



California Environmental Protection Agency

2020

State Agency Greenhouse Gas Reduction Report Card

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This Report Card documents (1) the effectiveness of measures to reduce greenhouse gas (GHG) emissions in California and (2) GHG emissions from State agencies' operations. Figure 1 shows the trend in reductions as reported in this year's and previous years' Report Card. This year's Report Card documents reductions of 76 million metric tons of carbon dioxide equivalent (MMT CO_2e) that occurred in 2019. Each Report Card shows reductions that happened two years prior to publication.¹

In 2016, California reached its 2020 GHG emissions target four years early and emissions continue to go down. The goal, set by AB 32 (Núñez, Chapter 488, Statutes of 2006), required getting GHG emissions back to 1990 levels by 2020. The quantitative target was 431 MMT CO_2e . The GHG inventory for 2018 came to 425 MMT CO_2e .² The GHG reductions documented in the Report Card made this achievement possible.

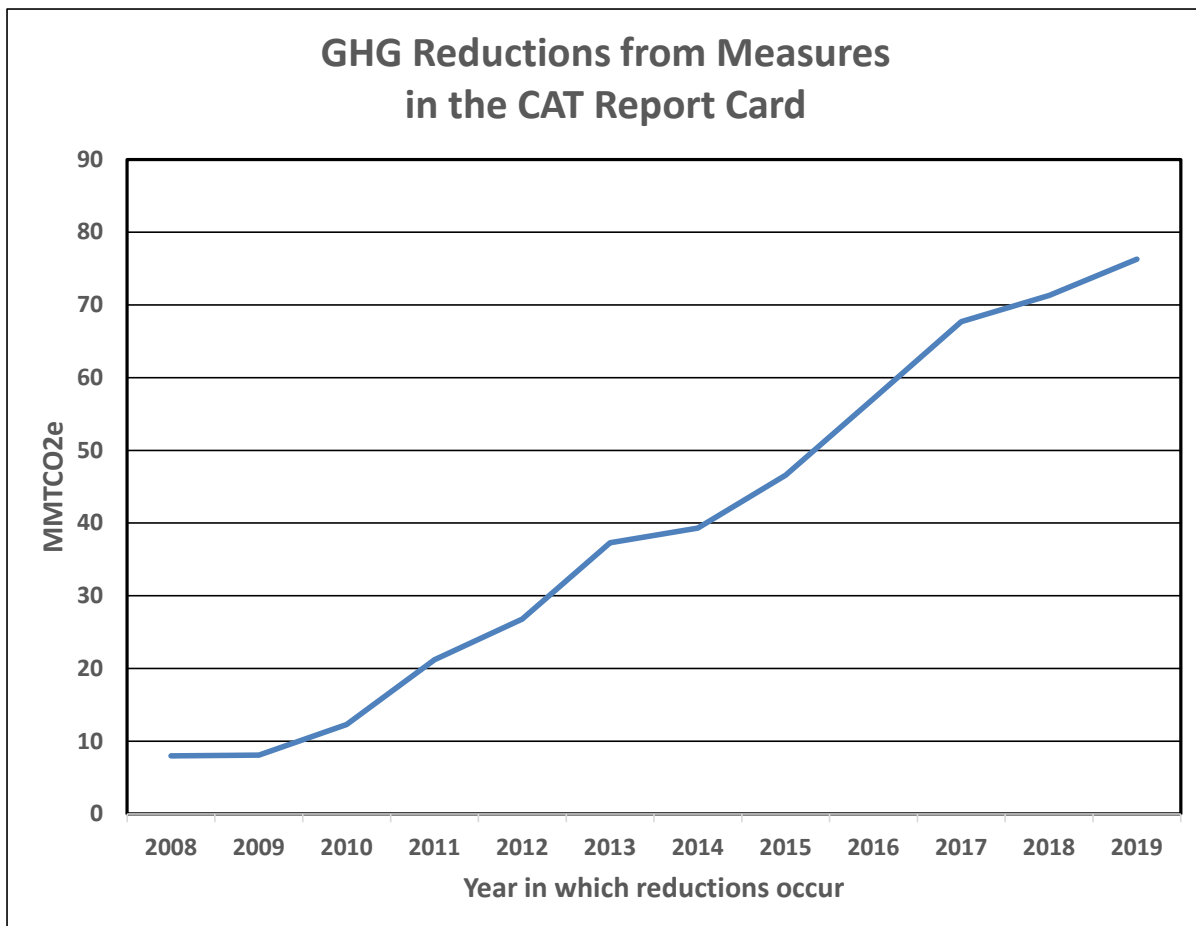


Figure 1

¹ Recent Report Cards are available at

http://climatechange.ca.gov/climate_action_team/reports/

² California Air Resources Board, *California Greenhouse Gas Emissions for 2000 to 2017*,

https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-18.pdf

Background

Annually, the California Environmental Protection Agency (CalEPA) must prepare a report describing state agency actions to reduce GHG emissions. Per Section 12892 of Part 2.5 of Division 3 of Title 2 of the Government Code SB 85 (Stats. 2007, ch. 178), this law further directs CalEPA to compile and organize this information in the form of a “Report Card” and post it on the CalEPA website. The report reflects information gathered in 2020 for actual GHG reductions occurring in 2019. Projections of future GHG emissions were current as of October 2020, when state agencies were required to submit their information to CalEPA.

The statute requires that the Report Card include the following:

- A list of measures adopted and implemented by the state agency with the actual GHG emissions reduced because of these measures.
- A list and timetable for adoption of any additional measures needed to meet GHG emission reduction targets.
- A comparison of the reductions from actions taken or proposed to be taken by a state agency to that agency’s GHG emission reduction targets.
- An estimate of the greenhouse gas emissions from each agency’s own operations and activities.

Climate Change Report Card Tables

CalEPA has organized the required information into four tables as described below:

TABLE 1: GHG Reduction Target Comparison:

Table 1 summarizes the reductions shown in Tables 2 and 3, and compares the 2020 goals from Table 3 with the annual reductions from current programs shown in Table 2. Reductions shown are those achieved within California during the given year. The annual figures reflect cumulative efforts but not cumulative reductions³. In addition, they do not include reductions that might occur out-of-state.

TABLE 2: On-going Measures and Reductions in 2019:

Table 2 looks back to 2019, showing GHG emission reductions achieved by Scoping Plan measures in that calendar year, as reported to CalEPA by the responsible agencies. Nearly all of the GHG emission reduction measures in the 2008 AB 32 Scoping Plan are already in place and operational.

TABLE 3: GHG Reduction Measures and Reductions Expected in 2020:

Table 3 looks ahead to 2020, listing: measures; the expected GHG reduction in 2020. Several measures require cross-agency implementation. The total reduction for these measures may appear twice to reflect that each agency is responsible for some portion of the reductions. In addition, several individual measures feature interacting impacts so that the reduction numbers

³ For example, consider the GHG reductions due to building efficiency standards. The GHG reductions that occur in 2019 are a consequence of cumulative installations that occurred over several years, not just in 2019.

from each are not strictly additive (as recognized and explained in the 2008 Scoping Plan.⁴ Nearly all the Scoping Plan measures are in place by now.

TABLE 4: Climate Action Team (CAT) – GHG Inventory Status:

Each CAT agency is required to report an estimate of the greenhouse gas emissions from their own operations and activities. Table 4 lists the CAT agencies, boards, departments and commissions, and the status of the greenhouse gas inventory activities for each. The named agency or department provided the information in this Table to CalEPA.

The GHG inventories employ protocols established by The Climate Registry (TCR)⁵. Inventories identified as ‘verified’ have been verified by an approved third party and submitted to the registry. The verified inventory reports are on the registry’s website:

<https://www.theclimateregistry.org/our-members/cris-public-reports/>.

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Abbreviations

CAL FIRE – California Department of Forestry & Fire Protection
CARB – Air Resources Board
CAT -- Climate Action Team
CDFA – California Department of Food & Agriculture
CEC – California Energy Commission
CalRecycle – California Department of Resources Recycling and Recovery
CPUC – California Public Utilities Commission
DGS – Department of General Services
DWR – Department of Water Resources
GHG – Greenhouse Gas
GW – Gigawatt
GWh – Gigawatt hour
GWP –Global Warming Potential
LEED – Leadership in Energy and Environmental Design (certification program)
MMBtu – Million British Thermal Units
MMTCO₂e - Million Metric Tons of CO₂ Equivalent
MTCO₂e - Metric Tons of CO₂ Equivalent
MW – Megawatt
MWh – Megawatt hour
OPR – Office of Planning and Research
SF₆ – Sulfur Hexafluoride
SWRCB – State Water Resources Control Board

⁴ <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>

⁵ Originally chartered by the state of California as the California Climate Action Reserve.

TABLE 1 - GREENHOUSE GAS (GHG) EMISSION REDUCTIONS

The following summarizes the totals from Tables 2 and 3. Reductions shown are Million Metric Tons of CO₂ equivalent (MMTCo₂e) and are those achieved within California during the given year. The annual figures do not reflect reductions that might occur out-of-state. For many measures, the annual reductions are due to cumulative action over several years since 2008.

TABLE 1a: GHG EMISSION REDUCTIONS ACHIEVED			
Agency	GHG Emission Reductions Achieved in 2017¹	GHG Emission Reductions Achieved in 2018¹	GHG Emission Reductions Achieved in 2019¹
CAL FIRE	4.5	4.6	4.0
CalRecycle	3.5	3.5	3.5
Caltrans	<0.1	<0.1	<0.1
CARB	28.8	33.2	41.0
CDFA	0.7	0.3	0.3
CEC	12.4	11.2	12.8
CPUC	16.4	17.1	13.3
DGS ³	<0.1	<0.1	<0.1
DWR	1.4	1.4	1.4
HCD ⁴	0.0	0.0	0.0
OPR ⁴	0.0	0.0	0.0
SWRCB	0.0	0.0	0.0
Additional GHG emissions reductions from previous year			5.0

TABLE 1b: Agency GHG Targets for 2020	
Agency	Expected GHG Emission Reductions in 2020 from Agency Measures²
CAL FIRE	2.6
CalRecycle ³	1.0
Caltrans	0.2
CARB	73.6
CDFA	1.5
CEC	11.6
CPUC	23.2
DGS ⁴	6.8
DWR	1.2
HCD ⁵	0.0
HSR	0.3
OPR ⁵	0.0
SWRCB	0.5
Total⁶	122.5

Notes

1. The values in this column are taken from the totals in Table 2. The figures may reflect emission reductions from programs implemented before AB 32 was enacted in order to provide a broad picture of all on-going GHG related efforts. Figures for years prior to the most recent two years come from previous year Report Cards.
2. The values in this column are taken from the agency totals in Table 3. These figures only reflect reductions from programs implemented since AB 32 was enacted. The total aggregate GHG reduction cannot be directly calculated from these values due to issues of double counting. Example: the Green Building measures achieve reductions, primarily, by reducing energy consumption. Such reductions would be captured in the energy sector but the measure would be implemented by non-energy sector agencies such as DGS.
3. Only 1.0 MMTCo₂e of the CalRecycle total shown on Table 3 is included in the target because the balance of the reductions may occur largely out-of-state.
4. Most of the GHG reductions from DGS measures are captured within the energy sector. The target is for measures that are not counted elsewhere.
5. These agencies have important programmatic responsibilities but do not have emission reduction regulatory authority.
6. The total exceeds the amount necessary to reach the 2020 GHG target..

TABLE 2: ONGOING MEASURES AND RELATED GHG EMISSION REDUCTIONS				
MMTCO _{2e} - Million Metric Tons of CO ₂ Equivalent				
Numbered footnotes appear at the end of each agency's section.				
California Department of Forestry and Fire Protection (CAL FIRE)				
Program Title	Emissions Reductions, MMTCO_{2e} 2018	Emissions Reductions, MMTCO_{2e} 2019	Notes	Website
Sustainable Forests (various programs)	0	0	1	
Forest Practices	1.9	1.9	2	https://bof.fire.ca.gov/projects-and-programs/ab-1504/
Urban Forestry	<0.1	<0.1		https://www.fire.ca.gov/grants/urban-and-community-forestry-grant-programs/
Forest Health	2.7	1.6	3	https://www.fire.ca.gov/grants/forest-health-grants/
Forest Legacy	<0.1	0.5	4	https://www.fire.ca.gov/grants/forest-legacy/
Fire Prevention Grant Projects	N/A	N/A		https://www.fire.ca.gov/grants/fire-prevention-grants/
Priority Projects	N/A	<.1		https://www.fire.ca.gov/about-us/45-day-report/

State Agency Greenhouse Gas Reduction Report Card: Table 2

Program Title	Emissions Reductions, MMTCO ₂ e 2018	Emissions Reductions, MMTCO ₂ e 2019	Notes	Website
Sustainable Forests, continued				
Vegetation Management Program (VMP)	N/A	N/A		https://www.fire.ca.gov/programs/resource-management/resource-protection-improvement/vegetation-management-program/
California Forest Improvement Program (CFIP)	<0.1	0		https://www.fire.ca.gov/grants/california-forest-improvement-program-cfip/
<p style="text-align: center;">CAL FIRE NOTES:</p> <p>¹ CAL FIRE, AB 1504 California Forest Ecosystem and Harvested Wood Product Carbon Inventory: 2007 – 2016</p> <p>² CAL FIRE, AB 1504 California Forest Ecosystem and Harvested Wood Product Carbon Inventory: 2007 – 2016, p. 15.</p> <p>³ Benefits estimated using Quantification Methodology approved by California Air Resources Board for Forest Health.</p> <p>⁴ Benefits estimated using Quantification Methodology approved by California Air Resources Board for Land Conservation.</p>				

State Agency Greenhouse Gas Reduction Report Card: Table 2

California Department of Resources, Recycling and Recovery (CalRecycle)				
Program Title	Emissions Reductions, MMTCO₂e 2018	Emissions Reductions, MMTCO₂e 2019	Notes	Website
Statewide Recycling	3.5 ± 0.5	3.5 ± 0.5		https://www2.calrecycle.ca.gov/Publications/Details/1662

State Agency Greenhouse Gas Reduction Report Card: Table 2

California Department of Transportation (Caltrans)				
Program Title	Emissions Reductions, MMTCO₂e 2018	Emissions Reductions, MMTCO₂e 2019	Notes	Website
Alternative Cement and Concrete Strategies	<0.1	<0.1		https://dot.ca.gov/programs/maintenance/pavement/concrete-pavement-and-pavement-foundations/concrete-pavements
Alternative Asphalt Strategies	<0.1	<0.1		https://dot.ca.gov/programs/maintenance/pavement/asphalt-pavement
Alternative Fuel and Fleet Strategies	<0.1	<0.1		https://dot.ca.gov/programs/equipment/greening-the-fleet
Alternative Employee Commuting Strategies	<0.1	<0.1		https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/caltrans-climatechangerprt-final-april-2013-a11y-.pdf
LED Roadway Lighting	<0.1	<0.1		Office of Roadway Materials Testing Electrical Testing Branch http://www.dot.ca.gov/hq/esc/ttsb/electrical/lighting.htm
Facility Efficiency and Energy Conservation	<0.1	<0.1		https://dot.ca.gov/programs/sustainability/sustainable-caltrans

State Agency Greenhouse Gas Reduction Report Card: Table 2

California Air Resources Board				
Program Title	Emissions Reductions, MMTCO _{2e} 2018	Emissions Reductions, MMTCO _{2e} 2019	Notes	Website
High Global Warming Potential (GWP) Gases	1.8 ± 0.4	2.2 ± 0.3		
Reduction of Refrigerant Emissions from Non-Professional Services (H-1)	0.2	0.3		https://ww2.arb.ca.gov/our-work/programs/small-containers-automotive-refrigerant
SF ₆ Limits in Non-Utility and Non-Semiconductor Applications (H-2)	<0.1	<0.1		https://ww2.arb.ca.gov/our-work/programs/sulfur-hexafluoride-non-electric-non-semiconductor-sources
GHG Emission Reductions from Semiconductor Operations (H-3)	<0.1	<0.1		https://ww2.arb.ca.gov/our-work/programs/semiconductor
Global Warming Potential Use in Consumer Products (H-4)	0.2	0.2		https://ww2.arb.ca.gov/our-work/programs/consumer-products-program
Refrigerant Management Program (H-6)	1.0 ± 0.4	1.2 ± 0.3		https://ww2.arb.ca.gov/our-work/programs/refrigerant-management-program

State Agency Greenhouse Gas Reduction Report Card: Table 2

Program Title	Emissions Reductions, MMTCO _{2e} 2018	Emissions Reductions, MMTCO _{2e} 2019	Notes	Website
High GWP Gases, continued				
SF ₆ Emission Reductions from Gas Insulated Switchgear (H-6)	<0.1	<0.1		https://ww2.arb.ca.gov/our-work/programs/elec-tandd
With California Energy Commission, California Building Standards Commission Specifications for New Supermarket Refrigeration (H-6)	0.4	0.5		https://ww2.arb.ca.gov/sites/default/files/classic//research/apr/past/09-306.pdf
Recycling and Waste Management	0.3 to 1.7	0.3 to 1.7		
Landfill Methane (RW-1)	0.3 to 1.7	0.3 to 1.7		https://ww2.arb.ca.gov/our-work/programs/landfill-methane-regulation

State Agency Greenhouse Gas Reduction Report Card: Table 2

Program Title	Emissions Reductions, MMTCO _{2e} 2018	Emissions Reductions, MMTCO _{2e} 2019	Notes	Website
Transportation Sector	31.1	38.5	1,2	
Pavley (AB 1493) (National GHG Standard for 2012-2025 Model Year Light-Duty Vehicles ≤8,500 lbs. GVWR), and Advanced Clean Cars (ACC) (T-1)	14.9	17.8		https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program
Low Carbon Fuel Standard (LCFS) (T-2)	12.5	16.6		https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard
Tire Pressure Program (T-4)	0.7	0.7		https://ww2.arb.ca.gov/resources/documents/tire-inflation-regulation
Ship Electrification (T-5)	0.1	0.1		https://ww2.arb.ca.gov/our-work/programs/ocean-going-vessels-berth-regulation
Diesel Anti-Idling (T-6)	0.2	0.2		https://ww2.arb.ca.gov/capp-resource-center/heavy-duty-diesel-vehicle-idling-information
Goods Movement (Drayage Trucks) (T-6)	0.1	0.1		https://ww2.arb.ca.gov/our-work/programs/drayage-trucks-seaports-railyards

State Agency Greenhouse Gas Reduction Report Card: Table 2

Program Title	Emissions Reductions, MMTCO _{2e} 2018	Emissions Reductions, MMTCO _{2e} 2019	Notes	Website
Transportation Sector, continued			1,2	
Heavy-Duty Vehicle GHG Emission Reduction Measure TTGHG + Phase I + Phase 2 (above 8,500 lbs. GVWR) (T-7)	2.6	3		TTGHG: https://ww2.arb.ca.gov/our-work/programs/ttghg Phase 1: https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/phase1 Phase 2: https://ww2.arb.ca.gov/our-work/programs/ghg-std-md-hd-eng-veh
Medium- and Heavy-Duty Vehicle Hybridization (T-8)	<0.1	<0.1		https://www.californiahvip.org/
<p>CARB NOTES:</p> <p>¹ ACC: In 2019, the federal administration acted to preempt the ACC greenhouse gas emissions and zero-emission vehicle programs. Although California is fighting this action in court, future reductions from this program are uncertain pending restoration of California's authority.</p> <p>² LCFS: Emissions reductions attributable to the LCFS are estimated by taking the difference in life cycle GHG emissions between those low-carbon intensity alternative fuels supported by LCFS and the high carbon intensity fossil fuels that they displace. Alternative fuels supported by the LCFS may also be supported by other State and federal programs including but not limited to electric vehicle incentive/rebate programs, the Renewable Fuel Standard, and the Biodiesel Production and Blending tax credit.</p>				

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California Department of Food and Agriculture				
Program Title	Emissions Reductions, MMTCO₂e 2018	Emissions Reductions, MMTCO₂e 2019	Notes	Website
State Water Efficiency and Enhancement Program (SWEEP)	0.1	0.1		https://www.cdfa.ca.gov/oefi/sweep/
Dairy Digester Research and Development Program	0.2	0.3		https://www.cdfa.ca.gov/oefi/ddrdp/
Alternative Manure Management Program	<0.1	0.1		https://www.cdfa.ca.gov/oefi/AMMP/
Healthy Soils Incentives and Demonstration Programs	<0.1	<0.1		https://www.cdfa.ca.gov/oefi/healthysouils/

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California Energy Commission				
Program Title	Emissions Reductions, MMTCO ₂ e 2018	Emissions Reductions, MMTCO ₂ e 2019	Notes	Website
Appliance Energy Efficiency Standards	7.6	8.3		https://www.energy.ca.gov/appliances/
Building Energy Efficiency Standards	0.2	0.20	1	https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards
Comprehensive Publicly Owned Utility Customer Energy Efficiency Programs	1.8	2.0		https://www.energy.ca.gov/programs-and-topics/topics/energy-assessment/energy-efficiency-public-power-sector
Clean Transportation Program	1.5	2.1	2	https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program
California Clean Energy Jobs Act: Proposition 39 (K-12) Program	0.1	0.2		https://www.energy.ca.gov/efficiency/proposition39/
<p>CEC Notes:</p> <ol style="list-style-type: none"> 1. Revised based on final approved rulemaking documents submitted to DOF and OAL 2. The emissions reduced by Clean Transportation Program activities are also the result of other programs/regulations that might be included in this Report Card by other agencies. As a result, some benefits might end up being “double-counted,” particularly if our emission reduction numbers are added on top of emission reductions claimed by CARB’s Low Carbon Fuel Standard, CARB’s ZEV regulation, CARB’s vehicle incentives (e.g., CVRP and HVIP). 				

State Agency Greenhouse Gas Reduction Report Card: Table 2

California Public Utilities Commission				
Program Title	Emissions Reductions, MMTCO ₂ e 2018	Emissions Reductions, MMTCO ₂ e 2019	Notes	Website
California Solar Initiative	3.2	3.1	1	http://www.cpuc.ca.gov/General.aspx?id=6043
California Solar Initiative – Thermal Program (Solar Water Heating)	<0.1	<0.1		http://www.cpuc.ca.gov/General.aspx?id=3753
Self-Generation Incentive Program	tbd	tbd		http://www.cpuc.ca.gov/sgip/
Investor-Owned Utilities Energy Efficiency Programs	4.8	4	2	http://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/Organization/Divisions/Office_of_Governmental_Affairs/Legislation/2018/13-15%20Energy%20Efficiency%20Report_Final.pdf
Renewables Portfolio Standard	9.1	6.1	3	http://www.cpuc.ca.gov/RPS_Homepage/
<p>CPUC NOTES: ¹ CSI numbers differ from previous years because CSI now has a program evaluation based on actual program data. CSI ended on December 31, 2016, so between 2018 and 2019 there wasn't any additional installation, but variations in solar generation based on actual program data led to differences in reported emissions reductions. Due to this, we also updated the 2018 value to be more accurate.</p> <p>² Emissions reductions report first year savings for energy efficiency measures, consistent with prior years' reporting.</p> <p>³ RPS emissions reductions values attributable to serving IOU load peaked in 2018 and the emissions reductions are now in decline due to departing load, even as their electricity becomes less carbon intensive.</p>				

State Agency Greenhouse Gas Reduction Report Card: Table 2

Department of General Services (DGS)				
Program Title	Emissions Reductions, MMTCO ₂ e 2018	Emissions Reductions, MMTCO ₂ e 2019	Notes	Website
Green Buildings - LEED	<0.1	<0.1		https://www.dgs.ca.gov/OS/Resources/Page-Content/Office-of-Sustainability-Resources-List-Folder/California-LEED-Certified-State-Buildings
Green Buildings – Distributed Generation	<0.1	<0.1		https://www.dgs.ca.gov/OS/Resources/Page-Content/Office-of-Sustainability-Resources-List-Folder/Clean-Energy-Generation
Green Buildings – Existing State Buildings Retro-Commissioning	<0.1	<0.1		https://www.dgs.ca.gov/OS/Resources/Page-Content/Office-of-Sustainability-Resources-List-Folder/Energy-Efficiency-Retrofits

State Agency Greenhouse Gas Reduction Report Card: Table 2

California Department of Water Resources (DWR)				
Program Title	Emissions Reductions, MMTCO ₂ e 2018	Emissions Reductions, MMTCO ₂ e 2019	Notes	Website
End Use Water Conservation & Efficiency	1.4	1.4		https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-X7-7

TABLE 3: GHG EMISSION REDUCTION MEASURES, AND REDUCTIONS EXPECTED IN 2020

Numbered footnotes appear at the end of the document. Notes identified with asterisks are at the end of each agency's section.

MMTCO_{2e} Million Metric Tons of CO₂ Equivalent

CAL FIRE / BOARD OF FORESTRY MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter /	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO _{2e})	Implementation Status	Notes	Website
FOREST SECTOR						
CAL FIRE / BOARD OF FORESTRY	(Sub-strategies Below)	Sustainable Forests		Implemented	**	
CAL FIRE / BOARD OF FORESTRY	F-1: sub-strategy 1	Conservation Forest Management	0	Implemented		
CAL FIRE / BOARD OF FORESTRY	F-1: sub-strategy 2	Forest Conservation	0.5	Implemented		
CAL FIRE / BOARD OF FORESTRY	F-1: sub-strategy 3	Fuels Management/Biomass	1.3	Implemented		
CAL FIRE / BOARD OF FORESTRY	F-1: sub-strategy 4	Urban Forestry	0.5	Implemented		
CAL FIRE / BOARD OF FORESTRY	F-1: sub-strategy 5	Afforestation/Reforestation	0.3	Implemented		
Total Reductions Expected from CAL FIRE Led Strategies			2.6			
<p>CAL FIRE NOTES:</p> <p>*All emissions reductions are made using information from California Air Resources Board approved emissions quantification methodology and carbon flux reporting from CAL FIRE's Fire and Resource Assessment Program's Resource Assessment Report. Numbers listed are estimates for the activity based on an average annual emissions reduction calculation and the number of years those activities were funded between 2005-2020.</p> <p>**CAL FIRE led activities may increase the baseline sequestration potential in future years as funding becomes available for more expansive implementation of the 5 substrategies listed above.</p>						

CALRECYCLE MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
RECYCLING AND WASTE MANAGEMENT						
CARB, CalRecycle	RW-1	Landfill Methane Control Measure (Discrete Early Action)	1.5	Implemented	*	https://www.arb.ca.gov/cc/landfills/landfills.htm
CalRecycle	RW-2	Increasing the Efficiency of Landfill Methane Capture	<0.1	Implemented		https://www.calrecycle.ca.gov/climate/landfill
CalRecycle	RW-3 (Sub strategies listed below)	Zero Waste - High Recycling	Reductions detailed below	Implemented	**	
CalRecycle	RW-3: Sub strategy 1	Anaerobic Digestion	2.0	Implemented	**	https://www.calrecycle.ca.gov/SWFacilities/Compostables/AnaerobicDig/
CalRecycle	RW-3: Sub strategy 2	Mandatory Commercial Recycling Regulation	5.0	Implemented	**	https://www.calrecycle.ca.gov/recycle/commercial
CalRecycle	RW-3: Sub strategy 3	Extended Producer Responsibility (EPR)	<0.1	Implemented	** , ***	https://www.calrecycle.ca.gov/epr
CalRecycle	RW-3: Sub strategy 4	Increase Production & Markets for Compost	2.0	Implemented	**	https://www.calrecycle.ca.gov/organics/compostmulch
CalRecycle, DWR	Appendix C, Section 4.E.	Watershed Friendly Landscape Guidelines	<0.1	Implemented		https://www.calrecycle.ca.gov/Organics/Landscaping/
CalRecycle	Appendix C, Section 9. C.	Liquefied Natural Gas from Landfill Gas Measure	1	Implemented		https://www.calrecycle.ca.gov/climate/landfill
CalRecycle	Not in Scoping Plan	Achieved 50 Percent Statewide Recycling Goal	3	Implemented		http://www.calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/MostRecent/

CALRECYCLE MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
RECYCLING AND WASTE MANAGEMENT, continued						
CalRecycle	Not in Scoping Plan	AB 341 – California’s 75 Percent Recycling Initiative	20	Implemented	****	https://www.calrecycle.ca.gov/75percent
CalRecycle	Not in Scoping Plan	Greenhouse Gas Reduction Grants & Loans Program	1	Implemented		https://www.calrecycle.ca.gov/climate/grantsloans
Total Reductions Expected from CalRecycle Led Strategies			22.0		*****	
<p>CalRecycle NOTES: * Reduction included under CARB’s totals</p> <p>** GHG emission reduction estimates for RW-3 sub strategies are included in "AB 341 – California’s 75 Percent Recycling Initiative" below.</p> <p>*** Split responsibility for Sub strategy 3: CalRecycle is lead for EPR, and DGS is lead for EPP.</p> <p>**** GHG emission reduction estimate for this measure is in Appendix C, First Update to the Climate Change Scoping Plan, May 2014. Includes GHG reductions for all RW-3 sub strategies.</p> <p>***** The total is the sum of GHG emission reductions from: RW-2 - "Increasing the Efficiency of Landfill Methane Capture"; "Watershed Friendly Landscape Guidelines"; "Liquefied Natural Gas from Landfill Gas Measure"; "AB 341 -- California’s 75 Percent Recycling Initiative"; and "Greenhouse Gas Reduction Grans & Loans Program." The total does not include RW 1 (Landfill Methane Control Measure) because its reduction is included under CARB’s reductions or "Achieve 50 Percent Statewide Recycling Goal" because it pre-dates the Scoping Plan.</p>						

State Agency Greenhouse Gas Reduction Report Card: Table 3

CALTRANS MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
TRANSPORTATION SECTOR						
Caltrans	Not in Scoping Plan	Alternative Employee Commuting Strategies	<0.1	Implemented		https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/caltrans-climatechangerprt-final-april-2013-a11y-.pdf
Caltrans	Not in Scoping Plan	Fleet Greening and Fuel Diversification	<0.1	Implemented		https://dot.ca.gov/programs/sustainability/zero-emission-vehicles
Caltrans	Not in Scoping Plan	LED Retrofits	<0.1	Implemented		Office of Roadway Materials Testing Electrical Testing Branch: http://www.dot.ca.gov/hq/esc/ttsb/electrical/lighting.htm
INDUSTRY SECTOR						
Caltrans	Not in Scoping Plan	Alternative Asphalt Strategies	<0.1	Implemented		https://dot.ca.gov/programs/maintenance/pavement/asphalt-pavement
Caltrans	Not in Scoping Plan	Alternative Cement and Concrete Strategies	<0.1	Implemented		https://dot.ca.gov/programs/maintenance/pavement/concrete-pavement-and-pavement-foundations/concrete-pavements
OTHER						
Caltrans	Scoping Plan	Facility Efficiency and Energy Conservation	<0.1	Implemented		https://dot.ca.gov/programs/sustainability/sustainable-caltrans
Total Reductions Expected from Caltrans Led Strategies			0.2			
Caltrans NOTES: *For more information, see: https://dot.ca.gov/-/media/dot-media/programs/sustainability/documents/2018-2019_roadmap-a11y.pdf https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/climate-change						

CALIFORNIA AIR RESOURCES BOARD (CARB) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
HIGH GLOBAL WARMING POTENTIAL (GWP) GASES						
CARB	H-1	HFC Reduction Strategies, Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	0.3	Implemented		https://ww2.arb.ca.gov/our-work/programs/small-containers-automotive-refrigerant
CARB	H-2	SF ₆ Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)	< 0.1	Implemented		https://ww2.arb.ca.gov/our-work/programs/sulfur-hexafluoride-non-electric-non-semiconductor-sources
CARB	H-3	GHG Emission Reductions from Semiconductor Operations (Discrete Early Action)	<0.1	Implemented		https://ww2.arb.ca.gov/our-work/programs/semiconductor
CARB	H-4	Limit High GWP Use in Consumer Products--Pressurized Gas Duster GWP Limit of 150 and Other Consumer Product Categories (Discrete Early Action)	0.2	Implemented		https://ww2.arb.ca.gov/our-work/programs/consumer-products-program
CARB	H-5	Low GWP Refrigerants for New Vehicle Air Conditioning Systems	Included in T-1	Implemented		https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program
CARB	H-6	The following three measures collectively get this reduction:	1.8			
		High GWP Reductions from Stationary Sources:				
		1) High-GWP Refrigerant Management Program for Stationary Sources	1.2	Implemented	i.	https://ww2.arb.ca.gov/our-work/programs/refrigerant-management-program
		2) Specifications for Commercial and Industrial Refrigeration Systems	0.6	Implemented		https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/09-306.pdf
		3) SF ₆ Emission Reductions from Gas Insulated Switchgear	<0.1	Implemented		https://ww2.arb.ca.gov/our-work/programs/elec-tandd
INDUSTRY SECTOR						
CARB	I-1	Energy Efficiency and Co-Benefits Assessments for Large Industrial Sources	N/A	Implemented		https://ww2.arb.ca.gov/sites/default/files/classic/cc/energyaudits/energyaudits.htm
CARB	I-2	Oil and Gas Extraction GHG Emission Reduction	0.5	Implemented		https://ww2.arb.ca.gov/our-work/programs/oil-and-natural-gas-production-processing-and-storage
CARB	I-3	GHG Leak Reduction from Natural Gas Transmission and Distribution	0.5	Implemented		https://ww2.arb.ca.gov/our-work/programs/natural-gas-transmission-and-distribution
CARB	I-5	Incorporation of Methane into Air District Rules for Major Industrial Sources to Reduce Fugitive Emissions/Leaks	N/A	Implemented		https://ww2.arb.ca.gov/air-district-rules
RECYCLING AND WASTE MANAGEMENT						
CARB	RW-1	Landfill Methane Control Measure (Discrete Early Action)	1.8	Implemented		https://ww2.arb.ca.gov/our-work/programs/landfill-methane-regulation

CALIFORNIA AIR RESOURCES BOARD (CARB) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO _{2e})	Implementation Status	Notes	Website
TRANSPORTATION SECTOR						
CARB	T-1	The following three measures collectively get this reduction:	21			
		Pavley I		Implemented		https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/lev-program/low-emission-vehicle-greenhouse-gas
		Advanced Clean Cars		In progress	ii.	https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program
CARB	T-2	Low Carbon Fuel Standard (LCFS) (Discrete Early Action)	16.9	Implemented	iii.	https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard
Local Governments / CARB / Caltrans / HCD / OPR / Regional Planning Agencies	T-3	Regional Transportation-Related Greenhouse Gas Targets	3	Implemented	1	https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-and-climate-protection-program
CARB	T-4	Tire Pressure Program (Discrete Early Action)	0.7	Implemented		https://ww2.arb.ca.gov/resources/documents/tire-inflation-regulation
CARB	T-5	Ship Electrification at Ports (Discrete Early Action)	0.2	Implemented		https://ww2.arb.ca.gov/our-work/programs/ocean-going-vessels-berth-regulation
CARB	T-6	Goods Movement Efficiency Measures:				
		1) Port Drayage Trucks	0.1	Implemented		https://ww2.arb.ca.gov/our-work/programs/drayage-trucks-seaports-railyards
		2) Transport Refrigeration Units Cold Storage Prohibition	<0.1	Implemented		https://ww2.arb.ca.gov/our-work/programs/transport-refrigeration-unit
		3) Diesel Anti-Idling, and Cargo Handling Equipment	0.1	Implemented		https://ww2.arb.ca.gov/capp-resource-center/heavy-duty-diesel-vehicle-idling-information https://ww2.arb.ca.gov/our-work/programs/cargo-handling-equipment
		4) Commercial Harbor Craft	TBD	Implemented	2	https://ww2.arb.ca.gov/our-work/programs/commercial-harbor-craft
CARB	T-7	Phase I and Tractor-Trailer Heavy-Duty Vehicle GHG Emission (TTGHG) Reduction Measures; TTGHG + Phase 1 and Phase 2 (above 8,500 lbs. GVWR)	3.5	Implemented		TTGHG: https://ww2.arb.ca.gov/our-work/programs/ttghg Phase 1: https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/phase1 Phase 2: https://ww2.arb.ca.gov/our-work/programs/ghg-std-md-hd-eng-veh
CARB	T-8	Medium- and Heavy-Duty Vehicle Hybridization:				
		1) Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)	< 0.1	Implemented		https://www.californiahvip.org/
		2) Zero-Emission Truck and Bus Pilot Projects	< 0.1	Implemented		https://ww3.arb.ca.gov/msprog/lct/posters_heavy.htm

CALIFORNIA AIR RESOURCES BOARD (CARB) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO _{2e})	Implementation Status	Notes	Website
OTHER SECTORS / STRATEGIES						
CARB	Appendix C, Sections 3 and 4	Cool Communities	N/A	Implemented	iv.	https://coolcalifornia.arb.ca.gov/cool-roofs
CARB	Scoping Plan Chapter IV, Section B	Small Business Toolkit	N/A	Implemented	iv.	https://coolcalifornia.arb.ca.gov/small-business
CARB	Appendix C, Section 3	Local Government Toolkit	N/A	Implemented	iv.	https://coolcalifornia.arb.ca.gov/local-government
CARB	Scoping Plan Chapter II, Section B	Local Government Operations Protocol	N/A	Implemented	iv.	https://ww2.arb.ca.gov/local-government-operations-protocol-greenhouse-gas-assessments
CARB	Scoping Plan Chapter II, Section C.1.	Cap-and-Trade Program	23	Implemented	v.	https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program
Total Reductions Expected from CARB-Led Strategies			73.6			
<p>CARB Notes:</p> <ul style="list-style-type: none"> i. This projected value was updated in 2019 to account for removal of previously included measures now deemed unfeasible, as well as inclusion of impact of additional regulations currently being adopted. ii. In 2019, the federal administration acted to preempt the Advanced Clean Cars greenhouse gas emissions and zero-emission vehicle programs. Future reductions from this program depend upon the restoration of California's authority. iii. Emissions reductions attributable to LCFS are estimated by taking the difference in life cycle GHG emissions between those low carbon intensity alternative fuels supported by the LCFS and the high carbon intensity fossil fuels that they displace. Alternative fuels supported by the LCFS may also be supported by other State and federal programs including but not limited to electric vehicle incentive/rebate programs, the Renewable Fuel Standard, and the Biodiesel Production and Blending tax credit. iv. These measures facilitate reductions through voluntary actions. v. Set at a level needed to help achieve the GHG emissions reduction target for 2020. The Cap-and-Trade Program contributes emissions reductions to the transportation, industry, and electric and natural gas sectors. 						

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE (CDFA) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
AGRICULTURAL SECTOR						
CDFA, CARB	A-1	Methane Capture at Large Dairies (Enteric Fermentation, Dairy Digesters)	0.5	Implemented		https://www.cdfa.ca.gov/oefi/ddrdp/
CDFA, CARB	Not in Scoping Plan	Manure Management at Dairies	0.1	Implemented		https://www.cdfa.ca.gov/oefi/AMMP/
CDFA, CARB	Not in Scoping Plan	Soil carbon sequestration	<0.1	Implemented		https://www.cdfa.ca.gov/oefi/healthsoils/
CDFA, CARB, SWRCB, DWR	Not in Scoping Plan	Incentives for farmers to utilize efficient management practices	0.8	Implemented		https://www.cdfa.ca.gov/oefi/sweep/
CDFA, CARB, CEC	Early Action Item	Agricultural Research - Nitrous Oxide Reduction	N/A	Implemented	4	https://www.cdfa.ca.gov/is/frep/Default.aspx
CDFA	Not in Scoping Plan	Hydrogen Fuel Quality and Quantity	0.1	Implemented		
CDFA	Not in Scoping Plan	Biodiesel Blends Renewable Diesel	N/A	Implemented	4	
CDFA	Scoping Plan	Ethanol Flex Fuel, Gasoline-Ethanol Blends, and other alcohols	N/A	Implemented	4	
CDFA	Not in Scoping Plan	Developmental Fuels	N/A	Implemented	4	
CDFA, CEC	Not in Scoping Plan	Energy Crops	N/A	Implemented	4	
CDFA	Not in Scoping Plan	Specialty Crop Block Grants	N/A	Implemented	4	https://www.cdfa.ca.gov/Specialty_Crop_Competitiveness_Grants/FFY2018.html
Total Redu			1.5			

State Agency Greenhouse Gas Reduction Report Card: Table 3

CALIFORNIA ENERGY COMMISSION (CEC) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
ELECTRIC AND NATURAL GAS SECTORS						
CEC	E-1	Comprehensive Publicly Owned Utilities Efficiency Program	2.3	Implemented		https://www.energy.ca.gov/programs-and-topics/topics/energy-assessment/energy-efficiency-public-power-sector
CEC	E-1	Building Energy Efficiency Standards	0.2	Implemented		https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards
CEC	E-1	Appliance Energy Efficiency Standards	9.1	Implemented		https://www.energy.ca.gov/rules-and-regulations/appliance-efficiency-regulations-title-20
TRANSPORTATION SECTOR						
CEC	T-4	Fuel-Efficient Tires		Implemented	*	https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program
Total Reductions Expected from CEC Led Strategies			11.6			
CEC NOTES: * The current fuel-efficient tires program will not yield GHG reduction impacts until 2023.						

CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
CPUC	E-1	IOU Energy Efficiency Programs	11.7	Implemented	*, **	http://cpuc.ca.gov/energyefficiency/
CPUC, CEC	E-2	Customer-Installed Combined Heat and Power systems (non SGIP)	2.7	Implemented	1, 4, *	http://www.cpuc.ca.gov/General.aspx?id=5432
CPUC, CEC	E-3.1	Renewables Portfolio Standard	5.9	Implemented	1, *	http://cpuc.ca.gov/RPS_Overview/
CPUC, CEC	E-4	California Solar Initiative (CSI) Senate Bill 1 - GoSolarCalifornia (previously titled - 'Million Solar Roofs')	2.9	Implemented	*	http://gosolarcalifornia.org/about/index.php
CPUC	CR-2	CSI Thermal	<0.1	Implemented		http://www.cpuc.ca.gov/General.aspx?id=3753
CPUC	Not In Scoping Plan	Self Generation Incentive Program	TBD	Implemented	2	http://www.cpuc.ca.gov/sgip/
ARB, CPUC	Scoping Plan Chapter II, Section C.1.	Cap-and-Trade Program	Reduction included in ARB totals.	Implemented	1	https://www.cpuc.ca.gov/General.aspx?id=5932
CPUC	Not In Scoping Plan	Green Tariff Shared Renewables (GTSR) Program	Incremental to 33 percent RPS goals. TBD	Implemented	2,3	http://www.cpuc.ca.gov/GSTR
CPUC	Scoping Plan	Alternative Fuel Vehicles (Natural Gas and Electric Vehicles)	TBD	Implemented	1, 2, 4	http://www.cpuc.ca.gov/zev
Total Reductions Expected from CPUC Led Strategies			23.2			
					<p>CPUC NOTES:</p> <p>*GHG Reduction goals for PUC measures are taken from ARB's AB 32 Scoping Plan. Unless otherwise noted, values represent statewide reductions for the measures and are not prorated to the CPUC jurisdictional utilities' share.</p> <p>** The anticipated first year savings for energy efficiency in 2020 is expected to be 3.1 MMTCO₂e.</p>	

State Agency Greenhouse Gas Reduction Report Card: Table 3

DEPARTMENT OF GENERAL SERVICES (DGS) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO _{2e})	Implementation Status	Notes	Website
GREEN BUILDINGS						
DGS	GB-1	Green Buildings Initiative	Reductions specified by sub-strategy (below)	Implemented		https://www.dgs.ca.gov/-/media/Divisions/OS/Policies/CASPBPM.pdf https://www.dgs.ca.gov/Resources/SAM/TOC/1800
DGS, State Agencies	GB-1: sub-strategy 1	New state buildings	0.3	Implemented		https://www.dgs.ca.gov/-/media/Divisions/OS/Policies/CASPBPM.pdf https://www.dgs.ca.gov/Resources/SAM/TOC/1800
DGS, State Agencies	GB-1: sub-strategy 2	Existing state buildings	0.9	Implemented		https://www.dgs.ca.gov/-/media/Divisions/OS/Policies/CASPBPM.pdf https://www.dgs.ca.gov/Resources/SAM/TOC/1800
DGS, State Agencies Office of Public School Construction, Department of	GB-1: sub-strategy 3	Schools	0.2	Implemented		https://www.dgs.ca.gov/DSA/Resources/Page-Content/Resources-List-Folder/Sustainability-Plan-Review
DGS, State Agencies	GB-1: sub-strategy 4	Leased Buildings	0.3	Implemented		https://www.dgs.ca.gov/-/media/Divisions/OS/Policies/CASPBPM.pdf https://www.dgs.ca.gov/Resources/SAM/TOC/1800
DGS, State Agencies, CSU/UC	GB-1: sub-strategy 5	Distributed Generation	0.2	Implemented		https://www.dgs.ca.gov/Resources/SAM/TOC/1800 https://www.dgs.ca.gov/OS/Services/Page-Content/Office-of-Sustainability-Services-List-Folder/Clean-Energy-Generation
DGS, State Agencies, CIWMB, DTSC	GB-1: sub-strategy 6	Environmentally Preferable Purchasing (EPP)	N/A	Implemented	*	https://www.dgs.ca.gov/PD/Resources/Find-EPP-Goods-and-Services
Standards Commission, CEC,	GB-1: sub-strategy 7	Green Building Code Development	2.9	Implemented		https://codes.iccsafe.org/content/document/658?site_type=public
DGS, State Agencies	GB-1: sub-strategy 8	Clean Renewable Energy Purchases	0.2	Implemented		https://www.dgs.ca.gov/-/media/Divisions/OS/Policies/CASPBPM.pdf https://www.dgs.ca.gov/Resources/SAM/TOC/1800
DGS, State Agencies	GB-1: sub-strategy 9	Zero Net Energy	1	Implemented		https://www.dgs.ca.gov/OS/Resources/Page-Content/Office-of-Sustainability-Resources-List-Folder/Zero-Net-Energy
TRANSPORTATION						
DGS, State Agencies	Appendix C, Section 2.A.	Right-size the State Fleet	0.2	Implemented		https://www.green.ca.gov/fleet/
DGS, State Agencies	Appendix C, Section 2.B.	Removing Higher-Polluting Vehicles from the State Fleet	0.4	Implemented		https://www.green.ca.gov/fleet/
DGS, State Agencies	Appendix C, Section 2.C.	Actively manage vehicle miles traveled and reduce petroleum consumption	0.2	Implemented		https://www.green.ca.gov/fleet/
Total Redu			6.8			
DGS NOTES: * Unable to determine projected GHG reductions arising from EPP Program due to the relative immaturity of computational algorithms and lack of data collection processes in this area.						

DEPARTMENT OF WATER RESOURCES (DWR) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
WATER SECTOR						
DWR, SWRCB	W-1	End use water conservation & efficiency	1.4	Implemented	3	https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-X7-7
DWR	W-3, W-5; Appendix, Volume 1	DWR Climate Action Plan	1.2	Implemented		https://water.ca.gov/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan
Total Reductions Expected from DWR Led Strategies			1.2			

CALIFORNIA HIGH SPEED RAIL AUTHORITY (HSR) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO2e)	Implementation Status	Notes	Website
TRANSPORTATION						https://hsr.ca.gov/programs/green_practices/sustainability.aspx
HSR	Not in Scoping Plan	Caltrain Electrification	<0.1	Implemented	*	
HSR	Not in Scoping Plan	Construction Recycling	0.1	Implemented		
HSR	Not in Scoping Plan	Land Mitigation	<0.1	In progress		
HSR	Scoping Plan	Urban Trees	0.2	In progress	**	
Total Reductions Expected from HSR Strategies			0.3			
<p>HSR NOTES: *The Authority has provided funding to Caltrain to carry out electrification of the Caltrain system between San Jose and San Francisco. Expected GHG reductions from electrification of train operations are 0.035 MMT in 2020. increased ridership is expected to reduce GHG emissions by an additional 0.044 MMT in 2020, due to replacement of passenger vehicle trips by train trips.</p> <p>**4,900 trees planted to date</p>						

OFFICE OF PLANNING AND RESEARCH (OPR) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
OTHER SECTORS/STRATEGIES						
OPR	Chapter II Section A	CEQA Guidelines re: GHG emissions	N/A	Implemented	4	http://www.opr.ca.gov/news/2018/12-28.html
OPR	Not in Scoping Plan	Comprehensive General Plan Guidelines Update	N/A	Implemented	4	http://opr.ca.gov/planning/general-plan/guidelines.html
OPR	Chapter II Section B	Technical Assistance	N/A	Implemented	4	
OPR	Not in Scoping Plan	CEQA Guidelines re: Infill and transportation emissions	N/A	Implemented	4	
OPR	Not in Scoping Plan	Interagency Coordination on integrated climate action	N/A	Implemented	4	http://opr.ca.gov/planning/icarp/
OPR	Not in Scoping Plan	Convenings and Conferences	N/A	Implemented	4	
		Total Reductions Expected from OPR Strategies	0.0		*	
OPR has important programmatic responsibilities but does not have emission reduction regulatory authority. OPR NOTES:						

STATE WATER RESOURCES CONTROL BOARD (SWRCB) MEASURES						
Agency and Sector	2008 Scoping Plan: Measure Number or Chapter / Section	Measure Name	Expected GHG Emissions Reductions in 2020 (MMTCO ₂ e)	Implementation Status	Notes	Website
WATER SECTOR						
SWRCB, DWR, CEC, CPUC	W-2	Water Recycling	0.3	Implemented	3	https://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/ https://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/recycled_water_research.htm#links
SWRCB	W-4	Storm Water Use	0.2	Implemented	3	https://www.waterboards.ca.gov/water_issues/programs/stormwater/
	Total Redu		0.5			

TABLE 3 FOOTNOTES:

1. Where multiple agencies are noted, the first is the lead agency and the others work in collaboration to achieve measure goals.
2. Measures shown with GHG emission reduction shown as "TBD" represent on-going or future efforts for which quantification has not been completed.
3. GHG emission reduction estimate not included in calculating the total reductions needed to meet the 2020 target as established in the Scoping Plan.
4. These measures will not result in direct reductions of GHG emissions but will facilitate reductions through associated voluntary actions and potential future regulatory efforts.
5. These programs pre-date the Scoping Plan but are included here to document on-going efforts. GHG reductions are not included in the total for the agency as they do not provide additional reductions over and above what would have occurred absent AB 32.

GHG Inventories of State Agencies

Starting with the January 2010 report card, CalEPA began compiling GHG inventories prepared by the CAT member agencies. These inventories were each prepared independently using The Climate Registry's *General Reporting Protocol*. Executive Order B-18-12 required all state agencies under the direct authority of the Governor to take actions to reduce entity-wide greenhouse gas emissions by 10 percent by 2015 and 20 percent by 2020, as measured against a 2010 baseline. In addition, Executive Order N-19-19 requires that every aspect of state government redouble its efforts to reduce greenhouse gas emissions. Currently, over 40 state agencies report their annual GHG emissions to The Climate Registry Information System. Figure 2 shows the total GHG emissions from State agency operations from 2010 to 2019. State agency GHG inventories can be viewed at www.green.ca.gov.

From 2010-2019, state agencies have reduced emissions by 56% primarily due to the California Department of Water Resources' (DWR) divestiture of the Reid Gardner coal-fired power plant in mid-2013. Many State agencies continued to reduce their GHG emission between 2014 and 2018. The decrease in total emissions in 2019 is due almost entirely to DWR emissions, which fluctuates year to year depending on the weather.

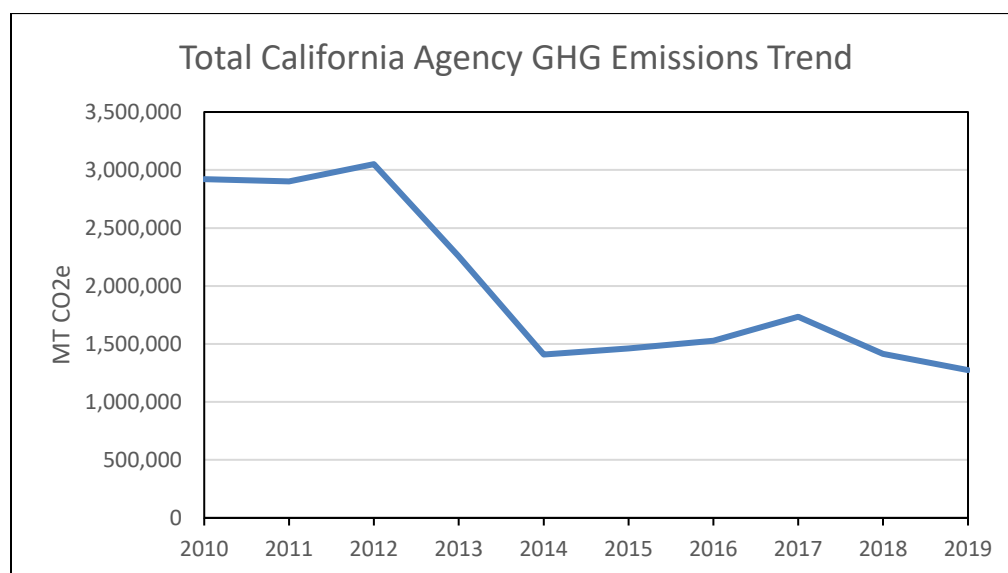


Figure 2

Additional GHG reduction measures that agencies continue to implement include: identifying vehicles for zero emission vehicle/plug-in hybrid replacement, instituting energy conservation principles, increasing use of renewable diesel, pursuing LEED and zero-net-energy at existing and new facilities, and participating in green energy purchase programs that supply 50% or 100% renewable energy to state facilities.

In order to avoid double counting in this state-government-wide reporting effort, departments and agencies changed reporting methods for their emissions, starting with 2010 emissions. For example, in the case of departments and agencies occupying DGS-owned buildings, they no longer include emissions from those buildings in their inventories. Instead, DGS reports those emissions in its own inventory. Because of these changes in reporting, it is important to compare emissions only from calendar year 2010 forward.

Additionally, while changes in year-to-year GHG emissions can result from changes in the way state agencies do business, they also result from elements beyond individual agency control. In particular, California utilities rely extensively on hydropower for base-load energy generation. In dry years, more electricity will be generated using natural gas with a resultant substantial increase in GHG emissions. Similarly, weather conditions (cold or hot) can have a significant impact on building energy use. Because the state experiences weather anomalies, longer-term, multi-year trends will prove useful for policy makers developing mid-term and long-term climate goals.

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The data below is organized by Agency though many departments are reporting inividually.

Table 4: Climate Action Team - GHG Inventory Status

INVENTORY STATUS >	Member of The Climate Registry	Reporting Year	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	NOTES
			Direct	Indirect	Total	Green indicates verified inventory
California State Transportation Agency						
- CalTrans	Yes					
		2007	136,587	93,996	230,583	
		2008	75,546	111,331	186,877	
		2009	98,423	131,227	229,650	
		2010	125,627	89,356	214,983	
		2011	125,342	85,725	211,067	
		2012	118,242	78,373	196,615	
		2013	115,989	80,841	196,830	
		2014	110,074	45,538	155,612	
		2015	116,001	48,172	164,173	
		2016	87,615	40,829	128,444	
		2017	81,725	36,957	118,682	
		2018	100,910	20,158	121,068	
		2019	109,197	35,750	144,947	

State Greenhouse Gas Report Card

INVENTORY STATUS >	Member of The Climate Registry	Reporting Year	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	NOTES
			Direct	Indirect	Total	Green indicates verified inventory
California Environmental Protection Agency						
-Totals include inventory data for CalRecycle, CARB, OEHHA, DPR, DTSC and SWRCB	Yes					
		2005	2,632	4,914	7,546	
		2006	3,119	4,780	7,899	
		2007	3,050	5,545	8,595	
		2008	3,177	5,478	8,655	
		2010	2,364	4,884	7,248	
		2011	2,120	4,952	7,072	
		2012	1,964	4,704	6,668	
		2013	2,069	4,544	6,613	
		2014	1,882	3,961	5,783	
		2015	1,921	4,474	6,395	
		2016	1,866	3,953	5,819	
		2017	1,969	3,964	5,933	
2018	1,842	4,336	6,178			
2019	1,943	4,341	6,284			

Table 4 Summary - 2

State Greenhouse Gas Report Card

INVENTORY STATUS >	Member of The Climate Registry	Reporting Year	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	NOTES
			Direct	Indirect	Total	Green indicates verified inventory
California Department of Food and Agriculture	Yes					
		2010	8,133	1,974	10,107	
		2011	7,952	1,966	9,918	
		2012	6,740	1,948	8,688	
		2013	6,157	1,603	7,760	
		2014	5,737	2,386	8,124	
		2015	5,895	1,901	7,796	
		2016	5,432	1,688	7,120	
		2017	4,853	786	5,639	
		2018	4,988	1,479	6,467	
		2019	5,023	1,576	6,599	

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			Direct	Indirect	Total	Green indicates verified inventory
California Governor's Office of Emergency Services	Yes					
		2010	107	1,125	1,232	
		2011	320	990	1,310	
		2012	303	904	1,207	
		2013	1,354	1,261	2,615	
		2014	2,109	1,570	3,679	
		2015	2,118	1,564	3,682	
		2016	2,558	1,495	4,053	
		2017	3,163	732	3,895	
		2018	2,475	821	3,296	
		2019	2,397	961	3,358	

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INVENTORY STATUS >	Member of The Climate Registry	Reporting Year	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	NOTES
			Direct	Indirect	Total	Green indicates verified inventory
CA Public Utilities Commission	Yes					
		2004	92	849	941	
		2005	432	1,084	1,516	
		2006	515	1,228	1,743	
		2010	167	892	1,059	
		2011	156	850	1,006	
		2012	149	805	954	
		2013	173	836	1,009	
		2014	152	729	881	
		2015	126	861	987	
		2016	206	680	886	
		2017	187	668	855	
		2018	348	713	1,061	
		2019	435	305	740	

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			Direct	Indirect	Total	Green indicates verified inventory
Health and Human Services Agency						
- <i>Department of Public Health</i>	Yes	2010	5,320	5,909	11,229	
		2011	6,244	5,026	11,270	
		2012	5,855	4,768	10,623	
		2013	5,390	2,140	7,530	
		2014	4,514	210	4,723	
		2015	4,785	294	5,079	
		2016	4,572	273	4,845	
		2017	5,295	286	5,581	
		2018	4,997	298	5,295	
		2019	4,953	242	5,195	

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			Direct	Indirect	Total	Green indicates verified inventory
Natural Resources Agency						
- <i>The following Boards and Departments calculate emissions separately:</i>						
- <i>CalFire</i>	Yes	2007	41,882	7,460	49,342	
		2008	37,222	6,044	43,266	
		2009	34,273	5,620	39,893	
		2010	33,832	4,916	38,748	
		2011	32,916	4,587	37,503	
		2012	38,355	4,664	43,019	
		2013	35,536	5,540	41,076	
		2014	37,406	4,298	41,704	
		2015	44,389	5,413	49,802	
		2016	57,623	4,031	61,654	
		2017	64,555	4,610	69,165	
		2018	57,538	4,345	61,883	
2019	43,267	3,881	47,148			

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			Direct	Indirect	Total	Green indicates verified inventory
Natural Resources Agency, continued						
- CA Energy Commission	Yes	2003	22	576	598	
		2008	14	948	962	
		2009	11	863	874	
		2010	4	903	907	
		2011	3	894	897	
		2012	3	1347	1350	
		2013	1	489	490	
		2014	1	400	401	
		2015	1	424	425	
		2016	1	1	2	
		2017	0	1	1	
		2018	0	1	1	
		2019	0	1	1	

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INVENTORY STATUS >	Member of The Climate Registry	Reporting Year	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	Emissions in Metric Tons CO2E for each year calculated	NOTES
			Direct	Indirect	Total	Green indicates verified inventory
Natural Resources Agency, continued						
- <i>Dept. of Fish & Wildlife</i>	Yes	2007	15,716	18,303	34,019	
		2008	15,175	14,597	29,772	
		2009	13,557	9,026	22,583	
		2010	13,223	8,483	21,706	
		2011	13,793	8,490	22,283	
		2012	14,447	8,318	22,765	
		2013	12,060	8,263	20,323	
		2014	14,049	4,962	19,011	
		2015	13,549	7,553	21,102	
		2016	12,773	3,671	16,444	
		2017	12,669	6,050	18,719	
		2018	12,857	5,125	17,982	
		2019	12,356	4,999	17,355	

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			Direct	Indirect	Total	Green indicates verified inventory
Natural Resources Agency, continued						DWR has updated and re-verified its 2010-2019 GHG inventories using the TCR default EF (eGRID). DWR's previous inventories used CARB emission factors for net pump load.
- Dept. of Water Resources	Yes					
		2007	14,299	3,226,250	3,240,549	
		2008	9,929	2,400,211	2,410,140	
		2009	11,477	2,025,807	2,037,284	
		2010	863,297	816,447	1,679,744	
		2011	740,566	851,513	1,592,079	
		2012	929,572	935,363	1,864,935	
		2013	470,413	619,543	1,089,956	
		2014	17,719	329,160	346,879	
		2015	14,169	437,681	451,850	
		2016	10,058	575,589	585,647	
		2017	17,651	838,669	856,320	
		2018	13,738	510,597	524,335	
		2019	10,385	405,971	416,356	

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			Direct	Indirect	Total	Green indicates verified inventory
Natural Resources Agency, continued						
<i>- Dept. of Parks and Recreation</i>	Yes	2010	15,595	4,696	20,291	
		2011	15,877	5,046	20,923	
		2012	15,800	5,233	21,033	
		2013	15,597	5,793	21,390	
		2014	15,782	4,828	20,609	
		2015	13,218	6,183	19,401	
		2016	13,248	5,080	18,328	
		2017	11,187	4,333	15,520	
		2018	15,587	3,860	19,447	
		2019	15,893	4,384	20,277	

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			Direct	Indirect	Total	Green indicates verified inventory
Office of Planning & Research	Yes					
Government Operations Agency						
- Dept. of General Services	Yes					The Department of General Services's inventory includes much of the operations (including buildings and vehicles) of many other agencies.
		2006	56,135	80,434	136,569	
		2007	58,124	90,739	148,863	
		2008	60,256	83,678	143,934	
		2009	55,324	80,009	135,333	
		2010	55,144	70,272	125,416	
		2011	55,342	70,225	125,567	
		2012	50,048	62,340	112,388	
		2013	43,767	65,778	109,545	
		2014	42,398	59,956	102,355	
		2015	42,695	59,870	102,565	
		2016	40,456	24,234	64,690	
		2017	39,112	14,559	53,671	
		2018	40,894	4,797	45,691	
		2019	42,374	9,717	52,091	