

**2021 Annual Report
to the Joint Legislative Budget Committee
on Assembly Bill 32
(Nuñez and Pavley, Chapter 488, Statutes of 2006)
The California Global Warming
Solutions Act of 2006**

*Fulfills the Requirements of:
Supplemental Report of the 2012 Budget Act (Item 3900-001-0001 California Air
Resources Board) and
Senate Bill 1018 (Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012)*



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INTRODUCTION

[Assembly Bill \(AB\) 32](#) (Nuñez and Pavley, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006, designates the California Air Resources Board (CARB or Board) as the State agency charged with monitoring and regulating sources of greenhouse gas (GHG) emissions. AB 32 requires California to reduce GHG emissions to 1990 levels by 2020. The law tasks CARB 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 maintain and continue GHG reductions beyond 2020. In 2016, [Senate Bill \(SB\) 32](#) (Pavley, Chapter 249, Statutes of 2016) codified a 2030 GHG reductions target. SB 32 supports CARB's commitment to achieve the emissions goal for 2050. [AB 398](#) (Garcia, E., Chapter 135, Statutes of 2017) provided additional direction to CARB on the role and design of the Cap-and-Trade Program in achieving the SB 32 target and was passed alongside [AB 617](#) (Garcia, C., Chapter 136, Statutes of 2017) to focus on reducing exposure in communities most impacted by air pollution.

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

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

[SB 1018](#) (Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012) also requires CARB and the Secretary for Environmental Protection to submit the following reports to the Joint Legislative Budget Committee on proposed actions and planned expenditures by the Western Climate Initiative, Incorporated (WCI, Inc.):

- (4) Semi-annual reports 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 CARB payments to WCI, Inc. over \$150,000.

This annual document contains all four items listed including updates for January 1, 2020 through December 31, 2020 and upcoming milestones for January 1, 2021 through December 31, 2021. This document covers CARB's implementation of AB 32 and, for the most part, does not include the activities and resources of other State agencies to implement AB 32. 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.

SECTION 1:

ANNUAL AB 32 PROGRAM UPDATES (January–December 2020 and January–December 2021)

This [report](#) is required by the Supplemental Report of the 2012–13 Budget, and it must highlight significant recent developments and identify upcoming milestones in CARB’s implementation of AB 32. The report includes updates on major regulatory measures and supporting programs, a discussion of GHG emissions reductions, and current funds in the Greenhouse Gas Reduction Fund (GGRF).

While this program update focuses on the high-profile regulations and supporting programs identified in the Supplemental Budget Report, it represents a subset of CARB’s activities and resources that address climate change. Additional activities include research, air monitoring, and preparing the emission 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-duty trucks and the trailers they pull, ships at berth, semi-conductor manufacturing, appliance recycling, and consumer products.

I. CARB GREENHOUSE GAS EMISSIONS REDUCTION MEASURES

This section focuses on the activities of three major CARB regulatory programs to reduce GHG emissions: the Cap-and-Trade Program, Low Carbon Fuel Standard, and Advanced Clean Cars, along with Light Duty Vehicle and Clean Transportation Equity Programs. Also discussed are the Landfill Methane Regulation mentioned in the supplemental budget language, emissions reductions from oil production and natural gas operations, electricity programs, and short-lived climate pollutants (SLCP).

A. Cap-and-Trade Regulation

1. Background

The [Cap-and-Trade Program](#) (Program) covers the major sources of GHG emissions in the State, including refineries and power plants, industrial facilities, imported electricity, and natural gas and transportation fuels. The Program covers approximately 80 percent of the State’s GHG emissions and imposes an emissions cap beginning in 2013 that declines annually to ensure the State meets its GHG emissions targets. The State distributes allowances, which are tradable permits equivalent to one metric ton of carbon dioxide equivalent, equal to the cap. In the early stage of the Program, most

allowances were distributed for free to facilities covered by the Program to provide a smooth transition into the Program, allowing those facilities to focus on investing in emissions reductions and cleaner technologies, and limiting any concerns about competitiveness and emissions leakage. Any remaining allowances not allocated for other uses are sold at quarterly auctions with the monies going to the GGRF. Approximately half of allowances are now made available at these quarterly auctions.

Under the Program, CARB-issued compliance offset credits can be used by covered entities to meet a limited portion of their compliance obligation. An offset credit represents a reduction of one metric ton of carbon dioxide equivalent from an activity following a Board-adopted protocol for sectors not covered by the Program. Reductions must be quantifiable, verifiable, enforceable, real, permanent, and additional, meaning beyond any regulation and beyond what would otherwise occur.

Covered sources under the cap need to turn in allowances and offset credits—collectively referred to as compliance instruments—equal to their emissions for each multi-year compliance period. The covered sources must annually report GHG emissions and have them verified by an accredited third party verifier. Sources that aggressively reduce their emissions may trade any surplus allowances to firms that find it more expensive to reduce their emissions.

The Program is [estimated to reduce GHG emissions](#) by about 23 million metric tons of carbon dioxide equivalent (MMTCO₂e) in 2020, about 30 percent of the total needed to achieve the AB 32 target for that year. From 2021 through 2030, the Regulation is estimated to deliver about 38 percent of the reductions needed to achieve the SB 32 target.

2. Recent Developments—January through December 2020

- CARB’s activities to support the Cap-and-Trade Program during this period included ongoing [quarterly joint allowance auctions with Québec](#), [issuance of compliance offset credits](#), [free allocation of allowances](#), and an annual compliance event.
- Through Quarter 3 of 2020, the auctions raised about \$1.11 billion from the sale of State-owned allowances. The sale of State-owned allowances at the 32 auctions held through August 18, 2020 raised about \$13.65 billion, which have been deposited into the GGRF. The California Climate Investments section of this report provides more information on the use of Cap-and-Trade Program auction proceeds.
- CARB has posted a [summary of vintage 2020 allowance allocation](#) to covered industrial facilities, electrical distribution utilities, natural gas suppliers, and other facilities covered by the Cap-and-Trade Program.
- CARB continued to coordinate Program implementation with its linkage partner, Québec. CARB continued to share its experiences on the development of California’s cost-effective portfolio of emission-reducing policies through bilateral discussions and multilateral platforms, including the International Carbon Action Partnership (ICAP), which CARB co-chaired during 2020.

Cap-and-Trade Litigation. There was activity in one existing court case involving CARB regarding the Cap-and-Trade Program and two new lawsuits were filed that relate to the Cap-and-Trade Program.

Sowinski v. California Air Resources Board, et al.:

The plaintiff in the federal *Sowinski v. California Air Resources Board, et al.* case alleges, among other things, that the Cap-and-Trade Program's auction platform infringes on a patent Dr. Sowinski obtained in 2003. A federal district court dismissed the suit with prejudice in 2016, which the Federal Circuit Court of Appeals (Federal Circuit) affirmed in 2017. Despite this final judgment, the plaintiff refiled essentially the same suit against CARB, which another federal District Court dismissed in 2018 and the Federal Circuit affirmed in 2020. The plaintiff filed a petition for rehearing on September 21, 2020, which the Federal Circuit is still considering.

United States v. California Air Resources Board, et al.:

On October 23, 2019, the United States of America filed a complaint against the State of California, CARB, and other parties (collectively, the Defendants) challenging the linkage of the California Cap-and-Trade Program and Québec Cap-and-Trade Program in federal District Court in Sacramento. The complaint asserts that the following violate the U.S. Constitution: an agreement between California and Québec regarding linkage; an agreement between California and WCI, Inc.; and certain provisions of state law that pertain to linkage. Specifically, the United States asserts that these agreements and provisions violate the Treaty Clause, Compact Clause, Foreign Affairs Doctrine, and Foreign Commerce Clause. The U.S. moved to dismiss its Foreign Commerce Clause claim, and the federal District Court granted CARB's motions for summary judgment on the other claims. On September 14, 2020, the U.S. filed a notice of appeal to the Ninth Circuit Court of Appeals regarding the District Court orders. Briefing in the Ninth Circuit case will occur in late 2020 and early 2021.

W.O. Stinson & Son LTD. v. Western Climate Initiative, Inc.:

On June 8, 2020, W.O. Stinson & Son LTD (Stinson) filed a statement of claim in Ontario Canada Superior Court against the State of California through CARB, WCI, Inc., and the Province of Québec (collectively, the Defendants). Stinson—a regulated entity under the Province of Ontario's now-defunct cap-and-trade system—asserts that, in June 2018, the Defendants “froze” the allowances in Stinson's Ontario account and prevented Stinson from selling such allowances, causing a financial loss. The briefing schedule has not been established in this case.

3. Upcoming Milestones—January through December 2021

The following is a brief summary of some of the upcoming milestones for the Cap-and-Trade Regulation during 2021.

- CARB will implement provisions of the Cap-and-Trade Regulation that were adopted by the Board pursuant to AB 398:
 - New price ceiling and price containment points, including a mechanism for offering additional metric tons at the price ceiling if reductions are needed for compliance;
 - New quantitative usage limits for the use of offset credits to satisfy compliance obligations (four percent for emissions from 2021–2025 and six percent for emissions from 2026–2030);
 - A new requirement that no more than one-half of the quantitative usage limit may be sourced from projects that do not provide “direct environmental benefits in the state”; and
 - Assistance factors used in calculating free [allowance allocation to all industrial covered entities](#) set at 100 percent.
- CARB will continue to allocate allowances to industrial facilities to minimize emissions leakage and to electrical distribution utilities and natural gas suppliers for the benefit of their ratepayers, consistent with the goals of AB 32.
- CARB will continue to issue offset credits.
- CARB will continue to hold quarterly joint auctions with Québec as scheduled in the Regulation (February, May, August, and November 2021).

B. Low Carbon Fuel Standard

1. Background

The [Low Carbon Fuel Standard](#) (LCFS) Program is designed to reduce the average carbon intensity (CI) of California’s transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits. The LCFS achieves a reduction in transportation-related emissions by setting annually declining CI benchmarks. Petroleum-based fuels (with CI values higher than the benchmark) generate deficits in the program while alternative fuels (with CI values lower than the benchmark) earn credits. Credits can also be generated by implementing innovative emissions reduction projects at oil fields and petroleum refineries. Providers of high-carbon fuel must retire credits equivalent to their deficits every year, which they can generate themselves or purchase from alternative fuel providers.

CARB approved the LCFS Regulation in 2009 with a goal of achieving a 10 percent reduction in the CI of transportation fuels used in California by 2020. In September 2018, CARB approved several amendments to the LCFS, which included strengthening and smoothing the declining annual targets to achieve at least a 20 percent CI reduction by 2030, which is in-line with meeting California’s 2030 GHG target enacted through SB 32. In addition, new crediting opportunities were included to promote on-road and off-road zero emission vehicles (ZEV), alternative jet fuel, carbon capture and sequestration, and other advanced technologies to achieve deep decarbonization in the transportation sector. The goal to achieve a 20 percent CI reduction by 2030 is on track, and to date over 16 billion gallons of petroleum fuel have been displaced by low-

carbon alternative fuels. The LCFS Program is estimated to reduce GHG emissions by 15 MMTCO_{2e} this year.

2. Recent Developments—January through December 2020

- Validation of LCFS fuel pathway applications by CARB-accredited third-party verifiers began this year. CARB published [a list of CARB-accredited verification bodies](#) and [individual verifiers](#) in January 2020 so that entities can obtain services of independent verifiers. CARB, as the accreditation body, maintains quality standards that all verification bodies and individual verifiers must meet.
- Staff released additional modifications to the 2019 LCFS amendments in February 2020. These amendments focused primarily on reinforcing the cost containment provisions of the LCFS and strengthening the equity component of the program. Those amendments became effective on July 1, 2020.
- CARB held [LCFS verifier accreditation training in October](#), with self-paced on-line recorded lectures and weekly live remote question-and-answer sessions. Interested government representatives from outside California continue to listen in to CARB's verifier training sessions to understand how they could utilize the information in their LCFS programs.

3. Upcoming Milestones—January through December 2021

Below is a brief summary of upcoming milestones for LCFS.

- CARB will conduct workshops to discuss future rulemaking topics.
- Annual verification of LCFS data reports will begin in April by CARB-accredited third-party verifiers. Verification statements are due to CARB by August 31.
- CARB will continue to provide LCFS verifier accreditation training.
- In line with Governor Newsom's [Executive Order N-79-20](#), CARB will continue to evaluate how to continue the State's current efforts to reduce the carbon intensity of fuels beyond 2030 with consideration of the full carbon life cycle.

C. Advanced Clean Cars

1. Background

The [Advanced Clean Cars \(ACC\) Program](#) establishes stringent GHG emissions standards, tighter criteria pollutant standards, and increased ZEV production requirements for passenger cars and light-duty trucks through the 2025 model year (MY). At this time, the ZEV and GHG emissions standards are not enforceable because of the [Safer Affordable Fuel-Efficient Vehicles \(SAFE\) Rule Part One: One National Program](#) action by the United States Environmental Protection Agency (U.S. EPA) and the National Highway Traffic Safety Administration. CARB is leading a broad coalition of states and local governments opposing this illegal move in a pending action in federal

court,¹ and expects to restore its authority for these programs. Notwithstanding this federal action, this suite of regulations would reduce GHG emissions by about 3.1 MMTCO_{2e} this year, which is approximately four percent of the total needed to achieve the AB 32 GHG emissions reduction target for that year. The ACC Program includes both ZEV and GHG light-duty vehicle regulations that support California's near- and long-term climate goals, as well as attainment of ambient air quality standards.

Zero-Emission Vehicle Regulation. The timing and stringency of the [ZEV Regulation](#) were adjusted numerous times during the last three decades since it was first adopted in 1990. Under the current rule, adopted by the Board in 2012, manufacturers are required to make a minimum percentage of advanced technology vehicles, including battery electric or fuel cell ZEVs. Manufacturers have an option of partially complying by offering plug-in hybrid electric vehicles (PHEV). Other flexible compliance options allow manufacturers to offset sales from one year to the next, and trade for sales by other manufacturers through a credit-trading system. If not for the federal actions revoking authority for this rule, the regulation would call for the equivalent of nearly 10 percent of new vehicle sales in California by 2025 to be ZEVs and PHEVs.

Light-Duty Vehicle GHG Standards. Since the 2009 MY, CARB has limited GHG emissions from light-duty vehicles per [AB 1493](#) (Pavley, Chapter 200, Statutes 2002). As an option since the 2012 MY, CARB accepted compliance with federal GHG emission standards, which all manufacturers elected to follow. In 2018, CARB amended its regulations to clarify that it would only accept compliance with the federal standards as they existed at the time, in response to the SAFE Vehicles proposal from the Trump administration to hold the federal standards at the 2020 MY level (along with preempting California's ZEV and GHG light-duty vehicle regulations).²

2. Recent Developments—January through December 2020

Below is a brief summary of some recent developments this year.

- CARB staff began implementing the [Electric Vehicle Supply Equipment Standards Regulation](#), making plug-in electric vehicle charging at public stations more accessible to consumers regardless of membership status to a charging network.
- CARB staff developed the [Clean Miles Standard](#) to reduce emissions from transportation network companies. This standard includes an electrification target measured in percent electric vehicle miles traveled (VMT), and a GHG emissions target measured in metric grams CO₂ per passenger miles travelled. The Board will consider the proposed regulation in early 2021.
- The federal government finalized the [SAFE Vehicles Rule](#), reducing the stringency of the federal GHG emissions and fuel economy standards for light-duty vehicles

¹ See *California v. Wheeler, et al.*, United States Court of Appeals, District of Columbia Circuit, Case No. 19-1239, consolidated under No. 19-1230 along with Nos. 19-1241, 19-1242, 19-1243, 19-1245, 19-1246, and 19-1249 (Challenge to SAFE Part 1).

² The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, 83 Fed. Reg. 42,986 (Aug. 24, 2018).

from improving annually by about 4.5 percent, to 1.5 percent.³ CARB (again leading a broad coalition of state and local governments) challenged the Final SAFE Rule in federal court. That litigation also remains pending.⁴ Despite this regression at the federal level, and besides its litigation, CARB took two significant steps to reduce GHG emissions from the light-duty vehicle sector. [CARB and five automakers entered agreements](#) to reduce GHG emissions and sell more ZEVs in the country than would otherwise be required by the federal SAFE Rules. CARB also began developing potential GHG emission standards for the 2026 MY and beyond, as part of its Advanced Clean Cars II (ACC II) proceeding. California's light-duty vehicle criteria pollutant emission standards, and other GHG emissions standards for vehicles and engines remain in place at this time.

- In 2020, CARB began developing the next round of the ZEV and GHG emissions standards for MY 2026 and beyond.
- CARB is developing ZEV standards continuing beyond 2025, and presented a [workshop on the potential regulations](#) on September 16, 2020, as part of its ACC II proceeding.
- For ACC II, CARB is considering prohibiting the use of high-global warming potential (GWP) hydrofluorocarbons (HFC) refrigerants in motor vehicle air conditioning systems (MVAC) systems of newly manufactured light-duty vehicles post-MY 2025. This measure would ensure a complete transition to low-GWP alternatives for this sector that has been fostered by credit incentives under CARB and U.S. EPA vehicle GHG emission standards.
- Governor Newsom issued Executive Order N-79-20, directing CARB to develop and propose regulations to reach the goal of all new passenger car and truck sales to be zero-emission by 2035, among other requirements.

CARB continues researching ways to reduce transportation emissions. Innovation by industry, available data, and the latest research continue to demonstrate that emissions can and must be reduced to protect public health, restore the environment, and stabilize the climate, and that doing so is cost-effective and will have many co-benefits.

3. Upcoming Milestones—January through December 2021

- CARB will consider proposed regulations to transition transportation network companies (e.g., Uber and Lyft) to zero-emission technologies.
- CARB staff plan to propose regulations for Board consideration for its Advanced Clean Cars II program to reduce GHG emissions from light-duty vehicles and increase sales of ZEVs for MYs beyond 2025.
- CARB staff will continue to develop the regulatory proposal for ACC II High-GWP HFC Prohibition rulemaking, including stakeholder engagement. Staff plans to bring the rulemaking to the Board for its consideration in late 2021.

³ 85 Fed. Reg. 24, 174 (Apr. 30, 2020).

⁴ See *California v. Wheeler, et al.*, *United States Court of Appeals*, District of Columbia Circuit, Case No. 20-1167, consolidated with Nos. 20-1145, 20-1168, 20-1169, 20-1173, 20-1174, 20-1176, and 20-1177 (Challenge to the SAFE Part 2 Rule).

D. Light-Duty Vehicle and Clean Transportation Equity Programs

1. Background

As a part of the [Low Carbon Transportation Program](#), CARB's Light-Duty Vehicle and Clean Transportation Equity Programs (Clean Vehicle Rebate Project, Enhanced Fleet Modernization Program/Clean Cars 4 All; financing assistance; and car sharing and mobility options) complement the ZEV regulation by increasing the number of ZEVs on California's roads and help the market reach sustainability. These programs also support the long-term transformation of California's fleet while meeting policy and statutory goals and requirements. These incentive programs provide direct benefits to targeted disadvantaged communities such as reduced GHG, criteria pollutant, and toxics emissions and are a result of multiple key legislative drivers.⁵ These programs also produce critical co-benefits such as improving public health from reduced pollution exposure, transportation cost-savings, increased household economic stability, increased connectivity to destinations, reduced traffic congestion, and increased environmental sustainability.

Clean Vehicle Rebate Project. California's current rebate program for ZEVs, the [Clean Vehicle Rebate Project](#) (CVRP) provides consumer rebates for zero-emission and plug-in hybrid passenger vehicles. In recent years, CARB has refined CVRP requirements to increase participation by low-income consumers including funding reserved specifically for low-income applicants.

Clean Transportation Equity Programs. CARB's Clean Transportation Equity Programs are designed to increase access to clean vehicles for lower-income households, disadvantaged communities, and low-income communities. Specifically, these projects include the [Enhanced Fleet Modernization Program/Clean Cars 4 All](#) car scrap and replace; financing assistance for low-income consumers to buy new or used ZEVs, plug-in hybrids, and hybrids; and car sharing, van pools, and mobility options in disadvantaged communities. In addition, the Access Clean California (formerly known as the [One-Stop-Shop Pilot Project](#)) aims to provide a streamlined application tool for low-income consumers to apply and qualify for CARB's [Clean Transportation Equity Projects](#). Access Clean California also focuses on supporting, coordinating, and streamlining community-based outreach targeted towards priority populations. More information on these programs can be accessed at the [Low Carbon Transportation Investments and Air Quality Improvement Program \(AQIP\) Meetings and Workshops](#) and [Low Carbon Transportation Investments and AQIP Funding Plans](#) webpages.

⁵ [SB 1275](#) (De León, Chapter 530, Statutes of 2014), [SB 535](#) (De León, Chapter 830, Statutes of 2012), [AB 1550](#) (Gomez, Chapter 369, Statutes of 2016), [SB 350](#) (De León, Chapter 547, Statutes of 2015), [SB 375](#) (Steinberg, Chapter 728, Statutes of 2008), and [SB 150](#) (Allen, Chapter 646, Statutes of 2017).

2. Recent Developments—January through December 2020

- In February, the [Statewide Financing Assistance for Lower-Income Consumers Pilot Project](#) relaunched after funds were exhausted in November 2018 due to higher-than-expected demand, resulting in a temporary program closure.
- The [Clean Mobility Voucher Pilot Program](#) launched, providing a streamlined process for launching electric vehicle car sharing, bike sharing, microtransit, and other clean mobility option projects in disadvantaged communities, affordable housing units, and tribes located in low-income communities. This program also provides technical assistance and capacity building throughout California to help communities understand how to develop and implement these types of mobility projects.
- The Sacramento Metropolitan Air Quality Management District and San Diego Air Pollution Control District launched their Clean Cars 4 All Programs, making Clean Cars 4 All available in five air districts including South Coast Air Quality Management District, San Joaquin Valley Air Pollution Control District, and Bay Area Air Quality Management District.
- In October, the One-Stop-Shop Pilot Project was renamed as a part of the project's communications strategy and is now known as Access Clean California. CARB staff worked on developing a streamlined application along with an accompanying web platform to host the application and serve as a comprehensive resource hub for outreach partners and community-based organizations.⁶
- CARB staff developed minor changes to CVRP with the intention of streamlining program implementation and aligning requirements for the CVRP increased rebate with other CARB transportation equity programs.⁷

3. Upcoming Milestones—January through December 2021

- The Clean Mobility Voucher Program anticipates launching projects in late 2021.

E. Landfill Methane

1. Background

The [Landfill Methane Regulation](#) is a discrete early action adopted by CARB pursuant to AB 32 that became effective in 2010. The regulation requires owners and operators of certain uncontrolled municipal solid waste landfills to install gas collection and control systems, and it requires existing and newly installed gas and control systems to operate in an optimal manner. These provisions reduce methane emissions from the State's

⁶ As of the writing of this report in October 2020, the streamlined application and accompanying web platform are expected to be released in November 2020.

⁷ As of the writing of this report in October 2020, the Board is expected to consider these changes in December 2020.

landfills. The regulation allows local air districts to enter voluntarily into memoranda of understanding (MOU) with CARB to implement and enforce the regulation and to assess fees to cover costs. The regulation is projected to reduce methane emissions by 1.8 MMTCO_{2e} this year.

U.S. EPA promulgated updates to the [Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills](#), 40 CFR, Part 60, Subpart Cf (Emission Guidelines), which became effective on October 28, 2016. CARB submitted its State Plan to U.S. EPA in 2017 to demonstrate that CARB's Landfill Methane Regulation is equivalent to, or more stringent than, the Emission Guidelines. Since then, U.S. EPA published rules delaying deadlines for state and federal plans. These rules, and related court orders directing methane controls on the original schedule, are currently being litigated in federal appellate courts. CARB expects the federal rules ultimately to go into force, but the timeline is uncertain until litigation concludes.

2. Recent Developments—January through December 2020

- Throughout 2020, CARB continued to partner with local air districts to ensure successful implementation and enforcement of the regulation, monitor compliance at landfills located in districts that have not signed an MOU, and conduct audits through inspections and document reviews.
- U.S. EPA [partially approved and partially disapproved](#) California's State Plan on January 9, 2020. The partial disapproval relates to minor provisions dealing primarily with well-head monitoring, reporting, and other provisions.
- CARB continues to work with U.S. EPA regarding the partial approval/disapproval of the submitted state plan for compliance with the Emission Guidelines.

3. Upcoming Milestones—January through December 2021

- Throughout 2021, CARB will continue to partner with local air districts to ensure successful implementation and enforcement of the Landfill Regulation, monitor compliance with landfills located in air districts that have not signed an MOU, and conduct audits through inspections and document reviews.
- CARB plans to work with U.S. EPA to achieve a full approval of the State Plan. CARB will continue to oppose any efforts aimed at reducing the stringency of the Emission Guidelines.

F. Crude Oil and Natural Gas Production, Processing, and Storage

1. Background

The initial Scoping Plan proposed the development of a measure that reduces venting⁸ and fugitive⁹ GHG (methane) emissions associated with oil and gas production,

⁸ Intentional release of gases into the atmosphere.

⁹ Unintentional release of gases into the atmosphere.

processing, and storage. In 2009, CARB undertook a survey of the industry to improve the emissions inventory for this sector. The survey results showed that about 1.3 MMTCO₂e come from vented and fugitive methane emissions in the oil and natural gas production, processing, and storage sector. These emissions come from various sources, such as storage tanks, compressor seals, and leaking components including valves, flanges, and connectors. The Board approved the [Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities](#) (Oil and Gas Methane Regulation) in 2017. The regulation is projected to reduce GHG emissions by 0.5 MMTCO₂e this year. More information is available on the [Oil and Natural Gas Production, Processing, and Storage program webpage](#).

2. Recent Developments—January through December 2020

- CARB received required updates on annual reported data.
- Each natural gas underground storage facility began the process to establish ambient methane concentration baselines for the facility.
- CARB distributed \$1 million among the air districts according to a distribution allotment approved by the California Air Pollution Control Officers Association (CAPCOA) to assist with regulation implementation.
- CARB staff worked with a contractor to add district user capabilities to the web-based reporting tool and continued to implement the detection equipment loan-out program to district staff.

3. Upcoming Milestones—January through December 2021

- Under the requirements of the Oil and Gas Methane Regulation, CARB will continue to receive updates to equipment reporting, new tank flash testing data, leak detection and repair inspection reports, reciprocating and centrifugal natural gas compressor flow rates, low-bleed pneumatic device flow rates, vented gas volumes from liquids unloading of natural gas wells, and well casing vent emission flow rates.
- Natural gas underground storage facilities will continue to monitor ambient methane concentrations.
- CARB will continue to distribute funds among the air districts according to a distribution allotment approved by CAPCOA to assist with regulation implementation.
- CARB staff will continue to implement the detection equipment loan-out program to air district staff. If COVID-19 conditions allow, CARB will arrange multiple training sessions throughout the State for air district staff on how to use leak detection equipment.

G. Electricity Programs

1. Background

Measures aimed at reducing emissions from the electricity sector provide important contributions towards reducing emissions of criteria pollutants, toxic air contaminants, and GHGs. Through its development of the State's Climate Change Scoping Plan,

development and implementation of regulations in targeted areas of the electricity sector, and partnerships with multiple State agencies, CARB plays a significant role in evaluating and proposing statewide policies and programs towards achievement of a clean electricity system. Some examples include reducing sulfur hexafluoride (SF₆) emissions from electricity transmission and distribution equipment, and establishing GHG planning targets for electricity providers.

SF₆ is a highly potent GHG that is tens of thousands of times more effective at trapping heat in the atmosphere than an equivalent amount of carbon dioxide. The most common use for SF₆ is as an electrical insulator in electricity transmission and distribution equipment. SF₆ can escape from gas-insulated equipment through seals, and can also be released during equipment installation and servicing. Due to its high GWP, CARB adopted the [Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear \(SF₆ Regulation\)](#) in 2010 as an AB 32 early action measure. In 2017, CARB staff began discussing with stakeholders potential regulatory amendments in response to California's aggressive climate goals and the increasing availability of technology that does not use SF₆.

Building on the State's climate leadership, [SB 350](#) (De León, Chapter 547, Statutes of 2015), established 2030 targets for the Renewables Portfolio Standard (RPS) Program. This program promotes renewable energy adoption in California by requiring that increasing percentages of electricity come from renewable energy. [SB 100](#) (De León, Chapter 312, Statutes of 2018) increased the RPS requirement from 50 percent to 60 percent by the year 2030. The California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) work collaboratively to implement RPS. CEC is responsible for determining any publicly owned utility's (POU) compliance violations and referring the violations to CARB. CARB is responsible for assessing financial penalties on POUs that fail to meet program requirements.

SB 100 also established a landmark California policy that 100 percent of retail sales of electricity to end-use customers come from renewable and zero-carbon resources by 2045. SB 100 requires CEC, CPUC, and CARB to prepare a [Joint Agency Report](#) to the Legislature (SB 100 Report) every four years, with the first one due in 2021. The SB 100 Report will evaluate options for achieving the 100 percent zero-carbon electricity policy, while ensuring that the path forward maintains safe, reliable power grid operation; prevents unreasonable impacts to customer rates; and incorporates environmental and equity considerations.

To ensure that RPS targets achieve GHG emissions reductions, large electricity providers are required to develop and submit Integrated Resource Plans (IRP) that outline the actions utilities will take to achieve California's long-term GHG emissions reduction goals, while considering cost effectiveness, reliability, impacts on disadvantaged communities, as well as statutory mandates such as the RPS. To facilitate this planning, SB 350 requires CARB, in coordination with CPUC and CEC, to set GHG emissions reduction planning targets for the electricity sector and for individual electricity providers. In 2018, CARB originally finalized 2030 GHG planning target

ranges for electricity providers' use in IRPs. CARB staff will periodically revise the 2030 GHG emissions targets, in coordination with each IRP planning cycle, to accommodate shifts in load-share between electricity providers.

2. Recent Developments—January through December 2020

- In October, CARB staff released updates to the 2030 GHG emissions targets for the electricity sector and electricity providers.
- As part of the SB 100 Report development process, which kicked off in September 2019, CEC, CPUC, and CARB held three statewide scoping workshops and three technical workshops to discuss interpretation of “zero-carbon resources,” present assumptions for modeling 2045 electricity sector outcomes, and present draft modeling results for various exploratory scenarios to inform the path to zero-carbon electricity by 2045. The agencies released a draft [SB 100 Report](#) in fall for public review.
- CARB proposed amendments to the SF₆ Regulation to further reduce GHG emissions, increase flexibility in complying with the standards, and address other minor issues. In September, CARB's Board approved amendments (with modifications) to the SF₆ Regulation. These amendments are slated to go into effect in 2021.

3. Upcoming Milestones—January through December 2021

- CEC, CPUC, and CARB will finalize the SB 100 Report in early 2021. Modeling results in this initial report are intended to provide a directional look at what a 2045 electricity portfolio could look like utilizing existing technologies. Further analytical work is needed to provide higher resolution insights, particularly around reliability, emerging technologies, and further addressing environmental and health impacts and equity.
- In line with Governor Newsom's Executive Order N-79-20, CARB will work together with CEC, CPUC, and other relevant State agencies to accelerate deployment of affordable fueling and charging options for zero-emission vehicles, in ways that serve all communities and in particular low-income and disadvantaged communities, consistent with State and federal law.

H. Short-Lived Climate Pollutants

1. Background

Short-lived climate pollutants are powerful climate forcers that have relatively short atmospheric lifetimes, and include methane, black carbon, and some fluorinated gases (including HFCs). CARB, in coordination with other State agencies, developed a [Short-Lived Climate Pollutant Reduction Strategy](#) (SLCP Strategy) pursuant to [SB 605](#) (Lara, Chapter 523, Statutes of 2014) and [SB 1383](#) (Lara, Chapter 395, Statutes of 2016). The SLCP Strategy identifies current State measures to reduce SLCP emissions, as

well as additional measures needed to meet the targets required by SB 1383. These targets include a 40 percent reduction in methane and HFC emissions and a 50 percent reduction in anthropogenic black carbon emissions, all relative to 2013 levels, by 2030. SB 1383 also provides specific direction for emissions reductions from dairy and livestock operations and from landfills (the latter via diversion of organic materials).

Dairy and Livestock Sector Methane Emissions. SB 1383 requires CARB, in consultation with the California Department of Food and Agriculture (CDFA), to develop regulations to reduce manure methane emissions from the dairy and livestock sector to 40 percent below 2013 levels by 2030 (2030 target). These regulations may take effect on or after January 1, 2024. Prior to adopting any regulations, SB 1383 requires CARB to work with stakeholders to identify technical, market, regulatory, and other barriers to methane emissions reduction projects, provide a forum for public engagement, conduct or consider relevant research, and consider developing emissions reductions protocols. CARB took steps to meet these requirements including convening a [Dairy and Livestock GHG Emissions Reduction Working Group](#) to make [recommendations](#) on overcoming barriers to methane emissions reductions projects and [research priorities](#), funding research on methane emissions reductions strategies from manure management practices and enteric fermentation, and completing an analysis of the progress the sector has made toward the 2030 target. CARB also administers the Cap-and-Trade Program and Low Carbon Fuel Standard Program, both of which facilitate methane emissions reductions from dairy and livestock anaerobic digestion projects.

Hydrofluorocarbons. HFCs are potent SLCPs with GWPs that are hundreds to thousands of times greater than CO₂. CARB has been acting to reduce HFC emissions since the early 2000s. CARB initiated an effort to reduce HFCs from mobile sources in its first light-duty vehicle GHG emissions standard, adopted by the Board in 2004. In 2009, the Board adopted several early acting measures including a regulation creating the [Refrigerant Management Program](#) (RMP). Global action to control HFC refrigerant use resulted in the 2016 Kigali Amendment to the Montreal Protocol. If adopted by the U.S., the agreement would require a phasedown to 15 percent of baseline by 2036 within the U.S. Although the U.S. was a signatory, it has not ratified the Kigali Amendment.¹⁰ In California, CARB staff analysis has determined a more rapid reduction in HFC use is required than specified in the Kigali Amendment in order to reach the SB 1383 target. For example, building electrification may potentially increase HFC emissions as electric refrigerant-containing appliances replace natural gas appliances. In 2018, key federal HFC prohibitions were vacated partially in court. California took action and backstopped key HFC prohibitions by adopting a new regulation and through new legislation, [SB 1013](#) (Lara, Chapter 375, Statutes of 2018).

Woodsmoke Reduction Program. During the winter, biomass burning from home heating is one of the largest sources of anthropogenic black carbon. The [Woodsmoke Reduction Program](#) provides incentives for households to replace uncertified wood stoves, wood inserts, or fireplaces with cleaner burning and more energy efficient home

¹⁰ This information is current as of the writing of this report in October 2020.

heating devices. Higher incentives, up to the full cost of device and installation, are available for low-income households and households located in disadvantaged and low-income communities. CARB operates the program in partnership with CAPCOA and local air districts who administer the funding on the ground.

2. Recent Developments—January through December 2020

- CARB, in consultation with CDFA, developed a draft of its *Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Reduction Target* for public comment.¹¹ The analysis includes an evaluation of the progress made in overcoming technical and market barriers to sector methane emissions reductions projects.
- CARB worked with stakeholders on a regulatory proposal that would place additional prohibitions on high-GWP HFCs to decrease the allowable GWP in new refrigeration and air-conditioning equipment. In addition, existing retail food facilities (e.g., supermarkets and grocery stores) would be required to comply with a company-wide standard to reduce emissions of high-GWP HFCs. The proposed regulation is scheduled to be heard by the Board in December 2020.
- CARB staff worked with the Car Care Council, designated by the manufacturers of small containers of automotive refrigerant, to implement another year of media strategies to develop the [Enhanced Education Program](#) in major regions of California. Starting 2020, the program added funds for investments in other GHG reduction projects, leading to emission reductions in areas that historically had been excluded.
- CARB expanded the RMP's online reporting tool, called the Refrigerant Registration and Reporting System. These updates added multiple tools to assist users with their reporting, helps track compliance, and will result in more concise and accurate data reported to CARB.
- CARB staff designed and launched the [Fluorinated Gas Reduction Incentive Program](#) (FRIP) to promote the adoption of low-GWP refrigerant technologies, particularly in low-income and disadvantaged communities using funds allocated by the legislature.
- CARB is working closely with CEC to incorporate HFC emissions in baseline building emissions for the [AB 3232](#) (Friedman, Chapter 373, Statutes of 2018) assessment report, bringing HFCs to the forefront of building decarbonization discussions.
- CARB also coordinated with CEC to incorporate HFCs in the 2022 California Building Code (Part 6 Energy Code). This will enable builders and contractors to receive credit for reducing emissions through the installation of low-GWP appliances in lieu of energy efficiency measures.
- CARB expended all FY 2016–17 Woodsmoke Reduction Program funds. Working with 24 air districts participating in the program, CARB allocated \$5 million in

¹¹ As of the writing of this report in October 2020, this analysis is expected to be released before the end of 2020.

incentives to approximately 1,500 households for replacing uncertified wood burning devices with cleaner burning and more energy efficient home heating alternatives.

- CARB allocated \$3 million in FY 2018–19 funding for the Woodsmoke Reduction Program to 27 air districts.

3. Upcoming Milestones—January through December 2021

- CARB will publish a final *Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Reduction Target*.
- CARB will finalize updates to the HFC regulation.
- CARB will evaluate and consider development of additional HFC mitigation measures needed to meet the legislatively mandated targets, which may include a ban on sales of virgin high-GWP refrigerants in California and GWP limits on heat pump water heaters and other heat pump technologies.
- CARB will continue discussions with air districts to coordinate enforcement cooperation on RMP and on CARB’s other HFC regulations. CARB plans to amend RMP, as the program requires updates to better guarantee emission reductions as well as to clarify parts of the initial rule.
- CARB staff will continue to work with the Car Care Council, designated by the manufacturers of small containers of automotive refrigerant to evaluate the effectiveness of the Enhanced Education Program, and modify media strategies for improved can return rates, as well as other GHG emissions reduction projects.
- CARB will begin awarding grants under FRIP beginning in 2021.
- CARB will continue to work closely with CEC, CPUC, other state agencies and public utilities to increase wide-scale adoption of low-carbon cooling and water heating technologies that will become increasingly important for building decarbonization.
- Air districts will continue to implement the Woodsmoke Reduction Program on behalf of CARB.

II. CARB ACTIVITIES TO SUPPORT AB 32

This section focuses on major AB 32 support activities identified in the supplemental budget language, including updates to the AB 32 Scoping Plan, coordination with entities outside California, implementation of Sustainable Communities Plans, and the use of Cap-and-Trade Auction Proceeds. Also included are developments on minimizing community health impacts from freight, which will further provide significant benefits for climate, regional air quality, and localized health risk reduction.

A. Scoping Plan

1. Background

AB 32 requires CARB to develop a [Scoping Plan](#) to outline the State’s strategy for reducing GHGs and to update it every five years. The initial [2008 Scoping Plan](#) presented the first economy-wide approach to reducing emissions, and highlighted the

value of combining both carbon pricing with other complementary command-and-control programs to achieve the most cost-effective emission reductions. The [2013 Scoping Plan Update](#) built upon the initial Scoping Plan with new strategies and recommendations, including the need to address SLCPs and set a mid-term target to put California on a trajectory towards its long-term 2050 climate goals.

2017 Scoping Plan to Meet the 2030 Target. In December 2017, the Board adopted the [2017 Scoping Plan Update](#), which described an actionable, cost-effective, and technologically feasible path for achieving a 40 percent reduction in GHG emissions by 2030 as codified in SB 32. Legislation approved during Scoping Plan development, AB 398, provided direction on the role of a post-2020 Cap-and-Trade Program as part of the overall strategy. The 2017 Scoping Plan Update is a comprehensive document that subsumes and builds on major air quality and climate plans and measures to create a balanced portfolio of actions to achieve the 2030 target. See the sections in this report on the Cap-and-Trade Program, LCFS, ACC, Crude Oil and Natural Gas, Electricity Programs, Short-Lived Climate Pollutants, Sustainable Communities Strategies, California Climate Investments (Cap-and-Trade Auction Proceeds), and Sustainable Freight, for current activities related to each of these programs that are key elements of the Scoping Plan.

Natural and Working Lands. California's [natural and working lands](#), including our forests, rangelands, urban green spaces, wetlands, and farms, are home to the most diverse sources of food, fiber, and renewable energy in the country. They underpin the State's water supply and support clean air, wildlife habitat, and local and regional economies. With their potential to sequester carbon, reduce GHG emissions, and increase the capacity for California to withstand inevitable climate impacts, California's lands are a critical component of California's integrated climate change strategy and achieving carbon neutrality. However, it is increasingly clear that California's lands are deteriorating and that the critical ecosystem services they provide, including their ability to sequester carbon from the atmosphere, are at risk. CARB's [California Natural & Working Lands Inventory](#) shows that California's lands are already a net GHG source, losing more carbon than they are sequestering, with timber harvest and wildfire being the largest causes of carbon loss. To achieve the deep GHG emissions reductions needed to avoid the most catastrophic impacts of climate change, the State needs a concerted and ambitious effort to protect carbon stocks, increase carbon sequestration, and reduce GHG emissions on our lands to change their current trajectory, moving California's lands toward a resilient carbon sink.

Carbon Neutrality. Board Resolution 17-46 directs CARB staff to continue to evaluate and explore opportunities to achieve significant cuts in GHG emissions from all sectors and sources. [Executive Order B-55-18](#) established a statewide goal for California to achieve carbon neutrality by 2045. To ultimately stabilize the climate, the carbon dioxide and other GHG emissions generated by sources such as vehicles, power plants, industrial processes, and natural working & working lands must be less than or equal to the amount of carbon dioxide that is removed from the atmosphere. In 2019, CARB initiated a series of [sector-specific public meetings](#) to gather information and to facilitate

dialogue on the potential role of each sector in achieving statewide carbon neutrality. The next Scoping Plan Update, planned for 2022, will lay out the path to achieving carbon neutrality by mid-century.

Mobile Sources. The majority of air quality and climate plans and measures identified in the 2017 Scoping Plan Update regarding transportation and vehicles are covered in other parts of this document. However, the 2017 Scoping Plan Update contains additional state-of-the-art commitments for low- and zero-emission vehicles that are discussed in this section, including the [Zero-Emission Airport Shuttles Regulation](#), which requires airport shuttles operating at regulated airports to be converted to ZEVs beginning in 2027, and by 2035, be 100 percent zero-emissions; the [Zero-Emission Powertrain Certification Regulation](#); the [Advanced Clean Trucks Regulation](#); and updates to CARB's [Mobile Source Strategy](#).

2. Recent Developments—January through December 2020

The following describes developments related to the 2017 Climate Change Scoping Plan Update that are not highlighted elsewhere in this report.

Natural and Working Lands.

- CARB staff continued to coordinate with CalEPA, the California Natural Resources Agency, CDFA, the Strategic Growth Council (SGC), and Governor's Office of Planning and Research on approaches to integrate California's lands into a framework for carbon neutrality and the next Scoping Plan Update consistent with Governor Newsom's [Executive Order N-82-20](#).
- CARB continued to be engaged at the local, state, and national levels participating in workshops, symposia, and critical public processes involving natural and working lands such as the State's Forest Management Task Force and the [U.S. Climate Alliance](#).

Carbon Neutrality, and Decarbonization Updates.

- Pursuant to [AB 74](#) (Ting, Chapter 23, Statutes of 2019), CalEPA commissioned two [carbon neutrality studies](#) on reducing transportation fossil fuel demand and emissions, and managing the decline in transportation fossil fuel supply. Both reports are expected to be published in early 2021.
 - The Institute of Transportation Studies at the University of California (UC) Davis identified strategies to reduce significantly transportation-related fossil fuel demand and emissions, including transitioning to ZEVs, accelerating the use of alternative fuel sources, and reducing VMT.
 - UC Santa Barbara identified strategies to manage strategically and responsibly the decline of transportation-related fossil fuel supply.
- The carbon neutrality workshop series continued with a webinar in February on approaches for the industrial sector and a workshop in July discussing low-carbon fuels and infrastructure requirements. CARB's role in these workshops has

generally been to bring together experts to facilitate public discussions about economic, technological and social considerations for each sector.¹²

- CARB commissioned a study through Energy and Environmental Economics, Inc. The draft report [Achieving Carbon Neutrality in California](#) identifies scenarios California could take to reduce emissions from the fossil energy and industrial sectors to help achieve carbon neutrality by 2045.

Mobile Source Updates.

- The Zero-Emission Powertrain Certification Regulation became effective on April 1, 2020, allowing manufacturers to begin certifying using the new, alternative certification pathway designed to help reduce variability in the quality and reliability of heavy-duty zero-emission technology, ensure information regarding heavy-duty electric and fuel-cell vehicles (and their powertrains) are effectively and consistently communicated to purchasers, and accelerate progress towards greater vehicle reparability.
- Consistent with Governor Newsom’s Executive Order N-79-20, in June, the Board adopted the Advanced Clean Trucks Regulation, a first-in-the-world rule requiring truck manufacturers to produce and sell zero-emission trucks, vans, and buses beginning in 2024 as in increasing percentage of their sales. The regulation is expected to result in the deployment of roughly 100,000 zero-emission trucks by 2030 and 300,000 by 2035. This rule will help achieve a 100 percent zero-emission drayage fleet by 2035 and zero-emission trucks and buses everywhere feasible by 2045.
- Staff developed the 2020 Mobile Source Strategy, which focuses on medium and heavy duty vehicle goals through mid-century, as required by [SB 44](#) (Skinner, Chapter 297, Statutes of 2019).¹³

Scoping Plan Litigation. There was activity in one court case against CARB challenging content included in the 2017 Scoping Plan Update.

The Two Hundred, et al. v. California Air Resources Board:

In this writ action, filed in April 2018, The Two Hundred, “an unincorporated association of civil rights leaders,” requested that the court declare certain elements of the 2017 Scoping Plan Update to be unlawful, and invalidate them. The specific elements petitioners object to include discussion of potential future reductions of VMT, and future per capita GHG emissions reductions necessary to meet California’s future GHG emissions reductions target. The lawsuit argues that this non-binding discussion within the 2017 Scoping Plan creates new and unlawful mandates that will exacerbate California’s existing housing crisis, and disproportionately harm disadvantaged and minority communities, thus violating federal civil rights law, the California Environmental

¹² As of the writing of this report in October 2020, a Board update is expected in November 2020.

¹³ As of the writing of this report in October 2020, the Board is expected to consider approving the strategy in December 2020.

Quality Act (CEQA), and other laws. Throughout 2020, CARB worked with petitioners on finalizing a CEQA litigation record.

3. *Upcoming Milestones—January through December 2021*

Throughout 2021, CARB and other lead State agencies will continue to develop and implement recommendations laid out in the 2017 Climate Change Scoping Plan Update. The following are a brief summary of items not covered elsewhere in this report.

- CARB will initiate the 2022 Scoping Plan Update by convening the Environmental Justice Advisory Committee, organizing workshops, and holding community meetings in coordination with other lead State agencies. The draft Scoping Plan is targeted for release in early 2022 with the final plan release towards the end of 2022.
- In line with Governor Newsom’s Executive Order N-82-20, the next update to the Scoping Plan will reflect the pivotal function natural and working lands have in protecting, restoring, and sustainably managing our lands.

B. Coordination with Other Entities Outside of California

1. *Background*

AB 32 requires CARB 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, CARB engages with interested jurisdictions outside of California at the local, State, regional, national, and international levels to guarantee that the rigorous standards established by California are understood, and to encourage participation from other jurisdictions. Where other states and nations develop or implement their own GHG emissions reduction programs, CARB seeks committed partners to expand cost-effective actions that tackle global climate change together. By sharing California’s programs, policies, and best practices, other entities can design programs that complement California’s efforts.

One focus of CARB’s efforts is to work with partner jurisdictions to expand cost-effective emissions reduction opportunities. These efforts have included developing the administrative support activities managed by WCI, Inc. Another example is the linkage between California’s Cap-and-Trade Program and the Canadian province of Québec’s program. Like California, Québec has enacted legislative requirements to reduce economy-wide GHG emissions. Each jurisdiction has adopted GHG emissions

reduction targets and is implementing a portfolio of programs, including a comprehensive Cap-and-Trade Program, to meet those targets. Since linkage in 2014, California and Québec have implemented successful Cap-and-Trade Programs. Linkage enables compliance instruments to be traded and used interchangeably across the linked programs; expands the market; enhances compliance flexibility for program participants; and allows for centralizing administrative functions, which improves efficiencies and offers the potential to reduce governmental costs.

2. Federal and State Governments

This section discusses CARB's activities with federal and state governments outside of California. CARB coordinates with state and federal entities that develop similar climate-related programs to ensure that important provisions are as consistent as possible, and to facilitate broadening of policies to other jurisdictions. CARB 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 (CFTC), and the Federal Energy Regulatory Commission (FERC) on climate change issues.

Federal Government. CARB works with the federal government on multiple efforts, some of which are described here. Accomplishments include California's mandatory GHG emissions reporting regulation, which is modeled on and periodically updated to maintain consistency with U.S. EPA's GHG emissions reporting rule. The Compliance Instrument Tracking System Service (the market compliance tracking software for California's Cap-and-Trade Program) was built in cooperation with U.S. EPA and modeled on the framework used in other emission trading systems (ETS), including the federal Acid Rain Program and the Northeast states' Regional Greenhouse Gas Initiative. CARB also coordinates with CFTC and FERC to strengthen carbon and related energy market monitoring, oversight, and enforcement. Although, under the current administration there has not been as much coordination.

CARB is also involved in federal regulation of GHG emissions. For instance, in 2019, U.S. EPA finalized the [Affordable Clean Energy \(ACE\) Rule](#), which repealed the Clean Power Plan. Promulgated under the federal Clean Air Act, the Clean Power Plan would have driven emissions reductions by looking broadly at the ability of power plants to shift generation from higher-emitting to lower-emitting plants. In contrast, the ACE Rule will achieve hardly any GHG emissions reductions from existing power plants, and may even lead to emissions increases.

Challenging the ACE Rule is one of California's efforts to sustain and shape federal policy. CARB has also filed litigation for other programs, as appropriate, to support timely and effective federal action on climate change. CARB has litigated to ensure that federal methane rules for oil and gas sources remain in force, and has filed extensive comments supporting continued rigorous federal programs for stationary and mobile sources. U.S. EPA and CARB routinely coordinate on advanced transportation and

fuels as well. This includes the relationship between the federal Renewable Fuels Standard and the California LCFS.

Other State and Provincial Governments. Some of CARB's work with other state and provincial governments includes sharing insights gained from developing and implementing California's LCFS. CARB has also provided ongoing technical expertise and assistance to the U.S. Climate Alliance on reducing GHG emissions.

CARB staff continues to collaborate with staff in British Columbia and Oregon on their low carbon fuel standard programs. CARB staff and Executive Office members met several times in 2020 and participated in multiple conference calls with their counterparts within the [Pacific Coast Collaborative](#) to discuss the design elements and challenges of a low carbon fuel standard. Staff is also providing input, when solicited, to other prospective state-level clean fuels programs, including a consortium of states in the U.S. Midwest, New York, and Colorado. Staff anticipates further collaboration with other state and provincial governments in 2021 as more jurisdictions pursue clean fuels policies like the LCFS.

3. *International*

Pursuant to AB 32, California consults with other governments and international coalitions to identify the most effective strategies and methods to reduce GHG emissions, manage GHG emissions control programs, and to facilitate the development of integrated and cost-effective regional, national, and international GHG emissions reduction programs. In collaboration with the Governor's Office, CalEPA, CEC, and other State agencies, CARB conducts activities in support of these strategies, including:

- Development of an effective, efficient, and economic portfolio of emission-reducing policies that can serve as a model for federal and international policy;
- Direct consultation with other jurisdictions to provide technical assistance on the development of their programs; and
- Analysis to support federal and international policy regimes that build on California's program.

California shares its experiences through multilateral platforms and over 50 declarations. The most prominent results of our bilateral engagement have been through MOU and Declarations of Intent with China, Mexico, the European Union (EU), and subnational governments signed on to the Under2 Coalition.

CARB also participates in several international initiatives and multilateral coalitions to support and motivate climate action, including the 38-member Governors' Climate and Forest Task Force, the International Zero-Emission Vehicle Alliance (ZEV Alliance), the World Bank's Partnership for Market Readiness, and the International Carbon Action Partnership.

In addition to the above efforts, CARB hosts delegations from around the world at its facilities in Sacramento and El Monte. Through March 2020, CARB hosted seven in-person meetings with foreign delegations. From April to December 2020, due to COVID-19 restrictions, CARB hosted virtual meetings only. This section outlines CARB's international partnerships and initiatives to reduce GHG emissions, and strengthen California's ability to compete in the global economy.

Under2 Coalition. The [Under2 Coalition](#) is a global community of state and regional governments publicly committed to ambitious climate action long-term deep decarbonization. The coalition brings together signatories of the Subnational Global Climate Leadership Memorandum of Understanding, or "Under2 MOU." CARB is providing technical expertise to knowledge exchanges facilitated by the Under2 Coalition.

México. California has engaged with Mexico to provide cooperation on climate change and the environment initially through a four-year information sharing MOU signed in 2014. The MOU focused on four priority action areas: climate change, air quality, wildfires, and clean vehicles. CARB continues to engage with Mexico on climate change, air quality, and clean vehicles.

Climate change work between California and México has continued through bi-weekly calls of a Climate Change Working Group. This group also includes expert staff from Québec. To support the development of México's national ETS, the Group continued to dedicate time on topics that are critical to designing a robust ETS. The Mexican Secretariat for Environment and Natural Resources published final ETS regulations in October 2019 and began implementing a pilot phase. The pilot will not pose an economic impact on regulated entities, but will serve to familiarize them with ETS requirements and test the system. The pilot will run through 2022 and the Group continues to discuss topics that are of relevance to a broader, first phase of the ETS after 2022.

CARB also continued to engage with the [Mexican National Forestry Commission](#) (CONAFOR) on México's National Strategy to Reduce Emissions from Deforestation and Forest Degradation. CONAFOR has been an integral part of the Climate Change Working Group discussions and a driving force in advancing the role of forests and indigenous engagement related to climate change. In 2020, the discussions continued to focus on approaches and requirements to effectively structure subnational programs within the national climate policy framework.

In addition, CARB is actively engaged with local, state, federal, binational and community partners to address air quality issues on both sides of the California-México border. Progress is being made in a number of areas including enhanced coordination of air quality planning efforts, more comprehensive air monitoring activities, increased public outreach, and assessing and mitigating air quality impacts at the community scale. Actions include supporting regulatory air quality monitors across the Imperial-Mexicali region; supporting deployment of low-cost sensor networks in Mexicali and

Tijuana; and work on Community Emission Reduction Plans in both San Diego and Imperial counties as part of the [Community Air Protection Program](#).

China. CARB and other agencies including CalEPA and CEC have also been working with several entities in China to advance efforts to reduce GHG emissions and combat air pollution. China has become the world's leading emitter of GHG emissions and, as such, is a critical partner in addressing global climate change. At the same time, 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 benefits to China, California, and the global climate.

In 2017, China launched a national GHG ETS after launching local ETS programs in seven cities and provinces in 2013. CARB has participated in many meetings to discuss ETS and international carbon markets. CARB has also continued to support the goals of California's MOUs with China for clean air collaboration. California's clean car and truck policies, including ZEVs, are having a significant positive influence on China's policies. At the national level, China is looking to California for cutting-edge requirements for car diagnostics and policies that promote ZEVs similar to California's ZEV plans. At the provincial level, Beijing has moved its programs even closer to those in California by adopting our vehicle emissions standards and a number of other progressive environmental regulations. CARB continues to provide technical assistance to our counterparts in China, covering a wide range of issues, including emissions reduction measures and trading systems, ZEVs, and policy framework for mitigating pollution.

The European Union ETS. The [EU ETS](#) covers approximately 45 percent of EU GHG emissions in some 31 countries, has been in operation since 2005, and is set to deliver a reduction of 43 percent in EU emissions from the covered sectors by 2030. In September 2018, California and the EU confirmed their view that greater alignment of carbon markets is in the interests of both. Aligning carbon markets could maximize and leverage climate action for economic transformation while ensuring real progress on reducing GHG emissions. In addition, both emphasized the need to engage other jurisdictions with similar and emerging programs to foster broader dialogue.

Since 2019, officials from the EU and California increased the frequency of conversations, including on principles for alignment and the role of carbon pricing in the following areas: sending near- and long-term investment signals for transformative technologies, addressing economic competitiveness, and maximizing public benefits of program revenues use. These officials also agreed to review, assess, and report on progress in these exchanges in twelve months.

India. CARB continues to pursue a strong bilateral relationship with India, focusing on air quality and clean transportation. The "Track II Dialogue" working group CARB participates in is committed to advancing collective understanding of the key policy and resource factors influencing the development and advancement of electric vehicle manufacturing sectors in India and the United States. The Dialogue offers a platform for

partners from the U.S. and India to exchange views and identify areas of collaboration on critical issues related to climate. California plays an important role in demonstrating to India and other national governments that Americans remain committed and California is a ready and willing partner in tackling the climate crisis together. CARB has partnered with India's Central Air Pollution Board in the past and both parties are interested in reviving collaboration.

Governors' Climate and Forests Task Force. The [Governors' Climate and Forests \(GCF\) Task Force](#) is a subnational partnership aimed at designing jurisdiction-wide programs that reduce deforestation, benefit local communities, and protect the climate. The GCF Task Force commenced in 2008, and now includes 38 states and provinces from around the world including Brazil, Colombia, Ecuador, Indonesia, Ivory Coast, México, Nigeria, Peru, Spain, and the United States. A majority of its members are also signatories of the Under2 MOU. The 12th annual GCF Task Force meeting originally planned for May 2020 in Manaus, Brazil, was rescheduled due to COVID-19; it will be held in 2021.

Following years of engagement with the GCF Task Force, CARB developed a [California Tropical Forest Standard](#) to provide a rigorous methodology for assessing jurisdiction-scale programs that reduce deforestation and to incentivize responsible action and investment. The Board endorsed the Standard in 2019. Endorsement of the Standard does not result in any regulatory changes in California or any linkage with any jurisdiction, nor does it allow any tropical forest offset credits into the California Cap-and-Trade Program. GCF Task Force partners participated in the development process of the Standard and testified in support of the Standard. The Standard provides a strong signal to value the preservation of tropical forests over continued destructive activities such as oil exploration and extraction, and ensures rigorous social and environmental safeguards for indigenous peoples and local communities. Pursuant to Board direction, CARB expects to continue engaging with GCF Task Force partners on the use of the Standard in 2021.

Partnership for Market Readiness. CARB has also participated in meetings of the [Partnership for Market Readiness](#) (PMR), 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. CARB became a Technical Partner of PMR in November 2014 and has continued to participate and support the activities organized by PMR.

International Carbon Action Partnership. Recognizing that many efforts around the world are underway to use market forces to motivate GHG emissions reductions, California worked with more than 15 other government leaders to establish [ICAP](#) in 2007. ICAP provides a forum for sharing experiences and knowledge among jurisdictions that have already implemented or are actively pursuing market-based GHG programs. CARB began serving as a co-chair of ICAP in 2019 along with the European Union Commission and continued in that role this year.

International Zero-Emission Vehicle Alliance. In August 2015, California launched the [ZEV Alliance](#) with the Netherlands and Québec to accelerate global adoption of ZEVs. By January 2020, the alliance had grown to include 18 members.¹⁴ In conjunction with Conference of Parties 21 in Paris, the ZEV Alliance announced a goal to make all passenger vehicle sales in their jurisdictions ZEVs as quickly as possible and no later than 2050. Each year, the ZEV Alliance selects several focus areas for in-depth exchange, webinars, and best practices reports. CARB plays a key role in the ZEV Alliance on policy and technical matters, and serves as the State of California's jurisdiction coordinator alongside experts from CEC, California Governor's Office of Business and Economic Development, and CPUC.

Low Carbon Fuels. CARB staff continued to engage with the government of Canada and U.S. EPA to share lessons learned from implementation of the LCFS provisions and to inform/support development and implementation of their own federal clean/renewable fuels program. Staff also engaged with representatives from Japan and the European Commission, each of which were seeking information on California's approach to incentivizing use of low carbon fuels. Staff anticipates continued international collaboration in 2021 as the California LCFS remains strong and continues to serve as a global model.

Climate and Clean Air Coalition. California became the first subnational jurisdiction (state) to join the [Climate and Clean Air Coalition](#) (CCAC) in 2018. CCAC is the United Nations body that tackles SLCPs. Given California's leadership and effective programs on SLCPs, CCAC invited CARB to engage with many other partners addressing emissions from methane, black carbon, and HFCs.

C. SB 375: Sustainable Communities and Climate Protection Act

1. Background

CARB is encouraging regional planning that integrates transportation and land use to reduce VMT via [SB 375](#) (Steinberg, Chapter 728, Statutes of 2008). The Sustainable Communities and Climate Protection Act of 2008 is intended to support the State's broader climate goals by encouraging integrated regional transportation and land use planning that reduces GHG emissions from passenger vehicle use. California's metropolitan planning organizations (MPO) develop regional Sustainable Communities Strategies (SCS) containing land use, housing, and transportation strategies that, when implemented, can meet the per capita passenger vehicle GHG emissions reduction targets set by CARB for 2020 and 2035. The goal of an SCS is to align land use and transportation planning to drive development towards transit-accessible places, reduce VMT, and foster healthier and more equitable communities. Pursuant to SB 375, CARB

¹⁴ ZEV Alliance members include Baden-Wurttemberg, British Columbia, Canada, Germany, Netherlands, Norway, Québec, United Kingdom, and the states of California, Connecticut, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, Vermont, and Washington.

reviews SCSs in order to determine whether or not the SCS, when implemented, would meet the GHG emission reduction targets. In addition, CARB strengthened its SCS Evaluation Guidelines to focus on tracking implementation in the regions; assessing the strategies, key actions, and investments committed to in the SCS; reporting the regions incremental progress from one plan to the next; and highlighting how each region addresses equity.

CARB's [Sustainable Communities and Climate Protection Program](#) is estimated to reduce per capita passenger vehicle GHG emissions by 10 percent compared to 2005 levels this year. By 2035, the program is estimated to reduce per capita passenger vehicle GHG emissions by 19 percent compared to 2005 levels. The full reduction needed to achieve the SB 32 target is on the order of a 25 percent reduction in statewide per capita GHG emissions by 2035. SB 375 program implementation alone will not provide all of the reductions needed to reach the 25 percent reduction. Bridging the gap will require a combination of new State and local VMT reduction actions.

2. Recent Developments—January through December 2020

- In July, CARB staff finalized and published documentation guiding the data needed from MPOs as part of the SCS Submittal for CARB staff to complete the third-round SCS Evaluations.
- Between July and October, CARB staff published SCS technical evaluations for the following nine MPOs: Kern Council of Governments, Tulare County Association of Governments, San Joaquin Council of Governments, Stanislaus Council of Governments, San Luis Obispo Council of Governments, Shasta Regional Transportation Agency, Madera County Transportation Commission, Sacramento Area Council of Governments, and Southern California Association of Governments.¹⁵
- All MPOs are now in their third SCS cycle subject to the targets set in 2018.¹⁶
- CARB also invested in clean transportation and mobility options in low-income and disadvantaged communities as part of Low Carbon Transportation Investments that provide an alternative to owning vehicles. These projects, in addition to CARB's broader suite of Low Carbon Transportation equity investments, are helping to increase access, address unique mobility barriers and transportation needs, such as provide first-last mile connections to transit, reduce GHG emissions, and reduce the need to use a personal car. Example projects include, but are not limited to:
 - [Sustainable Transportation Equity Project](#),
 - [Clean Mobility Voucher Pilot Program](#),
 - [Car Sharing and Mobility Hubs in Affordable Housing Pilot Project](#), and

¹⁵ As of the writing of this report in October 2020, CARB expects to publish the SCS technical evaluation for Kings County Association of Governments in November 2020. CARB also expects that, in December 2020, Butte County Association of Governments will adopt its third SCS; CARB will subsequently review.

¹⁶ As of the writing of this report in October 2020, CARB expects that, by the end of 2020, all 18 MPOs will have adopted their second SCSs and three MPOs will have adopted their third SCSs. The Regional Transportation Plan/SCS updates occur on a rolling four-year basis.

- [BlueLA Pilot Project.](#)
- CARB continued work with other State agencies on plans, policies, and guidelines related to transportation, housing, and land use as part of its role in reviewing and providing input on program guidelines and project selection criteria for other agencies' incentive programs. A few examples include:
 - Participation in policy working groups and steering committees for the Affordable Housing and Sustainable Communities, Transformative Climate Communities, and Sustainable Agricultural Lands Conservation programs administered by SGC.
 - Coordination with the California State Transportation Agency on development of the 2020 Transit and Intercity Rail Capital Program cycle guidelines to incentivize transit investments that serve existing and future housing and facilitate future infill and affordable housing development, which support VMT reduction.
- CARB worked to support housing near jobs, transit and other high-opportunity locations by providing information and support to other agencies as they craft plans and guidance that shape land use and transportation. This includes:
 - Interagency work with the California Department of Transportation (Caltrans) and the Office of Planning and Research (OPR) under [SB 743](#) (Steinberg, Chapter 386, Statutes of 2013) to change transportation impact analysis under CEQA for new construction (including housing).
 - Providing input to the Department of Housing and Community Development on its development of guidelines for its "prohousing" designations, which can encourage local government actions to support housing that helps to reduce VMT and GHG emissions.
 - Participating on both the technical and policy advisory committees for Caltrans' development of its California Transportation Plan 2050.
 - Ongoing work by CARB staff to evaluate research needs and pursue projects with the goal of informing State and local efforts—including policies, strategies, and technologies—that bring us closer to achieving climate, housing, transportation, and equity goals.
- CARB expanded its work supporting housing policy development and implementation, recognizing that where and how new housing is built has significant impacts on the State's ability to achieve its VMT and GHG emissions reduction goals, as well as on the health and equity of California's communities. This work relies on collaboration with housing and other State agency partners.

3. *Upcoming Milestones—January through December 2021*

- As each MPO adopts a new SCS, CARB staff evaluates the plan to determine whether the SCS, when fully implemented, would achieve the GHG emissions reduction targets. CARB periodically reports to the Board on these actions.
- In 2021, four MPOs plan to adopt their third SCSs, including Tahoe Metropolitan Planning Organization, Metropolitan Transportation Commission/Association of Bay Area Governments, Santa Barbara County Association of Governments, and San

Diego Association of Governments. CARB will review all SCSs for approval after the MPOs provide complete submittals.

- CARB will collaborate with the California Transportation Commission and the California Department of Housing and Community Development on two joint meetings in 2021.
- CARB staff will continue to engage with the California State Transportation Agency, Governor’s Office of Planning and Research, California Business, Consumer Services and Housing Agency, California Department of Housing and Community Development, California Transportation Commission, Caltrans, and SGC, on [SB 1](#) (Beall, Chapter 5, Statutes of 2017) transportation funding, housing bills, and GGRF revenues appropriated for SCS program implementation. This work helps enable GHG emissions reductions and numerous community and environmental co-benefits.
- CARB staff will continue working to support housing near jobs, transit and other high-opportunity locations by providing information and support to other agencies as they craft plans and guidance that shape land use and transportation, including continuing interagency work with Caltrans and OPR on SB 743 implementation.
- CARB will also continue ongoing work to evaluate research needs and pursue projects with the goal of informing State and local efforts—including policies, strategies, and technologies—that bring us closer to achieving climate, housing, transportation, and equity goals.

D. California Climate Investments: Cap-and-Trade Auction Proceeds

1. Background

The Legislature and Governor approve the expenditure of the [State’s portion¹⁷ of the Cap-and-Trade Program auction proceeds](#) to invest in programs that support the goals of AB 32. These programs, collectively referred to as California Climate Investments (CCI), have provided over \$13.6 billion since 2013 to further AB 32 implementation, including support of long-term, transformative efforts to reduce GHG emissions, improve public and environmental health, and develop a clean energy economy—particularly for the most vulnerable Californians. More than 20 State agencies are involved in program development, project selection, and implementation of 68 CCI programs that focus on reducing climate pollution across numerous sectors of California’s economy, from transportation and affordable housing to forest health and fire prevention.

CARB is responsible for the fiscal management of GGRF and has a variety of responsibilities related to the administration of CCI programs including:

¹⁷ This amount does not include proceeds from Québec-owned allowances or allowances consigned to auction by utilities.

- Developing guidance for administering agencies including funding guidelines, quantification methodologies, and methods to determine benefits to priority populations,
- Consulting with administering agencies on program implementation,
- Providing coordinated CCI awareness outreach and directing interested parties to administering agencies for program assistance,
- Compiling data from administering agencies and coordinating with the Department of Finance to prepare the Annual Report to the Legislature, and
- Maintaining a public website and map that provides project information on all CCI projects.

The effects of climate change and the continued use of fossil fuels present an ongoing challenge for the State, particularly for California’s disadvantaged and low-income residents. In 2012, [SB 535](#) (De León, Chapter 830, Statutes of 2012), set minimum investments for CCI projects that benefit disadvantaged communities and projects that are located within disadvantaged communities. In 2016, [AB 1550](#) (Gomez, Chapter 369, Statutes of 2016) amended the investment minimums for disadvantaged communities introduced by SB 535 to require a minimum percentage of projects to be located within and provide a benefit to disadvantaged communities, and established new investment minimums for low-income communities and low-income households. Under AB 1550, at least 35 percent of CCI projects must be allocated to these priority populations.

2. Recent Developments—January through December 2020

- In April, the Department of Finance submitted the [2020 Annual Report to the Legislature on Cap-and-Trade Auction Proceeds](#). Developed by CARB, the report describes the status of funded programs, estimates of the GHG emissions reductions expected from project investments, and key statistics on benefits to priority populations.
- In August, CARB released a semi-annual update to the reporting data, including updates to an [online project map](#) and project list to provide information to the public on the status and outcomes of implemented CCI projects. CARB has also released an interactive data dashboard that enables users to easily explore CCI data.
- As of May, CCI had invested over \$6.4 billion in over 456,000 individual implemented projects that reduce GHG emissions and provide other important environmental, economic, and public health benefits to California’s communities, with over \$1 billion in new funding implemented in the first half of 2020 alone. Implemented projects are expected to reduce GHG emissions by more than 64 MMTCO_{2e}.¹⁸ Additional information and summary statistics on outcomes are also available on the [California Climate Investments](#) webpage.

¹⁸ This figure does not include estimated GHG emissions reductions from the California High-Speed Rail project, which range from 64.3 to 75.9 MMTCO_{2e} over its first 50 years of operating life, as detailed in the [2019 California High-Speed Rail Sustainability Report](#).

Fiscal Year 2020–2021 Appropriations.

- The Legislature did not pass a comprehensive GGRF expenditure plan or establish new programs during the regular legislative session this year. In the Budget Act of 2020, the Legislature provided baseline state operations funding for State agencies to continue to develop and administer the broad portfolio of CCI programs.

3. *Upcoming Milestones–January through December 2021*

- CARB staff will continue to collect information from administering agencies on the status and outcomes of CCI projects and release this information publicly through an online project map and project list.
- CARB will compile data collected from agencies to develop the *2021 Annual Report to the Legislature on Investments of Cap-and-Trade Auction Proceeds*, scheduled for release in April 2021.
- CARB staff will work with the Department of Finance to develop the fourth triennial Investment Plan, which is due to the Legislature in January 2022.
- CARB staff will continue to work with administering agencies, outside experts, and academic partners to develop and/or update project-level quantification methodologies to capture additional information on environmental, public health, and economic benefits of the CCI projects.
- CARB staff will continue to work with contractors and administering agencies to expand and enhance outreach activities across the State with an emphasis on priority populations, particularly those impacted by COVID-19 and wildfires. CARB staff will also explore creative ways to display information on the State’s housing, climate, and equity goals.

E. Minimizing Community Health Impacts from Freight

1. *Background*

The trucks, locomotives, ships, harbor craft, cargo-handling equipment, and transport refrigeration units (TRU) that carry and move freight in California are significant sources of air pollution. Freight transport equipment and associated facilities such as ports, rail yards, airports, freeways, distribution centers, and border crossings contribute a significant portion of GHG emissions in the State, as well as a large portion of black carbon emissions that also contribute to climate change.

California’s freight transport system has already successfully undergone improvements toward shared efficiency and environmental objectives. Despite this progress, California needs 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 long-term climate goals.

To address public health and climate change impacts from the freight sector, CARB has established a path forward with additional CARB regulations and other actions, beyond those included in [State Implementation Plans](#), to cut emissions further. The additional freight regulations being considered include amendments to CARB rules for commercial harbor craft, cargo handling equipment, TRUs, and [drayage trucks](#) to transition those sources to zero or near-zero emission operation, as well as potential new rules for [rail yard and locomotive activities](#).

2. Recent Developments—January through December 2020

CARB activities related to freight included the following:

- [CARB funding programs](#) accelerated the transition from older freight equipment and vehicles to cleaner options. Funding to support these activities was provided by the Volkswagen settlement, Proposition 1B, Low Carbon Transportation, Air Quality Improvement, and Carl Moyer funding programs.
- CARB staff coordinated efforts amongst the State energy, business, transportation, and environmental agencies to implement the actions identified in the 2016 [California Sustainable Freight Action Plan](#).
- The Board approved the [Ocean-Going Vessels At Berth Regulation](#) that will reduce emissions and protect communities near California seaports.
- CARB staff released updated regulatory concepts that will transition the TRU sector to zero-emission technologies and usage of lower GWP refrigerants. CARB is incorporating into the [current TRU Regulation](#) a prohibition on the use of higher-GWP HFC refrigerants in newly manufactured TRUs as of 2022.
- CARB began certifying MVAC systems pursuant to the refrigerant leakage standards as part of CARB’s heavy-duty vehicle GHG “Phase 2” regulation certification. Changes made during this phase will ensure verifiable emission benefits.
- CARB staff continued development of concepts to reduce locomotive and railyard emissions effectively and permanently.
- CARB staff released updated regulatory concepts for commercial harbor craft that will reduce emissions through the use of cleaner tiers of equipment and other operational control strategies.
- CARB staff released regulatory concepts to transition the California truck fleet to zero-emission technologies by 2045 everywhere feasible and significantly earlier for certain market segments such as last-mile delivery and drayage applications.

3. Upcoming Milestones—January through December 2021

- CARB staff will finalize regulatory language and seek final approval of the [Commercial Harbor Craft](#) Regulation that will protect the communities near the ports and reduce the exposure to criteria pollutants and toxic air contaminants, and reduce GHG emissions.

- CARB staff will finalize regulatory concepts, and seek Board approval in mid-2021 of the [new TRU Regulation](#) that will transition the TRU sector to zero-emission technologies and usage of lower GWP refrigerants.
- CARB staff will identify ongoing needs for zero-emission medium- and heavy-duty vehicle infrastructure and begin implementing actions internally and externally that will help support deployment of innovative zero-emission technologies.
- CARB staff will hold public workshops to discuss regulatory concepts to increase usage of [zero-emission technology in forklifts](#).
- CARB staff will continue to utilize funding to accelerate the deployment of cleaner freight equipment throughout California.
- CARB staff will implement steps to support Governor Newsom's Executive Order N-79-20, which promotes zero-emission freight vehicles and equipment that utilize renewable energy.

III. GREENHOUSE GAS EMISSIONS AND REDUCTIONS

CARB periodically updates estimates of GHG emissions in California, which change over time as the science advances, national and international accounting methodologies are updated, growth forecasts are revised, and California makes progress in reducing emissions. CARB and international climate change organizations use the scientifically established GWP values developed by the Intergovernmental Panel on Climate Change in its Fourth Assessment Report, which includes updated GWP values for GHGs. CARB expresses the emissions of all GHGs in terms of CO₂e, which factor in how long the GHG remains in the atmosphere and how strongly it absorbs energy relative to carbon dioxide.

CARB's [GHG emissions inventory](#) shows that California emissions have remained below the [2020 target of 431 MMTCO₂e](#) since 2016. In 2018, State emissions were 425 MMTCO₂e. Emissions vary from year-to-year depending on the weather and other factors. California continues to implement its GHG emissions reductions program to ensure that the State remains on track to meet its climate targets in 2030 and beyond. A decade of successful climate programs is already providing lower-carbon fuel, cleaner cars, trucks and buses, more renewable energy, and more efficient homes and appliances. In addition, these emissions reductions are keeping California on track to meet the 2030 GHG emissions target of 260 MMTCO₂e while setting the State's economy on a trajectory to achieve greater GHG emissions reductions needed to limit global temperature rise below 2 degrees Celsius in this century.

CARB currently estimates that GHG emissions in 2030 will be 389 MMTCO₂e in a business as usual (BAU) scenario without further State action to reduce GHG emissions. To meet the 2030 target of 260 MMTCO₂e, the climate programs must reduce emissions by 129 MMTCO₂e in 2030.

Table 1 shows the GHG emissions reductions expected to result from the 2017 Scoping Plan Update measures in order to meet the SB 32 goal. The current economic downturn and potential economic recovery due to COVID-19 are not captured in the

modeling conducted for the 2017 Scoping Plan Update. The values in Table 1 are expected to change once there is updated modeling to support the 2022 Scoping Plan Update.

Table 1: Forecasted 2030 Emissions Reductions from Sector-Based Measures

Category	2030 GHG Emissions (MMTCO _{2e})*
Agriculture	12
Residential and Commercial	3
Electric Power	9
High GWP	18
Industrial	6
Recycling and Waste	2
Transportation	19
Cap-and-Trade Program	60**
2030 Emissions Limit	260
SB 32 Baseline 2030 Forecast Emissions (2030 BAU)	389

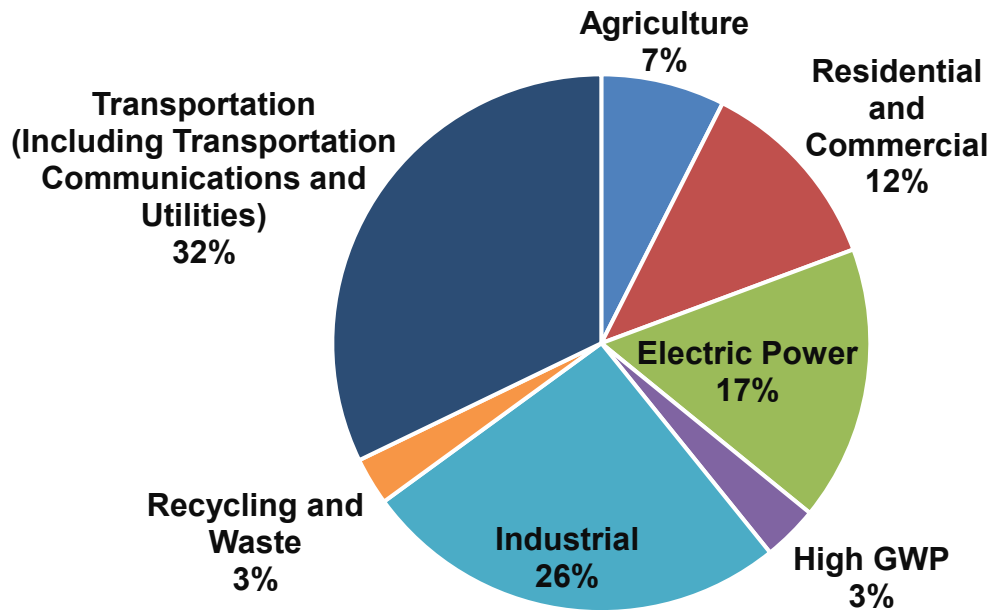
* Based on forecast from 2017 Climate Change Scoping Plan Update.

** Cap-and-Trade Program emissions reductions depend on the emissions forecast.

Figure 1 shows forecasted 2030 GHG emissions by economic sector.¹⁹ This forecast assumes that the 2030 target is achieved.

¹⁹ The 2030 emissions by economic sector are projected based on the reductions expected from the measures described in the 2017 Climate Change Scoping Plan Update, using the model (PATHWAYS).

Figure 1
Forecasted 2030 Greenhouse Gas Emissions By Sector
With Adopted Regulations and Programs



In allocating resources to its GHG emissions reduction programs, CARB seeks to prioritize programs that achieve the greatest GHG emissions reductions and improve air quality further for priority populations.

SECTION 2:

ANNUAL AB 32 FISCAL AND RESOURCES REPORT

**Fiscal Years: 2019–20 (current reporting year),
2020–21 (prospective) and 2018–19 (retrospective)**

This report is required annually by the Supplemental Report of the 2012–13 Budget to quantify the major revenues and expenses for CARB to implement AB 32 programs for the current reporting year (FY 2019–20), prospectively (FY 2020–21), and retrospectively (FY 2018–19). This report quantifies AB 32 Cost of Implementation Fee appropriations and expenditure adjustments, overall CARB resources required to implement AB 32 separated by program and contract costs, and breakdowns by major program area. For information on Cap-and-Trade Auction Proceeds, see the California Climate Investments section of this document.

I. STRUCTURE AND FUNDING FOR REGULATORY ACTIVITIES

The resources estimated in this section of the report are used to support all activities that provide a climate benefit, whether as the primary objective or as a co-benefit. CARB's resources to support the climate program exceed the amount budgeted exclusively for AB 32 activities that are funded by the AB 32 Cost of Implementation Fee. CARB relies on other funding sources, and the specific source is related to the activity for two reasons.

First, CARB has several measures and program areas that were originally designed to achieve other air quality goals and rely on different funding sources, but nonetheless provide a climate co-benefit by simultaneously reducing GHG emissions. Although the GHG emissions reductions associated with these other measures are counted towards the State's AB 32 targets and considered as part of the climate program, those activities may not necessarily be solely funded by the AB 32 Cost of Implementation Fee. For example, the At-Berth Regulation was initiated to reduce the community health risk from ship pollution, but the rule also provides substantial GHG co-benefits associated with using shore-based electrical power rather than burning fuel in onboard engines when the ships are in port.

Second, CARB's regulatory program has grown and evolved to address the agency's responsibilities under State and federal law to improve air quality at the local, regional, and global levels. CARB adopts, implements, and enforces regulations focused on meeting several different objectives:

- Reducing criteria pollutants such as ozone and particulate matter to meet health-based air quality standards in each region;

- Reducing the localized health risk from air toxics (e.g., benzene, hexavalent chromium, and diesel particulate matter); and
- Reducing GHG and SLCP emissions that contribute to global climate change.

Although the statutory foundation for each of these regulatory programs is distinct, to the extent feasible, CARB looks to develop regulations and comprehensive programs that meet two or more of these objectives simultaneously. This approach enables CARB to use resources most efficiently and benefits industry by providing a consolidated set of requirements.

Historically, CARB has tracked AB 32 programs and activities to implement AB 32 in totality, not at the level of individual regulations. To comply with all mandates (State laws, regulations, and policies on fiscal programs), CARB uses the Financial Information System for California (FI\$Cal), which is the State’s accounting system.

In response to requests by the Legislature to see more detailed information regarding the costs to implement AB 32, CARB committed to track and report on AB 32 expenditures for personnel, operations, and contracts for the major elements of the climate program. Therefore, CARB reports on the Climate Change Program (Fund 3510), of which the majority is appropriated from the Cost of Implementation Account (Fund 3237) but also includes appropriations from other funds that support climate change activities. These include the Air Pollution Control Fund (0115), Public Utilities Commission Utilities Reimbursement Account (Fund 0462), and Oil, Gas, and Geothermal Administrative Fund (Fund 3046). Climate change programs may also receive funding from other sources that target criteria and toxic air pollutants and also reduce GHGs and non-GHG SLCPs.

II. AB 32 COST OF IMPLEMENTATION FEE

Table 2 displays the Cost of Implementation Fee adjusted expenditures retrospectively (FY 2018–19) and for the current reporting fiscal year (FY 2019–20), as well as appropriations prospectively (FY 2020–21) for State agencies authorized to use the AB 32 Cost of Implementation Account. The expenditure of funds that support AB 32 programs at multiple agencies is established in the California Budget Act, and is referred to in the AB 32 Cost of Implementation Regulation as “required revenue.” Pro rata charges are a form of overhead, and are defined in the State Administrative Manual (SAM) 8754 as “the sharing of central service costs by funds other than the General Fund and the Central Service Cost Recovery Fund.” SAM 8753 defines central service costs as “amounts expended by central service departments and the Legislature for overall administration of state government and for providing centralized services to state departments.” Supplemental pension payments are a California Public Employees’ Retirement fund contribution enacted under [SB 84](#) (Committee on Budget and Fiscal Review, Chapter 50, Statutes of 2017).

Table 2 includes budget year appropriations, expenditure adjustments, as well as Legislature-approved budget change proposals for both the current reporting year and

retrospectively. In FY 2018–19, Legislature-approved budget change proposals included approximately \$3.9 million in contract funding for Building Energy Efficiency Standards Compliance Software at CEC, as well as a shift of expenditures to address CEC’s Energy Resources Programs Account structural deficit, and for the Office of Environmental Health Hazard Assessment’s report on the Indicators of Climate Change. CARB’s appropriation included \$366,000 for contract funding and two permanent positions to implement transportation access recommendations identified in the Low-Income Barriers Study, and to co-lead the Senate Bill 350 Interagency Task Force, as well as a fund shift for the short-lived climate pollutants program. In FY 2019–20, the Legislature approved two budget change proposals for six permanent positions and approximately \$1.0 million for CEC to implement SB 100 and AB 3232. The Legislature approved one budget change proposal for FY 2020–21, which is included in Table 5.

**Table 2: AB 32 Cost of Implementation
Adjusted Expenditures and Appropriations**

Department	Number of Positions	FY 2018–19	FY 2019–20	FY 2020–21
California Air Resources Board	211.1*	\$53,074,000	\$57,061,000	\$62,424,000
Department of Food and Agriculture	9	\$2,012,000	\$2,125,000	\$2,192,000
Department of Forestry and Fire Protection	3	\$400,000	\$401,000	\$401,000
Department of Housing and Community Development	1	\$223,000	\$241,000	\$240,000
Department of Public Health	1	\$350,000	\$379,000	\$381,000
Department of Resources Recycling and Recovery	12	\$1,287,000	\$1,550,000	\$1,552,000
Department of Water Resources	3	\$341,000	\$437,000	\$437,000
Energy Commission	45.5*	\$16,255,000	\$20,586,000	\$20,288,000
Financial Information Systems for California (State Controller)	0	\$7,000	\$(2,000)	-
Governor’s Office of Business and Economic Development	5	\$198,000	\$1,025,000	\$1,026,000
Office of Environmental Health Hazard Assessment	4.5	\$1,021,000	\$1,107,000	\$1,108,000

Department	Number of Positions	FY 2018–19	FY 2019–20	FY 2020–21
Secretary for Environmental Protection	4	\$1,208,000	\$1,240,000	\$741,000
Secretary of the Natural Resources Agency	1	\$292,000	\$312,000	\$312,000
State Water Resources Control Board	2	\$561,000	\$461,000	\$467,000
Statewide General Administrative (Pro Rata)	N/A	\$3,454,000	\$3,874,000	\$3,752,000
Supplemental Pension Payments	N/A	\$604,000	\$1,298,000	\$1,298,000
Total Adjusted Expenditures and Appropriations	298.1	\$81,287,000	\$92,095,000	\$96,619,000

Explanations: All dollars are rounded to the nearest thousand. Funding amount includes all personnel costs including travel, as well as contracts and overhead. Please note, the actual number of positions filled at each agency may vary.

*The number of authorized positions is the same for each fiscal year, except in FY 2018–19 when CARB had 205.4 positions and CEC had 39.5 positions.

Source: [Enacted Budget for FY 2020–21, 3237 Cost of Implementation Account, Air Pollution Control Fund](#). Budget change proposals are from [Department of Finance by budget year and agency](#).

Expenditure adjustments account for any excess or shortfall in collections from the previous fiscal years. Adjustments include discrepancies between agency positions and funding amount which could range from a shortfall due to differences in the timing of payments to contractors and salary adjustments made after the total required revenue is determined, to an excess due to unfilled positions. Other adjustments include refunds or additional fees collected that occur for various reasons including, but not limited to, late discovery of misreporting of fee-covered emissions or billing errors. CARB corrects for these adjustments in subsequent year invoices by adding the excess or shortfall to the required revenue to obtain the total required revenue.

Table 3 shows the total department expenditures (required revenue) along with updated information on total adjustments, total required revenue, regulatory fees collected, and outstanding fees.

Table 3: AB 32 Cost of Implementation Fee Appropriations, Adjustments, and Revenue for All Agencies

Fee Expenses and Revenue	FY 2018–19	FY 2019–20	FY 2020–21
Total department appropriations (required revenue)	\$81,287,000	\$88,796,000	\$96,619,000
Total adjustments	\$3,613,000	(\$1,445,000)	\$2,874,000
Total required revenue	\$84,900,000	\$87,351,000	\$99,493,000

Explanations: All dollars are rounded to the nearest thousand. As of September 30, 2020, there were \$43,947,000 in outstanding fees from FY 2018–19 through FY 2020–21 to be collected, most of which was from FY 2020–21. This amount outstanding is typical since a substantial amount is collected in the fourth quarter of each calendar year.

Sources: CARB relied on internal accounting records for total required revenue and outstanding fees (current as of September 30, 2020). FY 2020–21 total department appropriations are provided in Table 2. Current reporting year (FY 2019–20) total department appropriations are provided in [Enacted Budget for FY 2019–20, 3237 Cost of Implementation Account, Air Pollution Control Fund](#). Retrospective (FY 2018–19) total department appropriations are from [Enacted Budget for FY 2018–19, 3237 Cost of Implementation Account, Air Pollution Control Fund](#).

III. CARB RESOURCES TO IMPLEMENT AB 32

Table 4 provides the total CARB-only resources to implement AB 32 separated by personnel and operations, then contract expenditures.

Table 4: Overall Resources to Implement AB 32 for CARB Only

Category	FY 2018–19 Funding	FY 2019–20 Funding	FY 2020–21 Funding*
Personnel and operations expenditures	\$66,699,000	\$51,983,000	\$48,252,000
Contract expenditures (includes encumbered funds)	\$5,518,000	\$16,509,000	\$14,283,000
Total	\$75,217,000	\$68,492,000	\$62,535,000

Explanations: All dollars are rounded to the nearest thousand. Personnel expenses include salary, benefits, overhead, equipment, travel, and training. FY 2018–19, FY 2019–20, and FY 2020–21 contract funding refers to monies that may not have been encumbered during the fiscal year, but may be expended through the end of the fiscal year in 2021, 2022, and 2023, respectively. Additional funding sources besides the AB 32 Cost of Implementation Account (3237) that was used to support AB 32 activities include approximately \$4.1 million for FY 2018–19, \$1.8 million for FY 2019–20, and \$1 million for FY 2020–21. Table 5 has additional detail on these funding sources.

Source: Personnel and operations expenses are obtained from manual monthly tracking reports submitted by CARB staff.

*Funding is estimated from CARB staff monthly tracking reports from the previous fiscal year, adjusted to include an estimated 2.2 percent increase to employee compensation and adjusted to include additional expenditures from a Legislature approved budget change proposal for \$21.1 million in contract costs to WCI, Inc. in order to modernize CARB’s Cap-and-Trade Auction and Registry Databases.

Table 5 provides a breakdown by major program area of resources for personnel and operations and contract expenditures for all CARB activities that provide a climate benefit.

Table 5. Detailed CARB Expenditures by AB 32 Program Area

AB 32 Program Area	FY 2018–19		FY 2019–20		FY 2020–21	
	Personnel & Operations Expended	Contract Dollars Expended	Personnel & Operations Expended	Contract Dollars Expended	Projected Personnel & Operations Expenses	Contract Dollars Expended
Air Quality Data Analysis	\$50,000	-	-	\$6,000	-	-
Ambient Air Quality Monitoring	\$1,826,000	\$349,000	\$2,883,000	\$479,000	\$2,946,000	\$222,000
Cap-and-Trade Program	\$4,106,000	\$113,000	\$4,510,000	\$139,000	\$4,609,000	\$107,000
Economic Analysis	\$244,000		\$207,000	-	\$212,000	-
Emissions Testing	\$505,000		\$479,000	\$225,000	\$490,000	\$225,000
Emission Inventory	\$819,000	\$43,000	\$949,000	\$8,000	\$970,000	-
Laboratory Analysis*	\$302,000	\$169,000	\$202,000	\$88,000	\$206,000	\$21,000
Landfill Methane	\$1,253,000	\$783,000	\$398,000	\$1,240,000	\$407,000	\$677,000
Low Carbon Fuel Standard (LCFS), including Enforcement	\$6,260,000	\$776,000	\$4,851,000	\$972,000	\$4,958,000	\$319,000
Industry and Electricity	\$812,000	-	-	-	-	-
Mandatory Reporting Regulation (MRR)	\$816,000	\$732,000	\$924,000	\$305,000	\$944,000	\$202,000
MRR & LCFS Data Certification and Verification	\$815,000	-	\$927,000	\$207,000	\$947,000	\$30,000
Neighborhood Air Monitoring Near Oil/Gas Operations*	\$609,000	\$182,000	\$999,000	\$97,000	\$1,021,000	\$65,000

AB 32 Program Area	FY 2018–19		FY 2019–20		FY 2020–21	
	Personnel & Operations Expended	Contract Dollars Expended	Personnel & Operations Expended	Contract Dollars Expended	Projected Personnel & Operations Expenses	Contract Dollars Expended
Other AB 32 Activities	\$4,032,000	\$402,000	\$3,633,000	\$2,271,000	\$3,713,000	\$1,366,000
Reimbursement—Energy Commission	-	-	\$2,797,000	\$2,524,000	-	\$1,592,000
Reimbursement—Light-Duty Zero Emission Vehicle Infrastructure*	-	-	\$1,974,000	-	-	-
Research	\$3,745,000	\$362,000	-	-	-	-
SB 1371 (Leno, Chapter 525, Statutes of 2014) (Natural Gas Leakage)*	\$153,000		\$222,000	\$6,000	\$227,000	\$5,000
SB 375 (Sustainable Communities)	\$1,554,000	\$159,000	\$1,214,000	\$312,000	\$1,241,000	\$68,000
Scoping Plan	\$598,000	\$150,000	\$224,000	-	\$229,000	-
Short-Lived Climate Pollutants*	\$2,216,000	\$418,000	\$1,753,000	\$701,000	\$1,792,000	\$505,000
Systems Development and Support*	\$37,310,000	\$880,000	\$21,991,000	\$2,729,000	\$22,475,000	\$1,579,000
Western Climate Initiative, Inc.	\$1,674,000	-	\$846,000	\$4,200,000	\$865,000	\$7,300,000
Total	\$66,699,000	\$5,518,000	\$51,983,000	\$16,509,000	\$48,252,000	\$14,283,000

Explanations: All dollars are rounded to the nearest thousand. Other AB 32 support activities include environmental justice and AB 32 Fee Regulation. Allocated costs, including those for overhead, are included in the line item—Systems Development and Support. Projected expenses are from CARB staff monthly tracking reports from the previous fiscal year, adjusted to include an estimated 2.2 percent increase to employee compensation and additional expenditures from a Legislature approved budget change proposal for \$21.1 million in contract costs to WCI, Inc. in order to modernize CARB’s Cap-and-Trade Auction and Registry Databases. For contract expenses, CARB relied on its records of actual and encumbered expenditures under the Climate Change Program (Fund 3510). Contract dollars expended refers to monies that may not have been

encumbered during FY 2018–19, FY 2019–20, and FY 2020–21, but may be expended through the end of the fiscal year in 2021, 2022, and 2023, respectively.

Note: In previous year's *AB 32 Fiscal and Resources Reports*, allocated costs were included with each program personnel line item expense rather than having a separate line item.

Source: Personnel and operations expenses are obtained from manual monthly tracking reports submitted by CARB staff under the Climate Change Program (3510).

*Funding sources other than the AB 32 Cost of Implementation Account (3237) were used to support AB 32 activities, these include: Public Utilities Commission Utilities Reimbursement Account General Fund (0462); Oil, Gas, and Geothermal Administrative Fund (3046); and Air Pollution Control Fund (0115). These funding sources included approximately \$4.1 million for FY 2018–19, \$1.8 million for FY 2019–20, and \$1 million for FY 2020–21.

SECTION 3:

ANNUAL UPDATES ON WESTERN CLIMATE INITIATIVE, INC. ACTIVITIES (January 2020–December 2020, and January 2021–December 2021)

This report is required by the provisions of SB 1018 (Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012) that require advance notice of any CARB payments to WCI, Inc., over \$150,000, and semi-annual updates on the actions proposed by WCI, Inc. that affect California government or entities. This report provides updates on WCI, Inc. activities for Calendar Year 2020 and upcoming milestones for Calendar Year 2021. This update focuses on recent WCI, Inc. actions. CARB provides separate notices to the Joint Legislative Budget Committee prior to any transfer or expenditure to WCI, Inc. over \$150,000.

I. WCI, INC. ACTIVITY UPDATES

This report provides updates on WCI, Inc. activities for calendar year 2020 and upcoming milestones for calendar year 2021.

- In February, WCI, Inc. released a request for proposals (RFP) to develop a consolidated platform to manage the single market registry and the auction of emissions allowances for all participating jurisdictions. The purpose of the RFP was to award master services agreements to qualified contractors for this consolidated platform. WCI, Inc. solicited three categories of services (software development, quality assurance, and penetration testing) through the release of separate scopes of work.
- In March, WCI, Inc. released the Auction Project scope of work. Following evaluation of proposals, WCI, Inc. entered into an agreement with Harbinger Systems.
- In May, WCI, Inc. released the Quality Assurance scope of work for the Auction Project. Following evaluation of proposals, WCI, Inc. entered into an agreement with QA Impact.
- In June, WCI, Inc. released the Penetration Testing scope of work for the Auction Project. Following evaluation of proposals, WCI, Inc. entered into an agreement with QA Impact.
- WCI, Inc. anticipates release of the Registry Project scope of work in late 2020 and selection of contractors in 2021.
- The WCI, Inc. Board of Directors adopted the [budget](#) for calendar year 2020 on November 7, 2019.

- CARB, Québec, and Nova Scotia provided 2020 funding for WCI, Inc. The share of funding provided by each is determined in three parts:
 - The cost of managing WCI, Inc. (personnel and operating costs) is divided equally among CARB, Québec, and Nova Scotia;
 - The cost of the cap-and-trade service contracts is divided based on the total emissions covered by each jurisdiction’s trading program, and whether a jurisdiction uses a given service; and
 - The cost of jurisdiction-specific administrative support is assigned fully to each jurisdiction.
- At its February 5, 2020, meeting, the WCI, Inc. Board of Directors approved a funding agreement with CARB for services in the first half of 2020. The agreement, effective through the first half of 2020, included one payment of \$425,000 at the commencement of the agreement term and two quarterly payments in arrears in the amount of \$637,500 per quarter for participant dues on behalf of CARB.
- At its May 14, 2020, meeting, the WCI, Inc. Board of Directors approved a funding agreement with CARB for services in the second half of 2020 through the end of 2021. The agreement includes quarterly payments in which 25 percent of the quarterly payment will be paid in the beginning of each quarter and the remaining 75 percent will be paid in arrears. Fully executed participating jurisdiction funding agreements are available on the [WCI, Inc. Jurisdiction Agreements webpage](#).

II. WCI, INC. 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 current bylaws and policies are posted on the [WCI, Inc. website](#).

In 2020, the directors from California remained unchanged from 2019. They included:

- Secretary for Environmental Protection, Jared Blumenfeld;
- Chair of the California Air Resources Board, Mary Nichols²⁰;
- Assembly member Richard Bloom, appointed by the Speaker of the Assembly (nonvoting director); and
- Mr. Kip Lipper, appointed by the Senate Rules Committee (nonvoting director).

The [Board officers](#) were selected at the October 21, 2020 annual Board meeting.

III. PAYMENTS TO WCI, INC.

Payments by CARB to WCI, Inc. during 2020 are presented in Table 6.

²⁰ In 2021, the new Chair of the California Air Resources Board, Liane Randolph, replaces Mary Nichols.

Table 6: 2020 Payments from CARB to WCI, Inc.

Payments	Invoice Dates	Amount
2019 Q4 Payment	1/2/2020	\$500,000
AB 398 Funding	2/12/2020	\$1,000,000
2020 Initial Term Payment	2/12/2020	\$425,000
2020 Q1 Payment	4/1/2020	\$637,500
2020 Q2 Payment	7/1/2020	\$637,500
2020 Q3 Payment #1	7/2/2020	\$443,663
2020 Q3 Payment #2*	10/1/2020	\$1,330,988
2020 Q4 Payment #1*	10/1/2020	\$443,663

* As of the writing of this report in October 2020, these are anticipated payment amounts.