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Session 6: Era of Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF) and other Aviation Cleaner Energies



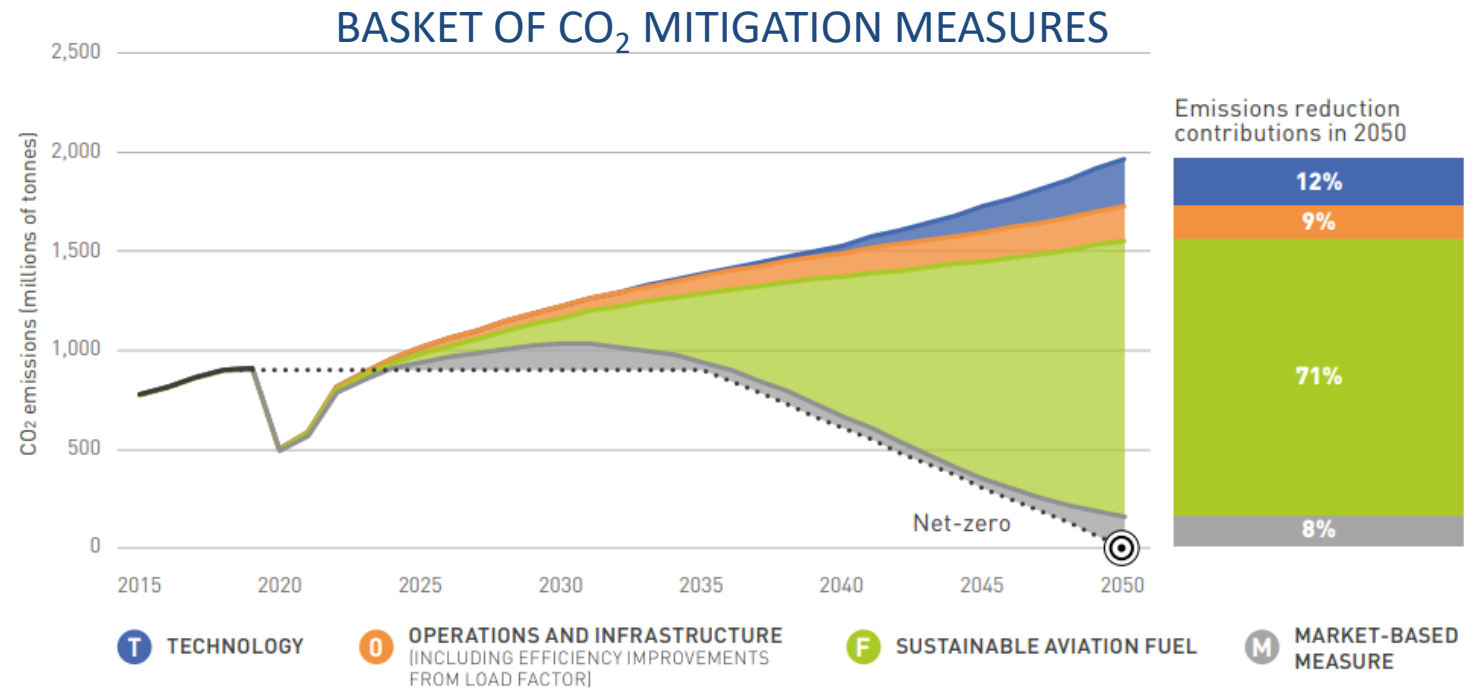
# ICAO SEMINAR ON GREEN AIRPORTS

ATHENS, GREECE | APRIL 18-19, 2024

## Regulatory framework

### About ICAO and CO<sub>2</sub> mitigation

- ✓ Aviation has been one of **the fastest growing sectors in terms of CO<sub>2</sub> emissions** over the past decades. In 2018, aviation accounted for 3.6% of the EU's greenhouse gas emissions (2% at global level) and for 13.2% of the emissions from EU transport. There is **no doubt about the need to boost the decarbonisation** of this sector if we are to achieve net-zero carbon emissions by 2050. **Accelerating aviation's decarbonization requires a coherent set of policy interventions** that rapidly strengthen the business case for private investment, bridge the price differential, and stimulate sustainable aviation fuels (SAF) demand.
- ✓ Sustainable aviation fuels (SAF) **would be a viable solution** to replace fossil jet fuel, as they are drop-in liquid fuels that can be blended with conventional kerosene, and, being compatible with the existing aircraft engines, would not therefore require any technological changes.



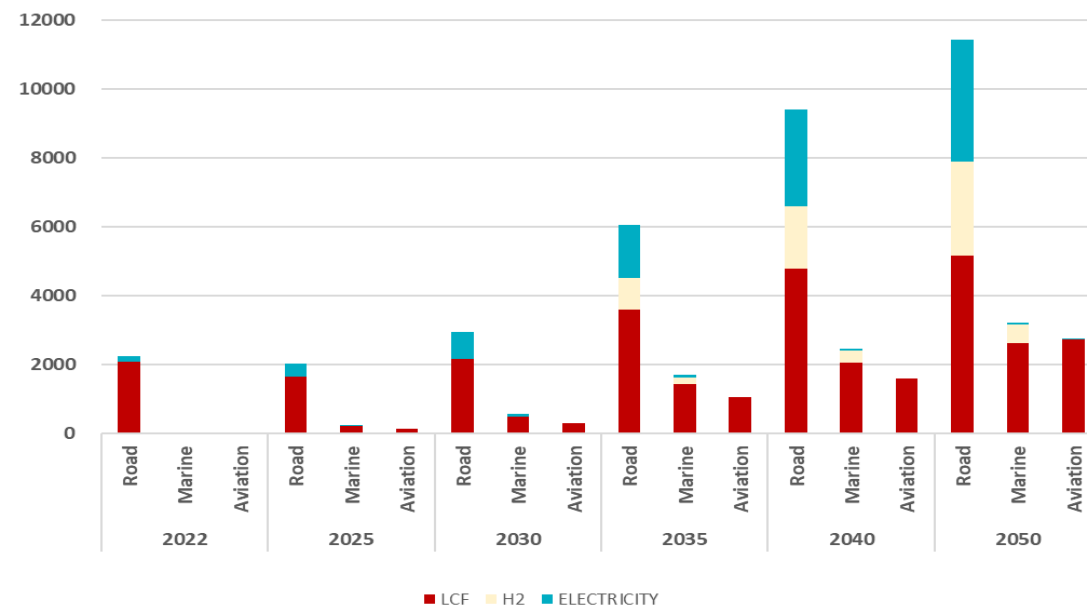
We recognize the efforts made at ICAO level but given the air transport global dimension and to avoid the risk of market distortion, **we call for a next step**: it is time to **promote an ambitious global system that supports the use of sustainable aviation fuels** and provides for an **international level playing field**.



## SAF market perspective

- Growth in the use of renewables in all transport sectors. The greatest growth occurs in the road sector driven by the use of RFNBOs
- The regulatory framework boost the use of LCF in the aviation and marine sectors and the use of RFNBOs on road
- Convincing of the need to establish alliances with strategic partners in the client area to generate trust and understanding of the cost implications of the decarbonization of air transport

Total Renewable Demand (HVO kteq)

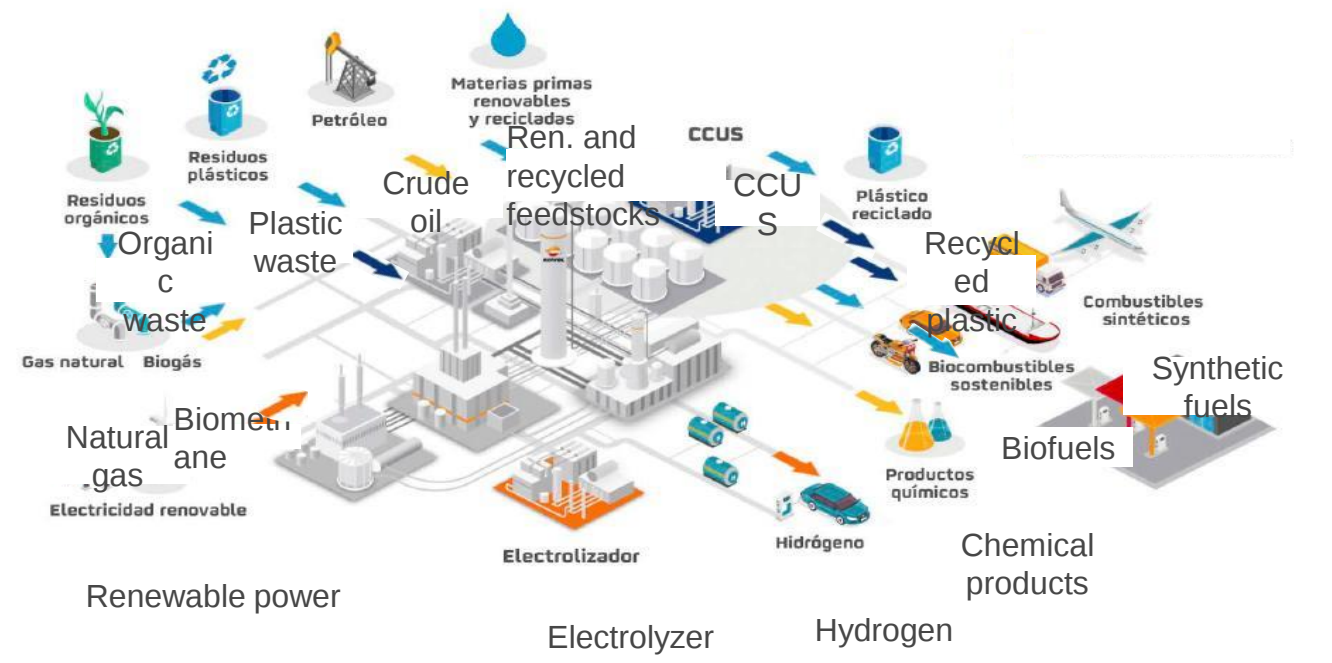


- A clear and stable regulatory framework is necessary to generate the necessary demand to leverage investments
- Most of SAF projects announced worldwide up to 2028 correspond to the HEFA route. The limitation in the availability of lipid waste makes it necessary for the post-2030 installed capacity to use innovative technologies capable of transforming other types of waste such as MSW, forest or agricultural biomass, etc., which today are not mature and require technological development and financial support.



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# Transformation of our industrial assets



- Conventional
- Renewable fuels
- Renewable energy, Green H<sub>2</sub> & Biomethane
- Circular materials

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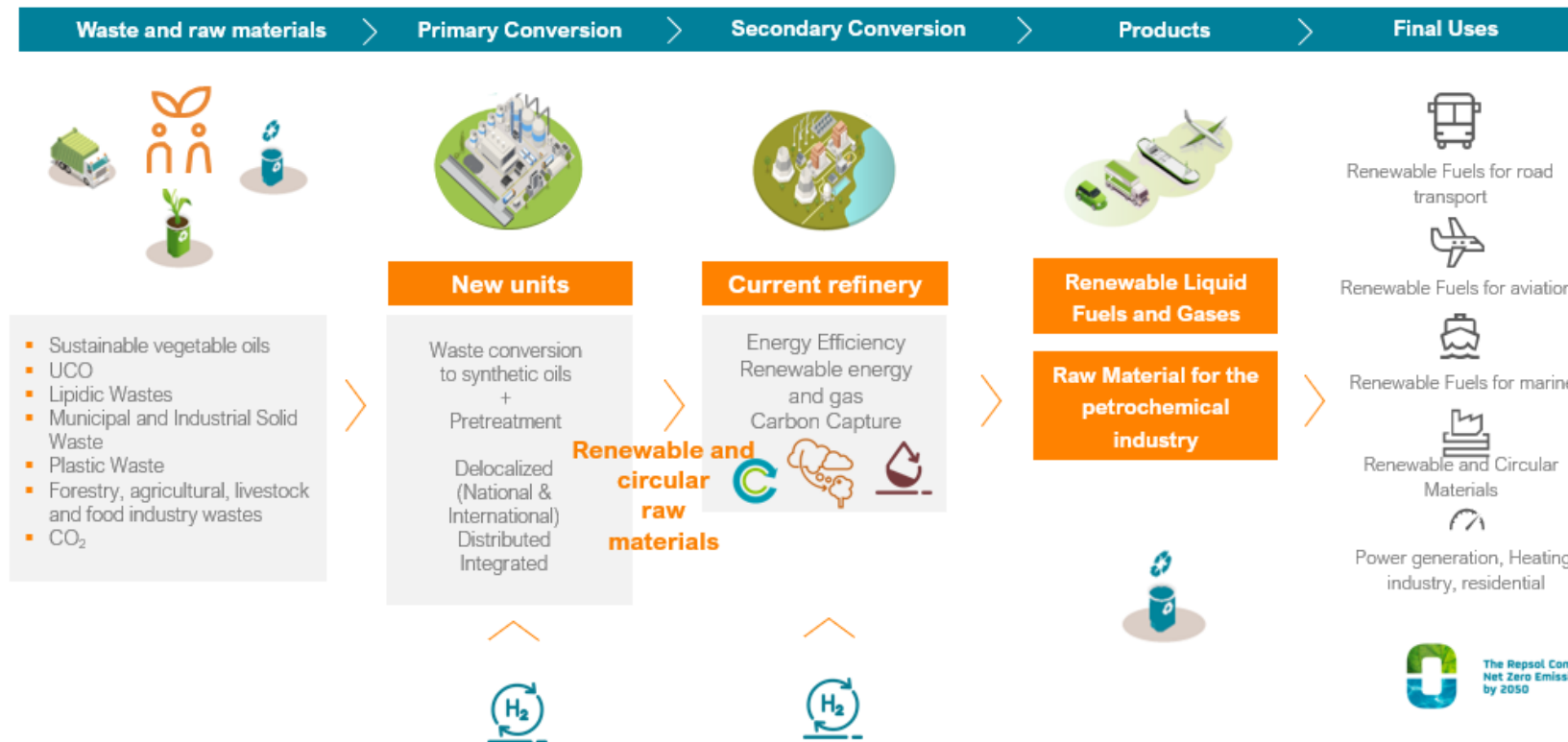
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BASKET OF CO<sub>2</sub> MITIGATION MEASURES

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## Integration with the industrial complexes



The Repsol Commitment  
Net Zero Emissions  
by 2050



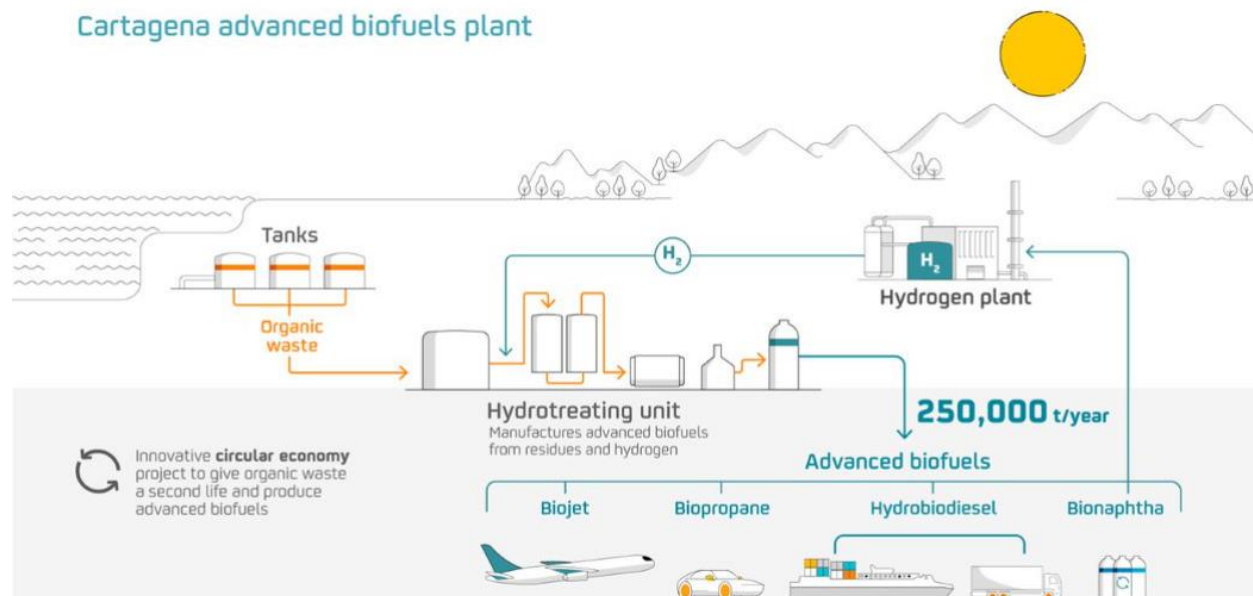
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## Advanced Biofuels Plant in Cartagena (Spain) STARTED 2 WEEKS AGO



120 M€ loan

Cartagena advanced biofuels plant



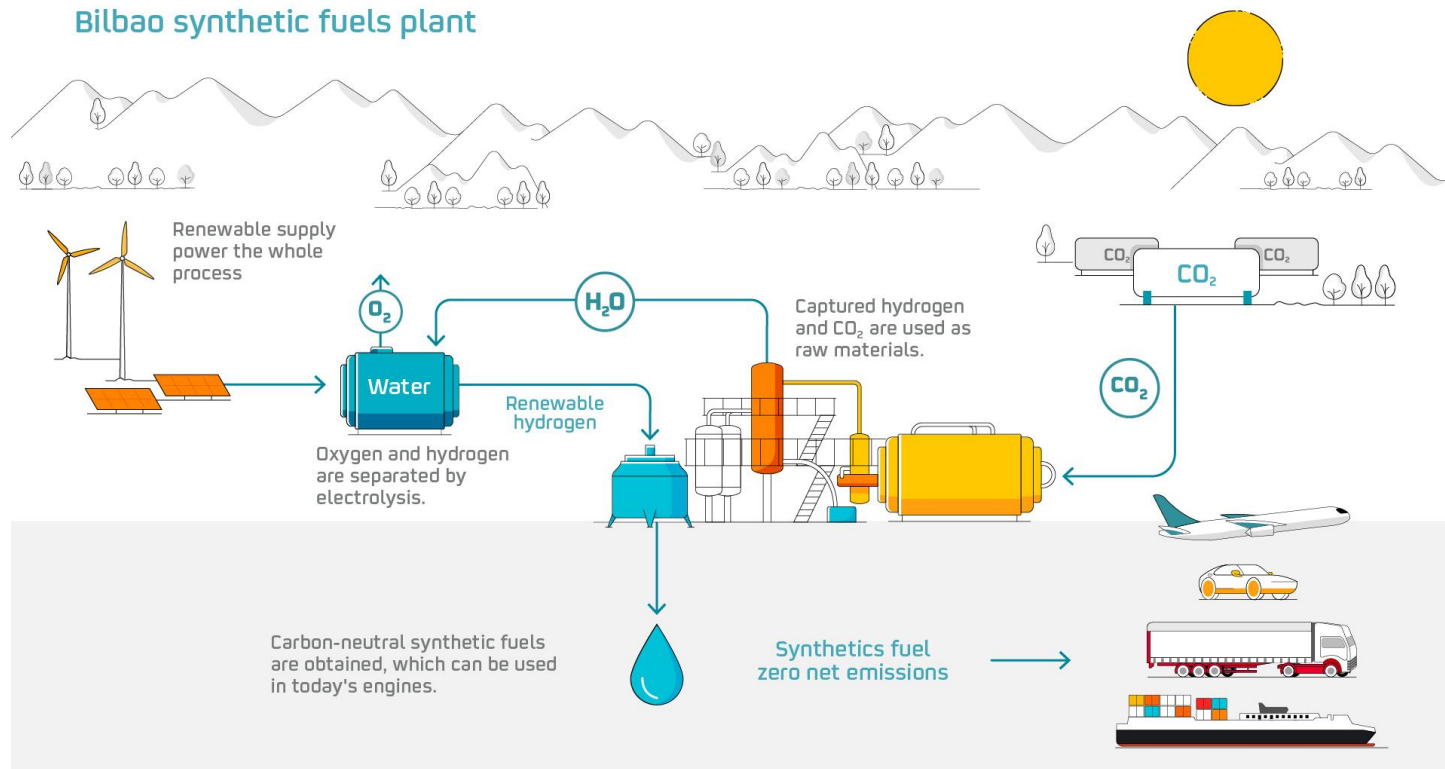
These biofuels will allow the reduction of **900,000 t CO<sub>2</sub>/year**



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## E-fuels demo plant: 2025

Bilbao synthetic fuels plant



Technology development needed

Demo plant – over 100 M€

Integration opportunities with  
Gasification and with refineries

CO<sub>2</sub> from hard-to-abate industries  
and DAC in the long term

Bio-CO<sub>2</sub> in the mid-term. Challenge  
in terms of scale and distribution



# THANK YOU FOR YOUR ATTENTION

Francisco Lucas



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# Thank You

