>. Table 2-1 lists the policies that have been adopted by the WCI, Inc. Board.

Table 2-1: WCI, Inc. Corporate Policies (as of December 31, 2013)
Records Availability Policy (Adopted December 9, 2013)
Open Meeting Policy (Adopted May 8, 2013)
Accounting Policies and Procedures (Adopted May 8, 2013)
Employee Handbook (Adopted April 15, 2013)
Funds Management Policy (Adopted October 30, 2012)
Procurement Policy (Adopted January 12, 2012)
Audit Committee Charter (Adopted November 3, 2011)
Ethical Guidelines and Conflict of Interest Policy (Adopted November 3, 2011, Revised December 9, 2013)
Retention of Business Records Policy (Adopted November 3, 2011)
Whistleblower Protection Policy (Adopted November 3, 2011)

No new policies were adopted by the WCI, Inc. Board during the first half of 2014.

Directors from California remain unchanged since the January 2014 report:

- Secretary for Environmental Protection, Matthew Rodriguez
- Chairman of the Air Resources Board, Mary Nichols
- Assembly Member Nancy Skinner, appointed by the Speaker of the Assembly (non-voting director)
- Mr. Kip Lipper, appointed by the Senate Rules Committee (non-voting director).

The WCI, Inc. Board officers were selected at the December 9, 2013 meeting of the Board. The officers remain unchanged since the last report:

- Chair, Matthew Rodriguez (California)
- Vice Chair, Geneviève Moisan, (Québec)
- Treasurer, Mary Nichols (California)
- Secretary, Tim Lesiuk (British Columbia)

The WCI, Inc. Board met in a publicly noticed open meeting on May 2, 2014. The meeting announcement, agenda, and materials were posted on the WCI, Inc. website. The May meeting included an executive (closed) session to consider banking and personnel matters. The executive session was recessed and reconvened on May 14, 2014.

On June 27, 2014, WCI, Inc. released a public notice and agenda for a Board meeting scheduled for July 9, 2014. The July meeting will include consideration of the funding agreement with Québec and a review of the WCI, Inc. budget.

The agendas and minutes of the WCI, Inc. Board meetings are posted at: <http://www.wci-inc.org/documents.php>.

C. Staffing and Operations

No staff changes have been made since the last report to the JLBC. WCI, Inc. staffing includes the following.

- Executive Director: Patrick Cummins serves as the Executive Director.
- Project Managers: WCI, Inc. has two part-time project managers to oversee contracts related to the CITSS, the auction platform, financial administration, and market analysis.
- Business Services: WCI, Inc. uses a contractor to support day-to-day business operations and has engaged the services of an accountant.
- Insurance and Banking: WCI, Inc. has retained insurance coverage and banking services.
- Office: WCI, Inc. has an office in Sacramento.
- WCI, Inc. has contracted for the services of a corporate counsel.

In May 2014, the Executive Director indicated his interest in transitioning out of his role. The transition began on June 1, 2014 when the Director shifted to one-half time, and is expected to be completed by the end of December 2014. During this period, the WCI, Inc. Board will recruit a new Executive Director, and work with the current Executive Director to ensure an efficient transition.

As previously reported, WCI, Inc. is planning to hire an Assistant Director located in Canada to support the Executive Director with all operational and business

requirements. Given the transition of the Executive Director, the hiring of the Assistant Director may be delayed until the new Executive Director is in place.

The Audit Committee contracted with an independent auditor (Crowe Horwath LLP), according to the requirements in the Audit Committee Charter, to conduct the audit and review the annual tax filings. On April 25, 2014, the independent auditor submitted its audit report to the Audit Committee stating that it did not find any significant or relevant issues regarding WCI, Inc.'s "oversight of the financial reporting process." The audit was subsequently presented by the auditor to the WCI, Inc. Board at the May 2, 2014 Board meeting. Also on May 2, 2014, the federal and State tax filings were presented to the Board. The tax filings, audited financial statements, and audit report prepared in 2014 are available on the WCI, Inc. website: <http://www.wci-inc.org/documents.php>.

Before WCI, Inc. was created, technical and contracted support for the Western Climate Initiative (WCI), an informal organization of states and provinces, was provided through the Western Governors' Association (WGA). When the arrangement with WGA ended, approximately \$192,000 was being held by the WGA for purposes of WCI. States and provinces contributed this money to WGA to further the objectives of WCI, including evaluating carbon pricing. WGA transferred these funds to WCI, Inc., which is solely a technical organization supporting the California and Québec cap-and-trade programs. The auditors recommended that it was necessary for the Board to make it explicit that WCI, Inc. must acknowledge that these funds are for use for States and provinces in carbon pricing programs, as was originally intended. As such, at the May 2, 2014 Board meeting, the Board designated the status of funds that had been received by WCI, Inc., from the WGA in 2013, consistent with the auditor's recommendation.

D. Delivery Capability

WCI, Inc. has entered into the following contracts to provide support to State and provincial programs. No changes to these contracts were made during the first half of 2014:

- Compliance Instrument Tracking System Service (CITSS) Development and Hosting: CITSS provides accounts for program participants to hold compliance instruments and to record transactions of compliance instruments with other account holders. Program participants access CITSS online. CITSS is supporting the programs in California and Québec.
- Auction Platform: In January 2013, WCI, Inc. contracted with Markit Group Limited for the continued development of the auction platform. The auction platform is used by program participants to apply for each auction or reserve sale and to enter their bid information. Program participants access the auction platform online. California and Québec use the platform to monitor the auctions and reserve sales, and to ensure that all auction and reserve sale requirements are met.

- Market Analysis: In January 2013, WCI, Inc. contracted with Monitoring Analytics, LLC for analyses in support of market monitoring. The contract supports multi-jurisdictional monitoring for California and Québec linked auctions and linked markets. This work builds upon the substantial efforts by California and Québec for market monitoring.
- Auction and Reserve Sale Financial Administration: In September 2013, WCI, Inc. contracted with Deutsche Bank Trust Company Americas for auction and reserve sale financial administration, which includes evaluation of bid guarantees and settlement (transferring the payments from the auction and reserve sale purchasers to the sellers).
- CITSS Help Desk Support: In October 2012, WCI, Inc. contracted with ICF Incorporated, LLC for help desk services to respond to inquiries from CITSS users.

WCI, Inc. contracts for administrative services in support of jurisdiction programs are posted to the WCI, Inc. website: <http://www.wci-inc.org/documents.php>.

E. Budget and Funding

As reported previously, the WCI, Inc. Board adopted the WCI, Inc. budget for calendar years 2014 and 2015 at its December 2013 WCI, Inc. Board meeting. The budget is scheduled to be reviewed at the July 9, 2014 meeting of the Board in light of the State budget enacted in California and the Provincial budget approved in Québec.

The WCI, Inc. budgets are available on the WCI, Inc. website: <http://www.wci-inc.org/documents.php>.

WCI, Inc. entered into a funding agreement with California that corresponds to the approved budget for calendar years 2014 and 2015. The funding agreement with Québec scheduled to be considered at the July 9, 2014 Board meeting also corresponds to the approved budget. The share of funding provided by each in 2014 and 2015 was determined in three parts:

- The cost of running WCI, Inc. (personnel and operating costs) is divided equally between ARB and Québec.
- The cost of the cap-and-trade service contracts is divided based on the total emissions covered by each jurisdiction's trading program, 85 percent to ARB and 15 percent to Québec.
- The cost of jurisdiction-specific administrative support is assigned fully to each jurisdiction. This support focuses primarily on the execution of reserve sales that are conducted individually for each of the Québec and California programs using the auction platform and financial administrative services.

Based on this approach, ARB funding for 2014 and 2015 is \$4 million, and as such, ARB developed a funding agreement for this amount. At its May 2, 2014 meeting, the WCI, Inc. Board of Directors approved the funding agreement with ARB. The agreement was subsequently approved by ARB and executed by both ARB and WCI, Inc. The fully executed funding agreement is available on the WCI, Inc. website: <http://www.wci-inc.org/docs/13-407%20Final%20STD%20%20213.pdf>.

The Québec funding for 2014 and 2015 is \$1,937,024 (US dollars). At its July 9, 2014 meeting, the WCI, Inc. Board of Directors will consider for approval the funding agreement with Québec. Once approved, the fully executed funding agreement will be available on the WCI, Inc. website.

F. Planned Payments to WCI, Inc.

For calendar years 2014 and 2015, ARB's share of the WCI, Inc. budget is \$4 million. The funding agreement with WCI, Inc. specifies that ARB will make quarterly payments to WCI, Inc. The planned payments are presented in Table 2-2.

Table 2-2: Planned Payments from ARB to WCI, Inc. for Calendar Years 2014 and 2015		
Payment	Payment Date	Amount
2014 Q1 Payment	Invoiced May 14, 2014	\$500,000
2014 Q2 Payment	To be invoiced: July 1, 2014	\$500,000
2014 Q3 Payment	To be invoiced: October 1, 2014	\$500,000
2014 Q4 Payment	To be invoiced: January 1, 2015	\$500,000
2015 Q1 Payment	To be invoiced: April 1, 2015	\$500,000
2015 Q2 Payment	To be invoiced: July 1, 2015	\$500,000
2015 Q3 Payment	To be invoiced: October 1, 2015	\$500,000
2015 Q4 Payment	To be invoiced: January 1, 2016	\$500,000
Total		\$4,000,000

The payments from ARB to WCI, Inc. under the funding agreement for calendar years 2012 and 2013 were completed in April 2014. Table 2-3 lists all the payments made from ARB to WCI, Inc. for operations in calendar years 2012 and 2013.

Table 2-3: Past Payments from ARB to WCI, Inc. for Calendar Years 2012 and 2013		
Payment	Payment Date	Amount
2012 Q1 Payment	7/1/2012	\$800,000
2012 Q2 Payment	8/30/2012	\$268,346
2012 Q3 Payment	1/17/2013	\$268,346
2012 Q4 Payment	2/6/2013	\$268,346
2013 Q1 Payment	5/28/2013	\$1,000,000
2013 Q2 Payment	8/30/2013	\$377,737
2013 Q3 Payment	12/6/2013	\$377,737
2013 Q4 Payment	4/18/2014	\$377,739
Total		\$3,738,251