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**JOINT LEGISLATIVE COMMITTEE ON
CLIMATE CHANGE POLICIES
ASSEMBLYMEMBER AL MURATSUCHI, CHAIR**

Informational Hearing: “Annual Update on Statewide Trends of Greenhouse Gas Emissions and an Overview of the 2022 Scoping Plan”

Tuesday, August 17, 2021, 1:30 P.M.
State Capitol, Room 437

Due to the ongoing COVID-19 safety considerations, including guidance on physical distancing, seating for this hearing is limited for the public. All are encouraged to watch the hearing from its live stream on the Assembly's website at <https://assembly.ca.gov/todayevents>.

We encourage the public to provide written testimony before the hearing. Please send your written testimony to: susan.chan@asm.ca.gov. Please note that any written testimony submitted to the committee is considered public comment and may be read into the record or reprinted.

A moderated telephone line will be available to assist with public participation. The public may provide comment by calling the following toll-free number: 877-692-8957, Access Code: 1315437

AGENDA

I. Opening Remarks

II. Panel One – California Air Resources Board

- **Liane M. Randolph, Chair, California Air Resources Board**
 - 2021 Update on statewide trends of greenhouse gas emissions and indicators.
 - Impacts of emissions trends on 2030 goal.
 - Overview of existing programs/tools used to achieve the 2030 goal and whether they are effective.
 - Overview of California's progress toward 2030 goal. Are we on track?
 - Overview of the 2022 Scoping Plan.
 - Current efforts toward net-zero emissions.

III. Panel Two – Academics and the Legislative Analyst's Office

- **Ross Brown, Principal Fiscal & Policy Analyst, Legislative Analyst's Office**
 - Effectiveness of California's various emission reduction strategies.
 - Is California on track to meet the 2030 goal?
 - What are the implication of this on a neutrality goal in 2045?

- Key considerations when selecting policy tools to achieve GHG goals and for evaluating policy effectiveness.
- **Daniel Cullenward, Ph.D, Policy Director, Carbon Plan**
 - How realistic is a neutrality goal by 2045? And by 2035?
 - What are some of the tradeoffs of pursuing neutrality by 2035 vs. 2045?
 - How does carbon neutrality differ from carbon removal/negative?
 - What should the Legislature consider as it determines the role of carbon removal in the pursuit of neutrality and beyond?
 - What are the differences between "natural" and "engineered" solutions? What are their tradeoffs?
- **Meredith Fowlie, Ph.D, Associate Professor, Department of Agricultural and Resource Economics, UC Berkeley**
 - Opportunity for California to serve as a model for the rest of the world.
 - The cost of neutrality and how do we pay for it.
 - Considering policy interactions and implication of existing programs and those yet to be developed.

IV. Panel Three – Advocates, Environmental Justice, and Industry

The speakers on this panel will each present their organization's perspectives on California's various emission reduction programs, CA's progress toward the 2030 goal, and the development of the 2022 scoping plan. They will also provide comments and suggestions for the Legislature to consider as the state moves net-zero emissions.

- **Paulina Torres, Staff Attorney, The Center on Race, Poverty, and the Environment.**
- **Andrew Meredith, NorCal Regional Director, California State Building & Construction Trades Council.**
- **Lance Hastings, President/ CEO, California Manufacturers Technology Association.**
- **Catherine Reheis-Boyd, President/ CEO, Western States Petroleum Association**
- **Katelyn Roedner Sutter, Senior Manager, U.S. Climate, Environmental Defense Fund.**

V. PUBLIC COMMENT

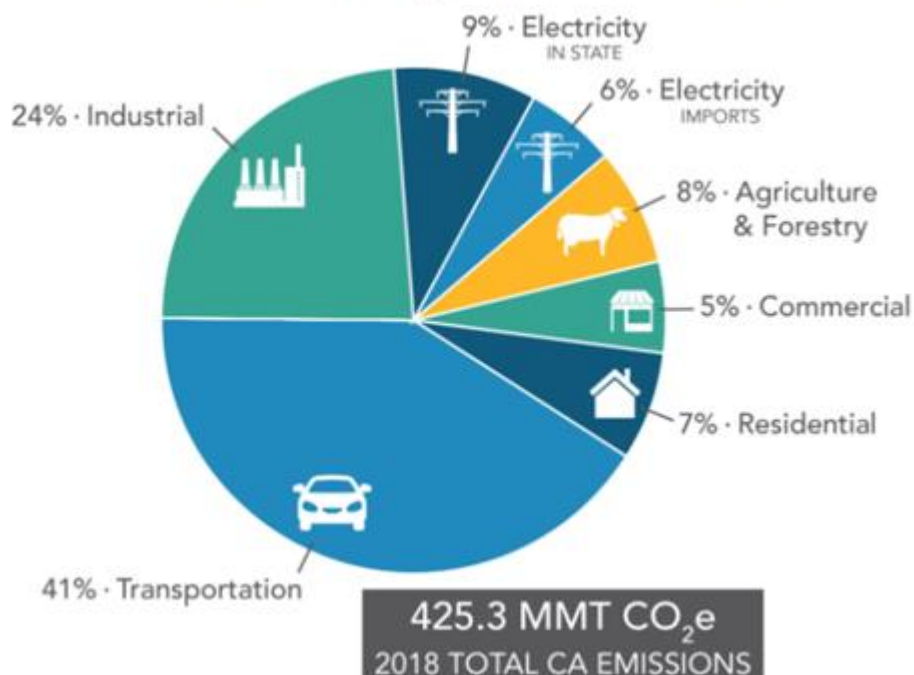
BACKGROUND

Current law requires the California Air Resources Board to provide the Joint Committee on Climate Change Policies an annual update on emissions. Assembly Bill 197 (Garcia, Chapter 250, Statutes of 2016) requires the chair of the California Air Resources Board (CARB) to appear annually before the Joint Legislative Committee on Climate Change Policies to present an informational report on the reported greenhouse gases, criteria pollutants and toxic contaminants from all sectors covered by the CARB's scoping plan. The report shall evaluate emission trends and include a discussion of the regulatory requirements, initiatives, and other programs that may influence those trends. The report also may include recommendations from the state board for legislative action and consideration.

The reporting of greenhouse gas emissions in California. CARB prepares and publishes an annual statewide greenhouse gas emission (GHG) inventory, which compiles and analyzes GHG data (Health and Safety Code section 39607.4). The data is categorized in three ways. They are:

1. Scoping Plan categories, which follows the categories identified in the AB 32 Scoping Plan.
2. Economic sectors, which allows for comparison with other emission inventories that are similarly categorized. See infographic displayed for this category below.
3. Intergovernmental Panel on Climate Change process-oriented categories, which follows the IPCC categorization to ensure comparability with international inventories.

2018 GHG Emissions by Main Economic Sector



Current law also identifies seven greenhouse gases that California Air Resources Board is responsible to monitor and regulate in order to reduce emissions: carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons, and nitrogen trifluoride (Health and Safety Code Section 38505). The inventory includes estimates for these required greenhouse gases.

The annual statewide greenhouse gas emission inventory is an important tool for establishing historical emission trends. This is how California tracks its progress toward established greenhouse gas emission reduction targets.

California's greenhouse gas emission goals. California has several greenhouse gas emission reduction targets in statute and by executive order. AB 32 passed in 2006 set an absolute statewide limit on greenhouse gas emissions. It required California to reduce its greenhouse gas emissions below the levels in 1990 by 2020.

Ten years after the passage of AB 32, California extended and strengthened the limit on greenhouse gas emissions with the passage of SB 32 in 2016. SB 32 raised its goal for greenhouse gas emissions to 40 percent below 1990 levels by 2030. This measure was paired with a companion bill, AB 197 (E. Garcia, 2016), which among other things, added environmental justice representatives to CARB and added a requirement to "prioritize direct emission reductions."

SB 100 in 2018 established a state policy that eligible renewable energy and zero-carbon resources supply 100 percent of all retail sales of electricity in California by 2045. Also in 2018, Governor Brown issued Executive Order B55-18, which set a statewide target to achieve carbon neutrality no later than 2045. AB 1395 (Muratsuchi/C. Garcia) is currently pending in the Legislature. This bill seeks to codify the carbon neutrality goal in EO B55-18 as well as to provide guidance to CARB in reaching that target.

In 2020, Governor Newsom issued Executive Order N-79-20, which set new statewide goals for phasing out gasoline-powered cars and trucks in California. EO N-79-20 requires 100 percent of in-state sales of new passenger cars and trucks are to be zero-emission by 2035; 100 percent of in-state sales of medium- and heavy-duty trucks and busses are to be zero-emission by 2045 where feasible, and 100 percent of off-road vehicles and equipment sales are to be zero-emission by 2035 where feasible. The EO does not ban ownership of sales of used vehicles that do not comply with these new-sales standards, it simply requires new car sales to meet emission standards.

California employs various tools to reduce GHGs. California's climate change mitigation policy is currently based on four major programs: the zero emission vehicle mandate, Renewables Portfolio Standard, the Low Carbon Fuel Standard, and the cap-and-trade program. These programs cover transportation fuels, industrial emissions, vehicle emissions and emissions from electricity generation. Each program is described in further detail below.

- a) *Zero Emission Vehicle (ZEV) Regulation* - The ZEV regulation is designed to achieve the state's long-term emission reduction goals by requiring auto manufacturers to offer for sale specific numbers of the very cleanest cars available. These vehicle technologies include full battery-electric, hydrogen fuel cell, and plug-in hybrid-electric vehicles. The ZEV regulation is part of the broader Advanced Clean Cars package of regulations, a set of tailpipe regulations put in place to limit smog-forming and greenhouse gas (GHG) emissions.
- b) *Renewable Portfolio Standard (RPS)* – The RPS is a regulatory mandate to increase production of energy from renewable sources such as wind, solar, biomass and other alternatives to fossil and nuclear electric generation. This program sets continuously escalating renewable energy procurement requirements.
- c) *Low Carbon Fuel Standard (LCFS)* – LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.
- d) *Cap-and-Trade Program (C&T)* – The C&T program establishes a declining limit on major sources of greenhouse gas emissions throughout California and it creates an economic incentive for investment in cleaner, more efficient technologies. The C&T program applies to emissions that cover approximately 75 percent of the State's GHG emissions.

CARB details California's path to reaching California's GHG goals in its Scoping Plans. AB 32, in addition to setting a carbon reduction goal, required the California Air Resources Board to prepare and approve a Scoping Plan at least once every five years. The Scoping Plan outlines California's policy path toward achieving our greenhouse gas emission goals and details how it will fulfill its landmark legislative mandate to reduce greenhouse gas emissions.

The Scoping Plan is required to achieve California's goal with the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from sources or categories of sources. The Scoping Plan shall, identify the following information for each emissions reduction measure, including each alternative compliance mechanism, market-based compliance mechanism, and potential monetary and nonmonetary incentive:

- a) The range of projected GHG emissions reductions that result from the measure.
- b) The range of projected air pollution reductions that result from the measure.
- c) The cost-effectiveness, including avoided social costs, of the measure.

ARB released its first Scoping Plan in 2008 and is currently working on its fourth scoping plan, which is scheduled to be adopted at the end of 2022.

The 2017 Scoping Plan. The Scoping Plan was last updated and adopted in 2017. The update details California's strategy for achieving the 2030 greenhouse gas emission reduction target. The Plan addresses reductions across major sectors of the State's economy. The key strategies in this plan are:

- SB 350
 - Achieves 50% RPS by 2030.
 - Doubles energy efficiency savings by 2030.
 - Does not account for SB 100, which increased this target to 60% but became law after the 2017 Scoping Plan was adopted.
- LCFS
 - Increases the stringency of LCFS by requiring the reduction of carbon intensity of fuels by 18% by 2030.
- Mobile Source Strategy
 - Maintains existing GHG standards for light- and heavy-duty vehicles.
 - Puts 4.2 million zero-emission vehicles (ZEVs) on the roads.
 - Increases ZEV buses, delivery and other trucks.
 - Does not account for the Governor's recent EO N-79-20, which was issued after the 2017 Scoping Plan was adopted.
- Sustainable Freight Action Plan
 - Improves freight system efficiency.
 - Maximizes use of near-zero emission vehicles and equipment powered by renewable energy.
 - Deploys over 100,000 zero-emission trucks and equipment by 2030.
- Short-Lived Climate Pollutant Reduction Strategy
 - Reduces emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
 - Reduces emissions of black carbon 50 percent below 2013 levels by 2030.
 - For dairies, California will aim to reduce methane emissions from dairy manure management by at least 20 percent in 2020, 50 percent in 2025, and 75 percent in 2030.
- SB 375 – Sustainable Communities Strategy

- Increases stringency of regional targets for GHG emissions reductions from passenger vehicles for 2020 and 2035 for each region covered by one of the State's metropolitan organizations (MPOs).
- Post-2020 Cap & Trade Program
 - Declining caps
 - Continues linkage with Québec, and linkage with Ontario, Canada.
 - Continues to explore options on how to support greater reductions.
- Natural and Working Lands Action Plan
 - Develops, by 2018, an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.
- AB 617
 - Strengthens the monitoring requirements under AB 617 to reduce air pollution at the community level.

Development of the 2022 Scoping Plan is underway. In a public workshop announcement, CARB indicated that the 2022 Scoping Plan Update will assess progress towards achieving the 2030 target and lay out a path to achieve carbon neutrality by 2045. CARB has also indicated that achieving carbon neutrality will require the State to consider GHG emissions and sinks from natural and working lands. CARB also initiated a workshop series on carbon neutrality that began in January 2019. The series covers topics such as deep decarbonization across all sectors and related issues such as the social cost of carbon.

While the Scoping Plan is a creation of law under the Global Warming Solutions Act and is expressly tied to the 2020 and 2030 statutory targets, CARB has interpreted this law to encompass other requirements such as the 2018 Carbon Neutrality Executive Order.

Letter from Governor Newsom. On July 9, 2021, Governor Newsom sent letters to the CPUC and CARB requesting them to accelerate California's progress toward its climate goals in order to meet the urgency of the climate crisis. Specifically, the letter details the Governor's request for CARB to evaluate pathways for the state to achieve carbon neutrality by 2035 – in advance of the 2045 target – including strategies to reduce fossil fuel demand and supply. The Governor also requested for the CPUC to establish a more ambitious greenhouse gas emissions target for electricity procurement by 2030, stepping up the state's pace in achieving zero carbon electricity. It is unclear how this letter revises plans for CARB's 2022 Scoping Plan Update.

The Legislature's pursuit of net-zero emissions. Assembly Bill 1395, authored by Assembly member Muratsuchi and Assembly member Cristina Garcia, would codify a net-zero greenhouse gas emission goal for 2045, require a 90 percent emissions reduction, and require accountability measures for technological and nature-based

solutions. AB 1395 is currently pending a hearing in the Senate Appropriations Committee.

Senate Bill 582, authored by Senator Stern, would require CARB to ensure that statewide greenhouse gas emissions are reduced to at least 40% and up to 80% below the 1990 level by 2030. SB 582 also requires the Natural Resources Agency, in coordination with the Environmental Protection Agency and CARB to develop a climate restoration plan that specifies carbon removal targets, before 2035. SB 582 is currently on the inactive file on the Senate Floor.

Potential Questions for the Panel:

- What are the key considerations for the State to achieve emissions neutrality as soon as possible but no later than 2045?
- How effective are the various climate programs in helping CA reach the 2030 target? What are the limitations of each of these programs?
- Can these programs be used to help us get to emissions neutrality?
- What are some lessons learned in our pursuit of the 2030 goal? How can these lessons be applied to our pursuit of an emissions neutrality goal?
- What are the considerations and tradeoffs of planning for emissions neutrality by 2035 vs 2045?
- How does CARB intend to harmonize the 2018 carbon neutrality EO and the Governor's recent request for CARB to accelerate that timeline? Does CARB intend to come up with two plans?
- What role should carbon capture and storage and carbon removal strategies play in reaching emissions neutrality? What about nature-based solutions?
- How can we ensure accurate and consistent emissions accounting methods that prevent double-counting of climate benefits?
- How does CARB currently account for emission reductions?
- How should the state balance the utility of various emissions reduction measures with their associated undesirable consequences?

- Are there areas needing legislative action in order to improve the state's ability to get to emissions neutrality effectively?
- What additional authorities might CARB likely need to implement major post-2030 aspects of its 2022 Scoping Plan?
- Should the legislature require a minimum level of emission reductions that must be achieved in California's, as part of a broader carbon neutrality goal?
- What do we know about how well different mitigation strategies have been implemented by state agencies? Do any of these programs face significant implementation or compliance challenges that limit their effectiveness?
- Which mitigation strategies are most effective at reducing emissions? Which are the most cost-effective?
- Are there additional mitigation strategies that state should be utilizing, for example currently being implemented in other states or countries?