

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)



The information provided on the table below is included as Enclosure 2 to ARB’s response to the Joint Legislative Audit Committee’s letter dated June 2, 2016, requesting additional information on the programs and projects that receive funding from the Greenhouse Gas Reduction Fund (GGRF).

In response to that letter, ARB collected and compiled the following information from agencies that administer California Climate Investments. The table below provides program information specifically responsive to items ‘a’ and ‘c-g’ in the JLAC letter.

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
High-Speed Rail Authority Appropriated: \$850M* *Approximate value based on 25% continuous appropriation	High-Speed Rail Project	Enclosure 4 includes all ARB quantification methods developed to-date	\$850	For GHG reductions from HSR system, see Footnote 3. ³	N/A ³	N/A ³	Yes, because the Authority uses GHG cost-effectiveness in a range of program delivery components, including competitive procurement for contractors.	<ul style="list-style-type: none"> • Air pollution reduction • Economic development • Mobility and access • Jobs 	No, GHG emissions resulting from shifting passengers from air travel to High Speed Rail would not be achieved under existing regulations. Although emissions reductions attributable to reduced passenger vehicle use are from sources covered by the Cap-and-Trade regulation, the regulation is not designed to achieve all of the same objectives as this program.	2025-2075

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
California State Transportation Agency Appropriated: \$265M* *Approximate value based on 10% continuous appropriation	Transit and Intercity Rail Capital Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$224.3	865,000	0.004	\$259	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Increased ridership through expanded and improved rail and transit service (including connectivity to rail services through expanded and improved transit and/or feeder bus services) • Reduced VMT from automobiles and the number of automobile trips through growth in ridership • Integration of the services with the state's various rail and transit operations, including integration with the state's high-speed rail system • Improved safety for users or non-users of the transit or rail service • Benefits to disadvantaged communities 	Yes, because the program funds GHG reductions from or emission sources covered by Cap-and-Trade. However, this program furthers additional objectives, which include reducing VMT from automobiles and the number of automobile trips through growth in transit ridership, increasing ridership through expanded and improved rail and transit service, and enhancing the connectivity, integration, and coordination of the state's various transit systems, including the high-speed rail system.	2015-2035

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Department of Transportation (Caltrans) Appropriated: \$145M* *Approximate value based on 5% continuous appropriation	Low Carbon Transit Operations Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$24.2	N/A ⁴	N/A	N/A	No, the program does not have a GHG cost-effectiveness threshold or use cost-effectiveness to select projects because the program funds transformative technology demonstration/deployment needed for future GHG reductions (e.g., zero-emission equipment); it is designed to provide significant benefits to disadvantaged communities and/or co-benefits, in addition to reducing greenhouse gases.	<ul style="list-style-type: none"> • Demonstrate that each project reduces GHG emissions • Increase mode share • Increase ridership, • An emphasis on 50% of program funds benefiting disadvantaged communities 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However, this program furthers additional objectives, which include increasing transit mode share, increasing ridership through expanded and improved transit service, connectivity to intercity rail and various transit systems with an emphasis in providing benefits to disadvantaged communities.	2015-2065

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Strategic Growth Council Appropriated: \$610M* *Approximate value based on 20% continuous appropriation	Affordable Housing and Sustainable Communities	Enclosure 4 includes all ARB quantification methods developed to-date	\$154.4	810,000	0.005	\$191	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Reduction of housing costs • Reduction of transportation costs • Increased access to active modes of transportation • Improved air quality • Increased access to parks • Reduced water use 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However, this program funds project types (e.g. the integration of affordable housing and transportation) and furthers additional objectives, which include affordable housing and disadvantaged community benefits, which are not required by regulation.	2015-2045
	Sustainable Agricultural Lands Conservation	Enclosure 4 includes all ARB quantification methods developed to-date	\$4.2	71,000	0.017	\$59	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Acres of agricultural land conserved • Habitat and/or ecosystem services role of the land • Greenbelt or urban separator role of the land 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However, this program furthers additional objectives, which include conserving threatened agricultural land, that are not required by regulation.	2015-2045

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Air Resources Board Appropriated: \$325M	Clean Vehicle Rebate Project	Enclosure 4 includes all ARB quantification methods developed to-date	\$204.3	4,470,000	0.022	\$46	No, the program does not have a GHG cost-effectiveness threshold or use cost-effectiveness to select projects because the program funds transformative technology demonstration and deployment needed for future GHG reductions (e.g., zero-emission equipment).	<ul style="list-style-type: none"> • Progress of California ZEV market using sales and registration data • Number of rebates issued, funding levels, and rebates for disadvantaged communities • Participant demographics (income levels and geographic distribution of rebates) using application data and recipient surveys • Emission reductions (GHG, NOx, ROG, PM) 	Yes, because the program funds GHG reductions from emission sources covered by the Cap-and-Trade and Advanced Clean Cars regulations. However, as a result of this funding program GHG reductions are expected to begin sooner and in excess of what would occur under the Advanced Clean Car regulation because the regulatory program applies only to manufacturers to offer vehicles for sale, not to consumers to make the purchase.	2015-2030
	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project	Enclosure 4 includes all ARB quantification methods developed to-date	\$19.9	44,000	0.002	\$452	No, the program does not have a GHG cost-effectiveness threshold or use cost-effectiveness to select projects because the program funds transformative technology demonstration and deployment needed for future GHG reductions (e.g., zero-emission equipment).	<ul style="list-style-type: none"> • Sales growth • Manufacturer diversity • Purchase price • Participating business/fleet type • Disadvantaged community benefits • Emission reductions (GHG, NOx, ROG, PM) 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However existing regulations would not accomplish the same objectives of this program, which includes funding projects that advance zero and near-zero emission technology, reduce harmful air pollution, and benefit disadvantaged communities. In addition, the GHG reductions are expected to begin sooner than would occur under Cap-and-Trade.	2014-2030

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Air Resources Board (cont.)	Enhanced Fleet Modernization Program Plus-Up	Enclosure 4 includes all ARB quantification methods developed to-date	\$12.0	29,000	0.002	\$414	No, because the program is designed to provide significant benefits to disadvantaged communities and/or co-benefits, in addition to reducing greenhouse gases.	<ul style="list-style-type: none"> Participant experience Number and types of vehicles funded Fuel economy of vehicle replacements Age and mileage of the retired and replaced vehicles Income level and whether the consumer resides in or near a disadvantaged community Emission reductions (GHG, NOx, ROG, PM) 	Yes, because the program funds GHG reductions from emission sources covered by the Cap-and-Trade and Advanced Clean Cars regulations. However, as a result of this funding program GHG reductions are expected to begin sooner and in excess of what would occur under the Advanced Clean Cars regulation because the regulation applies only to manufacturers that offer vehicles for sale, not to consumers that make the purchase. Additionally, California's existing climate regulations are not designed to achieve the same objectives as this program, which include maximizing disadvantaged community benefits.	2015-2018
	Car Sharing and Mobility Options Pilot	Enclosure 4 includes all ARB quantification methods developed to-date	\$2.0	TBD	TBD	TBD	No, because the program is designed to provide significant benefits to disadvantaged communities and/or co-benefits, in addition to reducing greenhouse gases.	<ul style="list-style-type: none"> Number of participants Demographics Participant transportation uses and needs Number, type, and mileage of trips taken Fuel/electricity used Changes in participant knowledge and acceptance of clean vehicles Opportunities for enhancing usefulness for participants and 	Yes, because the program funds GHG reductions from emission sources covered by the Cap-and-Trade and Advanced Clean Cars regulations. However, as a result of this funding program GHG reductions are expected to begin sooner and in excess of what would occur under the Advanced Clean Cars regulation because the regulation applies only to manufacturers that offer vehicles for sale, not to consumers that make the purchase. Additionally, California's	2016-2019

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Air Resources Board (cont.)								project continuation and expansion <ul style="list-style-type: none"> Emission reductions (GHG, NOx, ROG, PM) 	existing climate regulations are not designed to achieve the same objectives as this program, which include maximizing disadvantaged community benefits.	
	Public Fleets Increased Incentives Pilot	Enclosure 4 includes all ARB quantification methods developed to-date	\$2.9	4,000	0.001	\$725	No, because the program is designed to provide significant benefits to disadvantaged communities and/or co-benefits, in addition to reducing greenhouse gases.	<ul style="list-style-type: none"> Number of rebates issued and funding levels Location, types, and number of vehicles purchased Emission reductions (GHG, NOx, ROG, PM) 	Yes, because the program funds GHG reductions from emission sources covered by the Cap-and-Trade and Advanced Clean Cars regulations. However, as a result of this funding program GHG reductions are expected to begin sooner and in excess of what would occur under the Advanced Clean Cars regulation because the regulation applies only to manufacturers that offer vehicles for sale, not to consumers that make the purchase. Additionally, California's existing climate regulations are not designed to achieve the same objectives as this program, which include maximizing disadvantaged community benefits.	2015-2018
	Financing Assistance Pilot Project	Enclosure 4 includes all ARB quantification methods developed to-date	TBD	TBD	TBD	TBD	No, because the program is designed to provide significant benefits to disadvantaged communities and/or co-benefits, in addition to reducing greenhouse gases.	<ul style="list-style-type: none"> Number of participants Demographics (income, zip code/census tract) Cost, type, age, and mileage of vehicles purchased or leased Amount and type of financing assistance provided 	Yes, because the program funds GHG reductions from emission sources covered by the Cap-and-Trade and Advanced Clean Cars regulations. However, as a result of this funding program GHG reductions are expected to begin sooner and in excess of what would occur under the Advanced	TBD

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Air Resources Board (cont.)								<ul style="list-style-type: none"> • Loan term, amount, interest rate • Progress on outstanding loans • Emission reductions (GHG, NOx, ROG, PM) 	Clean Cars regulation because the regulation applies only to manufacturers that offer vehicles for sale, not to consumers that make the purchase. Additionally, California's existing climate regulations are not designed to achieve the same objectives as this program, which include maximizing disadvantaged community benefits.	
	Zero Emission Truck and Bus Pilot Projects	Enclosure 4 includes all ARB quantification methods developed to-date	TBD	TBD	TBD	TBD	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Technology performance • Zero-emission range and mileage accumulation; • Fuel and energy usage • Vehicle reliability • Costs (vehicle, infrastructure, maintenance) • Emission reductions (GHG, NOx, ROG, PM) • Fleet acceptance and driver experience • Potential for technology transfer to freight • Potential for cost reductions with production increases 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However existing regulations would not accomplish the same objectives of this program, which includes funding projects that advance zero and near-zero emission technology, reduce harmful air pollution, and benefit disadvantaged communities. In addition, the GHG reductions are expected to begin sooner than would occur under Cap-and-Trade.	TBD

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Air Resources Board (cont.)	Advanced Technology Freight Demonstration Projects: Multi-Source Facility Projects	Enclosure 4 includes all ARB quantification methods developed to-date	TBD	TBD	TBD	TBD	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Potential commercial viability • Zero-emission range and mileage/hour accumulation • Fuel and energy usage • Vehicle/equipment performance • Vehicle/equipment reliability • Costs (vehicle, infrastructure, maintenance) • Emission reductions (GHG, NOx, ROG, PM) • Potential for technology transfer to other sectors • Fleet acceptance and driver/operator experience 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However existing regulations would not accomplish the same objectives of this program, which includes funding projects that advance zero and near-zero emission technology, reduce harmful air pollution, and benefit disadvantaged communities. In addition, the GHG reductions are expected to begin sooner than would occur under Cap-and-Trade.	TBD
	Advanced Technology Freight Demonstration Projects: Drayage Trucks	Enclosure 4 includes all ARB quantification methods developed to-date	TBD	TBD	TBD	TBD	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Potential commercial viability • Zero-emission range • Fuel and energy usage • Vehicle performance • Vehicle reliability • Costs (vehicle, infrastructure, maintenance) • Emission reductions (GHG, NOx, ROG, PM) • Potential for technology transfer to other sectors • Fleet acceptance and driver experience 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However existing regulations would not accomplish the same objectives of this program, which includes funding projects that advance zero and near-zero emission technology, reduce harmful air pollution, and benefit disadvantaged communities. In addition, the GHG reductions are expected to begin sooner than would occur under Cap-and-Trade.	TBD

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Department of Community Services and Development Appropriated: \$154M	Single-Family/Small Multi-Family Energy Efficiency and Solar Water Heating	Enclosure 4 includes all ARB quantification methods developed to-date	\$24.0	85,000	0.004	\$282	Yes, GHG cost-effectiveness and the lifetime of each measure are used to determine which combination of energy efficiency measures will be installed. The thresholds depend upon whether programs are implemented in partnership with other state or federal programs.	<ul style="list-style-type: none"> • Energy savings • Energy cost savings for low-income households 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade and the Renewable Portfolio Standard. However, this program furthers additional objectives, which include energy cost savings for low-income households in disadvantaged communities.	2015-2035
	Single-Family Solar Photovoltaics	Enclosure 4 includes all ARB quantification methods developed to-date	\$22.3	106,500	0.005	\$209	Yes, GHG cost-effectiveness is used to determine whether solar projects should be installed at a given dwelling.	<ul style="list-style-type: none"> • Energy savings • Energy cost savings for low-income households 	Yes, because the program funds GHG reductions for emissions covered by Cap-and-Trade and the Renewable Portfolio Standard. However, this program furthers additional objectives which include energy cost savings for low-income households in disadvantaged communities.	2015-2040
	Large Multi-Family Energy Efficiency and Renewables	Enclosure 4 includes all ARB quantification methods developed to-date	\$24.0	67,500	0.003	\$356	Yes, GHG cost-effectiveness and the lifetime of each measure are used to determine which combination of energy efficiency measures will be installed. The thresholds depend upon whether programs are implemented in partnership with other state or federal programs.	<ul style="list-style-type: none"> • Energy savings • Energy cost savings for low-income households 	Yes, because the program funds GHG reductions for emissions covered by Cap-and-Trade and the Renewable Portfolio Standard. However, this program furthers additional objectives which include energy cost savings for low-income households in disadvantaged communities.	2015-2040

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Pending ⁵ Appropriated: \$20M	Energy Efficiency: Public Buildings	N/A	\$0		0	0	N/A	N/A	N/A	N/A
California Department of Food and Agriculture Appropriated: \$75M	Dairy Digester Research and Development Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$11.1	1,377,000	0.124	\$8	No, the program does not have a GHG cost-effectiveness threshold or use cost-effectiveness to select projects because the types of projects the program funds are inherently cost-effective.	<ul style="list-style-type: none"> Renewable energy production Odor reduction Pathogen reduction 	No, GHG reductions being achieved by this program are not required by existing regulations. The Proposed Short-Lived Climate Pollutant Strategy identifies the need for a future regulation to reduce manure methane emissions from the dairy industry.	2015-2025
	State Water Efficiency and Enhancement Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$18.1	552,000	0.030	\$33	No, because the program is designed to provide significant co-benefits, in addition to reducing greenhouse gases (e.g., water savings).	<ul style="list-style-type: none"> Water savings 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However, this program furthers additional objectives which include water savings, reduced energy costs, improved air quality, and protection of water quality.	2015-2030
	Biofuels ⁶	N/A	\$0	0	0.000	\$0	N/A	N/A	N/A	N/A

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Department of Water Resources Appropriated: \$70M	Water-Energy Grant Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$27.8	197,000	0.007	\$141	Yes, because the projects were ranked high to low based on water saved per total project cost and energy saved per total project cost. Projects with highest water savings per total project cost and highest energy savings per total project cost were funded first.	<ul style="list-style-type: none"> • Benefits to disadvantaged communities • Water savings • Energy savings 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade. However, this program furthers additional objectives which include water and energy savings.	2016-2041
	Turbines ⁷	Enclosure 4 includes all ARB quantification methods developed to-date	\$20.0	TBD	TBD	TBD	No, the program does not have a GHG cost-effectiveness threshold or use cost-effectiveness to select projects.	<ul style="list-style-type: none"> • Sustainability and reliability of the benefits 	Yes, because the program funds GHG reductions from emission sources covered by Cap-and-Trade and the Renewable Portfolio Standard. However, GHG reductions are expected to begin sooner as a result of this funding.	2015-2045

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Department of Fish and Wildlife Appropriated: \$27M	Sacramento-San Joaquin Delta and Coastal Wetland Restoration	Enclosure 4 includes all ARB quantification methods developed to-date	\$15.4	519,000	0.034	\$30	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> Habitat restoration and enhancement Improved habitat connectivity Improved flood protection for local communities Reduction or reversal of land subsidence Protection and improvement of water quality through filtration and pollution reduction Enhanced readiness to climate changes 	No, GHG reductions being achieved by this program are not required by existing regulations. The program only funds projects that provide benefits that are greater than any required applicable environmental mitigation measures or compliance obligations, where applicable.	2020-2070
	Mountain Meadow Ecosystems Restoration	Enclosure 4 includes all ARB quantification methods developed to-date	\$5.9	52,000	0.009	\$113	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> Habitat restoration and enhancement Reduction and delay of peak flows within and downstream of mountain meadows Increased late season flows downstream of mountain meadows Increased water storage capacity in mountain meadows Protect and provide climate refugia 	No, GHG reductions being achieved by this program are not required by existing regulations. The program only funds projects that provide benefits that are greater than any required applicable environmental mitigation measures or compliance obligations, where applicable.	2018-2068

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Department of Forestry and Fire Protection (CALFIRE) Appropriated: \$42M	Forest Health Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$7.7	2,046,000	0.266	\$4	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Wildlife habitat improvement • Water quality improvement • Number of acres treated • Biomass used for energy production • Biomass used for harvested wood products 	No, GHG reductions being achieved by this program are not required by existing regulations.	2019-2096
	Forest Legacy Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$4.0	387,000	0.097	\$10	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Wildlife habitat protection • Water quality protection • Number of acres protected 	No, GHG reductions being achieved by this program are not required by existing regulations.	2015-2025
	Urban and Community Forestry Program	Enclosure 4 includes all ARB quantification methods developed to-date	\$15.6	134,000	0.009	\$116	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Creating jobs • Increasing energy conservation • Reducing storm-water runoff • Improving local air and water quality • Improving public health outcomes • Utilization of removed trees to avoid such trees ending up in landfills • Reduction of urban heat island effect (reduced temps. on hot days) 	No, GHG reductions being achieved by this program are not required by existing regulations.	2016-2056

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

A		B	C				D	E	F	G
Administering Agency and GGRF Funding Appropriated (\$M)	Program	Method to Estimate GHG Reductions ¹	\$ Awarded (\$M)	GHG Reductions (MTCO _{2e})	MTCO _{2e} / \$ Awarded	\$ Awarded / MTCO _{2e}	Does the Program Have a GHG Cost-Effectiveness Threshold or is GHG Cost-Effectiveness a Factor for Eligibility or Ranking?	Other Metrics for Evaluating Program Effectiveness	Could GHG Reductions Have Been Achieved Through Existing Regulations?	Timeframe Over Which GHG Reductions are Estimated ²
Department of Resources Recycling and Recovery (CalRecycle) Appropriated: \$31M	Organics/ Composting Digestion Grants	Enclosure 4 includes all ARB quantification methods developed to-date	\$14.5	1,658,000	0.114	\$9	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Waste diversion • Air/water quality pollution reductions • Cost savings • Food rescue • Food waste prevention • Benefits to disadvantaged communities 	No, GHG reductions being achieved by this program are not required by existing regulations. The Proposed Short-Lived Climate Pollutant Strategy identifies the need for a future regulation to effectively eliminate organic disposal in landfills.	2016-2025
	Recycling Manufacturing	Enclosure 4 includes all ARB quantification methods developed to-date	\$5.0	323,000	0.065	\$15	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Waste diversion • Air/water quality pollution reductions • Cost savings • Food waste prevention • Benefits to disadvantaged communities (hiring/training employees and community outreach) 	No, GHG reductions being achieved by this program are not required by existing regulations.	2015-2025
	Organics and Recycling Project Loans	Enclosure 4 includes all ARB quantification methods developed to-date	\$1.7	470,000	0.276	\$4	Yes, GHG cost-effectiveness is one of the factors considered in project selection.	<ul style="list-style-type: none"> • Waste diversion • Air/water quality pollution reductions • Cost savings • Food rescue • Food waste prevention • Benefits to disadvantaged communities 	No, GHG reductions being achieved by this program are not required by existing regulations. The Proposed Short-Lived Climate Pollutant Strategy identifies the need for a future regulation to effectively eliminate organic disposal in landfills.	2016-2025

Enclosure 2: California Climate Investments – Program-Level Response to Joint Legislative Audit Committee – June 30, 2016
Data from 2016 Annual Report to the Legislature (as of December 2015)

1. The Quantification Methodologies are available on ARB's website (<http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/quantification.htm>) and are also provided as Enclosure 4, *California Climate Investments Quantification Methodologies for Estimating Greenhouse Gas Reductions and Supporting Materials*.
2. Column G lists the timeframe over which GHG reductions are estimated, or the reporting timeframe specified by the quantification methodology. In many cases, the GHG benefits are expected to continue beyond that time.
3. The High Speed Rail Project (HSR) is expected to reduce GHG emissions by 44 million metric tons, per the 2016 Annual Report to the Legislature. The 2016 Annual Report includes the estimated GHG reductions from the complete High Speed Rail System, but does not attribute these total system reductions to a particular year of funding. The High-Speed Rail Authority's updated forecasts (to be provided for ARB and public review in its forthcoming Sustainability Report) based on the 2016 Business Plan, provide a range of 58 to 71 million MTCO_{2e} in reduced emissions over the first 50 years of its operating life. GGRF funds provide a critical part of the total funds for the system, though it is difficult to estimate precisely what the ultimate GGRF investment will be, and consequently, a comparable cost effectiveness per ton of emissions reduced. Analyzing the proposed capital cost, without Federal or Prop 1a funds (approximately \$51.6 billion), results in between \$718 and \$888 per ton, and .0014 to .0011 ton/\$.
4. For FY 2014-15, as an interim guide to comply with the GHG reduction requirement, Caltrans, in consultation with ARB, developed and used a list of eligible projects determined to meet the statutory requirements of SB 862 for distribution of funds, and did not quantify GHG emission reductions at the project scale. For FY 2015-16, ARB and Caltrans developed a quantification methodology to estimate GHG emission reductions prior to project implementation.
5. Although funding for public buildings was initially appropriated to the California Energy Commission, the Administration has proposed in the FY 2016-17 Budget to have Department of General Services administer this program. The California Energy Commission did not receive any GGRF funding in FY 2014-15 or 2015-16.
6. CDFA's Alternative and Renewable Fuels Program was an in-house research program designed to review adopt and develop standards and specifications for low carbon renewable and zero-emission biofuels derived from agricultural waste.
7. ARB and DWR are working to finalize quantification of GHG reductions for the turbine projects and will include project-level data in the supplemental material to be posted online.