Airlines for America®
We Connect the World

June 24, 2022

Submitted electronically at:
https://www.arb.ca.gov/lispub/comm/iframe_bcsubform.php?listname=scopingplan2022&comm_period=N

Clerks' Office
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Airlines for America® Comments on the *Draft 2022 Scoping Plan Update*

Dear Sir/Madam:

Airlines for America® (A4A), the trade association for the leading U.S. passenger and cargo airlines,[1] appreciates the opportunity to comment on the California Air Resources Board's (CARB) *Draft 2022 Scoping Plan Update (Draft Update)* and the associated materials that CARB made publicly available on May 10, 2022.[2]

For context, we first reiterate below the extensive efforts that A4A has undertaken and continues to undertake to demonstrate our member carriers' longstanding commitment to environmental progress and reducing commercial aviation's greenhouse gas (GHG) emissions footprint, including through the development and deployment of sustainable aviation fuel (SAF, or as CARB refers to it under the Low Carbon Fuel Standard (LCFS) Program, alternative jet fuel). Following this background discussion, we provide our comments on the *Draft Update*, focusing in particular on those aspects of the document that pertain to commercial aviation.

I. Background

Commercial aviation has been an indispensable pillar of our national, state, and local economies for decades. Prior to the onset of the COVID-19 pandemic, commercial aviation helped drive over 10 million U.S. jobs and over 5 percent of U.S. Gross Domestic Product (GDP). In California, according to the most recent Federal Aviation Administration (FAA) analysis, civil aviation accounts for about 5 percent of jobs (over 1.15 million in 2016) and drives

[1] A4A's members are Alaska Airlines, Inc.; American Airlines Group Inc.; Atlas Air, Inc.; Delta Air Lines, Inc.; Federal Express Corporation; Hawaiian Airlines, Inc.; JetBlue Airways Corp.; Southwest Airlines Co.; United Airlines Holdings, Inc.; and United Parcel Service Co. Air Canada, Inc. is an associate member.

[2] Posted at https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents. A4A commented on CARB's September 30, 2021, technical workshop on the draft scenario inputs for the 2022 Scoping Plan Update, *see* https://www.arb.ca.gov/lists/com-attach/48-sp22-inputs-ws-UDZTPAZpVWcBawhX.pdf, and we incorporate those comments by reference here.

over 4 percent of State GDP ($109.1 billion in 2016).[3] Economic impact studies likewise have affirmed the critical importance to local economies of aviation activity at California's major airports.[4]

The record of the U.S. airline industry demonstrates that we can grow and help the country prosper even as we continue to improve our environmental performance. For example, between 1978 and 2021, the U.S. airlines improved their fuel efficiency (on a revenue ton mile basis) by more than 135 percent, saving over 5.5 billion metric tons of carbon dioxide (CO_2) – equivalent to taking more than 28 million cars off the road on average *in each of those years*. Similarly, since 1975, even as we quintupled the number of passengers served in the U.S., we have reduced the number of people exposed to significant levels of aircraft noise by 94 percent. The U.S. airlines have continually demonstrated their ability to contribute to the nation's economic productivity, while minimizing their environmental footprint.

This environmental record is not happenstance, but the result of a relentless commitment to driving and deploying technology, operations, infrastructure, and SAF advances to provide safe and vital air transport as efficiently as possible within the constraints of the air traffic management system. Indeed, for the past several decades, airlines have dramatically improved their fuel efficiency and reduced their CO_2 and other emissions by investing billions in fuel-saving aircraft and engines, innovative technologies like winglets (which improve aerodynamics), and cutting-edge route-optimization software.

We are committed to addressing and further reducing our industry's GHG emissions. On March 30, 2021, A4A, together with our member carriers, pledged to work across the aviation industry and with government leaders in a positive partnership to achieve net-zero carbon emissions by 2050 (2050 NZC Goal).[5] This pledge continues our longstanding commitment to embracing our responsibility to address climate change and reduce commercial aviation's GHG emissions

---

[3] *See* FAA, *The Economic Impact of Civil Aviation on the U.S. Economy – State Supplement* (Nov. 2020), at 10, available at https://www.faa.gov/about/plans_reports/media/2020_nov_economic_impact_report.pdf.

[4] *See, e.g.*, *Economic Impact Analysis – Los Angeles International Airport in 2014* (April 2016) (620,610 jobs in Southern California, $37.3 billion in labor income, $126.6 billion in economic output and $6.2 billion in state and local taxes), available at https://laedc.org/wp-content/uploads/2016/04/LAWA_FINAL_20160420.pdf; *2019 Economic Impact Study – San Francisco International Airport* (direct impact of 188,111 jobs, $14 billion in labor income and 42.5 billion in total revenues; total impact of 330,215 jobs, $25 billion in labor income and $72.7 billion in total revenues), available at https://www.flysfo.com/sites/default/files/SFO_Economic_Impact_Report_2019.pdf; *San Diego International Airport Economic Impact Study – June 2018* (direct impact of 67,200 jobs, over $2 billion in payroll and $6 billion in economic output; total impact of 116,571 jobs, $3.9 billion in payroll and $11.7 in annual output), available at https://timesofsandiego.com/wp-content/uploads/2018/09/2017-01-06-economic-impact-study.pdf.

[5] *See* https://www.airlines.org/news/major-u-s-airlines-commit-to-net-zero-carbon-emissions-by-2050/. On October 4, 2021, the International Air Transport Association and its member airlines followed suit by also committing to achieve net-zero carbon emissions by 2050. *See* https://www.iata.org/en/pressroom/2021-releases/2021-10-04-03/.

footprint.[6] With consistent analyses showing that tremendous quantities of SAF must be deployed for the industry to meet its climate goals, A4A carriers also pledged to work with the government and other stakeholders toward a rapid expansion of the production and deployment of commercially viable SAF to make 2 billion gallons available to U.S. aircraft operators in 2030. On September 9, 2021, as a complement to the federal government's announcement of the SAF Grand Challenge,[7] A4A and our members increased the A4A SAF "challenge goal" by an additional 50 percent, calling for 3 billion gallons of cost-competitive SAF to be available to U.S. aircraft operators in 2030.[8] Notably, this SAF challenge goal and the 2050 NZC Goal represent collective minimums, and some A4A members have in fact established even more ambitious goals.

Our airlines' efforts to address GHG emissions are designed to reduce their fuel consumption, GHG contribution, and potential climate change impacts responsibly and effectively, while allowing commercial aviation to continue to serve as a key contributor to the U.S., global, California, and local economies. At the same time, we continue to build upon our strong record of reducing conventional air pollutant emissions. Our airlines' primary focus is realizing further fuel efficiency and emissions savings through increasing levels of SAF deployment, modernization and optimization of the air traffic management system, public-private research and development partnerships, and a vast array of additional operational and infrastructure initiatives being undertaken in collaboration with regulators, airports, manufacturers, and other aviation stakeholders. A4A and our members have been particularly focused on developing low-carbon, sustainable liquid fuel alternatives, understanding that the deployment of tremendous quantities of SAF will be key to the achievement of our climate goals.

As drop-in fuel that currently reduces lifecycle GHG emissions by up to 80% compared to conventional, petroleum-based jet fuel while also helping to improve local air quality, SAF is absolutely vital to our sector. Unlike the on-road transportation sector (cars, trucks, buses, etc.), energy alternatives like electricity and hydrogen will not be sufficiently advanced in the near- or medium-term to make a meaningful contribution to the decarbonization of the aviation sector, meaning that commercial aviation will remain reliant on high energy density liquid fuels for years to come.[9]

---

[6] Since 2009, A4A and our members have been active participants in a global aviation coalition. Prior to strengthening our commitment in 2021, we had committed to 1.5 percent annual average fuel efficiency improvements through 2020, with goals to achieve carbon-neutral growth beginning in 2020 and a 50 percent net reduction in CO_2 emissions in 2050, relative to 2005 levels.

[7] *See* https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/09/fact-sheet-biden-administration-advances-the-future-of-sustainable-fuels-in-american-aviation/ and https://www.energy.gov/eere/bioenergy/sustainable-aviation-fuel-grand-challenge.

[8] *See* https://www.airlines.org/news/u-s-airlines-announce-3-billion-gallon-sustainable-aviation-fuel-production-goal/.

[9] *See* FAA, *United States 2021 Aviation Climate Action Plan*, at 18-19 (Nov. 2021) (*U.S. 2021 Aviation CAP*) ("there is no realistic option that could replace liquid fuels in the commercial aircraft fleet in the coming decades"), available at https://www.faa.gov/sites/faa.gov/files/2021-11/Aviation_Climate_Action_Plan.pdf.

Fortunately, we are in a position to succeed because we are not just getting started now. A4A and our members have been working diligently for many years to lay the groundwork for the establishment of a commercially viable SAF industry. In 2006, A4A was instrumental in co-founding with the FAA and other aviation organizations the Commercial Aviation Alternative Fuels Initiative® (CAAFI), which seeks to facilitate the development and deployment of SAF.[10] CAAFI has been integral in obtaining the certification of the seven SAF pathways that are now recognized under the ASTM International specification for aviation turbine fuel from alternative, non-petroleum sources (i.e., ASTM D7566) as well as the two co-processing pathways recognized under the ASTM D1655 jet fuel specification. Nearly all of A4A's member carriers, moreover, have entered into offtake agreements over the years with SAF producers in a concerted effort to spur the SAF industry and utilize the fuel. These offtakes include (but are not limited to) those of United Airlines, which has been procuring SAF from the World Energy facility in Paramount, CA for use at Los Angeles International Airport (LAX) since 2016, and Alaska Airlines, American Airlines, Delta Air Lines, JetBlue, and Southwest Airlines, which have been using SAF at San Francisco International Airport since as early as 2020 (and in JetBlue's case, also at LAX since 2021). It bears noting, too, that A4A was the original proponent and a key supporter of CARB's addition of alternative jet fuel as a credit-generating fuel under the LCFS Program on a voluntary, opt-in basis. In sum, we have been and remain deeply committed to the development of a commercially viable SAF industry -- in California, throughout the country, and throughout the world.

A4A's commitment to reducing the environmental impacts associated with aviation extend to reducing emissions that can affect local air quality. A4A and its members fully support the state-wide efforts to attain the National Ambient Air Quality Standards and ensure public health. Commercial airlines are dedicated to providing air transportation services to the public that, above all, ensure the safety of our passengers, crew, and the larger public. Accordingly, we view responsible environmental stewardship as essential to our business and have embraced the need to work proactively to address environmental concerns and achieve concomitant public health objectives.

In addition, A4A and our members have committed extensive time and resources over the years to support, through the International Civil Aviation Organization's Committee on Aviation Environmental Protection (ICAO/CAEP), the international standards for aircraft engines and aircraft that are consistent with the ICAO/CAEP Terms of Reference and adopted into U.S. law pursuant to section 231 of the federal Clean Air Act (CAA).[11] A4A and our members have supported the development of economically reasonable, technologically feasible, and environmentally beneficial international standards for aircraft engines and aircraft governing noise, nitrogen oxides, particulate matter (PM), and CO_2 through ICAO/CAEP. Most relevant in this context, A4A worked for years in the ICAO/CAEP process to support the development of a CO_2 Certification Standard for aircraft that ICAO adopted in 2017, and we strongly supported the U.S. Environmental Protection Agency's recent adoption of GHG emissions standards for aircraft engines pursuant to CAA section 231 that are equivalent to the ICAO CO_2 Certification Standard. This first of its kind standard provided the foundation for the development of future,

[10] *See* https://caafi.org/.

[11] 42 U.S.C. § 7521.

more stringent CO_2 standards. Indeed, A4A strongly supported the U.S. Government's proposal to ICAO/CAEP that it develop a new, "integrated" aircraft standard that will address both CO_2 and aircraft noise. ICAO/CAEP agreed with this proposal, and the effort to develop a new, more stringent aircraft standard for ICAO adoption in 2025 is now underway. A4A strongly supports this effort.

II. Comments on the *Draft 2022 Scoping Plan Update*

With the above background in mind, we set out below our comments on the *Draft 2022 Scoping Plan Update*.

A. A4A Supports CARB's Selection of the Proposed Scenario

A4A agrees that of the four alternatives CARB evaluated, the scenario it selected (the "Proposed Scenario") "best achieves the balance of cost-effectiveness, health [and economic] benefits, and technological feasibility."[12] As CARB indicates, the Proposed Scenario would "keep[] California on track to achieve the SB 32 GHG reduction target for 2030 and become carbon neutral no later than 2045."[13]

Specifically with respect to aviation, the Proposed Scenario envisions "10% of aviation fuel demand [being] met by electricity (batteries) or hydrogen (fuel cells) in 2045" and "[SAF] meet[ing] most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries."[14] Electric and hydrogen-powered aircraft are still in the early stages of development and it remains to be seen whether these technologies will become a viable means of meeting significant portions of demand for air transportation services. While the 10% projection for electric and/or hydrogen propulsion by 2045 is ambitious and may not come to fruition in 2045, A4A believes that it is reasonable to use this projection as a basis for the final 2022 Scoping Plan.[15] Most significant, however, is the recognition by CARB that the

---

[12] *Draft 2022 Scoping Plan Update*, at iv.

[13] *Id.* at 56.

[14] *Id.* at 58. For the Low Carbon Fuels for Transportation sector, the proposed scenario entails the use of "[b]iomass supply . . . to produce conventional and advanced biofuels, as well as hydrogen," also resulting in "reduce[d] demand for petroleum fuel and GHGs, and improve[d] air quality." *Id.* at 62.

[15] *See, e.g.,* Air Transport Action Group, *Waypoint 2050* (Second Edition, Sept. 2021), at 4 (stating that "[b]y 2050, it is expected that electric-, hybrid- and hydrogen-powered propulsion will have the potential to serve regional, short-haul and perhaps some medium-haul markets," with "[t]raditional liquid fuels . . . expected to remain necessary for long-haul aircraft and for the remaining short and medium haul aircraft that have not shifted to electric or hydrogen, but with a transition towards 100% sustainable and low carbon sources"), available at https://aviationbenefits.org/media/167417/w2050_v2021_27sept_full.pdf; ICF, *Fueling Net Zero: How the Aviation Industry Can Deploy Sufficient Sustainable Aviation Fuel to Meet Climate Ambitions* (Sept. 2021), at 4 (stating that "[e]lectric and hydrogen propulsion systems will initially be deployed on smaller aircraft flying short routes. As the technologies improve, their range and power could increase, and by 2050 scenario[] 3 of the [Waypoint 2050] analysis expects hydrogen, electric or hybrid propulsion to be deployed on aircraft up to 150 seats, operating flights less than 120 minutes. These routes represent 27% of current industry CO_2 emissions, with the remaining 73% of emissions from larger aircraft flying medium and long-haul routes."), available at

decarbonization of the aviation sector will depend on the availability of SAF to meet "most or the rest" of the 90% of aviation fuel demand in 2045. SAF is thus the critical means of enabling the decarbonization of the sector and achieving the projected outcome in the third column of Table 2-2 of the *Draft Update*: "reduce[d] demand for petroleum aviation fuel and reduce[d] GHGs."[16] Stated differently, this outcome cannot be realized absent an exponential increase in the production and use of SAF between now and 2045. Indeed, given the uncertainty surrounding the development of alternatively-powered aircraft (e.g., electric and hydrogen), the fact that SAF is already being deployed, and the fact that several technology/feedstock pathways to produce SAF have already been certified as safe (with more pathways on the way), it is critical that California work to ensure that SAF is available in sufficient quantities to meet at least 90% of aviation demand in 2045.

B. The Strategies for Achieving Success Must Be Appropriate and Specific to the Aviation Sector

For the "Fuels" category of the transportation sector more broadly, CARB lays out a number of strategies for achieving success. A4A strongly agrees with incentivizing private investment in new SAF production in California as well as the transition of existing refinery and other infrastructure assets to support the deployment of SAF. However, below we suggest that certain aspects of the strategy pertaining to the LCFS Program should be refined.

A4A and our members greatly appreciate that credit parity between renewable diesel and alternative jet fuel, which typically are coproduced in the same facility using the same feedstock, is finally due to take hold next year (i.e., in 2023), when the annual benchmarks for diesel fuel substitutes and conventional jet fuel substitutes will converge and then remain identical in the years thereafter.[17] This will (finally) level the playing field for SAF, which has been disadvantaged versus renewable diesel since 2019 due to the higher carbon intensity benchmarks for diesel fuel substitutes.[18] This disadvantage has incentivized the production of renewable diesel over SAF (even though the aviation sector has fewer available alternatives

---

https://aviationbenefits.org/media/167495/fueling-net-zero_september-2021.pdf; *U.S. 2021 Aviation CAP,* at 18-19 (stating that "while [battery] technologies have the potential to play an important role in decarbonizing short-distance flights in the coming decades, they are not expected to provide a solution for the medium- and long-haul flights that generate most of the aviation sector's carbon emissions by 2050," and although "there may be a role for hydrogen on shorter-range flights and more broadly in the years beyond 2050, we do not expect hydrogen-powered aircraft to make a significant contribution toward achieving net-zero aviation emissions by 2050").

[16] *Draft 2022 Scoping Plan Update*, at 58.

[17] *See* 17 CCR 95484(c)-(d).

[18] Assuming the same carbon intensity for renewable diesel and alternative jet fuel, as is the case for World Energy's coproduced fuels (*see, e.g.,* https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0268_summary.pdf and https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0168_summary.pdf), the higher benchmark for diesel versus conventional jet fuel substitutes necessarily means renewable diesel earns greater credit under the LCFS than alternative jet fuel.

than the on-road sector to decarbonize in the near- and mid- term). As such, to align with the outcomes in the final 2022 Scoping Plan, CARB must ensure that any future LCFS regulatory proposals will incentivize fuel producers to produce SAF and avoid a structural disadvantage to SAF production. At a minimum, this means ensuring the LCFS is designed to provide credit parity between SAF and renewable diesel. To meet the Scoping Plan objectives, given the tremendous amount of SAF needed to decarbonize the aviation sector and the relative lack of nearer-term decarbonization alternatives available to it, we suggest that when evaluating the "carbon intensity targets pre-2030"[19] CARB consider maintaining the static 2019-2022 carbon intensity benchmark for conventional jet fuel substitutes, 89.37 gCO_2e/MJ, for an additional 7 years (i.e., 2023-2029).

It is also important to emphasize that for the reasons set forth in A4A's comments on CARB's December 7, 2021, public workshop on potential future changes to the LCFS Program,[20] CARB cannot "[c]onsider integrating [AJF, as one of the opt-in fuels,] into the program."[21] Due to federal preemption, CARB cannot subject conventional jet fuel (regardless of whether it is used for international, interstate or intrastate flights) to annual carbon intensity reduction requirements under the LCFS Program. Again, we refer CARB to our January 7, 2022, comment letter for a more detailed explanation on this point.

We respectfully suggest that CARB should, in collaboration with aviation and other interested stakeholders, identify augmentations of existing incentives and new incentives that would spur greatly increased production and deployment of SAF in California. Policy supporting such incentives should recognize the direct GHG benefits and co-benefits of SAF, including but not limited to:

- Reductions in conventional air pollutants, including sulfur oxides and PM;
- Energy independence;
- Advanced fuel production; and
- Creation of high-paying, clean sector jobs.

Such incentives should also encourage the utilization of biomass feedstocks that present a wildfire risk and fully recognize the carbon intensity reductions that would result from the use of woody biomass, including the mitigation of wildfire risk and wildfire emissions and avoided burn pile emissions.

CARB should also identify actions that can be taken by the state to ensure that California's policy incentives for SAF are in fact sufficient to incentivize SAF production at least at a level comparable to the policy incentives provided to renewable diesel and other on-road alternative fuels. Moreover, CARB should identify tools for substantially increasing the state's SAF supply and demand, including, for example, SAF infrastructure and in-state production capacity and support for small and startup SAF producers.

---

[19] *Draft 2022 Scoping Plan Update*, at 154.

[20] Our January 7, 2022, comment letter is available at https://www.arb.ca.gov/lists/com-attach/71-lcfs-wkshp-dec21-ws-VzZTYV09BAhWMwZp.pdf.

[21] *Id.* Alternative jet fuel's status as an opt-in fuel stems from 17 CCR 95482(b)(5).

C. *A4A Welcomes a Public-Private Partnership on SAF and Urges Financial Investments by the State in SAF Development*

A4A agrees with CARB that neither the public sector nor the private sector can solve the climate crisis "alone," and that "public-private partnerships" are not only "effective at increasing the impact of public sector dollars and helpful in moving markets in a direction aligned with state policy,"[22] they are essential to addressing climate change. This is particularly the case with respect to the development and deployment of SAF, which the FAA has deemed "critical to the long-term decarbonization of aviation."[23] As explained above, the FAA, A4A, and other aviation stakeholders recognized the value of a public-private partnership dedicated to SAF more than 15 years ago, when we joined together to form CAAFI. Since 2019, aircraft taking off from California airports have uploaded almost 15 million gallons of alternative jet fuel[24] -- quite simply, this would not have been possible absent CAAFI's vision, dedication, and groundbreaking work since its creation. More recently, the White House has recognized that "bold partnerships [are needed] to spur the deployment of billions of gallons of [SAF] quickly."[25]

In this regard, A4A urges California to partner with airlines and other aviation stakeholders, and to provide robust financial support for the decarbonization of the aviation sector. For example, CARB and the key state authorities should ensure that the Climate Catalyst Revolving Loan Fund referenced on page 17 of the *Draft Update* extends to SAF projects as well. Other public sector funds should also be made available. We note that of the $22.5 billion in proposed 2022-2023 investments depicted on page 11 of the *Draft Update*, none appears to be devoted to SAF or aviation. Public climate change investments devoted to the aviation sector should be at least as robust as those dedicated to other modes of transport (e.g., zero-emission vehicles, high-speed rail). Earlier this month, in fact, a coalition comprised of A4A, various of our member airlines, Boeing, SAF producers, and California airports wrote to the leaders of the California Legislature and requested a $100 million investment in SAF production and deployment through the 2022-2023 state budget.[26] Such public funding would help the nascent SAF industry reach scale so that it can supply the tremendous quantities of SAF that are needed in California for commercial aviation's decarbonization.[27] As CARB itself observes:

---

[22] *Draft 2022 Scoping Plan Update*, at 17.

[23] *U.S. 2021 Aviation CAP,* at 18.

[24] *See* https://ww2.arb.ca.gov/sites/default/files/2022-05/quarterlysummary_043022.xlsx.

[25] *See* White House, *Fact Sheet: Biden Administration Advances the Future of Sustainable Fuels in American Aviation* (Sept. 9, 2021), available at https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/09/fact-sheet-biden-administration-advances-the-future-of-sustainable-fuels-in-american-aviation/.

[26] A copy of the coalition letter is attached.

[27] CARB makes clear on page 18 of the *Draft Update* that renewable diesel has experienced explosive -- almost 330-fold -- growth in California over the past decade. In view of the *Draft Update's* proposed scenario, SAF needs to experience a comparable level of growth over the coming years.

> In addition, some equipment types are only now in the initial stages of development of [zero-emission] technology for propulsion, such as commercial aircraft . . . . In addition to building the production and distribution infrastructure for zero-carbon fuels, the state must continue to support low-carbon liquid fuels during this period of transition and for much harder sectors for [zero-emission] technology such as aviation . . . .[28]

A4A and our members fully agree.

D. A4A Agrees Prioritization of Feedstocks for Low Carbon Fuels Must be Science-Based

Finally, we agree that "California must use the best available science to ensure that raw materials used to produce transportation fuels do not incentivize feedstocks with little or no GHG reductions from a life cycle perspective,"[29] and with the *Draft Update's* consideration of "carbon dioxide removal . . . as a complement to technologically feasible and cost-effective GHG emissions mitigation . . . ."[30] And inasmuch as forestry residues are prime biomass-based feedstocks for SAF and simultaneously reduce the risk of wildfires, we support "expand[ing] infrastructure to facilitate processing of biomass resulting from climate smart [forest] management."[31]

* * *

In closing, there is no denying that "the unprecedented rate of transition [away from fossil fuels]" is going to "require identification and removal of market and implementation barriers to the production and deployment of clean technology and energy."[32] From A4A and our members' perspective, this is every bit as true for the aviation sector and, in particular, SAF as it is for any other technology. We request that CARB and California partner with us and others in the aviation industry so that together we can take the necessary steps to scale the SAF industry

---

[28] *Draft 2022 Scoping Plan Update*, at 152 (emphasis added).

[29] *Id.* at 153-54.

[30] *Id.* at 173.

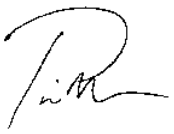
[31] *Id.* at 214. By way of this footnote, we express our disagreement with the modeling assumption in Table H-2 of Appendix H under which "[b]iomass wastes and residues (including urban, agriculture, and forestry residues)" were "allocated to hydrogen rather than liquid fuels." *Draft 2022 Scoping Plan - Appendix H: AB 32 GHG Inventory Sector Modeling*, at 14. In addition to so-called FOGs (i.e., fats, oils, and greases), separated municipal solid waste, agricultural residues, and forestry residues are prime feedstocks for SAF. So, too, for that matter, is the corn that leads to corn-based ethanol, thanks to the alcohol-to-jet pathway under Annex A5 of the ASTM D7566 specification. As a result, we also disagree with the exclusion of sugar and starch feedstocks like corn and sugarcane from the biomass energy supply estimates described on pages 57-58 of Appendix H.

[32] *Draft 2022 Scoping Plan Update*, at x.

and thereby support the achievement of California's 2030 GHG reduction target of at least 40 percent below 1990 levels and carbon neutrality by 2045 or earlier.

Thank you for your consideration of our comments. Please do not hesitate to contact us if you have any questions.

Sincerely yours,



Tim A. Pohle
Vice President
Environmental Affairs
Airlines for America
tpohle@airlines.org

Ira Dassa
Director
Environmental Affairs
Airlines for America
idassa@airlines.org

June 1, 2022

Honorable Toni Atkins
Senate President Pro Tempore
1121 O Street, Suite 8515
Sacramento, CA 95814

Honorable Anthony Rendon
Speaker of the Assembly
1121 O Street, Suite 8330
Sacramento, CA 95814

Honorable Nancy Skinner, Chair
Senate Budget Committee
State Capitol, Room 500
Sacramento, CA 95814

Honorable Phil Ting, Chair
Assembly Budget Committee
1121 O Street, Ste. 8230
Sacramento, CA 95816

Re: Sustainable Aviation Fuel Infrastructure Funding

Dear Madame Pro Tempore, Madame Chair, Mr. Speaker, and Mr. Chair:

The commercial aviation industry recognizes that to remain an essential driver of economic growth and prosperity in California it must grow sustainably and embrace its responsibility to address the climate crisis. The industry has committed to achieving net-zero carbon emissions by 2050 and to working with governments and aviation stakeholders to make 3 billion gallons of sustainable aviation fuel (SAF) available to U.S. operators by 2030. This "SAF Challenge Goal" parallels the Biden Administration's SAF Grand Challenge Goal.

We believe California, above all other states, now has a significant opportunity to further reduce emissions by supporting our nation and industry's targeted efforts to decarbonize.

While the State has long focused on ground transportation emissions, the commercial aviation industry has been working diligently for nearly 20 years to develop SAF that will significantly reduce aircraft emissions. SAF development and production has been financially supported by the airlines and alternative fuel producers and approved by ASTM International standards through the Federal Aviation Administration (FAA), which regulates commercial aircraft.

The State recognized the importance of SAF when the California Air Resources Board (CARB) amended the Low Carbon Fuel Standard (LCFS) regulation in 2018 by including voluntary opt-in crediting for SAF (a/k/a alternative jet fuel) that is produced in/or imported into the state and uplifted at California airports. This signaled a first-of-its-kind favorable state policy, which has led to California becoming the national leader in SAF production and use.

SAF remains the most significant pathway for commercial aviation to reduce emissions and every credible analysis demonstrates that production of SAF must grow exponentially to enable commercial aviation to meet its net zero by the 2050 goal. The industry has long been committed to addressing climate change and focused on reducing emissions through SAF and other means. This includes spending billions to

develop and acquire ever more efficient aircraft and aircraft engines and other technologies like wingtips, which reduce drag during flight. Efficiency investments also focus on cutting-edge software and equipage to enable much more efficient flight procedures.

While these investments have helped reduce fuel consumption and its emissions, SAF – if properly incentivized and with the necessary distribution and storage infrastructure – provides the most significant opportunity for California to lead the way with unprecedented emission reductions in the aviation sector. Sustainable aviation fuel can be made from a diverse group of feedstocks such as woody biomass, fats, oils, and greases, municipal solid waste, agricultural residues, and other waste materials. This fuel is a "drop in" replacement for conventional jet fuel; it is blended with conventional jet fuel and can be distributed through existing and additional jet fuel infrastructure.

The California aviation sector utilizes nearly 4 billion gallons of conventional jet fuel annually. Using SAF in lieu of conventional jet fuel enables airlines to significantly reduce their GHG emissions by up to 80% on a lifecycle basis; in addition, use of SAF will:

- Reduce particulate matter (PM) by up to 70%, improving local air quality and health;
- Reduce Sulfur dioxide (SO_2) by100%;
- Create new green jobs by building out SAF production facilities and infrastructure in California; and
- Reduce California's dependence on imported oil and refined products.

To further develop and sustain this climate-critical industry, California must establish long-term stable policies, continue to invest in SAF production and adequate infrastructure to aid new feedstocks and production facilities, and link the facilities to airport supply infrastructure. As such, we are requesting the following investment in this infrastructure be made through the 2022-2023 state budget.

Proposed Language:

Energy Resources Conservation and Development Commission
3360-3117-001. (Alternative and Renewable Fuel and Vehicle Technology Fund)

- $100 million GF dollars shall be allocated towards sustainable aviation fuel (SAF) production and deployment.
    - $50 million shall be awarded to projects that facilitate expansion of existing facilities and siting and permitting of new California SAF production facilities.
    - $50 million in grants for SAF infrastructure at airports, terminal facilities and related improvements for conveyance, storage and blending of SAF.

We thank you in advance for your favorable consideration of this request. Please feel free to contact Kathy Van Osten at 916-605-9293 or kvanosten@mvmstrategy.com if you have questions.

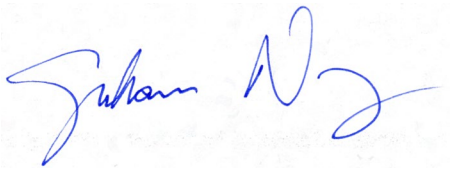
Sincerely,

Papia Gambelin

Papia Gambelin
Managing Director, State and Local
Government Affairs, Western Region
United Airlines

Ruben Zaragoza
State and Local Affairs Director
Southwest Airlines

Sean Williams
VP, State and Local Government Affairs
Airlines for America



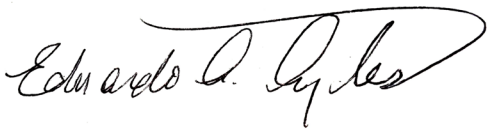
Graham Noyes
Noyes Law Corporation
on Behalf of SAF Producers

Diana Birkett Rakow
Senior Vice President, Public Affairs
and Sustainability
Alaska Airlines

Ivar C. Satero, Airport Director
San Francisco International Airport

Dana Debel
Managing Director, State and Local
Government Affairs
Delta Airlines

Blaine Miyasato
Managing Director- State and Local
Government Affairs
Hawaiian Airlines



Eddie A. Angeles
Director, State & Local Government Affairs
(CA, WA, HI, OR & AK)
American Airlines

Leeor Alpern
Senior Director of Government Relations
and Public Affairs
World Energy

Mark Taylor
Director of State and Local Government
Operations
Boeing

Justin Erbacci
Chief Executive Officer
Los Angeles World Airports Authority

\Jeffrey Goodell
Vice President Government and Airport Affairs
JetBlue Airways Corp.