



San Francisco International Airport

**MEMORANDUM**

December 19, 2017

TO: AIRPORT COMMISSION  
 Hon. Larry Mazzola, President  
 Hon. Linda S. Crayton, Vice President  
 Hon. Eleanor Johns  
 Hon. Richard J. Guggenlime  
 Hon. Peter A. Stern

FROM: Airport Director

SUBJECT: Policy on the Advancement of Sustainable Aviation Fuels

**DIRECTOR'S RECOMMENDATION: ADOPT AIRPORT POLICY ON THE ADVANCEMENT OF SUSTAINABLE AVIATION FUELS****Executive Summary**

The Airport Commission adopted San Francisco International Airport (SFO)'s Five-Year Strategic Plan (Fiscal Years 2016-2021), which includes "Goal 2: Achieve Zero by 2021" targeting carbon neutrality and reducing SFO-controlled greenhouse gas (GHG) emissions by 50%. As of 2016, SFO has reduced emissions by 33% from a 1990 baseline, while passenger growth has increased by 71%. An emerging opportunity to reduce on-airport emissions is to replace carbon-intensive petroleum jet fuels with fuels produced using renewable feedstocks, called Sustainable Aviation Fuels (SAF). While the airlines have responsibility for securing their own fuel supply, there are many steps SFO can take to encourage and support airline adoption and use of SAF. The attached Airport Policy on the Advancement of Sustainable Aviation Fuels (SAF Policy) outlines these steps.

**Background**

The International Civil Aviation Organization (ICAO) has adopted two related targets for air transport: (1) beginning in 2013, an average annual improvement of 2% in fuel efficiency and (2) a carbon-neutral growth target beginning in 2020. SAFs are expected to be a "game changer" within the aviation sector and a key enabler to achieve ICAO's targets, considering that these fuels have the potential to reduce lifecycle CO<sub>2</sub> emissions by up to 80%, when compared with conventional fossil fuel-based Jet-A, according to a recent NASA study.

Sustainable aviation fuels use second-generation feedstocks that can be grown or produced without negatively impacting food supplies, water or land use. Importantly, they are also "drop-in" fuels which share the same properties as jet fuel used today, so they can simply be blended with the current fuel supply as they become available.

Since the first SAF flight in a commercial aircraft took place in 2008, the fuel industry has invested billions of dollars into research, development, and certification of SAF through the American Section of the International Association for Testing Materials (ASTM).

THIS PRINT COVERS CALENDAR ITEM NO. 1

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This process has created five certified SAF pathways producing fuel which was blended into 100,000 SAF flights by 25 airlines worldwide. Numerous airlines operating at SFO have completed demonstration flights, signed SAF fuel purchase offtake agreements, or made direct investments into SAF production companies.

Annually, airlines operating at SFO use approximately one billion gallons of jet fuel. Aircraft landing and takeoff cycles generate 604,142 tons of GHG, accounting for 57% of the Airport's Scope 3 emissions. SAF use represents a significant opportunity to reduce these emissions at SFO and improve air quality for our airfield workers and the surrounding communities.

### **Progress**

Recognizing and seeking to enable these benefits at SFO, Staff has held partnering sessions with more than 60 stakeholders, including SAF producers, airlines, conventional Jet A fuel suppliers, state and local government agencies and non-government organizations to explore SFO's role in SAF. In October, SFO represented the airport industry at the Air Transport Action Group SAF Summit and ICAO's 2<sup>nd</sup> Conference on Aviation and Alternative Fuels (CAAF2). SFO has also partnered with United Airlines and the San Francisco Department of Environment to educate potential investors and generate financial support for SAF producers.

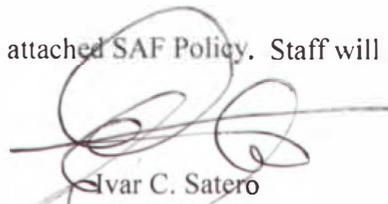
In November, SFO held another partnering session with its growing SAF stakeholder network with airport representatives from Geneva and Seattle to review emerging policies requiring 1% of airlines' jet fuel to be SAF. Further, SFO continues to build awareness of and generate support within the California Airport Council to support the inclusion of SAF by the California Air Resources Board within the Low Carbon Fuel Standard (LCFS). Adoption of this policy would be effective in 2019 and make SAF more cost competitive with conventional Jet A fuel.

### **Next Steps**

To prepare for the California-based SAF marketplace, SFO seeks to define a collaborative and consensus-based pathway to advance SAF use with our key stakeholders. As a first step to implementing the attached SAF Policy, the Director will form a SFO-SAF Stakeholder Working Group charged with adopting, by the end of 2018, guiding principles and an aspirational target for SAF use, emission reductions, or both, at SFO. This Working Group will also provide input into SAF-related infrastructure and feasibility studies, support SAF policy development and advocacy needs and foster awareness through a passenger-facing campaign.

### **Recommendation**

I recommend that this Commission adopt the attached SAF Policy. Staff will report periodically on the progress of these efforts.



Ivar C. Satero  
Airport Director

Prepared by: Julian Potter  
Chief Administrative and Policy Officer

Attachments

AIRPORT COMMISSION

CITY AND COUNTY OF SAN FRANCISCO

RESOLUTION NO. 17-0315

**POLICY ON THE ADVANCEMENT OF SUSTAINABLE AVIATION FUELS**

- WHEREAS, the Airport Commission adopted San Francisco International Airport (SFO)'s Five-Year Strategic Plan (Fiscal Years 2016-2021), which includes climate mitigation efforts in "Goal 2: Achieve Zero by 2021" to achieve carbon neutrality with a short term goal of reducing SFO-controlled greenhouse gas emissions by 50%; and
- WHEREAS, the Airports Council International World Airport Carbon Accreditation Program acknowledges SFO for its carbon mitigation efforts as one of four airports in North America to receive the Level 3 Optimization Accreditation, having reduced airport-controlled emissions by 33% in 2016 from a 1990 baseline; and
- WHEREAS, the State of California has established a goal to achieve a 40% reduction in all greenhouse gas emissions from a 1990 baseline by 2030; and
- WHEREAS, SFO acknowledges that the majority of total emissions at SFO (57%) arise from onsite aircrafts' conventional Jet A fuel use during landing and takeoff cycles (Scope 3); and
- WHEREAS, the International Civil Aviation Organization (ICAO) has adopted a policy for all international carriers to meet a two percent fuel efficiency improvement, annually, starting in 2013, and established a carbon neutral growth target starting in 2020; and
- WHEREAS, sustainable aviation fuels (SAF) will play an integral role in enabling airlines to meet the ICAO international 2020 carbon neutral growth target; and the aviation fuel industry has seen great advancements in the use of SAF including the American Section of the International Association for Testing Materials (ASTM) certification of five conversion processes to ensure safety and dictate that the final SAF product be chemically identical to the fossil fuels that they intend to replace; and
- WHEREAS, regular distribution of SAF is occurring at several airports worldwide supporting, in part, over 100,000 demonstration flights that have taken place; and in 2017 SFO in partnership with Singapore Airlines facilitated a series of twelve SAF demonstration flights via truck delivery to the aircraft, and several SFO signatory carriers have conducted similar demonstration flights around the world; and
- WHEREAS, air quality improvements can also be achieved on the airfield and surrounding communities by reducing the concentration of particulate matter (matter less than 2.5 micrometers in diameter) in the air near the ground and in the atmosphere, due to the absence of sulfur in SAF; and

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WHEREAS, the California Air Resources Board recognizes these air quality and greenhouse gas emissions benefits and is considering the inclusion in 2018 of SAF on an opt-in basis to its Low Carbon Fuel Standard, to become effective in 2019, which would make SAF more cost-competitive with conventional Jet A fuel; and

WHEREAS, SFO is partnering with the San Francisco Department of Environment to carefully analyze the use and adoption of SAF in the context of international, federal, state and local sustainability and environmental requirements and best practices for organizational and infrastructure resilience; and

WHEREAS, the Airport Commission recognizes the importance to SFO, its workforce, its community and its stakeholders for reducing greenhouse gas emissions and reducing the concentration of particulate matter in the atmosphere; now, therefore, be it

RESOLVED, that SFO shall explore, in partnership with the airlines operating at SFO, the mutual adoption and documentation of an aspirational target for SAF usage, emissions reduction, or both at the Airport, by the end of 2018; and, be it further

RESOLVED, that SFO shall facilitate and support a partnership with the airlines, SAF fuel providers, local, state and federal government agencies, and nonprofits, to explore what each party can do to support the development of a safe and robust SAF supply chain serving airlines that operate at SFO; and, be it further

RESOLVED, that SFO shall work with the international airport community to provide leadership and information-sharing of current and emerging industry best practices related to the development of supply chains for SAF, and successful partnership models with airlines and SAF providers; and, be it further

RESOLVED, that SFO shall identify and consider whether to support policy and financial frameworks that support SAF development, production and safe onsite use and other pathways that have the potential to support ICAO's 2020 carbon neutral baseline target for international airlines; and, be it further

RESOLVED, that only the Commission may modify this policy; the Airport Director may approve exceptions to this policy so long as any such exception does not compromise the purpose or intent of this policy.

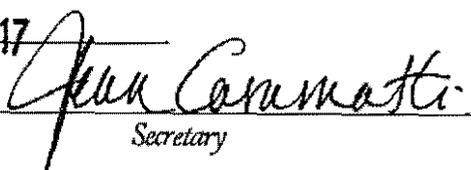
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*I hereby certify that the foregoing resolution was adopted by the Airport Commission*

*at its meeting of* \_\_\_\_\_

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Secretary