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TOWARD THE 2050 VISION FOR
SUSTAINABLE AVIATION FUELS



Sustainable Aviation Fuels (SAF) potential in the United Arab Emirates

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(SBRC)

Agenda Item 2: State and Organization initiatives for the
deployment of alternative fuel (*continued*)





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Overview

- Due to climate and geography, conventional fuel crops are not suitable for production in the UAE
- Essentially, biomass and biomaterials sources are limited
- Waste re-use or advanced biofuel processes are seen as potential feedstock sources



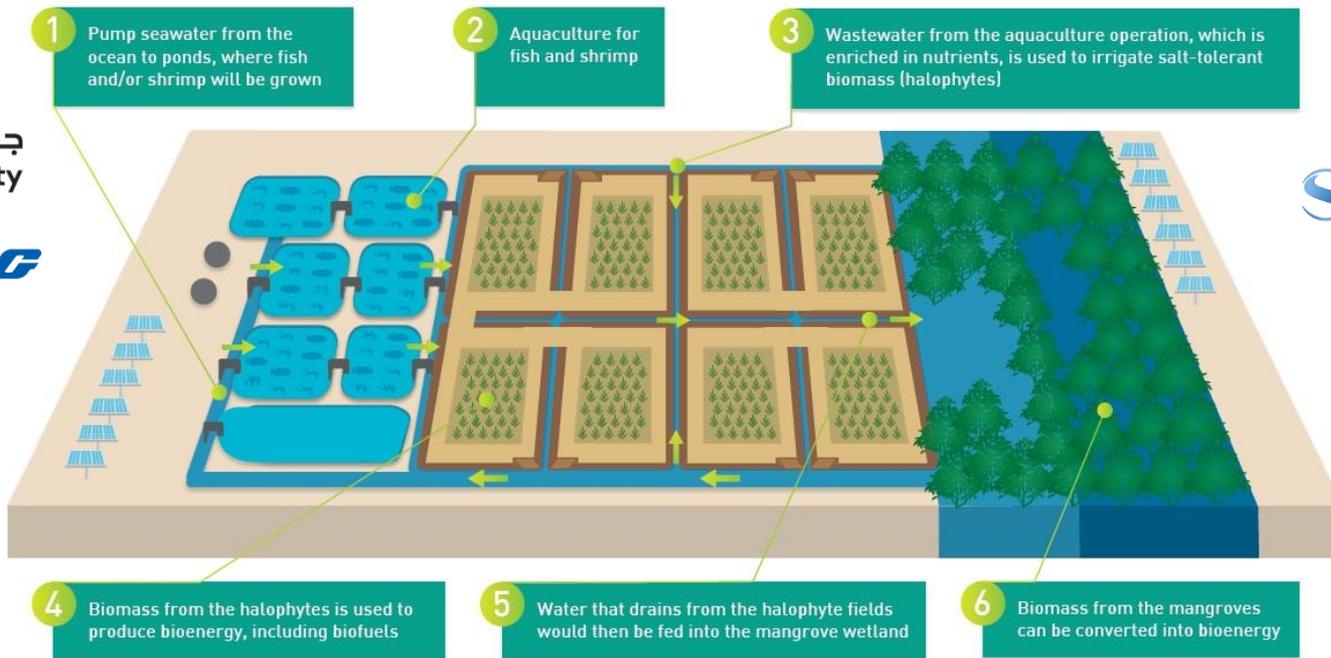
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The Seawater Energy and Agriculture System



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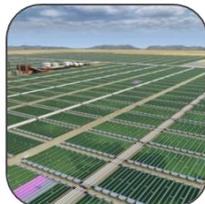


- A 2-hectare pilot facility for the SEAS was built in Masdar City
- It has been operating for 3 years with excellent results
- Knowledge on the interaction between the subsystems has been obtained and ratified
- Flight EY77 from Abu Dhabi to Amsterdam



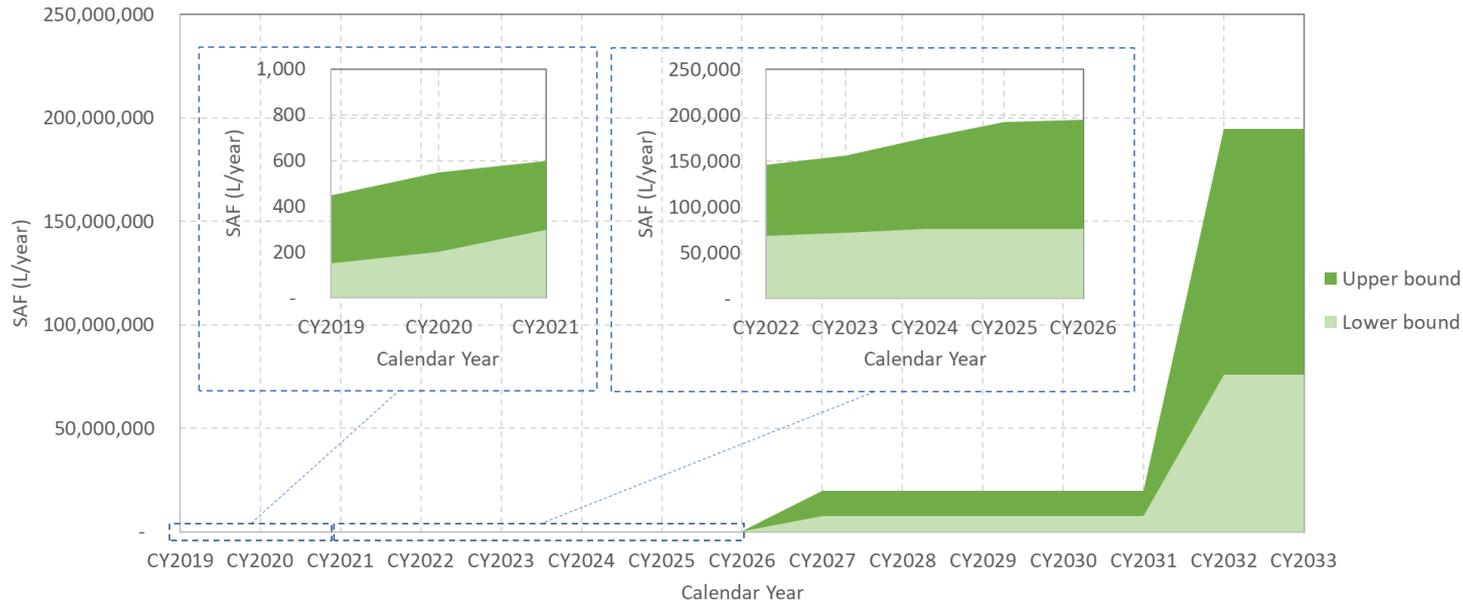


Potential SAF Feedstocks in the UAE

						
FEEDSTOCK	Halophytes	Municipal Solid Waste Agricultural Waste	Carbon-rich gases	Used cooking oil	Microalgae	Others
CONVERSION PATHWAY	Hydroprocessed Esters and Fatty Acids (HEFA)	Gasification + Fischer-Tropsch (FT)	Gas Fermentation to Ethanol + Alcohol-to-jet (ATJ)	Biodiesel (current), potential for HEFA	Potential for HEFA	-
PROJECT LEAD	SBRC	Tadweer	-	-	-	-

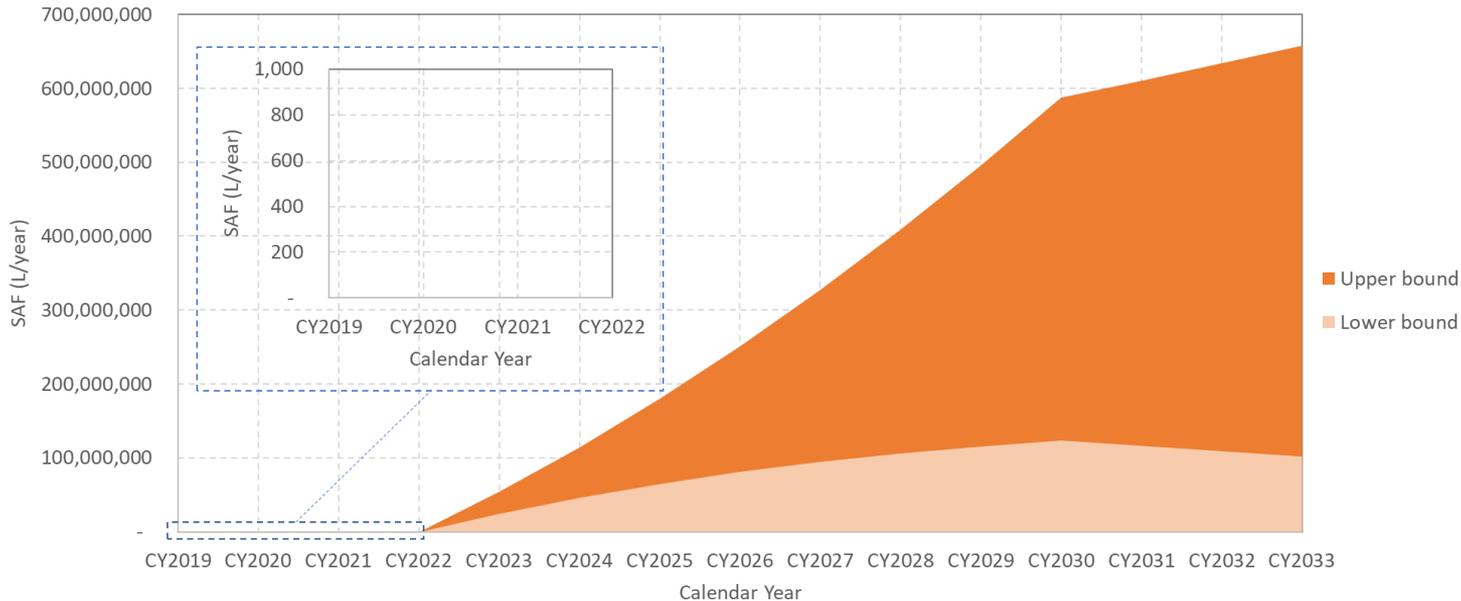


SEAS-based SAF production forecasts



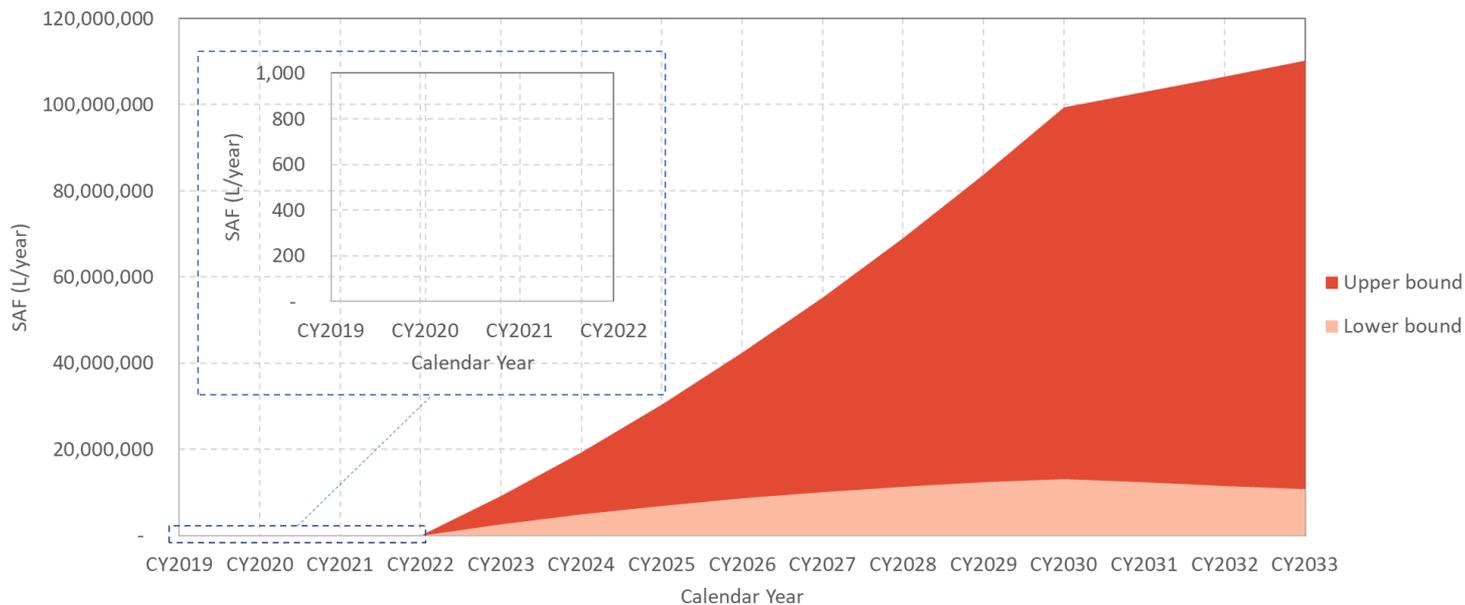


MSW-based SAF production forecasts





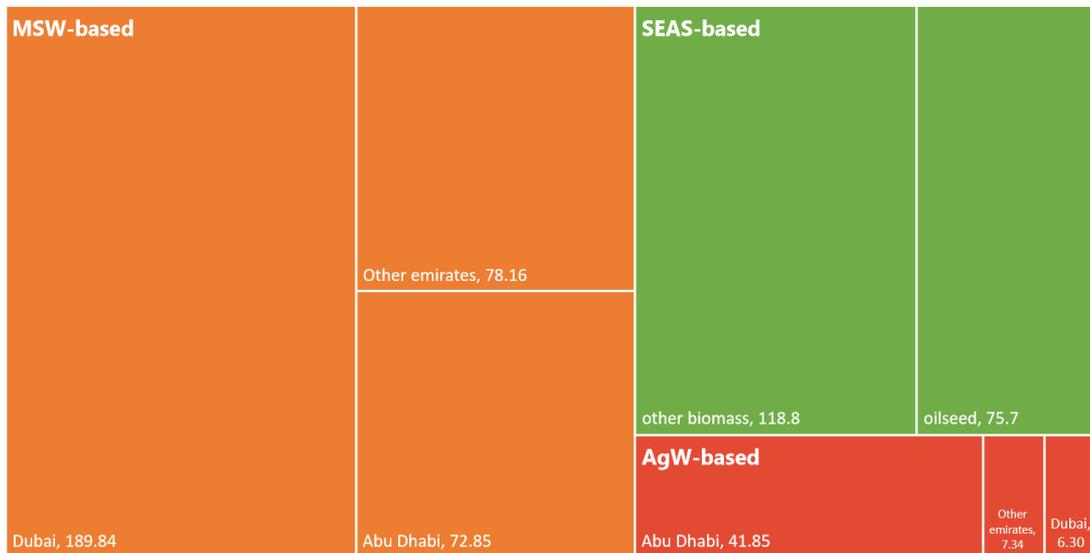
AgW-based SAF production forecasts





Overall feedstock potential in the UAE

SAF production forecast per feedstock (million liters/year)



SAF production estimates

Scenario	Value	unit
Base case	590	$ML_{SAF}/year$
Lower bound	188	$ML_{SAF}/year$
Upper bound	963	$ML_{SAF}/year$

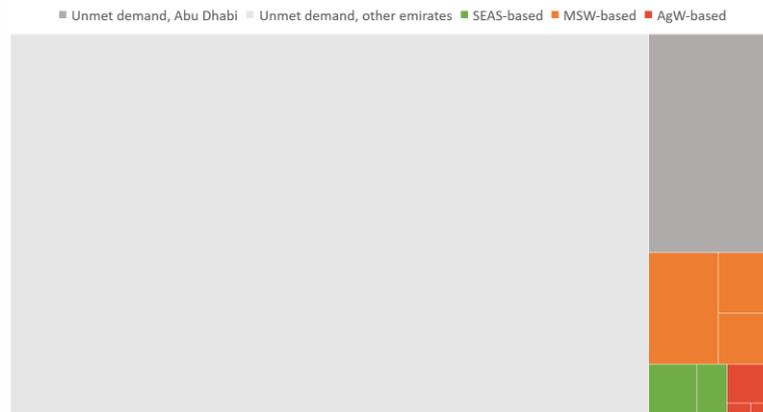


Comparison of SAF production potential and expected demand of jet fuel in the UAE*

Base case estimate, CY2033



Upper bound estimate, CY2033



Under current scenario assessments, local SAF production from feasible feedstocks is expected to meet 4.22% (range of 1.35-6.88%) of UAE's jet fuel demand in the year 2033



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Take-away messages

- Under the current technology landscape, SAF production in the UAE is very challenging
- Given the strategic value of aviation in the UAE, SAF will definitely be explored as part of the decarbonization solution



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THANK YOU