

2024 ICAO REGIONAL SEMINAR ON ENVIRONMENT

In collaboration



with
APAC Region

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Sustainable Aviation Fuel: Policies and initiatives shaping project financing in Asia-Pacific

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Our purpose
is to create a
healthier planet
for our children

Neste in a nutshell

- We create solutions for combating climate change and accelerating a shift to a circular economy.
- We refine waste, residues and innovative raw materials into renewable fuels and sustainable feedstock for polymers and chemicals.
- We are the world's leading producer of sustainable aviation fuel and renewable diesel, and renewable feedstock solutions for various polymers and chemicals industry uses. We are also developing chemical recycling technologies and capacity to combat plastic waste challenge.
- We are introducing renewable and recycled raw materials such as liquefied waste plastic as refinery raw materials. We have committed to reaching carbon-neutral production by 2035.



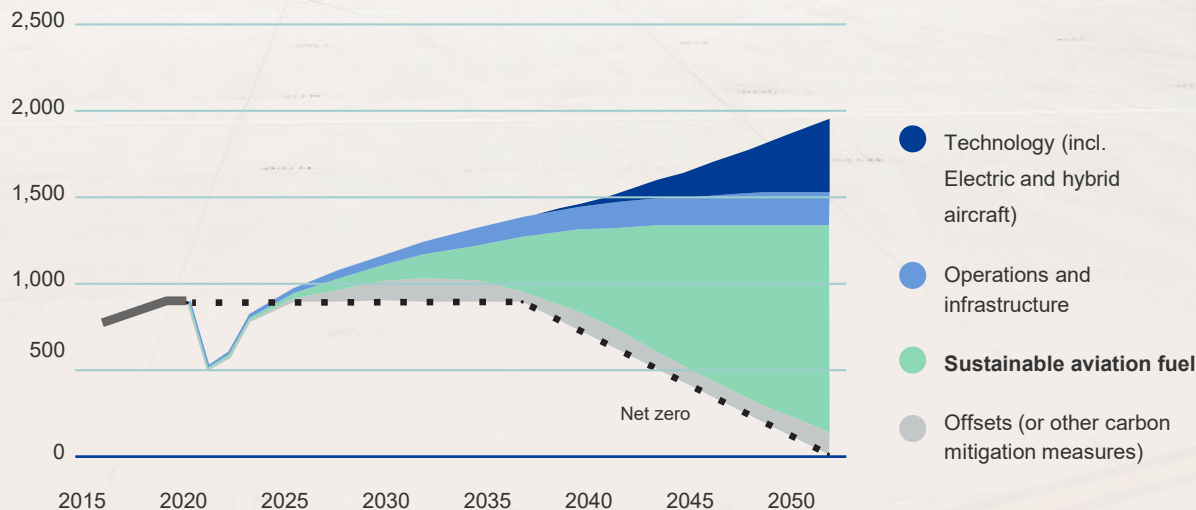
An aerial photograph of a white commercial airplane on a dark asphalt runway. The plane is positioned diagonally, facing towards the bottom left. Yellow curved lines mark the edges of the runway. The surrounding landscape is a mix of dark and light brown patches, possibly grass or tarmac.

Aviation has committed to achieving net-zero emissions by 2050

- Aviation accounts for 2-3 % of global carbon emissions - growing to >20% by 2050 if action not taken
- In addition, due to non-CO2 effects, like contrails, aviation's total climate impact estimated to be 3x that of CO2 alone
- Sustainable Aviation Fuel (SAF) is key for achieving aviation industry's goal of net zero emissions by 2050
- SAF is a solution that is available today, but we need more of it.

Aviation relies on sustainable aviation fuel, and other pathways, to achieve its 2050 targets

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

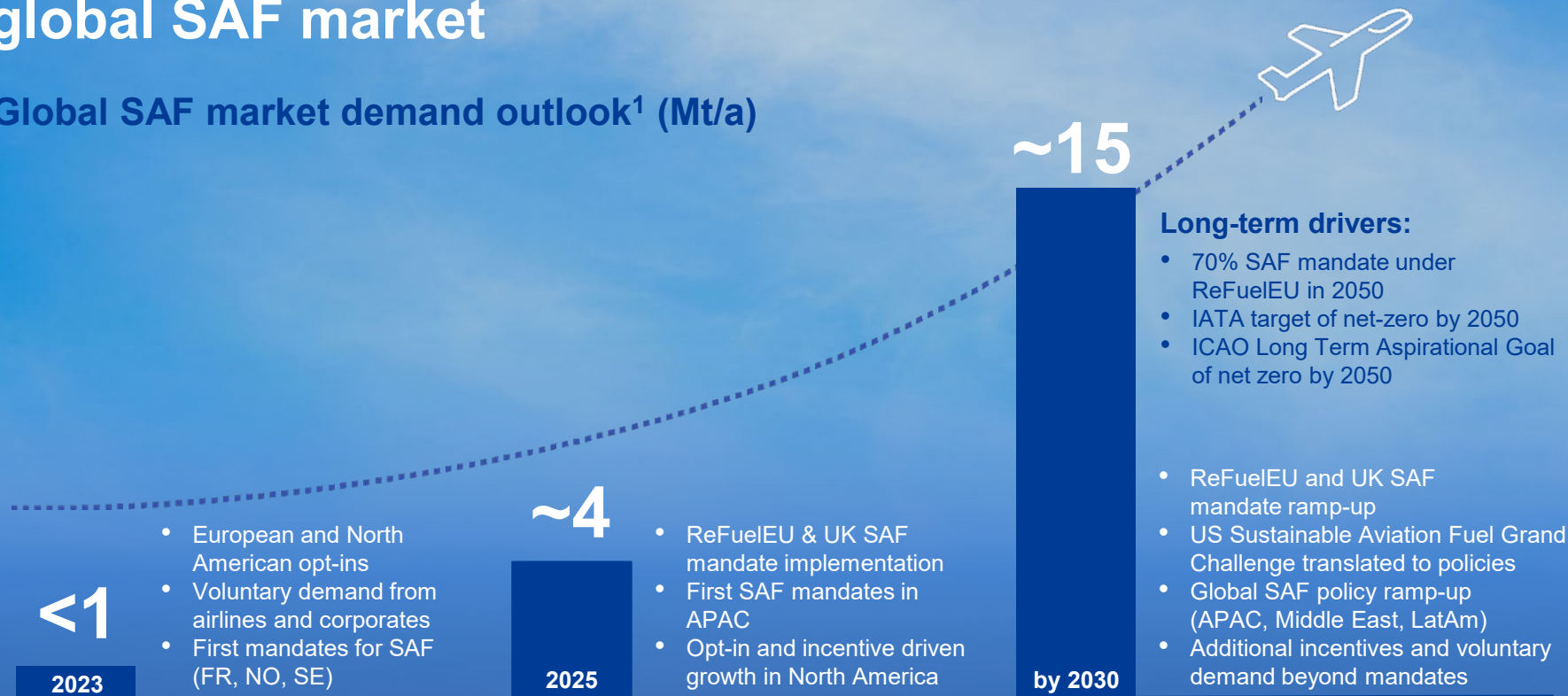


WORLD
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“Together we can put the global aviation sector on the path to net-zero emissions by 2050 by accelerating the supply and use of SAF technologies to reach 10% of global jet aviation fuel supply by 2030”

Regulations are driving the accelerating growth of the global SAF market

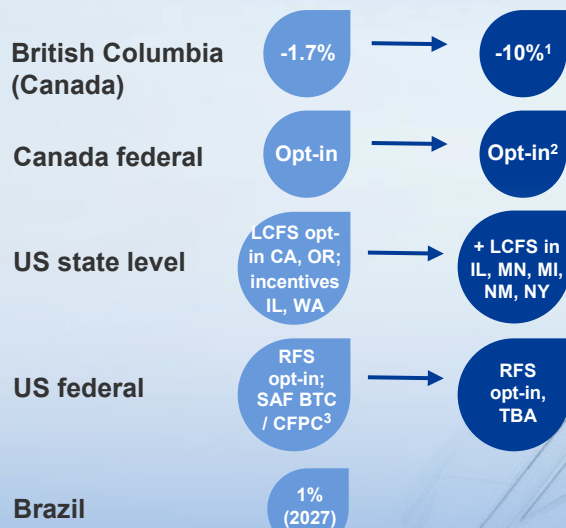
Global SAF market demand outlook¹ (Mt/a)



¹) Including opt-in into road mandates and voluntary demand. Source: Neste estimates.

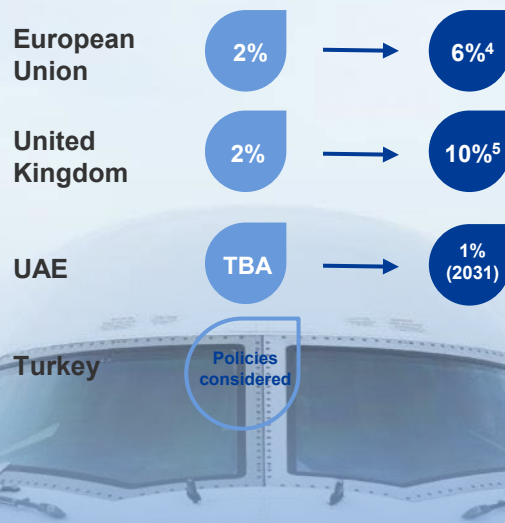
Continuing growth of the SAF market will require policy support to create demand certainty for investments

Americas



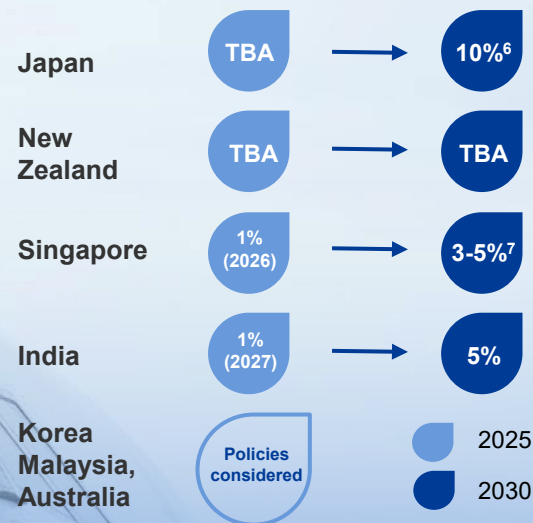
- Market growth in the US driven by a mix of federal and state level incentives (opt-ins and tax credits)
- British Columbia plans to implement an aviation specific emission reduction target
- First LatAm SAF mandate expected for Brazil

EMEA



- SAF mandates in place (NOR, SWE, FRA) to be superseded by an EU-wide SAF mandate in 2025
- UK plans to follow similar timeline
- Policy discussion starting in the Middle East

Asia Pacific



- Frontrunner countries such as Japan and Singapore setting comparable targets and timelines for SAF adoption as Western peers
- SAF policy discussion spreading to an increasing number of countries

1) Carbon intensity reduction target for jet fuel starting in 2024, with -10% CI target in 2030; 2) Canada federal Clean Fuel Standard 3) BTC (Blenders Tax Credit) expected to change to a CFPC (Clean Fuel Production Credit) in 2025; 4) Provisional agreement on ReFuelEU Aviation with 2030 level of 6% including 1.2% RFNBO sub-mandate; 5) UK Net Zero Strategy; 6) METI proposal on May 26, 2023; 7) Sustainable Air Hub Blueprint, February 19, 2024.

Frontrunners in APAC are shaping policies for SAF, with ambitions aligned to those in Europe and North America

SAF regulatory and market developments in APAC

SINGAPORE

Green Plan published in 2021 established first holistic approach for Singapore's climate agenda

International Advisory Panel (set up by CAAS) proposed in Sep 2022 a structural offtake mechanism for SAF; **Blueprint for Sustainable Aviation Hub** announces 1% SAF target in 2026, 3-5% in 2030

International collaborations with US, UK, Japan, New Zealand and Australia on aviation sustainability

AUSTRALIA

Jet Zero Council to advise government on required policies for aviation decarbonization. Aviation White Paper to be released

Qantas-Airbus **SAF Partnership** to invest US\$200 million in the SAF industry in Australia

Federal Budget in May 2024 announced **A\$1.7 billion to commercialise net zero innovations, including low-carbon liquid fuels (e.g. SAF)**. LCLF consultation launched.

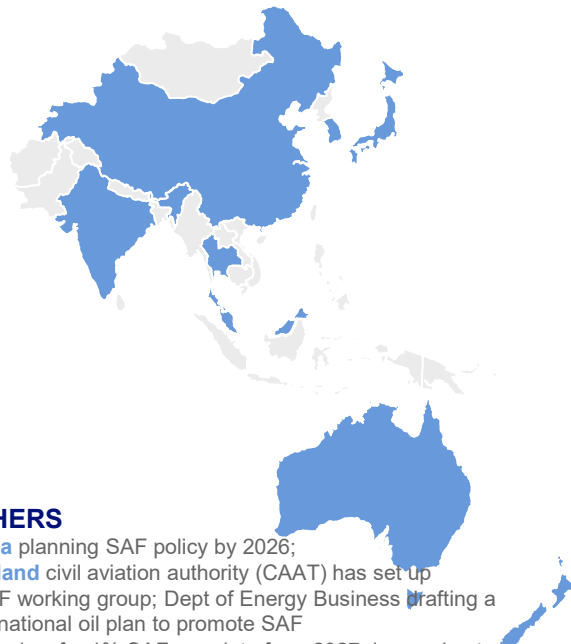
OTHERS

Korea planning SAF policy by 2026;

Thailand civil aviation authority (CAAT) has set up a SAF working group; Dept of Energy Business drafting a new national oil plan to promote SAF

India aims for 1% SAF mandate from 2027, increasing to 2% in 2028

Indonesia has announced plans for a SAF Roadmap to be launched Q3 2024. Possible mandate in 2027



JAPAN

Government has announced plan to introduce a **10% SAF mandate in 2030**; **Public-Private Council to Promote the Introduction of SAF** established in 2022

Basic Policy on Aviation Decarbonisation features SAF as one of five key elements to meet 2030 target of 30% emissions reduction from transport sector

JPY 1 trillion (EUR6.3bil/ USD6.8bil) investment by the public and private sectors in domestic SAF manufacturing in 10 years. Proposal for direct **corporate tax deduction of 30 yen per litre** for domestically produced SAF.

MALAYSIA

National Energy Transition Roadmap targets a SAF mandate of 1% in the short term, rising to 47% by 2050

Ministry of International Trade and Industry (MITI) established **Sustainable Aviation Energy Task Force**

NEW ZEALAND

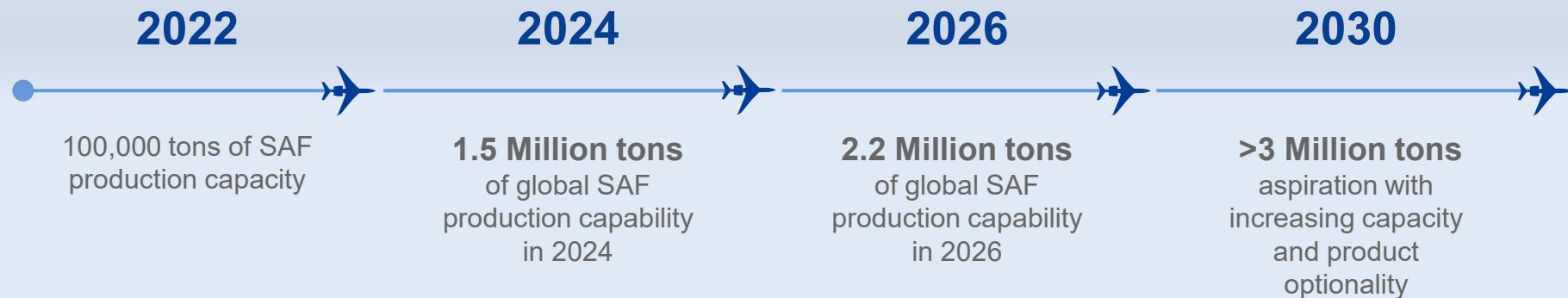
Government announced intention to implement a **dedicated SAF mandate** in 2026

Sustainable Aviation Aotearoa Public-Private partnership launched in November 2022 to recommend policies

First shipment of SAF delivered to Auckland airport for **Air New Zealand** in September 2022

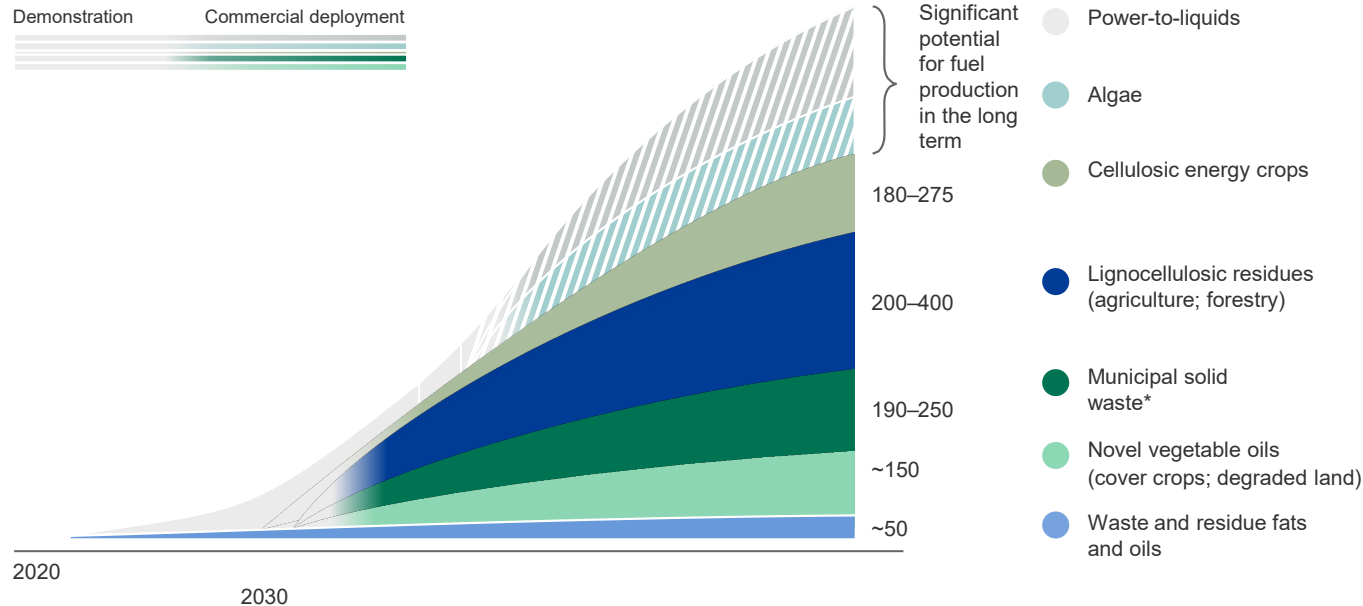
Taking charge of change

Neste is increasing its global SAF production to 2.2 Million tons in 2026



Long-term SAF production scale up is based on continuing expansion of global feedstock pool via new technologies

Global raw material potential for renewable fuels (Mtoe)



New abundant feedstock pools required to reach emission reduction ambitions

Source: Neste analysis based on WEF Clean Skies for Tomorrow and other sources. Biomass potential converted to fuel potential, using around 85% conversion efficiency (weight-based) for fats and oils and novel vegetable oils; around 25% efficiency for lignocellulosic biomass and municipal solid waste.

*80% organic waste, with 20% non-reusable, non-separable plastic waste

Long-term SAF production scale up in APAC will also require project financing

- ~ 43 SAF production facilities (all technologies) planned in Asia Pacific; only five (5) operational facilities in the region in 2024*
- By 2050: ca. USD 3,200 billion investment needs to meet global SAF demand**
- Demand certainty is required for large scale investment in SAF production facilities - Expansion of Neste Singapore refinery to produce 1MT SAF ~ EUR 1.65billion
- Policy support - mandates and/or incentives help create demand certainty, and can drive investment

*Argus SAF Capacity Map 2024

**IATA and ICAO fact sheets

Thank You

