CONCURRENCE IN SENATE AMENDMENTS
AB 1322 (Robert Rivas and Muratsuchi)
As Amended August 25, 2022
Majority vote

SUMMARY

Requires, by July 1, 2024, the state Air Resources Board (CARB) to develop, and commence implementation of, a plan to reduce aviation greenhouse gas (GHG) emissions and help the state reach its goal of net-zero GHG emissions by 2045, including a sustainable fuels target for the aviation sector of at least 20% by 2030.

Senate Amendments

1) Remove the entire contents of the bill, previously pertaining to land use, local measures, and conflicts.

2) Make implementation contingent upon an appropriation by the Legislature in the annual Budget Act or another statute.

3) Require the plan, developed by CARB, to include all of the following:

    a) Strategies to reduce GHG emissions through the increased production and use of sustainable fuels in the aviation sector, including sustainable aviation fuel (SAF), electricity, and hydrogen.

    b) Calculations of the incentive amounts required to encourage aircraft to voluntarily use cleaner fuels and selections of funding sources and implementation programs.

    c) Incentives for alternative fuel use, prioritized with consideration of the entire fuel life cycle to achieve the greatest GHG emissions reductions and cobenefits.

    d) Augmentations of existing incentives and the creation of new incentives necessary to increase the production and use of SAF in the state.

    e) The target quantity of GHG emissions reductions associated with volumes of SAF to support the state in meetings its overall GHG emissions reduction goals.

    f) An evaluation of barriers and possible solutions to increasing SAF production levels.

    g) Milestones toward increasing SAF production levels and for the promotion of all available sustainable feedstocks as needed, including waste biomass from forest management activities; agricultural residues, processing residues, and fats, oils, and greases; and postseparated municipal solid waste.

    h) Actions that can be taken by the state to ensure incentives for SAFs are sufficient to incentivize production comparable to policy incentives provided to renewable diesel and other on-road fuels.

    i) Tools for increasing the state's SAF supply and demand.

4) Require CARB, in developing the plan, to do all of the following:

a) Evaluate, model, and create incentives to increase the amount of SAF produced in, or imported into, the state for uploading to an aircraft in the state.

b) Examine the shortfalls that exist in GHG emissions policy frameworks that apply to alternative fuel incentives, including the Low Carbon Fuel Standard program (LCFS).

c) Maximize reductions in wildfire risk to state residents and communities by expediting review of SAF pathways for the LCFS that utilize feedstocks presenting wildfire risk and by fully recognizing carbon intensity reductions achieved through the use of woody biomass.

5) Require CARB to seek to address in the plan shortfalls in GHG emissions policy frameworks by assessing new incentives that recognize reductions in criteria pollutants and economic cobenefits.

6) Require CARB, in developing the plan, to consult with the Natural Resources Agency, the Department of Forestry and Fire Protection, the California Environmental Protection Agency, the State Energy Resources Conservation and Development Commission, the Governor's Office of Business and Economic Development.

7) Encourage CARB, in developing the plan, to consult with stakeholders; commercial airports, commercial airlines; aircraft and engine manufacturers; SAF producers and developers; aviation infrastructure providers; commercial air cargo network operators; environmental organizations; and academic experts in alternative aviation fuels.

8) Require CARB, on or before July 1, 2024, to commence implementation of the plan.

COMMENTS

This bill was substantially amended in the Senate and the Assembly-approved version of this bill was deleted. This bill, as amended in the Senate, is inconsistent with the Assembly actions and the provisions of this bill, as amended in the Senate, have not been heard in an Assembly policy committee.

Aviation emissions. Aircraft jet engines emit a mixture of carbon dioxide (CO_2), water vapor, oxides of nitrogen (NOx), particulate matter (PM), carbon monoxide, and other pollutants. 90% of the emissions from a flight occur at altitudes above 3,000 feet, with the remaining 10% being released during taxiing, takeoff, and landing. According to the U.S. Energy Information Administration, California's total 2020 jet fuel consumption was about 59 million barrels, or roughly 2.5 billion gallons. The international aviation market is responsible for about 2% of the world's GHG emissions. Nationwide, aviation emissions make up about 13% of transportation GHG emissions. In California, aviation accounts for 1% of all transportation-related GHG emissions.

This bill does not define SAF. For purposes of discussion, SAF is an aircraft biofuel that has similar properties to conventional jet fuel; it is blended with conventional jet fuel and can work in the same conventional jet fuel infrastructure. Depending on the feedstock and technologies used to produce it, SAF can reduce life cycle GHG emissions compared to conventional jet fuel, and some SAF pathways may have a net-negative GHG footprint. Given the technology is still

relatively new and being developed, SAF is currently much more expensive than conventional jet fuel (roughly five times more).

SAF Grand Challenge. The U.S. Department of Energy (DOE) is working with the U.S. Department of Agriculture (USDA), Department of Transportation (DOT), and other federal government agencies to develop a comprehensive strategy for scaling up new technologies to produce SAF on a commercial scale, reaching 35 billion gallons per year by 2050 (representing 100% of U.S. aviation fuel needs), with a near-term goal of 3 billion gallons per year by 2030.

Other federal efforts. The International Civil Aviation Organization (ICAO) is a United Nations intergovernmental body responsible for worldwide planning, implementation, and coordination of civil Aviation & Emissions. The Committee on Aviation Environmental Protection (CAEP) within ICAO is taking a critical role in formulating emission standards and recommended practices. These are the basis of the Federal Aviation Administration's aircraft engine performance certification standards, established through U.S. EPA regulations. Historically, U.S. EPA has adopted the aircraft emission standards proposed by ICAO for harmonization with the global airline industry. The U.S. EPA has described those standards as "technology-following," meaning they will not require a technology response from manufacturers. CARB has urged the U.S. EPA to strengthen the proposed standard.

The Carbon Offset and Reduction Scheme for International Aviation (CORSIA) is a carbon offset and carbon reduction scheme to lower CO_2 emissions for international flights which was developed by ICAO. As of January 2018, more than 70 countries representing more than 85% of international aviation activity have volunteered to participate. A 2019 agreement provided an update to CORSIA which would allow the use of alternative fuels to reduce offset obligations. This would create greater demand for aviation biofuel.

Scoping plan. Given the small contribution to overall state GHG emissions, aviation was not mentioned in CARB's 2017 scoping plan update. However, the 2022 Draft Scoping Plan includes aviation. The Draft Scoping Plan outlines a scenario that achieves GHG emission reductions that exceed levels expected based on existing policies, and keep the state on track to achieve the SB 32 GHG reduction target for 2030 and to become carbon neutral no later than 2045. This scenario assumes 10% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045. The scenario also assumes SAF meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries. While the scenario goals are clear, the pathways to accomplish these goals are not.

Mobile Source Strategy (MSS). The MSS scenario planning document includes aviation, specifically emissions from piston, agricultural, and jet aircraft. The 2020 MSS proposes four strategies to reduce aviation GHG emissions: (1) improving the current air traffic operation; (2) transitioning toward zero-emission auxiliary power units (APU); (3) accelerating the turnover of old aircraft; and, (4) technology advancement for future aircraft.

Low Carbon Fuel Standard (LCFS). LCFS sets a declining carbon intensity benchmark for transportation fuels used in California through 2030. In 2018, CARB approved changes to LCFS that authorized alternative, or renewable, aviation fuels to generate LCFS credits; these fuels do not generate deficits like gasoline and diesel do. Producers of alternative aviation fuels are permitted to voluntarily opt into the LCFS program. In 2020, the SAF LCFS pathway generated 0.2% of all LCFS credits for that year.

Whether the best policy action for SAF is at the state or federal level, and what those policy tools look like, remains to be seen. Implementation of the plan required by this bill is contingent upon a budget appropriation, which gives the Legislature the opportunity to consider SAF incentives in the broader context of overall funding for climate-related programs.

According to the Author
"Global GHG emissions are already driving catastrophic climate change. In 2015, commercial aviation in California accounted for an estimated 36 million metric tons of carbon dioxide. SAF is a cleaner alternative to traditional jet fuel and is the most significant pathway for commercial aviation to reduce emissions. While California leads in SAF deployment in the US, using approximately 99% of the nation's sustainable aviation fuel supply in 2020, this supply represents less than 0.0025% of the state's jet fuel use. To prevent and combat the most harmful impacts of climate change, we must leverage all possible options to minimize GHG emissions.

"The use and further production of sustainable aviation fuel can reduce lifecycle carbon by 80% compared to traditional petroleum-based jet fuel. [This bill] will require CARB to develop and implement a plan to identify incentive-based best practices that promote the use of SAF to help meet the state's goal of net-zero GHG emissions by 2045. [This bill] takes bold, necessary steps to ensure that our aviation industry can join the fight against the devastating impacts of climate change and help California achieve our ambitious GHG reduction goals on time."

Arguments in Support
"[T]he Ad Hoc Sustainable Aviation Fuel Coalition (SAF Coalition) are proud to sponsor [this bill], which would direct CARB to develop and implement a plan to incentivize SAF production and utilization in California as well as other emerging technologies, as feasible. The SAF Coalition is comprised of commercial airlines, California airports, an aviation manufacturer and SAF fuel producers, all of whom have devoted many years of time and effort to develop an approach to as quickly and efficiently as possible enable the aviation sector to help California meet its GHG reduction goals, as well as reduce criteria pollutants. CARB just released a draft 2022 Scoping Plan, which is a plan to enable California to be carbon neutral by 2045. As part of the Scoping Plan, CARB expects 90% of GHG emission reductions from the aviation sector to be achieved through the production and utilization of SAF in California. The SAF Coalition agrees."

Arguments in Opposition
"There are serious reputational risks built into this bill, and the anti-democratic process should raise red flags. If indeed the promotion of 'SAF' is to be considered by the legislature it must be done through normal legislative processes in order that the issue be thoroughly vetted and that the most impacted communities can have a say in the legislation. The hard truth is that the passage of this bill would be a blow to environmental democracy and would set in motion a series of events whose outcomes will not effectively address the climate impacts of aviation, and that will indeed run the risk of making the situation worse. More appropriate would be for the legislature to do a holistic review of the climate impacts of the aviation sector before advancing legislation on this matter. We urge you to consider an already existing vision for the transformation of our mobility infrastructure in a way that best respects the science and the global demands for a just transition."

FISCAL COMMENTS

According to the Senate Appropriations Committee:

1) Unknown one-time costs, likely in the millions of dollars (Cost of Implementation Account), for CARB to develop the plan and implement it through the Low Carbon Fuel Standard and other mechanisms.

2) Unknown but potentially significant cost pressure (various funds) to provide additional funding for any programs, incentives, or mechanisms identified in the plan to reduce aviation GHGs.

VOTES:

ASM LOCAL GOVERNMENT: 5-3-0
YES: Aguiar-Curry, Bloom, Ramos, Luz Rivas, Robert Rivas
NO: Lackey, Boerner Horvath, Voepel

ASM HOUSING AND COMMUNITY DEVELOPMENT: 6-2-0
YES: Chiu, Gabriel, Kalra, Ward, Quirk-Silva, Wicks
NO: Seyarto, Kiley

ASSEMBLY FLOOR: 49-22-7
YES: Aguiar-Curry, Arambula, Berman, Bloom, Calderon, Carrillo, Cervantes, Chau, Chiu, Cooley, Cooper, Daly, Frazier, Friedman, Gabriel, Cristina Garcia, Gipson, Lorena Gonzalez, Grayson, Holden, Jones-Sawyer, Kalra, Lee, Levine, Low, Mayes, McCarty, Medina, Mullin, Nazarian, O'Donnell, Quirk, Quirk-Silva, Ramos, Reyes, Luz Rivas, Robert Rivas, Rodriguez, Blanca Rubio, Salas, Santiago, Stone, Ting, Villapudua, Ward, Akilah Weber, Wicks, Wood, Rendon
NO: Bauer-Kahan, Bennett, Bigelow, Boerner Horvath, Choi, Cunningham, Megan Dahle, Davies, Flora, Fong, Gallagher, Irwin, Kiley, Lackey, Muratsuchi, Nguyen, Petrie-Norris, Seyarto, Smith, Valladares, Voepel, Waldron
ABS, ABST OR NV: Burke, Chen, Eduardo Garcia, Gray, Maienschein, Mathis, Patterson

UPDATED

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CONSULTANT: Christine Casey / TRANS. / (916) 319-2093 FN: