



Sustainable Aviation Fuels Initiative (SAFI) for the United Arab Emirates

Abu Dhabi, UAE

August, 2020



Importance of the UAE in aviation worldwide

The UAE is a major player in world aviation.

- The UAE is ranked 3rd worldwide both in terms of Revenue-Ton-Kilometers and Revenue-Passenger-Kilometers, only behind the USA and China
- Dubai is the largest international airport in the world, and the 3rd largest by total passengers
- The UAE ranks 6th worldwide in terms of CO₂ emissions from aviation
- The UAE accounts for around 45% of the Arab aviation sector
 - This figure takes into consideration the number of passengers and aircraft capacity, as well as the arrival of five to six aircrafts per month to its fleet of four national carriers



Importance of aviation for the UAE

Aviation is a sector of strategic importance for the UAE.

- The UAE has invested an estimated **\$270 billion (AED 1 trillion) in the aviation sector**, which includes improvements to airport infrastructure and a fleet of 884 commercial aircraft
- According to the Airports Council International (ACI) World, it is estimated that the aviation sector is set to contribute **AED 323.6 billion (\$88.1 billion)** to the country's GDP by 2030
- The aviation sector contributed **15% to the country's GDP in 2018**, according to the General Civil Aviation Authority (GCAA); it is expected to reach **20% over the next few years**



Energy landscape in the UAE

The UAE has access to plentiful and low cost energy.

- The world's lowest tariff for solar power has been recently announced in Abu Dhabi (\$1.35 cents/kWh)
 - Al Dhafra Solar PV project – 2 GW
 - Noor Abu Dhabi project – 1.2 GW
- Barakah nuclear power plant
 - The plant successfully completed fuel assembly loading into unit one in March 2020, marking the commissioning of nuclear operations
 - Expected to deliver up to a quarter of the nation's electricity needs when fully commissioned – 5.6 GW

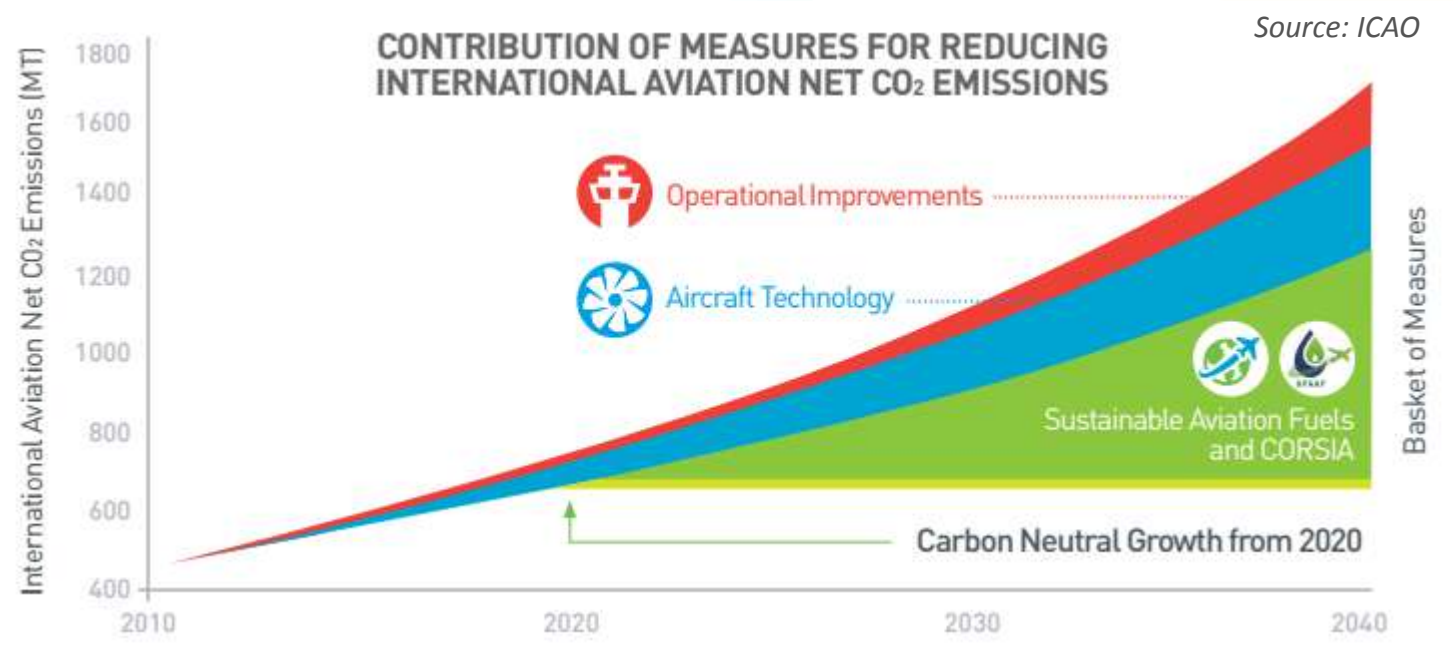




World aviation targets: IATA, ICAO and CORSIA

The UAE needs a holistic strategy to address its carbon emissions from aviation.

- The aviation industry worldwide is moving to decarbonization, and its governing bodies (ICAO and IATA) have established a set of aggressive goals
- The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) will increase costs for operators because of the need to acquire and cancel emissions units from 2021 onwards



GOAL 3

ON THE 2°C PATHWAY





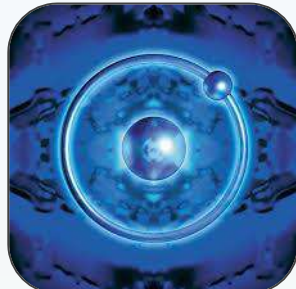

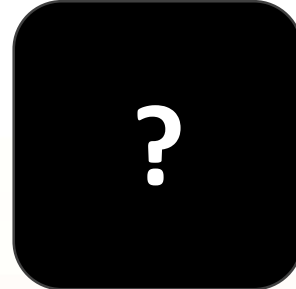
REDUCE AVIATION'S NET CO₂ EMISSIONS TO 50% OF WHAT THEY WERE IN 2005, BY 2050.

T O I



Potential SAF Feedstocks in the UAE

There are only a limited set of viable sources for Sustainable Aviation Fuels (SAF) in the UAE.

							
FEEDSTOCK	Halophytes	Municipal Solid Waste Agricultural Waste	Used cooking oil	Carbon-rich gases	Hydrogen, Syngas	Microalgae	Others
CONVERSION PATHWAY	Hydroprocessed Esters and Fatty Acids (HEFA)	Gasification + Fischer-Tropsch (FT)	Biodiesel (current), potential for HEFA (short term)	Gas Fermentation to Ethanol + Alcohol-to-jet (ATJ)	E-fuels PtL	Potential for HEFA	-
PARTICIPANTS	SBRC	Tadweer	Neutral Fuels, Blue	Lanzatech	Oil & gas industry	Supported by ADIO	-



Sustainable Aviation Fuel Initiative - UAE

A collection of logos and text representing the Sustainable Aviation Fuel Initiative in the UAE, including:

- AirArabia** العربية للطيران
- flydubai**
- Emirates**
- Etihad Airways** الإتحاد AIRWAYS Choose Well.
- Dubai Airports** مطارات دبي
- SAFI - UAE** (with UAE flag)
- ADNOC** أدنوك
- Enoc** اينوك
- Eni**
- ExxonMobil**
- Honeywell Uop**
- Oxy**
- Shell**
- bp**
- Saudi Aramco** أرامكو السعودية
- SAFRAN**
- BOEING**
- AIRBUS**
- GE**
- CFM**
- ROLLS ROYCE**
- DWC** DUBAI WORLD CENTRAL
- Sharjah International Airport** مطار الشارقة الدولي
- Abu Dhabi Airport** مطار أبوظبي
- AUS** الجامعة الأميركية في الشارقة American University of Sharjah
- UAEU** جامعة الإمارات العربية المتحدة United Arab Emirates University
- NYU | ABU DHABI** جامعة نيويورك أبوظبي
- Khalifa University** جامعة خليفة
- IATA**
- ICAO - OACI - ICAO**
- MUBADALA**
- Emirates Nature**
- WWF**
- AIRPORTS COUNCIL INTERNATIONAL**
- Masdar** A MUBADALA COMPANY
- IRENA** International Renewable Energy Agency
- FAB** First Abu Dhabi Bank
- ABU DHABI GLOBAL MARKET** سوق أبوظبي العالمي
- Tadweer** تدوير مركز أبوظبي لإدارة النفايات Abu Dhabi Waste Management Center
- Environment Agency - ABU DHABI** هيئة البيئة - أبوظبي
- Emirates Nuclear Energy Corporation** مؤسسة الإمارات للطاقة النووية
- SIEMENS**
- Marubeni**
- EWEC** Emirates Water & Electricity Co.
- ABU DHABI POWER CORPORATION**
- HSBC**
- Standard Chartered**
- Dubai Electricity & Water Authority** هيئة كهرباء ومياه دبي
- GENERAL CIVIL AVIATION AUTHORITY** الهيئة العامة للطيران المدني
- UNITED ARAB EMIRATES MINISTRY OF ENERGY & INDUSTRY** وزارة الطاقة
- DEPARTMENT OF ENERGY**
- UNITED ARAB EMIRATES MINISTRY OF CLIMATE CHANGE & ENVIRONMENT**
- UNITED ARAB EMIRATES MINISTRY OF DEFENCE**
- FOOD SECURITY** الأمن الغذائي
- DEPARTMENT OF MUNICIPALITIES AND TRANSPORT** دائرة البلديات والنقل



Sustainable Aviation Fuel Initiative - UAE

OBJECTIVE

SAFI-UAE aims to guarantee the aviation industry's license to grow by enabling, promoting, and developing a vibrant Sustainable Aviation Fuel industry in the UAE.

SCOPE

Holistic exploration of all potential feedstocks for SAF

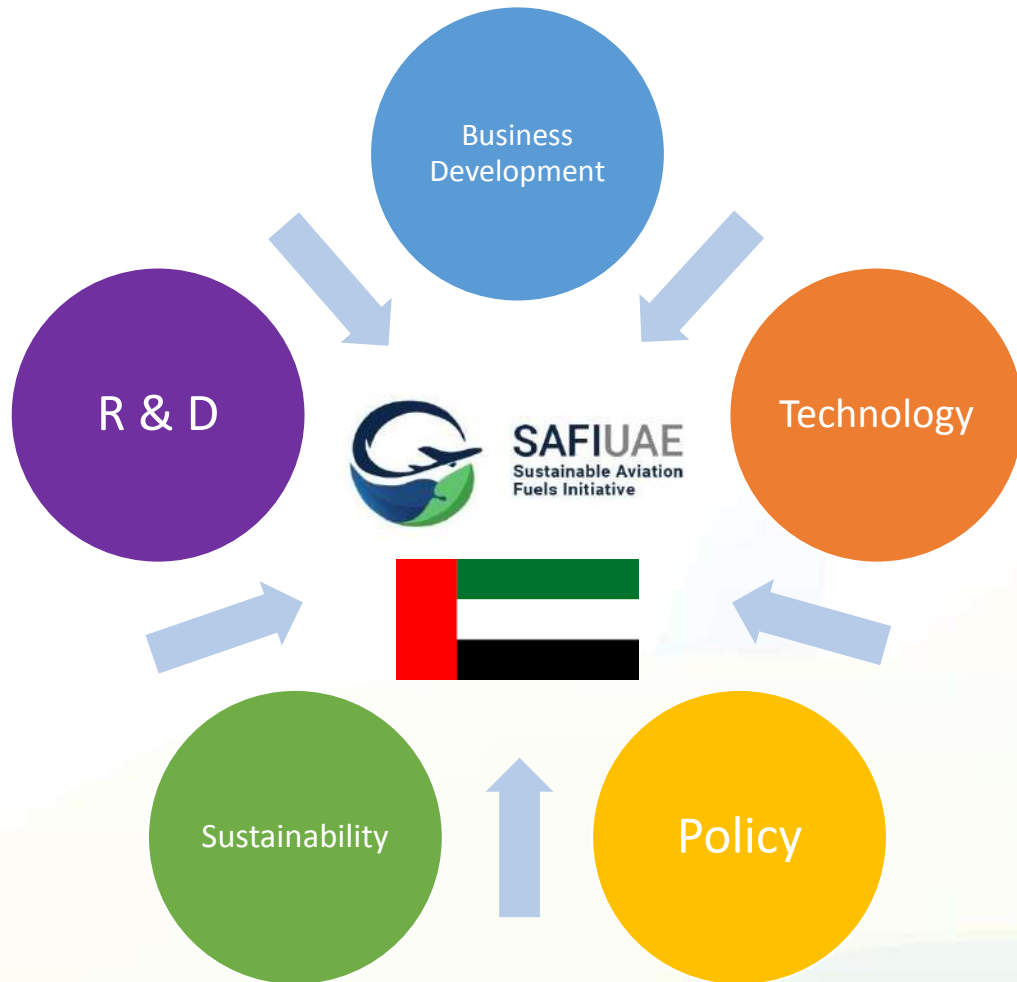


OUTCOMES

- SAFI-UAE will seek a comprehensive industrial ecology understanding of SAF production in the UAE with a feedstock-agnostic approach
- SAFI-UAE will help develop and support the UAE's national policy on SAF production and feedstock management
- Under its CORSIA obligations, the market potential of UAE-based SAF production will be benchmarked against other carbon offset options
- SAFI-UAE would become a model of sustainable leadership for the world



SAFI-UAE Pillars



SAFI-UAE will look into the priority areas to develop the industry:

- Business Development
- Technology
- Policy
- Sustainability
- R&D



The case for SAFI-UAE

- There is no time to waste to address the emissions from the aviation sector
- The UAE is in a prime position to be a world leader in the abatement of aviation emissions
- The UAE's core industries are perfectly aligned to take on this challenge





SAFI-UAE Webinar Series

<http://ku.ac.ae/safi-uae>



SAFIUAE
Sustainable Aviation
Fuels Initiative

Questions?/Comments

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