



**WORKING PAPER**

**SECOND CONFERENCE ON AVIATION AND ALTERNATIVE FUELS**

**Mexico City, Mexico, 11 to 13 October 2017**

**Agenda Item 1: Developments in research and certification of aviation alternative fuels**

**DEFINITIONS**

(Presented by the ICAO Secretariat)

**SUMMARY**

A number of terms related to aviation alternative fuels are commonly used without a harmonized definition. This paper proposes definitions for the terms: Conventional Aviation Fuel (CAF), Aviation Alternative Fuel (AAF), Sustainable Aviation Fuel (SAF), Feedstock, Conversion Process, and Pathway.

Action by the Conference is in paragraph 4.

**1. INTRODUCTION**

1.1 The first Conference on Aviation and Alternative Fuels (CAAF/1) agreed on a series of definitions of terms related to aviation alternative fuels. The development of this industry since 2009 yielded the need for harmonizing the definitions of some other terms. To ensure that participants in the Conference have a common understanding of these terms when they are used, the definitions listed in paragraph 3 are proposed for adoption for use during the Conference.

**2. DEFINITIONS AGREED IN CAAF/1**

2.1 Some of the definitions agreed in CAAF/1 and registered in CAAF/09-WP/09 are still deemed applicable for the current Conference.

2.2 **Conventional jet fuel:** jet fuel that is derived wholly from conventional petroleum sources, including crude oil, natural gas liquid condensates, heavy oil, oil shale and oil sands.

2.3 **Drop-in jet fuel blend:** a substitute for conventional jet fuel, that is completely interchangeable and compatible with conventional jet fuel when blended with conventional jet fuel. A drop-in fuel blend does not require adaptation of the aircraft/engine fuel system or the fuel distribution network, and can be used “as is” on currently flying turbine-powered aircraft.

2.4 **Drop-in neat jet fuel:** *a substitute for conventional jet fuel, that is completely interchangeable and compatible with conventional jet fuel. A drop-in neat fuel does not require adaptation of the aircraft/engine fuel system or the fuel distribution network, and can be used “as is” on currently flying turbine-powered aircraft in pure form and/or blended in any amount with other drop-in neat, drop-in blend, or conventional jet fuels.*

### 3. PROPOSED DEFINITIONS FOR CAAF2

3.1 The following definitions are proposed for the CAAF/2, in addition to the ones agreed in CAAF/1.

3.2 **Conventional Aviation Fuel (CAF)** – aviation fuel that is derived wholly from petroleum sources, including crude oil, natural gas liquid condensates, heavy oil, oil shale and oil sands. It includes both aviation kerosene (Jet-A, Jet-A1, Jet-B) and aviation gasoline.

3.3 **Aviation Alternative Fuel (AAF)** - drop-in aviation fuel obtained from sources other than petroleum, such as coal, natural gas, biomass, and hydrogenated fats and oils. Includes both drop-in fuel blends and drop-in neat fuels.

3.4 **Sustainable Aviation Fuel (SAF)** – aviation alternative fuel that meets sustainability criteria.

3.4.1 An ICAO definition of these sustainability criteria is currently ongoing under the CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) development process, which is taking into account the request made by ICAO Assembly Resolution A39-2 to States (“*recognize existing approaches to assess the sustainability of all alternative fuels in general, including those for use in aviation which should achieve net GHG emissions reduction on a life cycle basis, contribute to local social and economic development; competition with food and water should be avoided;*”). Once defined, these criteria will be part of the package of CORSIA Standards and Recommended Practices (SARPs).

3.5 **Feedstock** - a type of unprocessed raw material used for the production of aviation alternative fuels.

3.6 **Conversion process** - type of technology used to convert a feedstock into aviation alternative fuel.

3.6.1 Approved conversion processes are defined in the Annexes to the Specification ASTM D7566, described in more detail in CAAF/2-WP/07.

3.7 **Pathway** - a specific combination of feedstock and conversion process used for the production of aviation alternative fuel.

### 4. ACTION BY THE CAAF2

4.1 The CAAF2 is invited to adopt the definitions in this paper for the purpose of work on aviation alternative fuels.