

# California's Regulatory Experience

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*Speaking in personal capacity*

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# Key Air Agencies

## California Air Resources Board

- State agency for air pollution control
- Regulates emissions from mobile sources, fuels, and toxics and sets state air quality standards

## Local Air Districts (35 districts)

- Regulate emissions from industrial sources and other stationary sources at the local level

## U.S. Environmental Protection Agency

- National oversight of State programs
- Sets national standards for mobile sources, fuels, and overall national ambient air quality standards

# Los Angeles in the 1950s



# California's Air Pollution Control History

- 1947 Gov. Earl Warren signs Air Pollution Control Act authorizing county-level districts to regulate air pollution; Los Angeles County Air Pollution Control District established.
- 1959 California Department of Public Health is created and required to set air quality standards based on health effects of smog.
- 1965 Auto tailpipe emission standards set for hydrocarbons and carbon monoxide by the California Motor Vehicle Pollution Control Board (first in the nation).
- 1967 Gov. Ronald Reagan established California Air Resources Board (CARB) to regulate mobile sources and coordinate among Air Districts.
- 1967 Federal Air Quality Act (Clean Air Act) adopted; California allowed a waiver to set its own standards for new vehicles.
- 1990 CARB approved standards for cleaner burning gasoline, zero-emission vehicles (ZEVs), and low-emission vehicles (LEVs).

# Low-Emission Vehicle (LEV) Regulations

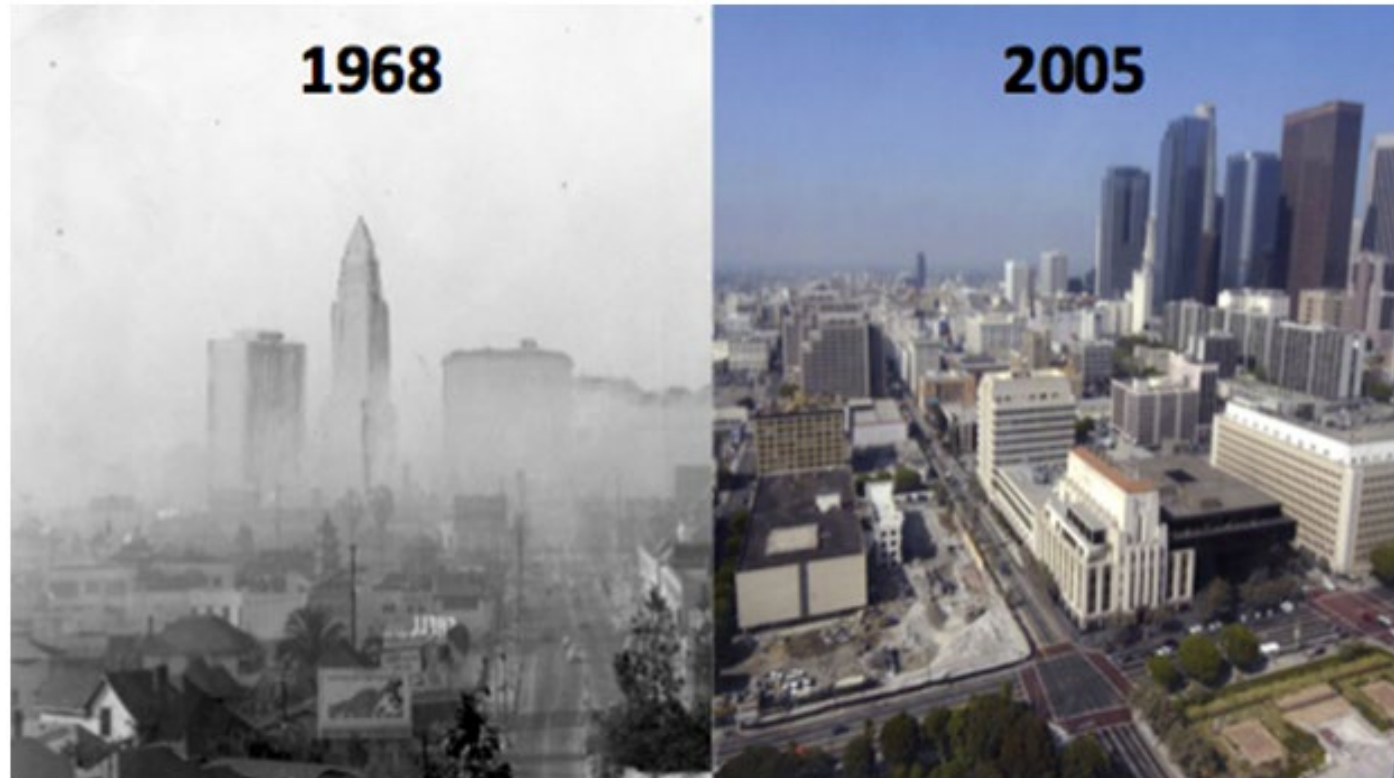
1990 CARB adopts Low-Emission Vehicle (LEV) regulations (LEV I)

- Required auto manufacturers to introduce progressively cleaner light- and medium-duty vehicles for model years 1994-2003.
  - Included year-to-year phase-in with credit banking/trading option
  - Required certain percentage to be ZEVs

1998 CARB adopts LEV II regulations

- Further reduced criteria pollutant emissions from new light- and medium-duty vehicles for model years 2004-2010.
  - Expanded light-duty truck category (SUVs, minivans, pickup trucks)
  - More stringent phase-in through 2010; flat-lined 2010-2014

# California's Air Quality Continues to Improve, Particularly in Los Angeles



# California's Air Pollution & GHG Control History

- 2002 Statute requires CARB to set greenhouse gas (GHG) vehicle emission standards (AB 1493).
- 2004 CARB approves passenger cars/small pick-up truck GHG standards.
- 2006 Statute requires CARB to establish economy-wide reductions of GHGs – Global Warming Solutions Act (AB 32) (first in the nation).
- 2012+ Legislature appropriates cap-and-trade proceeds for programs to reduce GHGs.
- 2016 Statute sets lower GHG emissions targets: 40% below 1990 level by 2030 (SB 32).
- 2017 Statute extends cap-and-trade (AB 398); companion bill to reduce toxic burden in communities (AB 617).
- 2018 Statute increases renewables requirement to 60% by 2030; goal of 100% electricity from renewables and zero-carbon resources by 2045 (SB 100).
- 2018 Exec. Order goal of economy-wide carbon neutrality by 2045; net negative thereafter.

# AB 32: Global Warming Solutions Act of 2006

- Established the first economy-wide climate change regulatory program in the United States.
- Set greenhouse gas emissions limit for 2020 at 1990 level; set path for 80% reduction by 2050.
- Requires CARB to prepare, adopt, and periodically update a “Scoping Plan”
  - “for achieving the maximum technologically feasible and cost-effective reductions” of GHG emissions under the law.
  - “identify and make recommendations on direct emissions reductions measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and non-monetary incentives[.]”
  - Updated at least every 5 years.
- Board’s original AB 32 Scoping Plan outlines a combination of regulations, other programs, and fees.

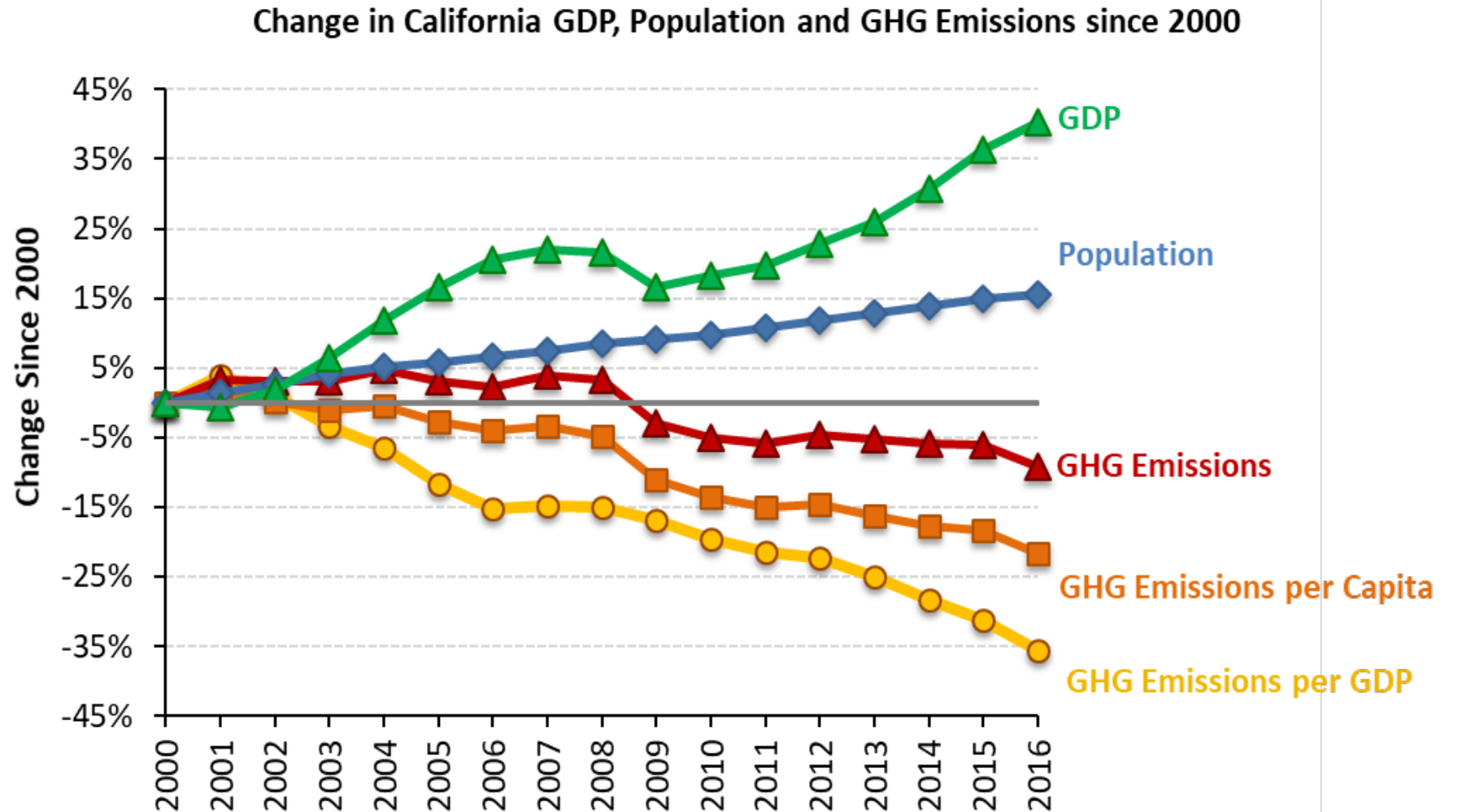


# Board Actions Taken (as of Feb. 2020)

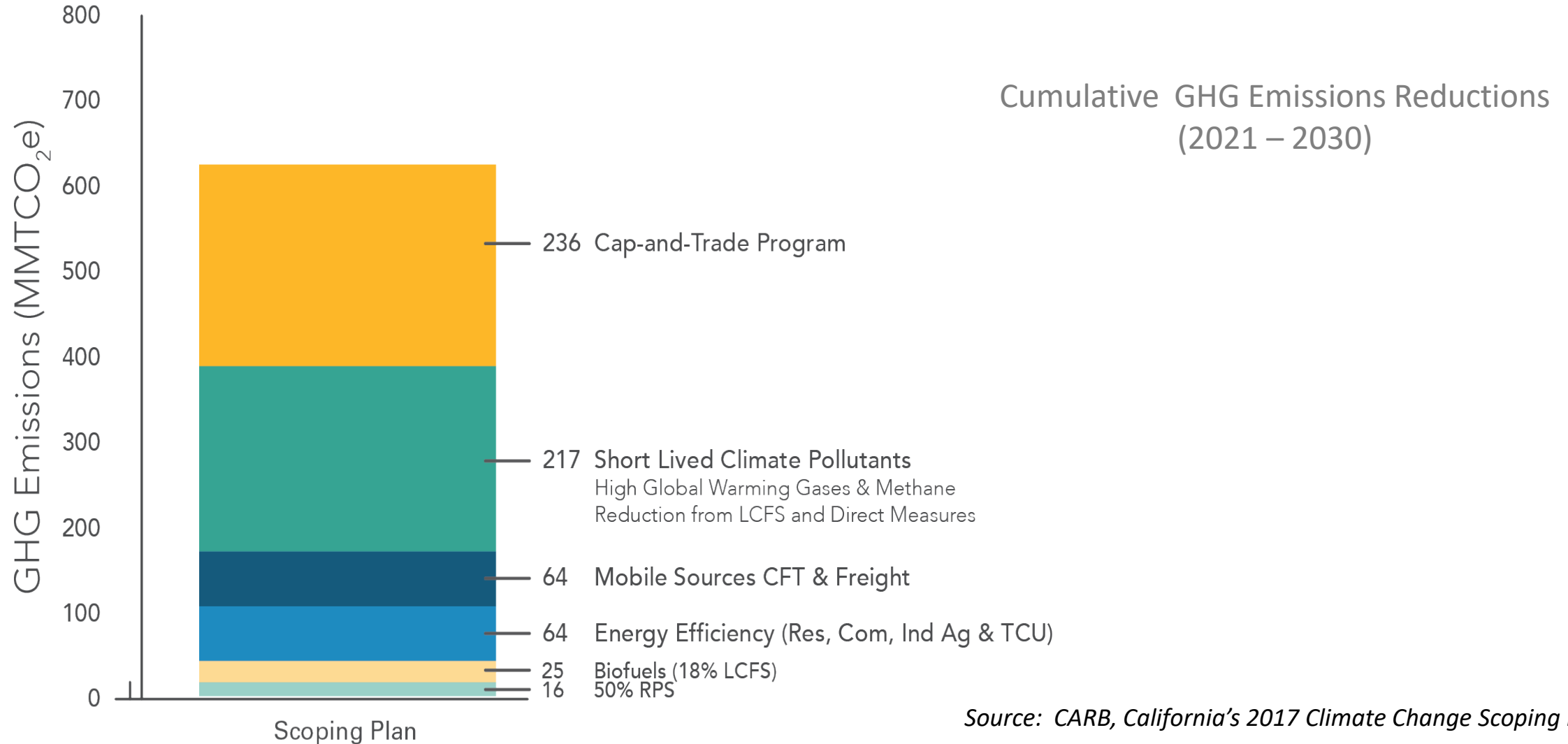
- Passenger vehicles, model year 2009-16 9/04
- Ship electrification in ports 12/07
- Port and rail yard cargo trucks 12/07
- High-GWP in consumer products 6/08
- Heavy-duty truck aerodynamic efficiency 12/08
- Vehicle “do-it-yourself” refrigerant cans 1/09
- SF6 limits in non-utility & non-semiconductor applications 2/09
- Perfluorocarbons in semiconductor manufacturing 2/09
- Tire inflation pressure program 3/09
- Low carbon fuel standard first adopted (later amended) 4/09
- Landfill methane control 6/09
- AB 32 cost of implementation fee first adopted (later amended) 9/09
- High GWP refrigerants for stationary sources 12/09
- SF6 limits in electricity sector 2/10
- SB 375 regional targets for vehicles (to reduce miles traveled) 9/10
- Renewable electricity standard withdrawn by statute
- Cap and trade, mandatory reporting, and offset protocols first adopted 10/11
- Passenger vehicles, model year 2017-25 1/12
- Oil and gas production, processing, and storage facilities 3/17
- Refrigerant foam 12/18
- Zero-emission public transit buses 12/18
- Zero-emission airport shuttles 2/19
- Amendments to many of these regs occurred or planned 2011-2020

# 2016 Emissions Below 2020 Target

- California's 2016 greenhouse gas emissions below 2020 target while economy continues to grow
- Per capita emissions continue to decline



# Scoping Plan Measures toward 2030 Target



# California's Transportation Approach

**Vehicles:** Standards for model years 2009-16, then 2017-25 (adopted in 2012 with a mid-term technology review)

**Vehicle Miles Traveled:** SB 375 (2008)

- Regional targets and incentives reduce vehicle miles traveled through long term planning strategies

**Fuel:** Low Carbon Fuel Standard

- Market-based regulation, allows flexible compliance options
- Declining average lifecycle fuel carbon intensity
  - At least 10% reduction by 2020 and 20% reduction by 2030

# Carbon Neutrality Goals

- SB 100 (2018): 100% of electric power from renewable and zero carbon-emitting sources by 2045
  - Also moved up target date for 50% renewable power to 2026, and revised 2030 target to 60% renewable power
  - 2045 target can include renewable energy (at least 60% after 2030) and zero carbon-emitting non-renewable energy
- But electric power sector represents ~16% percent of 2016 GHG emissions
  - E.O. B-55-18 (2018): directs State agencies to achieve economy-wide carbon neutrality by 2045 & achieve and maintain net negative emissions thereafter

# Carbon Neutrality: Key Questions for California

- Pathways to minimize emissions in fossil energy and industrial sectors by mid-century?
- Maximum potential of Natural and Working Lands to sequester carbon and timing to transition from emissions source to sink?
- Options for additional mechanical sequestration technologies? Tradeoffs?
- Optimal mix of carbon pricing with complementary policies?
- Tools to assess economic and environmental outcomes of achieving carbon neutrality under different scenarios at multiple levels (e.g., state economy, jobs, households and small businesses)?

# U.S. versus California rulemaking

|                                       | U.S. Administrative Procedure Act (APA) & Clean Air Act   | California Administrative Procedure Act & CARB Board process  |
|---------------------------------------|---|---|
| Requires notice & comment rule-making | Per statute and caselaw, excludes regs with “good cause,” plus “statements of policy” and “guidance” interpreting statute or regulation. Largely agency decision. | Per statute, “Every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure.” Review by Office of Admin. Law. |
| Notice & comment process              | Proposal; comment period; final rule with “logical outgrowth.”  | Informal public/stakeholder workshops; proposal & comment period; proposed changes & comment repeats until no substantive changes from reproposal.  |
| Exposure to public comment            | Limited public engagement pre-proposal. Staff hear/read comments; decisionmakers get high-level summary.  | Staff gets extensive feedback from informal workshops & comments. CARB Board hears directly from stakeholders at public Board hearing on proposal.  |

# CARB Regulation and Implementation

- Generally a performance-based approach (industry's choice how to meet requirements).
- Technology-forcing approach using both regulations and incentives.
- California's air pollution and greenhouse gas emissions reduction programs are models for the federal government, for other States, and internationally.



# CARB Resources

- CARB Website:
  - <https://ww2.arb.ca.gov/>
- CARB Climate Program Website
  - <https://ww2.arb.ca.gov/our-work/programs/climate-change-programs>