

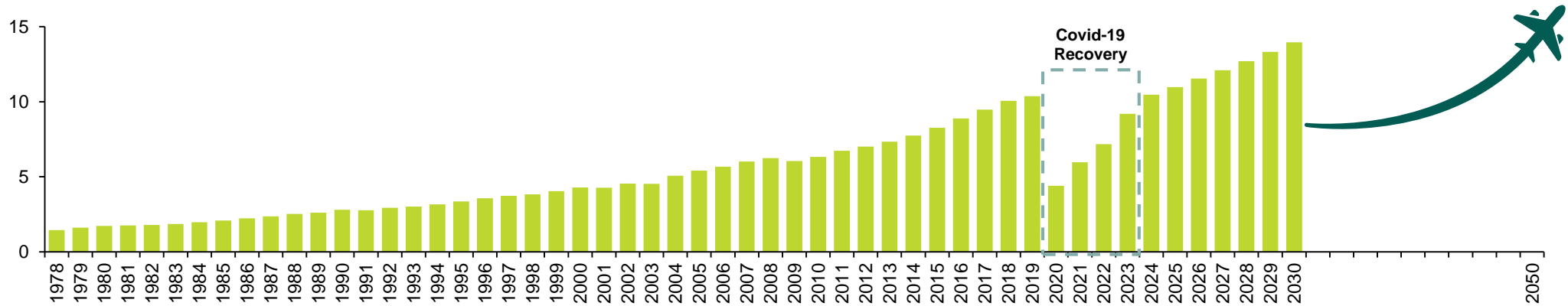
# UNLOCKING BIOMASS AS SUSTAINABLE AVIATION FUEL FEEDSTOCK

Mees Fox – Capacity Development EU  
SkyNRG



# FLYING IS ESSENTIAL FOR GLOBAL ECONOMIES BUT DECARBONISING THE AIRLINE INDUSTRY IS A HUGE AND GROWING CHALLENGE

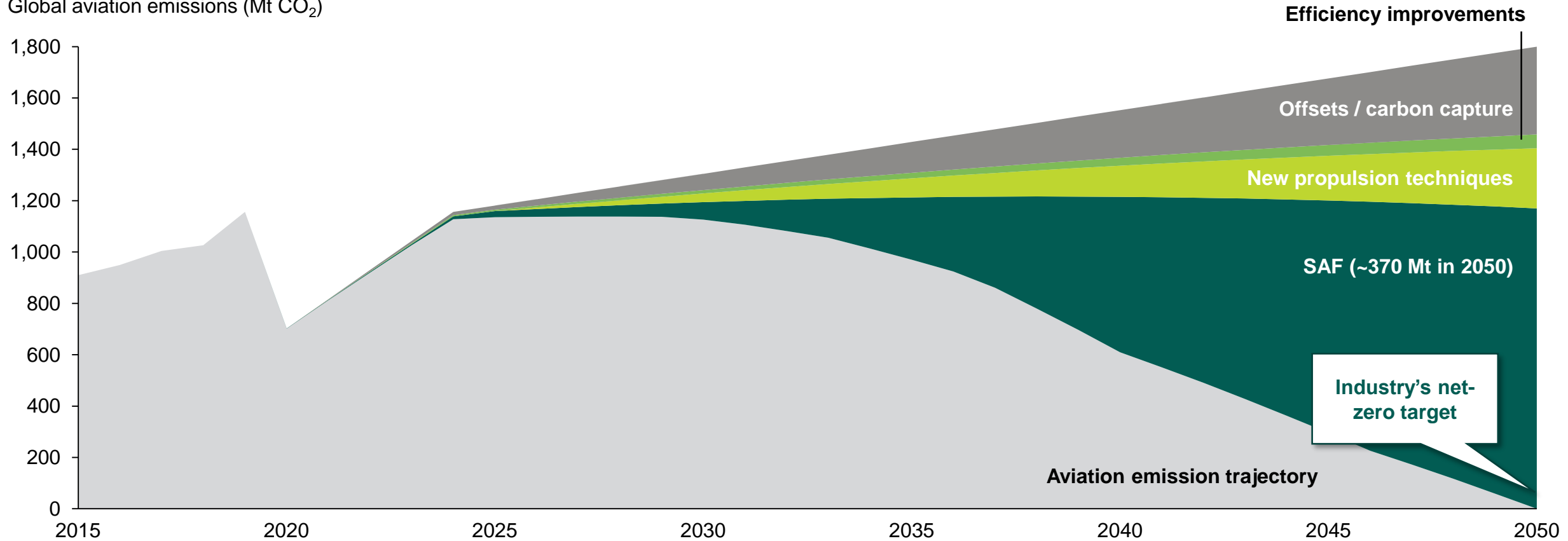
Available Seat Kilometres (m)



Source: Wall Street Research on Aerospace and Defence Data, IATA 2021.

# SAF IS CRUCIAL TO REACH NET-ZERO INDUSTRY TARGET BY 2050

Global aviation emissions (Mt CO<sub>2</sub>)



SAF market expected to grow from €0.2B today to €50B in 2030, to >€500B in 2050

# THE SOLUTION

**Sustainable aviation fuel – SAF – made from renewable resources is the only way to significantly reduce the dependency on fossil kerosene in the foreseeable future.**

## SAF ticks all the relevant boxes



**SAF meets all performance and safety requirements** and does not require infrastructure and aircraft adaptations



**Proven at commercial scale**  
370,000 flights and counting



**Various production pathways**  
ready for commercial deployment



When done right, sustainable aviation fuels **SAF can reduce life-cycle CO<sub>2</sub> emissions up to 100%**





# SKYNRG IS A PIONEER AND LEADER IN SUSTAINABLE AVIATION FUEL



We are a SAF  
capacity  
developer



We supply  
SAF to airlines



We provide  
SAF solutions  
for corporate  
and individual  
travelers



We provide  
advisory  
services on  
SAF



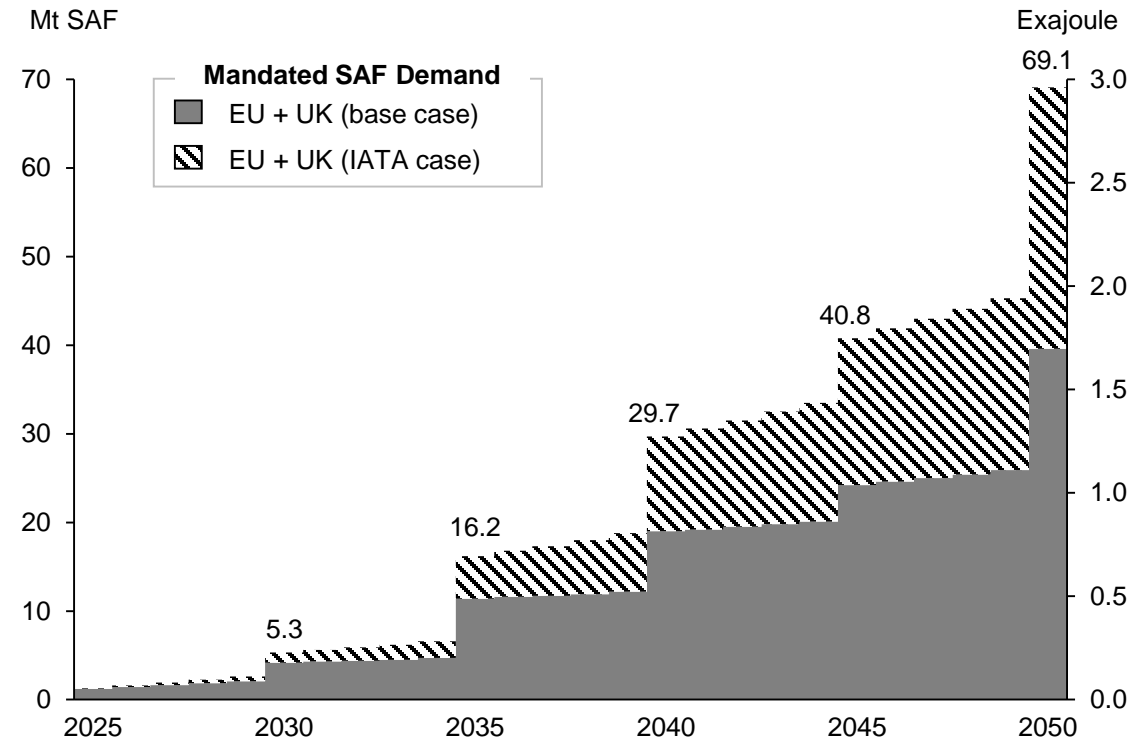
Sustainability  
is at the core  
of what we do

# POLICIES IN EUROPE DRIVE SAF DEMAND & SUPPLY



RED II | ReFuelEU | UK JetZero

- **Mandates** | Share of SAF in jet fuel supply (6% in 2030, 70% in 2050)
- **Penalty** | Double price-difference between fossil jet and SAF + carry forward of obligation to next year





# 2030 | WE EXPECT THE SAF MARKET TO REMAIN UNDERSUPPLIED, AS VOLUNTARY DEMAND WILL PROVIDE ADDITIONAL MARKET PRESSURE

## Airlines are increasingly committing to SAF targets

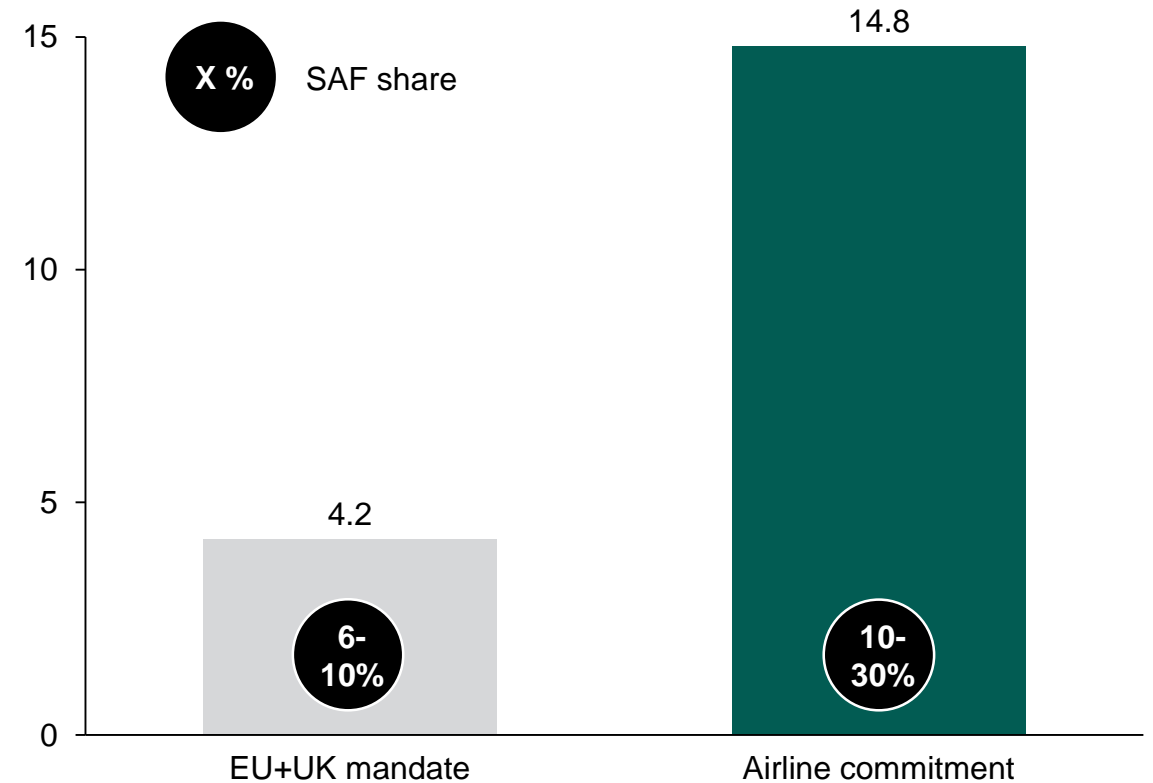
Airlines with SAF commitments (non-exhaustive)



## SAF commitments exceed mandated SAF share EU/UK

AIRLINE EXAMPLES | NON-EXHAUSTIVE

Voluntary SAF demand (2030, Mt)



# TO KEEP THINGS SIMPLE, SAF CAN BE PRODUCED FROM THREE TYPES OF FEEDSTOCK



## Waste oils & fats

HEFA | Co-processing



## Cellulosics & MSW

Gasification + Fischer-Tropsch | Alcohol-to-Jet



## Green H2 & Bio CO2

eSAF

FEEDSTOCK  
AVAILABILITY



TECHNOLOGY  
READINESS

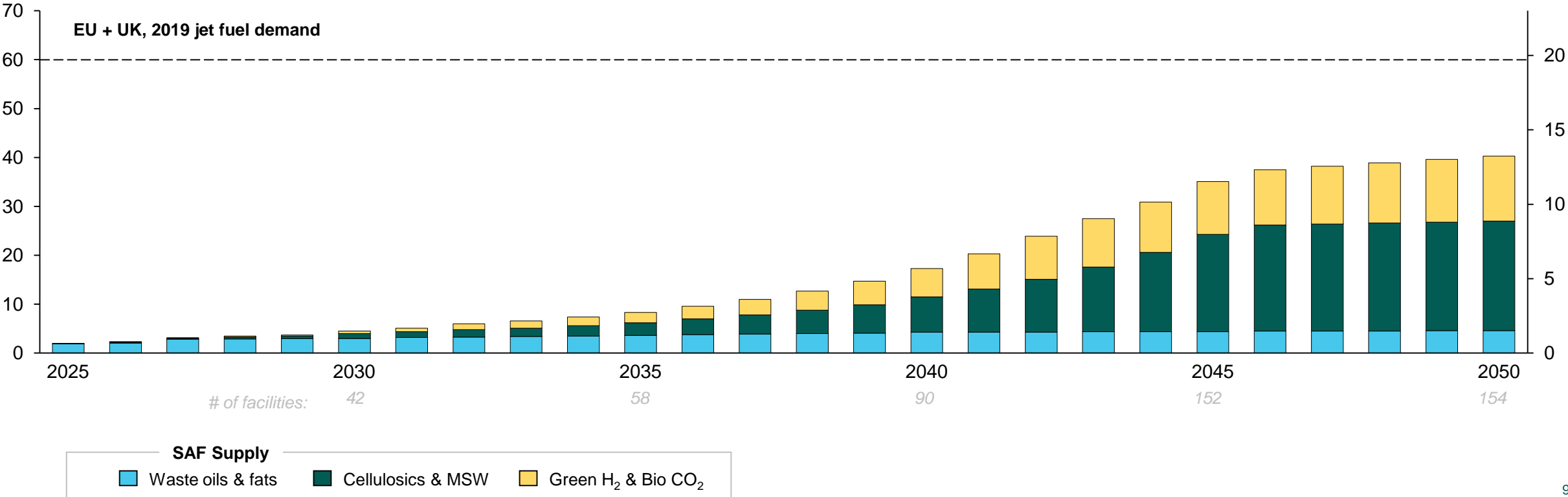




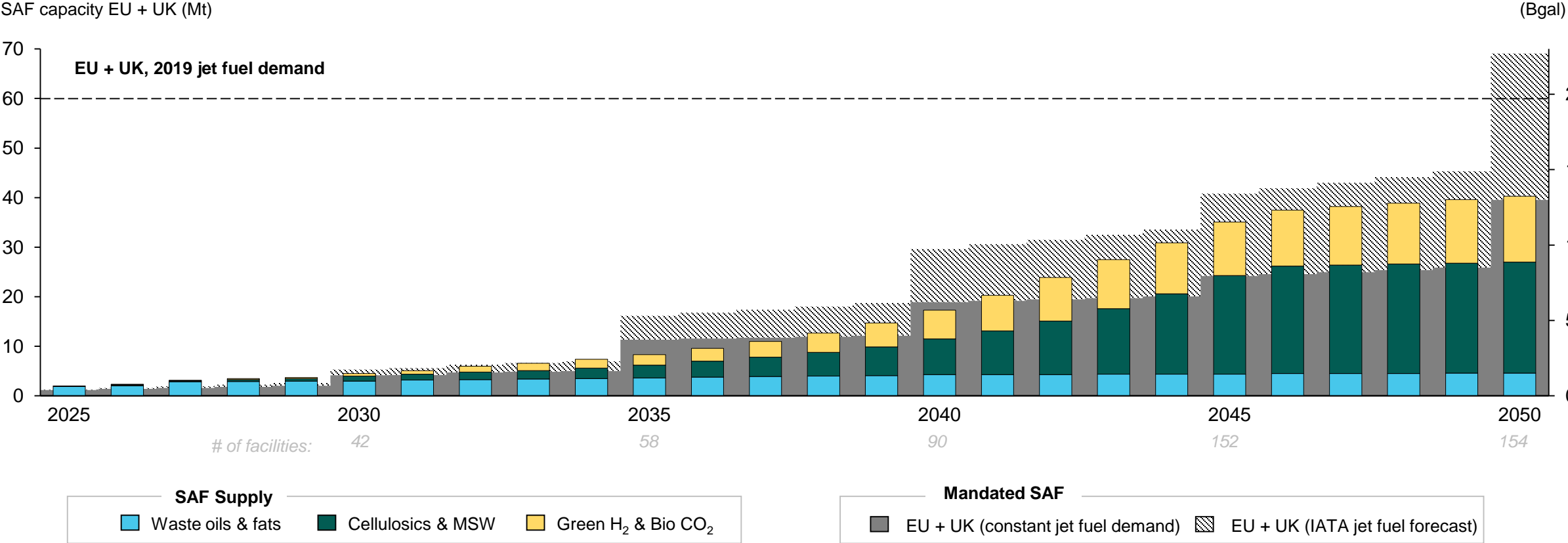
# SCALING CELLULOSIC AND POWER-TO-LIQUID PATHWAYS IS KEY TO MEETING MANDATES, ESPECIALLY IF JET FUEL DEMAND GROWS

SAF capacity EU + UK (Mt)

(Bgal)

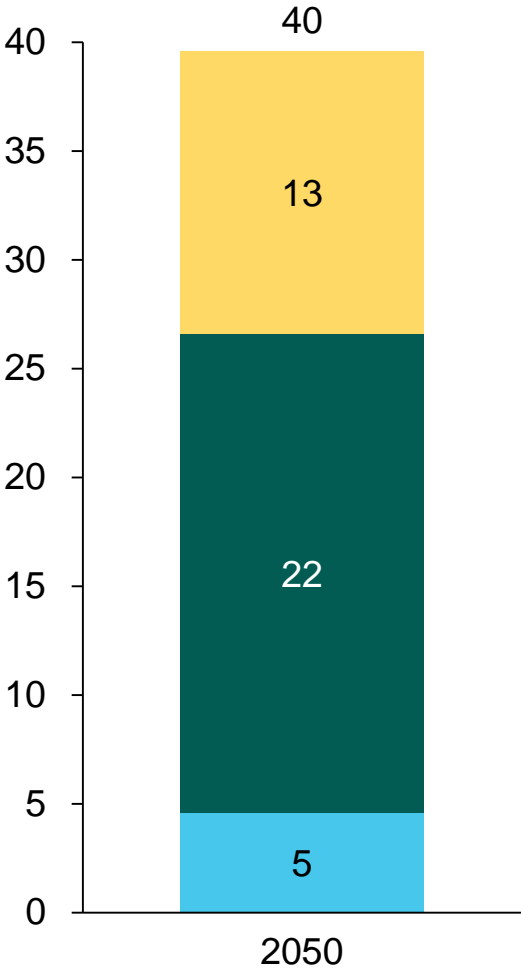


# SCALING CELLULOSIC AND POWER-TO-LIQUID PATHWAYS IS KEY TO MEETING MANDATES ESPECIALLY IF JET FUEL DEMAND GROWS



# ASSUMPTIONS TO GET TO OUR 2050 OUTLOOK

Mt SAF production potential in 2050



**Green H<sub>2</sub> & Bio CO<sub>2</sub>**

- 25% of all green hydrogen goes to eSAF
- Requires 50+ Mt of biogenic CO<sub>2</sub>

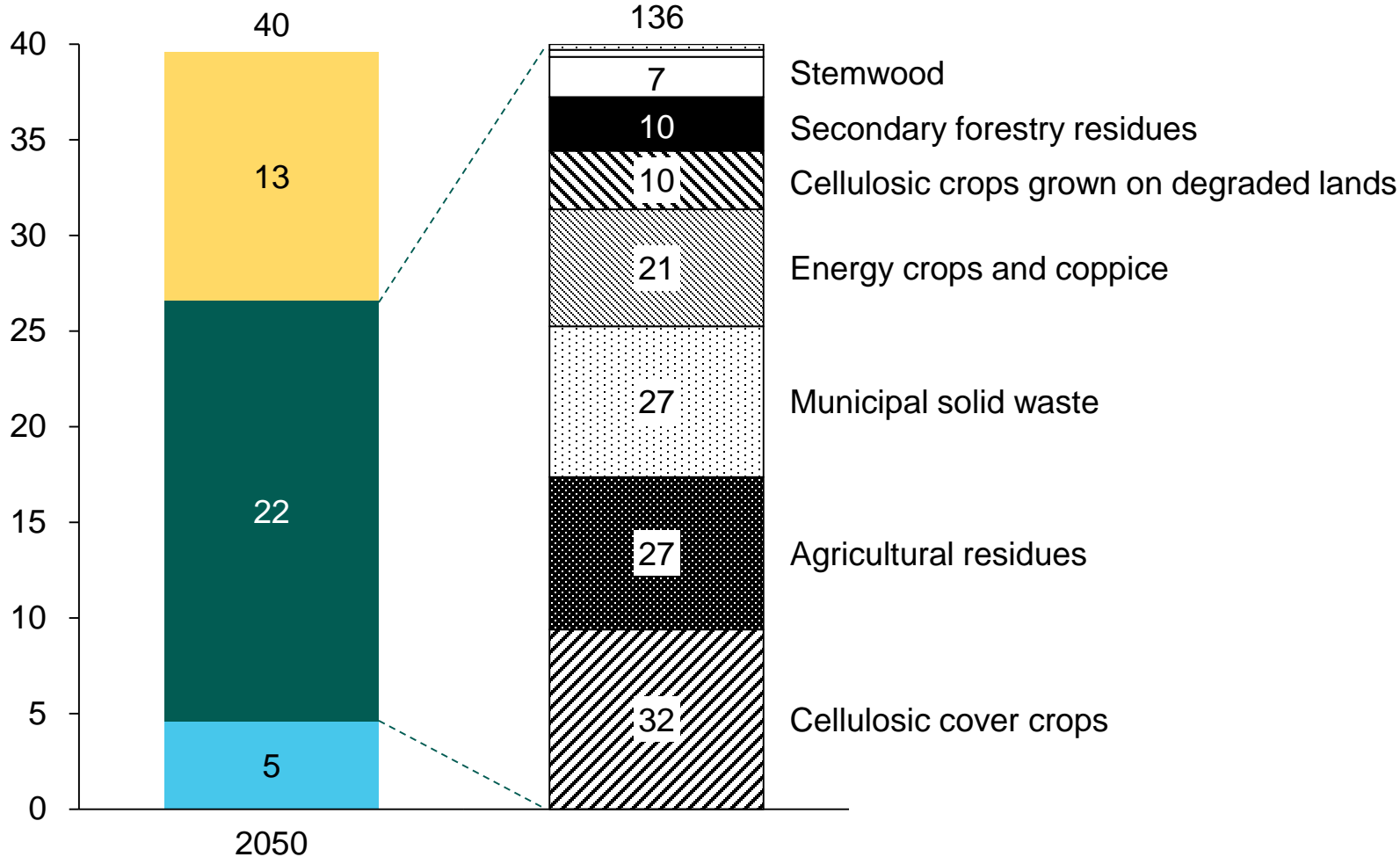
**Waste oils & fats**

- Technology is proven
- Additional feedstock supply will be **limited**



# ASSUMPTIONS TO GET TO OUR 2050 OUTLOOK

Mt SAF production potential in 2050



## Cellulosics & MSW

- **700 Mt cellulosic material** available in the EU
- We expect aviation to have a **claim of 30%**
- 2/3 of this can be economically sourced, leading to a **136 Mt feedstock potential**

## How to unlock this potential?

- Governments should **de-risk initial investments**
- Once the technology is proven, **the market is expected to move fast**

# HIGFLY (HIGee to Furanic-based jet-fueL technologY)

## Consortium

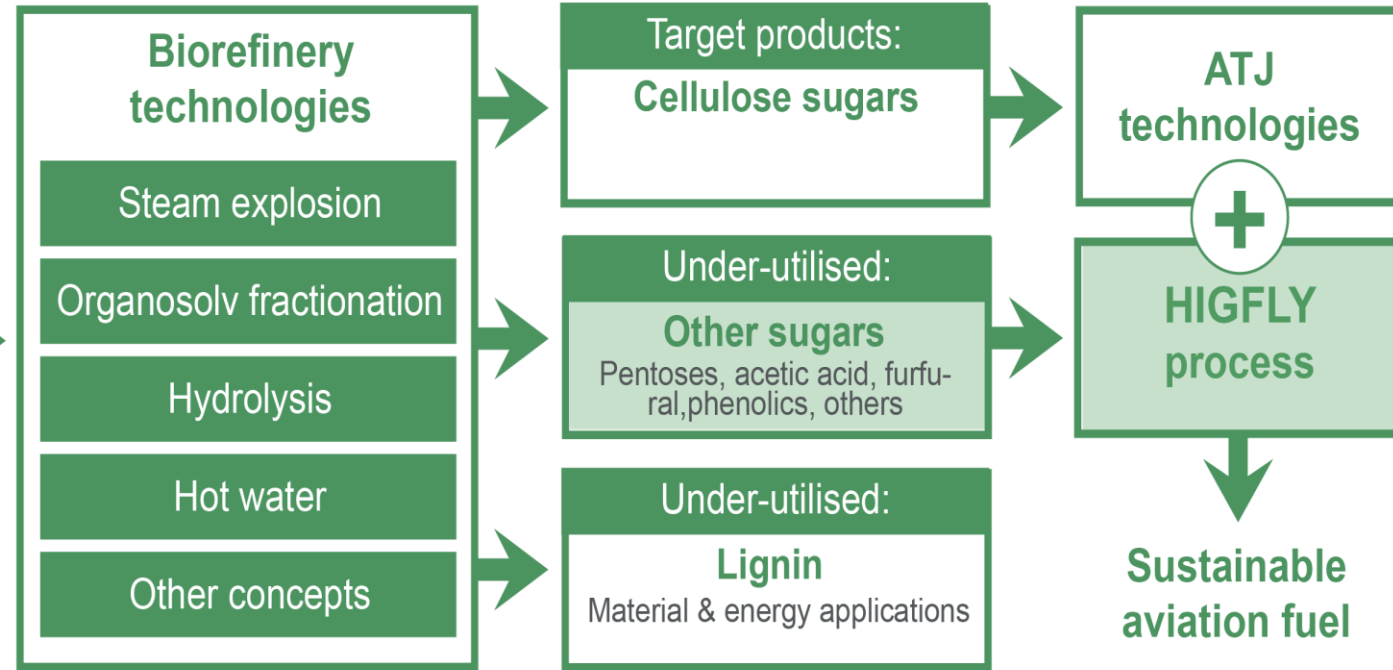


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## Potential integration of HIGFLY concept with other biorefineries:





# **SUSTAINABLE AVIATION FUEL MARKET OUTLOOK 2023**



May 2023

**SAF MARKET OUTLOOK AVAILABLE  
ON OUR WEBSITE:**

**[HTTPS://SKYNRG.COM/SAFMO2023/](https://skynrg.com/safmo2023/)**

**[WWW.SKYNRG.COM](http://www.skynrg.com)**

**MEES@SKYNRG.COM**