

# AVIATION CO<sub>2</sub> REDUCTIONS



STOCKTAKING SEMINAR  
TECHNOLOGY · OPERATIONS · SUSTAINABLE AVIATION FUELS



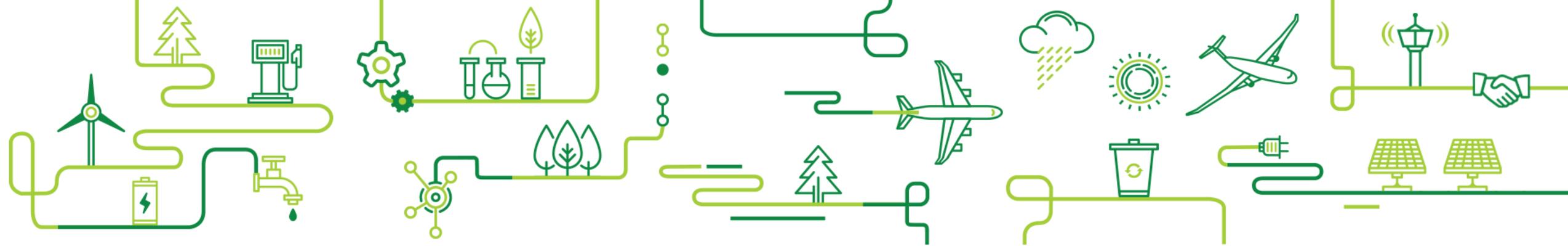
# Clean energy



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Sustainable Aviation UK





# About Sustainable Aviation UK (SA)



**SUSTAINABLE AVIATION**  
 CLEANER | QUIETER | SMARTER

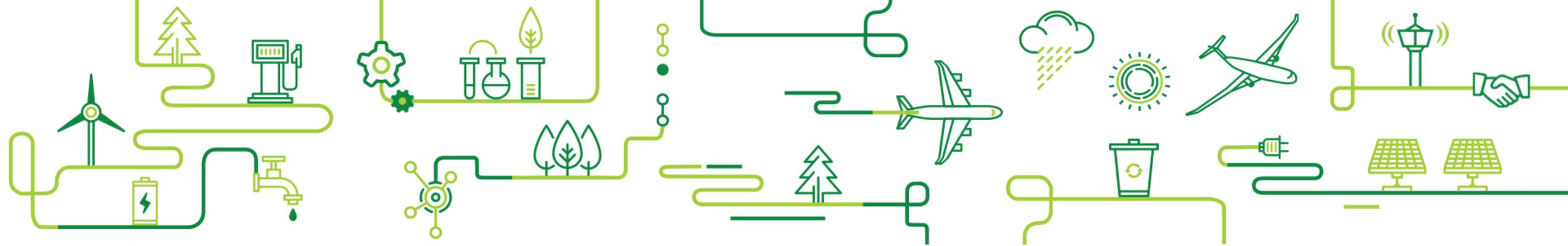
## Members

 The Travel Association ABTA	 ADS	 Airbus	 THE ASSOCIATION FOR UK AIRLINES Airlines UK	 air bp	 THE VOICE OF UK AIRPORTS AOA	 Birmingham Airport Birmingham
 Boeing	 Amazing journeys start here Bristol	 British Airways	 dnata	 easyJet	 Where Scotland meets the world Edinburgh	
 GLASGOW AIRPORT HOW TO SPEND YOUR LEISURE Glasgow	 YOUR LONDON AIRPORT Gatwick Gatwick	 Making every journey better Heathrow	 Friendly low fares Jet 2 Airlines	 Pastor. Easier. Friendlier. Liverpool	 CITY AIRPORT London City	 London Luton Airport Luton
 MAG	 NATS	 Your Airport Newcastle Airport	 ROLLS ROYCE Rolls-Royce	 Southampton Airport Southampton	 TUI GROUP	
	 VELOCYS Velocys	 virgin atlantic Virgin Atlantic				

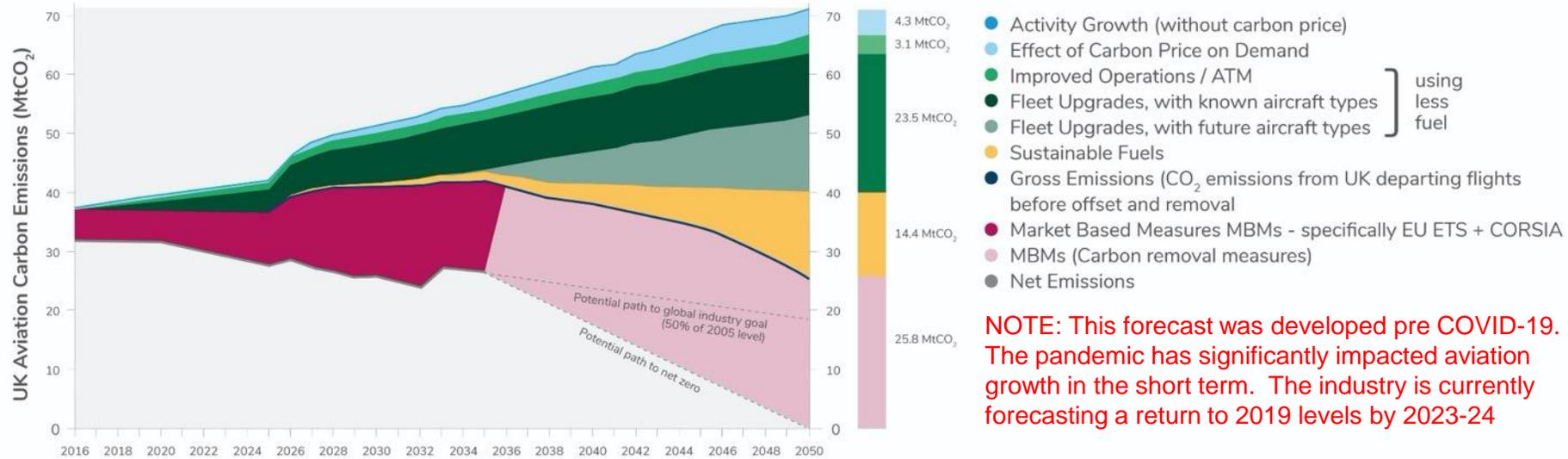
A coalition representing over 90% of UK aviation

Delivering a sustainable future for UK aviation since 2005





# SA Decarbonisation Road-Map (2020)



**SA members are committed to reaching net zero carbon for UK aviation by 2050 BUT there is no 'silver bullet' to delivery. Multiple pathways will be required with sustainable aviation fuels and improved operations offering immediate solutions**



# Making sustainable fuel phase 1 - Solid waste and waste gases

70-80% CO2 saving potential - Requires faster energy innovation (including DACS)



**British Airways investment in Altair Immingham project**

Once operational this planned plant will take hundreds of thousands of tonnes per year of post recycling waste, otherwise destined for landfill or incineration, and convert it into over 60 million litres of clean burning sustainable jet and road fuel each year.



**Virgin Atlantic and LanzaTech Sustainable Aviation Fuel Partnership**

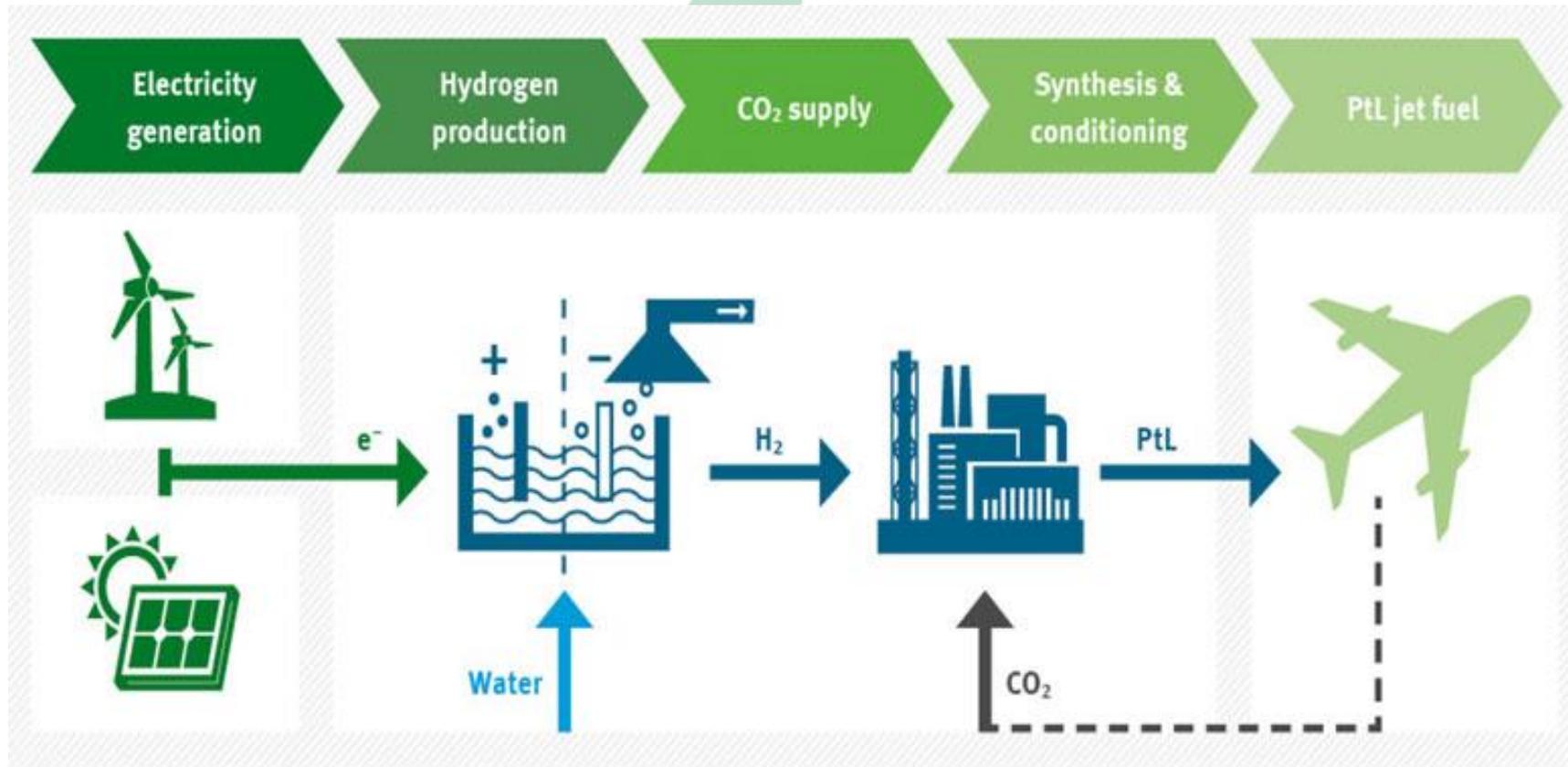
LanzaTech uses a novel carbon capture and utilisation (CCU) approach to recycle waste carbon-rich gases from heavy industries into jet fuel. Subject to RTFO reform LanzaTech has committed to provide all Virgin Atlantic's fuel out of the UK as a 50:50 blend, and 70% CO<sub>2</sub> savings compared to fossil jet fuels.





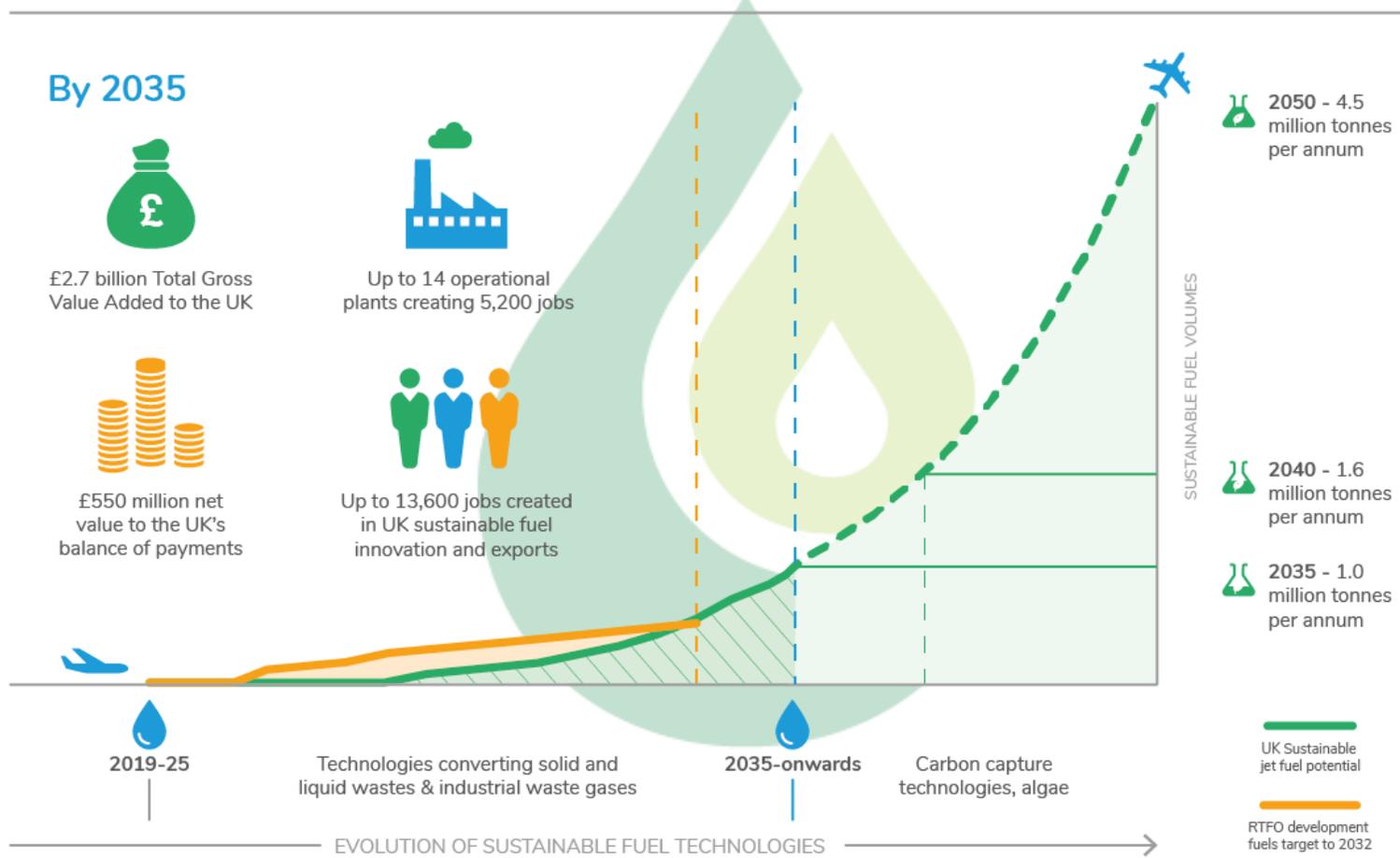
## Making sustainable fuel phase 2 - Power to liquid (2035+)

Potential to make negative emission fuel - Requires faster energy innovation (including DACS)





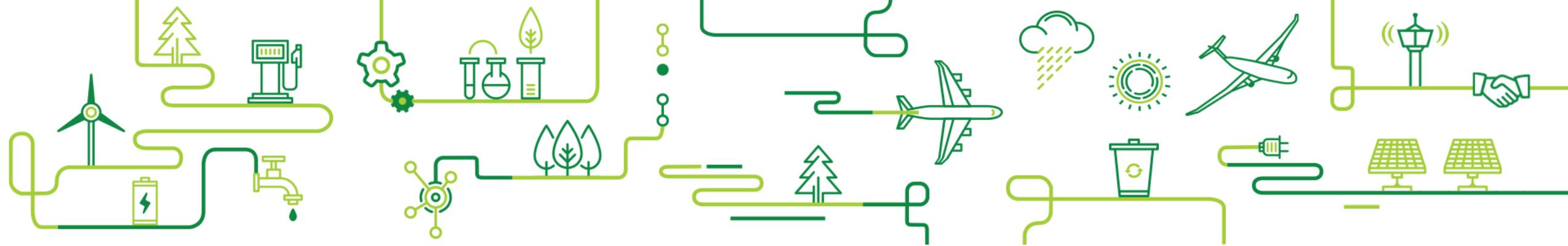
## UK POTENTIAL: SUSTAINABLE FUELS ROAD-MAP



The Renewable Transport Fuel Obligation (RTFO) is the Government's policy to reduce greenhouse gas emissions from fuel by providing incentives for sustainable fuels. To encourage investment in fuels manufactured from wastes and residues in line with the UK's long-term strategic needs, a 'development fuels' target was set as part of the RTFO from 2019. This includes sustainable aviation fuels. The RTFO only extends to 2032 at present.

2035 figures refer to domestic production of sustainable fuels and is based on the high-growth, aviation-optimised model



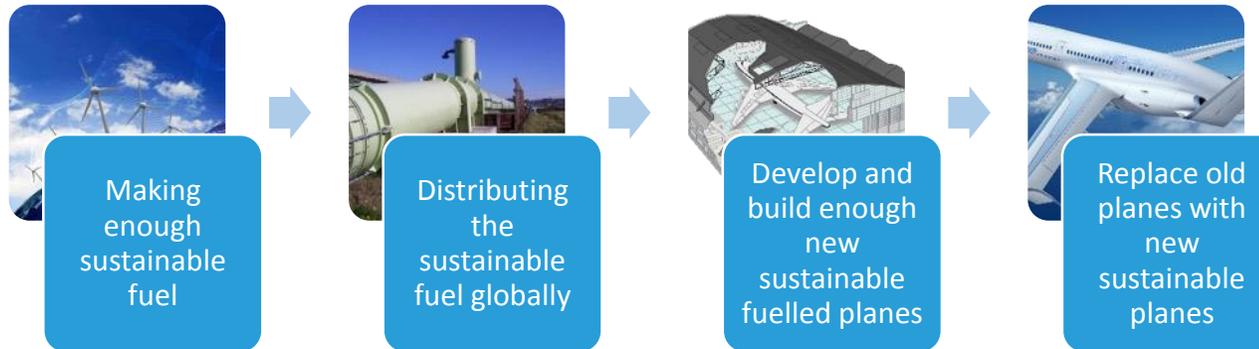


# Potential barriers to progress



The opportunity is to develop a negative emission fuel for aviation, creating new jobs and supporting existing ones across the wider economy. There are however, a number of barriers to realising this that need to be overcome in partnership between the aviation and clean energy industries and with governments around the world.

## Primary Barrier



## Secondary Barrier

Knowledge Sharing



# Enabling the sustainable aviation fuel market for the UK

## Aviation Fuels

Feedstock type	Conversion process
Multiple	Multiple



### By 2035



£2.7 billion Total Gross Value Added to the UK



Up to 14 operational plants creating 5,200 jobs

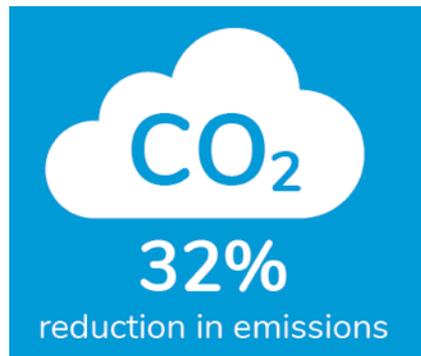


£550 million net value to the UK's balance of payments



Up to 13,600 jobs created in UK sustainable fuel innovation and exports

### By 2050



We now estimate a 32% reduction in emissions from UK aviation is possible from the use of SAF in 2050. This represents a CO<sub>2</sub> saving of 14.4Mt.

- 
**CO<sub>2</sub> reductions per flight** **70-80%**
- 
**Level of finance required** **£500m**
- 
**Timeframe** **Now to 2050**
- 
**Main challenges** **Securing Finance**



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## Thank you

For more information please visit:

[www.sustainableaviation.co.uk](http://www.sustainableaviation.co.uk)

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# Thank You



ICAO  
Headquarters  
Montréal

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Asia and Pacific  
(APAC) Sub-office  
Beijing

Middle East  
(MID) Office  
Cairo

Western and  
Central African  
(WACAF) Office  
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North American  
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and Caribbean  
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