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# Technologies to decarbonize aviation

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# Positive Motion

Going beyond Net Zero to Net Positive, enabling customers and society to move in the right direction

## Our strategy: Flying towards a sustainable future

55%

Scope 1&2 emissions reduction in 2030 vs 2019

0 Net-emissions

In 2050

EUR 7,000m

total investment

## Our commitment: Decarbonizing our clients

Renewable power  
(Wind + Solar) is generated...



Production capacity of 7GW in solar and wind projects in 2030



...to source the production of **Green Hydrogen**...



Production capacity of 2GW by 2030



...helping Cepsa to produce in its **Energy Parks**...



Strategically located in Cádiz and Huelva refineries, near key ports and markets  
With new **Energy Efficiency** technologies and **Carbon Capture**



...different types of sustainable **fuels**...



Biofuels production capacity of 2.5 Mt by 2030



SAF/HEFA from 2023/26

HVO from 2026



E-fuels from 2030

Green H2 from 2026





# Eligible SAF

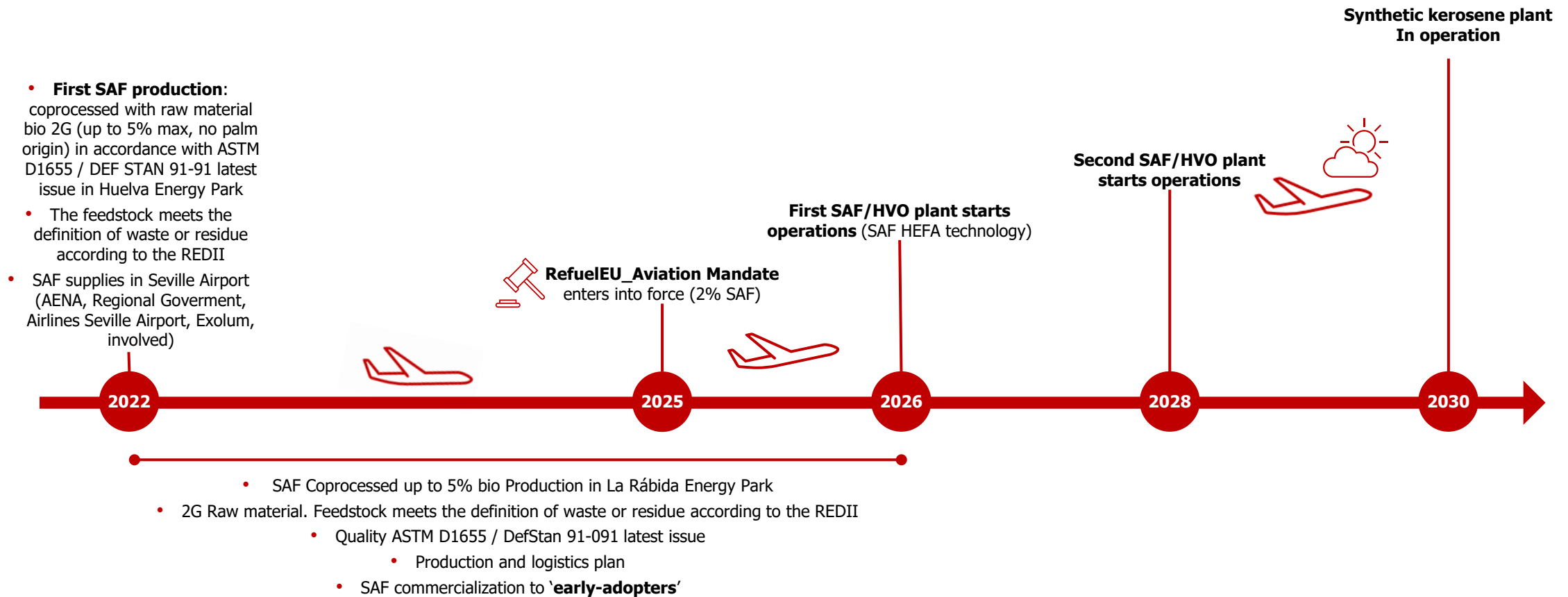
## Pathways that we are developing

- ASTM approvals

	ASTM reference	Conversion process	Abbreviation	Maximum Blend Ratio	
Co-processing	ASTM D1655 Annex A.1.2.2.1	Co-processing of mono-, di-, and triglycerides, free fatty acids, and fatty acid esters		5% in feedstock and final product	Ongoing work to increase limit to 30% co-processing
	ASTM D1655 Annex A.1.2.2.2	Co-processing of hydrocarbons derived from synthesis via the Fischer-Tropsch process using iron or cobalt catalyst		5% in feedstock and final product	
	ASTM D1655 Annex A.1.2.2.3	Co-processing of hydrocarbons derived from hydroprocessed mono, di- and triglycerides, free fatty acids, and fatty acid esters		10% in final product (24% feedstock)	
Synthetic blending components (SBC)	ASTM D7566 Annex 1	Fischer-Tropsch hydroprocessed synthesized paraffinic kerosene	FT	50%	Ongoing work to increase limits up to 100% SBC
	ASTM D7566 Annex 2	Synthesized paraffinic kerosene from hydroprocessed esters and fatty acids	HEFA	50%	
	ASTM D7566 Annex 3	Synthesized iso-paraffins from hydroprocessed fermented sugars	SIP	10%	
	ASTM D7566 Annex 4	Synthesized kerosene with aromatics derived by alkylation of light aromatics from non-petroleum sources	FT-SKA	50%	
	ASTM D7566 Annex 5	Alcohol-to-jet synthetic paraffinic kerosene	ATJ-SPK	50%	
	ASTM D7566 Annex 6	Catalytic hydrothermolysis jet fuel	CHJ	50%	
	ASTM D7566 Annex 7	Synthesized paraffinic kerosene from hydroprocessed hydrocarbons, esters and fatty acids	HC-HEFA-SPK	10%	
	ASTM D7566 Annex 8	Alcohol-to-jet synthetic paraffinic kerosene with aromatics	ATJ-SKA	50%	
	Under evaluation	Synthesized aromatic kerosene (SAK), Integrated hydro-pyrolysis and hydroconversion (IH2), Alcohol-to-Jet (ATJ) derivative utilizing biochemical production of isobutene, Single Reactor HEFA - Drop-in Liquid Sustainable Aviation and Automotive Fuel (DILSAAF), Pyrolysis of non-recyclable plastics (ReOIL), Co-processing of pyrolysis oil from used tires, Methanol to jet			

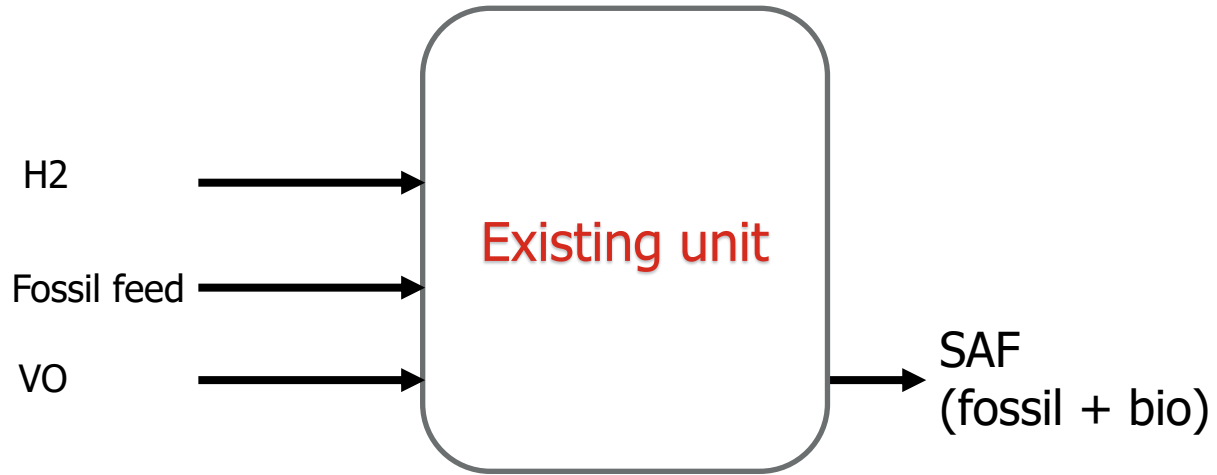
## Cepsa SAF roadmap

Cepsa aims to be the Southern Europe Sustainable Aviation leader by 2030



## Coprocessing basics

Coprocessing uses existing assets



Coprocessing mode



Feed



Product

### Key aspects:

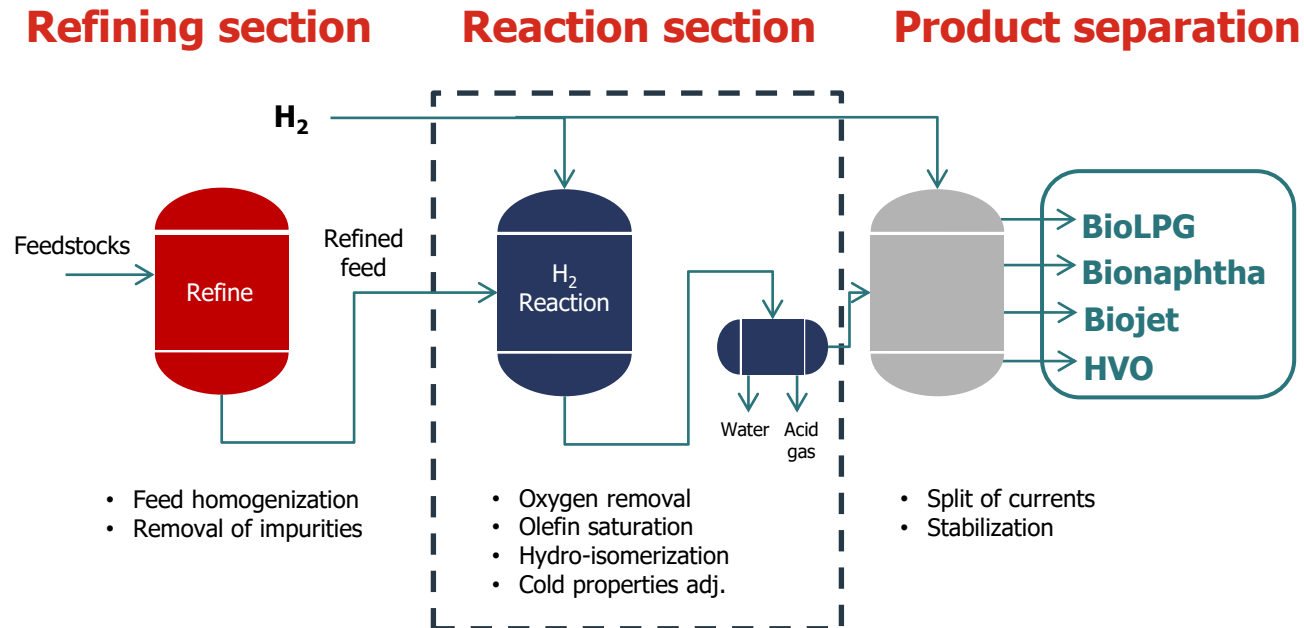
- Use of existing assets (with minor modifications)
- Yield can be determined by mass balance or C14 análisis
- Design of unit may limit type of bio feedstock
- High consumption of H2 vs. Fossil feed

### SAF Week en Sevilla



## Cepsa's HVO/SAF production

The new plant is going to produce HVO/SAF using HEFA technology by 2026. Strategy designed in blocks to adapt to regulation, demand and technology



**+ 500 kt/y HVO/SAF | 2026**

**First block:** Announced plant of 500 kty HVO/SAF. Flexible production, ~400 kty of biojet/SAF and ~100 kty of bionaphtha + bioLPG

The feedstock used in HVO production requires prior refining section

The plant can operate in different modes and the range of final products will change depending on the production mode selected

## Next steps

### Synthetic aviation fuel required to meet 2030 objectives

