



HEFA SAF: Fueling a sustainable future for aviation

Alexander Kueper, VP
Renewable Aviation | Neste

Neste creates value for society by developing solutions to mitigate climate change and plastic waste challenge.

We are a global leader in sustainable aviation fuel, renewable diesel and a forerunner in developing renewable feedstock for polymers and chemicals.

In 2023, we enabled our customers to reduce their GHG emissions by

11.0 Mt CO₂e

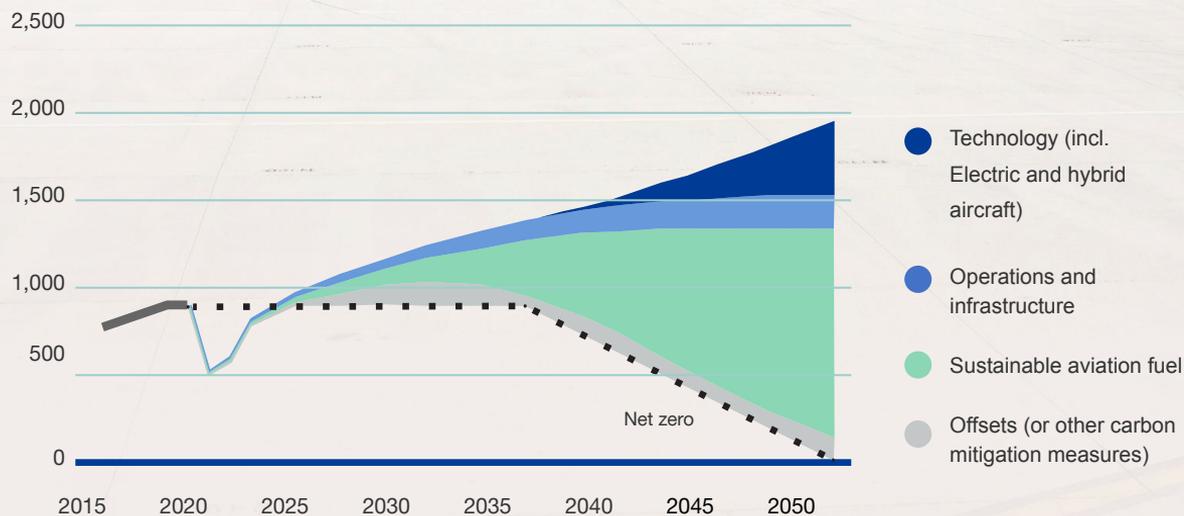
with our renewable products



For aviation, the choices are limited: SAF needs to deliver 65% of emission reductions by 2050



Aviation CO₂ emissions trajectory and reductions by measure (Mt CO₂e)

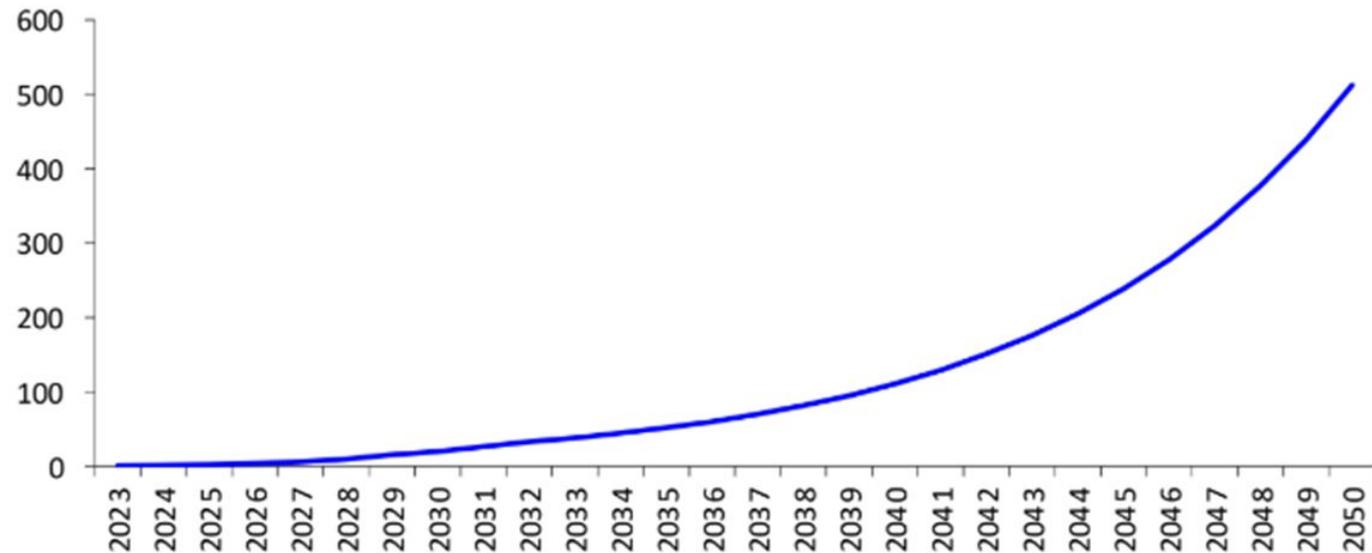


Aviation continues to rely heavily on liquid jet fuel, even with efficiency improvements and emergence of (short-haul) electric planes in the future. Sustainable Aviation Fuels will be the most important tool in the aviation sector's transition towards net zero.

SAF production volume needs to increase from 0.5 Mt in 2023 to 512 Mt in 2050 for the net zero transition

SAF production output needed for the net zero transition, million tonne (Mt)

Million tonne

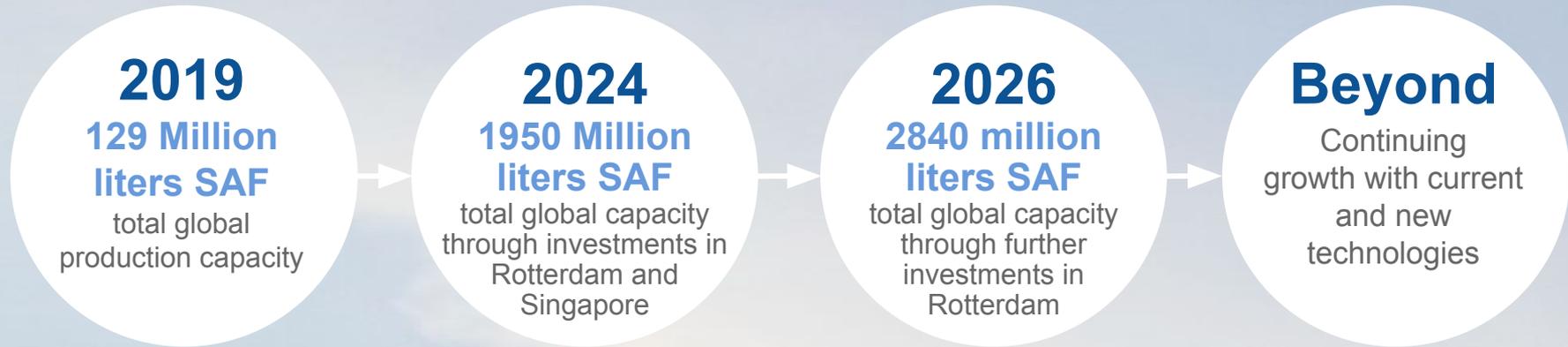


Source: IATA Sustainability and Economics





Neste's SAF production capability increased to 1.5 Mt by the end of 2024, and will reach 2.2 Mt by 2026



NESTE MY

Sustainable Aviation Fuel



Available Drop-in solution

- Compatible with existing jet engines and fuel supply infrastructure
- Commercially available and in use
- Used in blends up to 50%

Greenhouse gas emission reduction

- In neat form, reducing GHG emissions up to 80% compared to fossil fuels over the life-cycle
- Produced 100% from renewable waste and residue raw materials
- In-sector emission reduction, unlike offsets

Reduction of Non-CO2 effects

- Burns clean, reducing local emissions
- Additional climate benefits through reduced particulate emissions (non-CO2 effects of aviation may have equal or higher climate impact than carbon emissions¹)

¹ EASA Final Report: *Updated analysis of the non-CO2 climate impacts of aviation and potential policy measures pursuant to the EU Emissions Trading System Directive Article 30(4)*, November 2020

Scalable solutions for the future via continuously expand raw materials



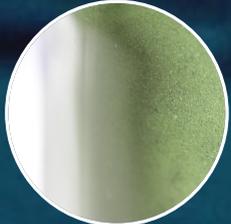
Renewable oils and fats



Novel Vegetable Oil



Lignocellulose



Algae



Renewable H₂ & PtX

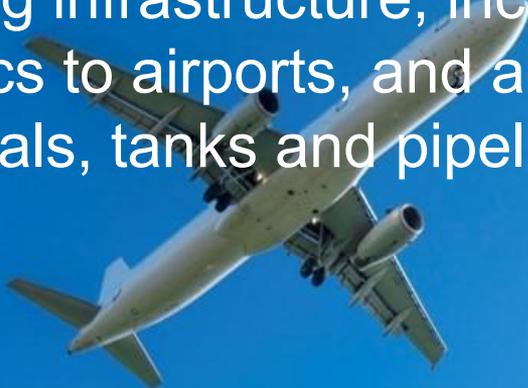
Now

Mid- to longer term options



HEFA SAF is a **drop-in** solution that requires:

- 1) **Legislation:** incentives that allow SAF to compete with fossil jet fuel (largest barrier)
 - **Fuels of the Future** in Brazil is a giant step forward!
- 2) **Access to Fueling Infrastructure:** open access to the existing infrastructure, including before the airport, fueling logistics to airports, and airport fuel storage. This includes all terminals, tanks and pipelines.



Neste's SAF has been used across major airports around the world



Collaborations across the aviation value chain



Commercial airlines



Business aviation



Cargo / Freight



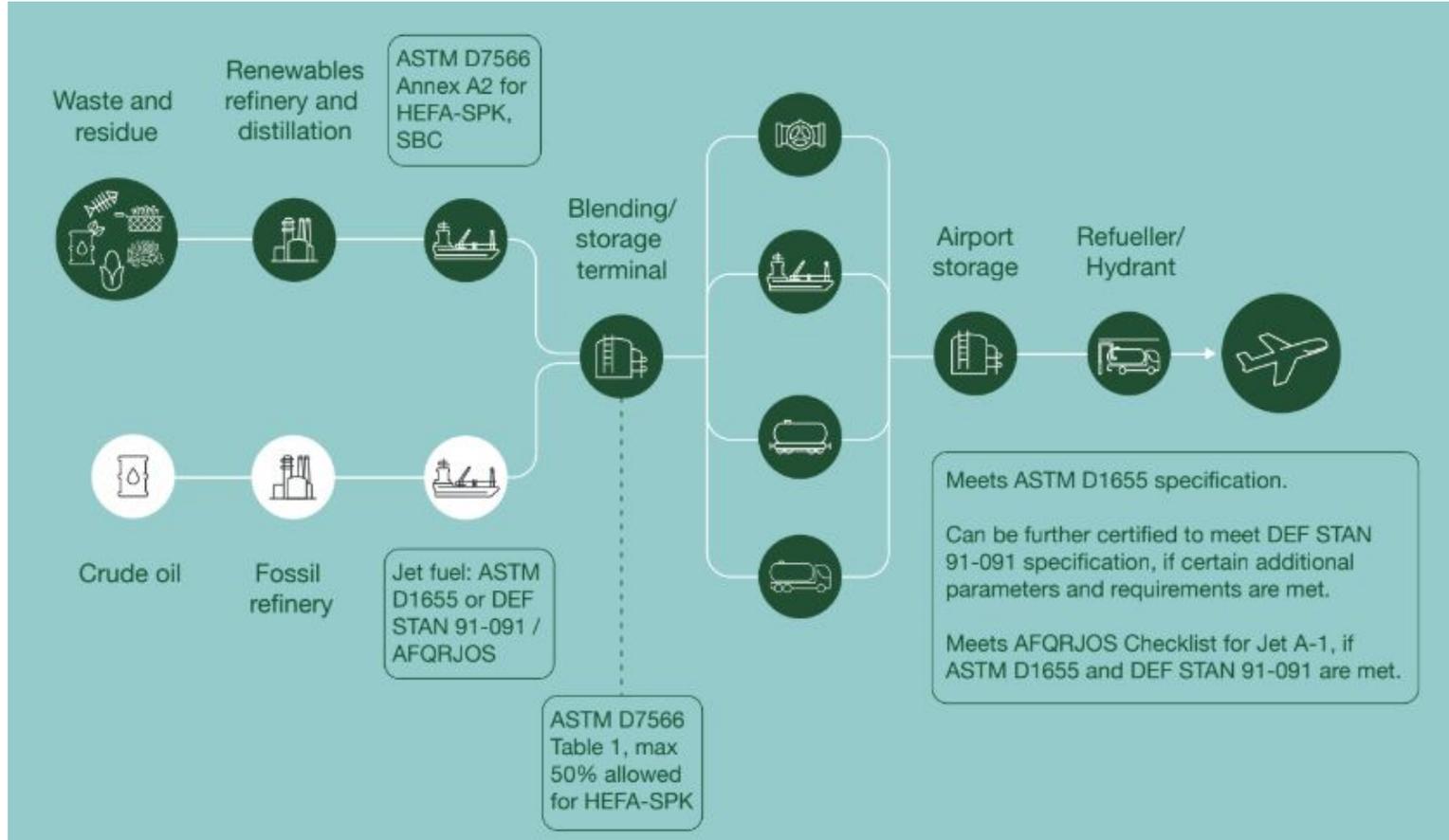
OEMs



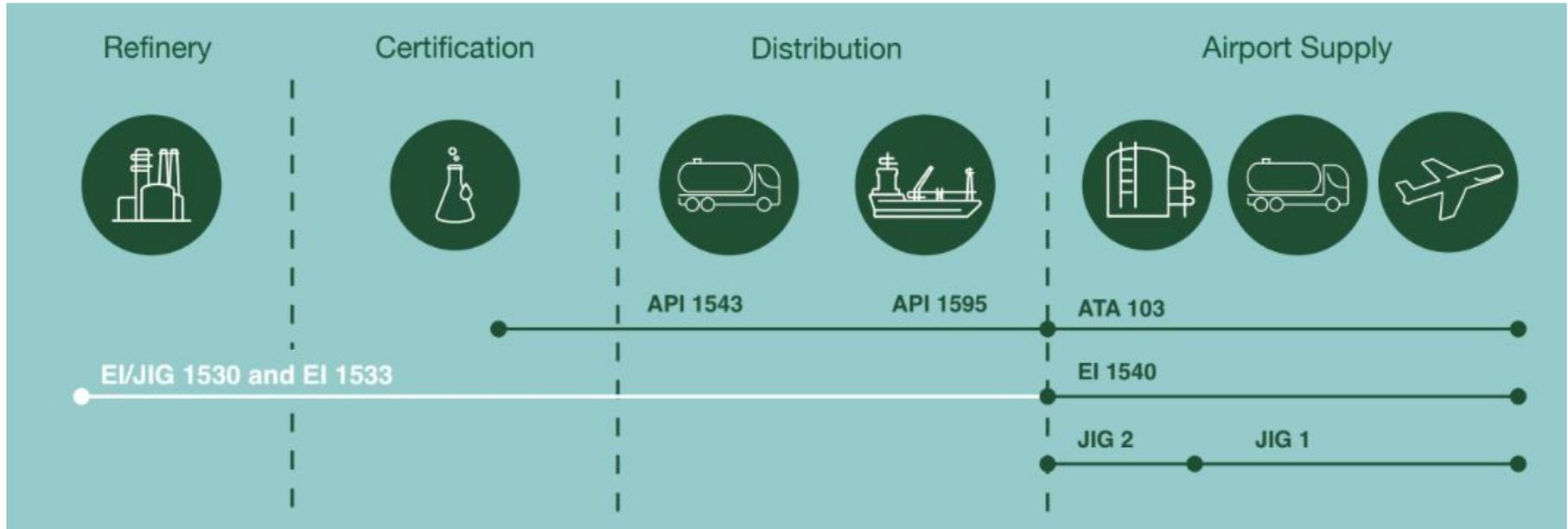
Airports



HEFA SAF is a drop-in solution....



.... that can leverage existing fueling infrastructure





Thank you