WATSON FARLEY & WILLIAMS

KGAL REAL INVESTMENTS

SUSTAINABLE AVIATION FUELS

THURSDAY 11 JULY 2024

Agenda

15:00	WELCOME AND INTRODUCTION Thomas Engelmann, Head of Energy Transition, KGAL Dr Dirk Janssen, Partner, Watson Farley & Williams
15:10	SAF - TECHNICAL BASICS Antoine Dupuy, Senior Technical Expert, KGAL
15:35	REGULATORY FRAMEWORK FOR SAF Dr Maximilian Boemke, Partner, Watson Farley & Williams
16:00	ANALYSIS OF THE SAF MARKET IN EUROPE Maximilian Held, Aviation Lead, Systemiq
16:25	BREAK
16:40	PRODUCING ESAF – HOW DOES IT WORK AND WHAT ARE THE CHALLENGES Amy Hebert, CEO, Arcadia eFuels
17:05	SAF – HOW DOES AN AIRLINE DEAL WITH IT? Jan Pechstein, Head of Corporate Emissions Management and Sustainable Aviation Fuels, Lufthansa Group
17:30	WHAT IS THE IMPACT OF SAF ON O&G INDUSTRY? Dr Holger Haaf, Senior Net Zero Originator, Uniper
17:55	REDUCING THE CARBON FOOTPRINT - ROLE OF SAF CERTIFICATES Margaux Torreilles, Partner Engagement Manager, SkyNRG
18:20	SHORT BREAK
18:30	PANEL DISCUSSION
19:00	END

Hosts

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Sustainable **A**viation **F**uels
Technical introduction

Aviation's path to net zero

Why does long-haul aviation need SAF to reduce its emissions?

- Alternate fuel solutions in sight, but long haul aviation will have to wait
  - First H_2-powered commercial aircraft expected around **2035** (Airbus) for short haul aircraft, >**2045** for long haul aircraft
  - First electrically and H_2 Fuel Cell powered aircraft will reach market readiness by **2025 - 2030** (small aircraft).

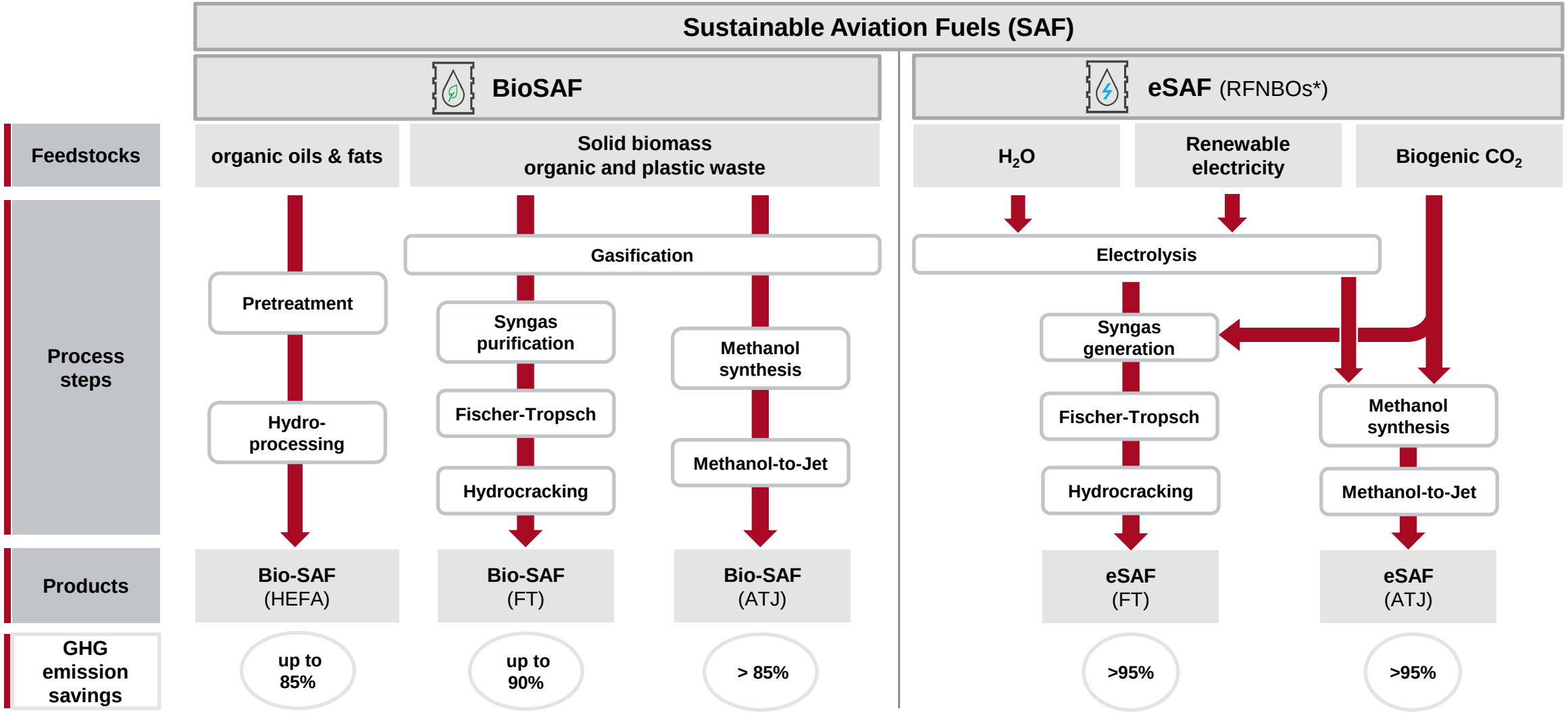
    Significant progress in battery technology is yet required before medium-haul aviation can be envisaged.

- SAFs are "drop-in fuels"
  - Interchangeability with conventional Jet Fuel, no engine modification required
  - Aviation certification authorities already allow up to 50% SAF blends
  - Compatibilty with existing fueling and airport infrastructure

- Fleet renewal and conventional aircraft phase-out will stretch over decades

SAFs offer aviation a bridge to reduce its emissions before overcoming the technological leap to decarbonization

What are Sustainable Aviation Fuels (SAF)?



HEFA: Hydroprocessed Esters and Fatty Acids
ATJ: Alcohol to Jet
FT: Fischer Tropsch
RFNBO: Renewable Fuels of Non Biological Origin

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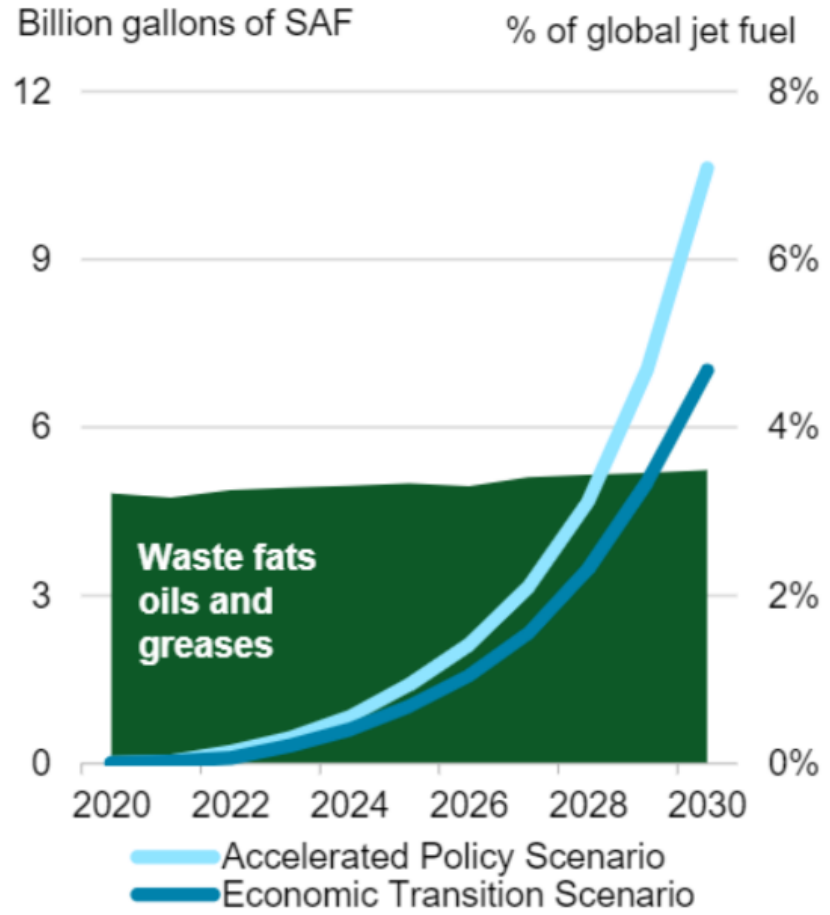
Ressource consumption & feedstock availability

Bio- and eSAFs can help reducing aviation's GHG emissions immediately

Potential SAF supply from waste fats oils and greases, versus SAF demand scenarios



Source: BloombergNEF

➪ ***But*** not all SAFs are equally sustainable and some challenges lie ahead:

BioSAF

Domestic production of biomass in EU is limited
Massive imports are needed, remote producers, potential competition with crops & food industry

Use of forest residues can be controversial and involve sustainability issues

Waste feedstocks are limited and can lead to fraud if not sufficiently regulated

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Ressource consumption & feedstock availability

Bio- and eSAFs can help reducing aviation's GHG emissions immediately

eSAF

Feedstocks for eSAF production are theoretically unlimited but:

Availability of biogenic CO_2 is limited and Direct Air Capture yet needs reach scale and cut costs

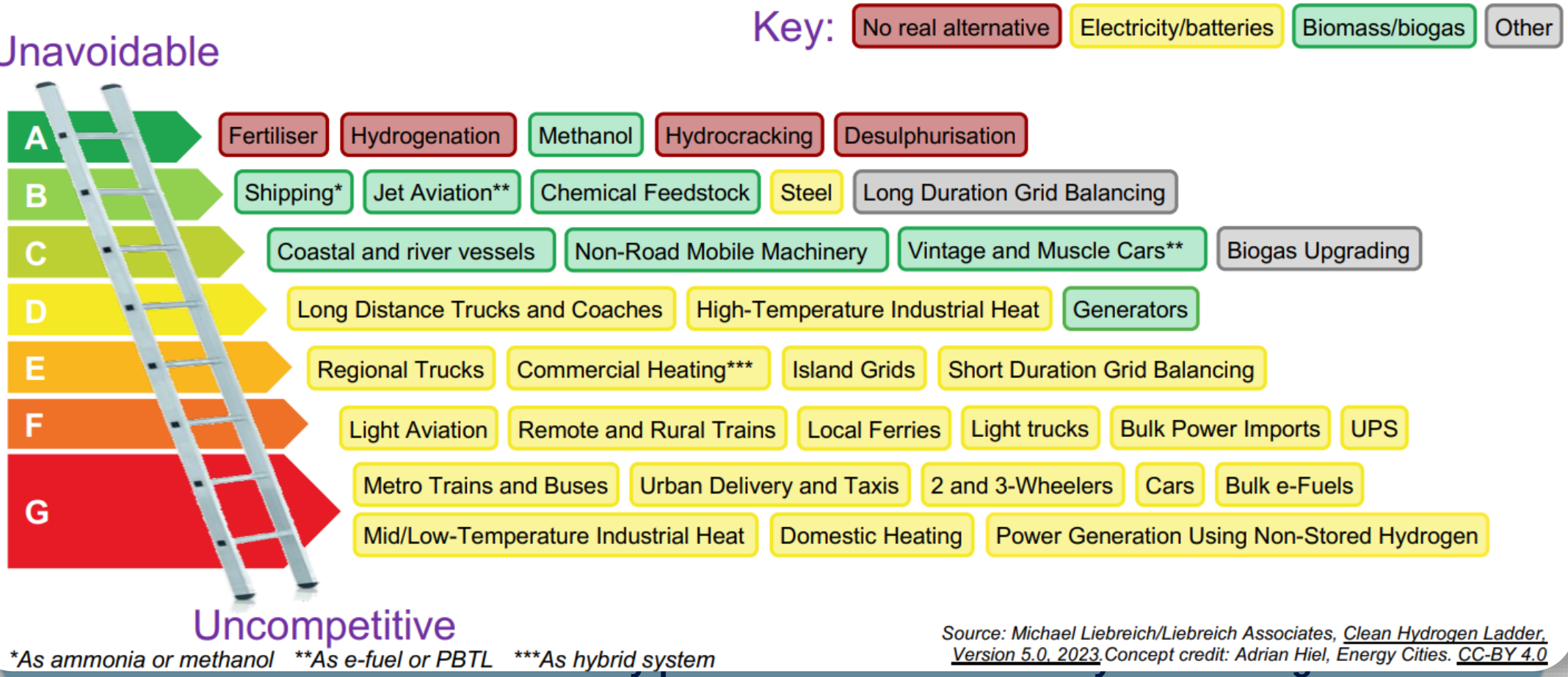
Large amounts of Renewable Electricity and / or green H_2 are required
→ Strong competition for access to RED* II/III compliant electricity / H_2 sources

Ressource consumption & feedstock availability

Bio- a

Hydrogen Ladder 5.0

Liebreich Associates



*As ammonia or methanol **As e-fuel or PBTL ***As hybrid system

Source: Michael Liebreich/Liebreich Associates, Clean Hydrogen Ladder, Version 5.0, 2023.Concept credit: Adrian Hiel, Energy Cities. CC-BY 4.0

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Ressource consumption & feedstock availability

Bio- and eSAFs can help reducing aviation's GHG emissions immediately

eSAF

Feedstocks for eSAF production are theoretically unlimited but:

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Large amounts of Renewable Electricity and / or green H_2 are required
→ Strong competition for access to RED* II/III compliant electricity / H_2 sources

⇨ BioSAF and eSAF are equally needed to reduce aviation's emissions

⇨ eSAF has better scalability potential and sustainability on the long run

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REGULATORY FRAMEWORK FOR SAF

DR MAXIMILIAN BOEMKE, PARTNER, WATSON FARLEY & WILLIAMS

Regulatory Framework for SAF
General Background

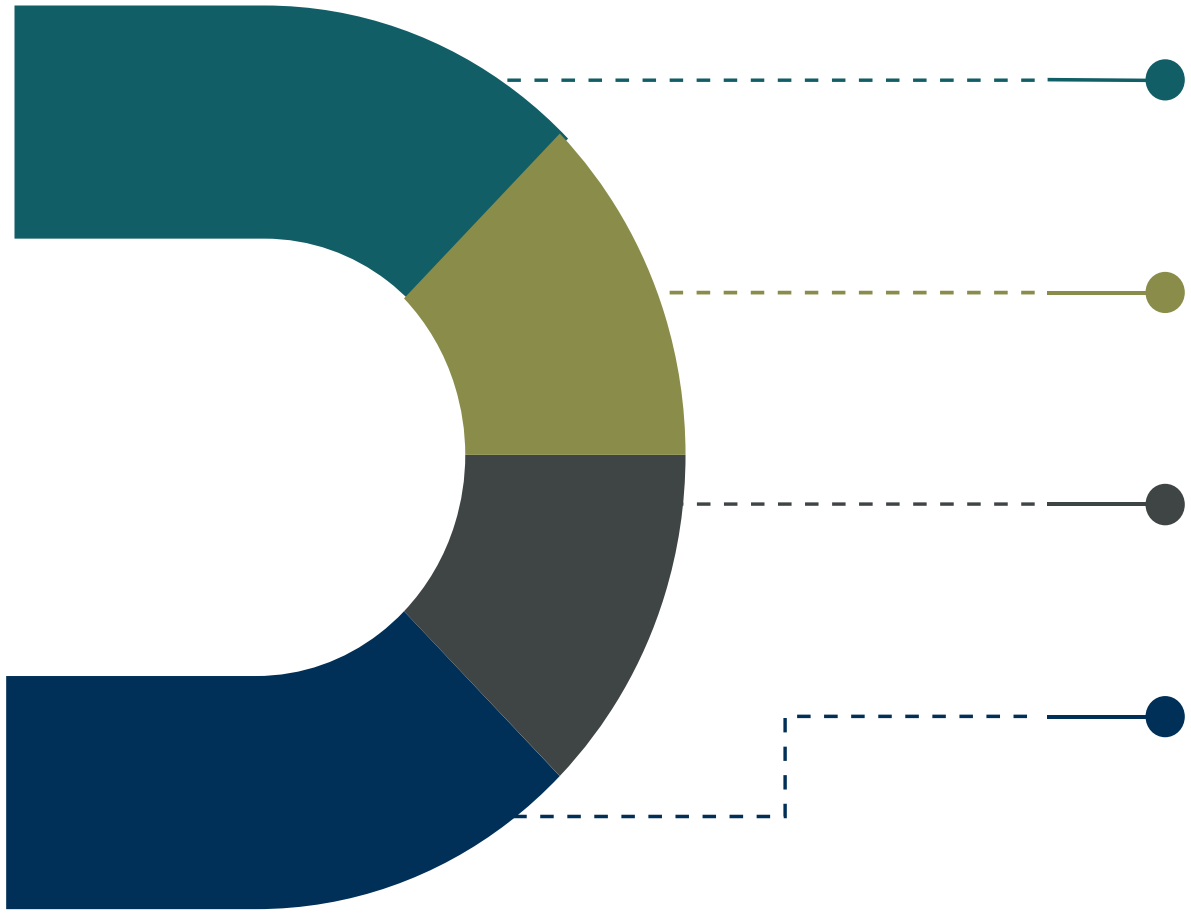
EU Fit for 55

- **General initiative to reduce the EUs net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels**
- Contains several legislative proposals and initiatives
- Specific targets set for all major industry sectors by EU regulations to ensure equal implementation in all EU member states
- These regulations contain specific measures tailored to the relevant industry
- One major theme is to introduce binding reduction targets for fuel consuming industry sectors which cannot be electrified , e.g. RE Fuel EU Martine
- AND **ReFuel EU Aviation (Regulation EU 2023/2405)**
  - **adopted on 18 October 2023**
  - **Entry into force 1 January 2024 (some provisions 1 January 2025)**

REFuel EU Aviation is the main EU Regulation providing the regulatory framework for aviation.

Regulatory Framework for SAF
RE Fuel EU Aviation

General Objectives



The legislation is designed to steer the aviation industry toward these environmental goals.

SAFs are essential tools for reducing carbon emissions in the short and medium term

Rectification of existing impediments to SAF development, such as low supply and significantly higher costs in comparison to traditional fossil fuels.

Industry wide obligations aiming at all industry players (i.e fuel suppliers, airports, airlines)

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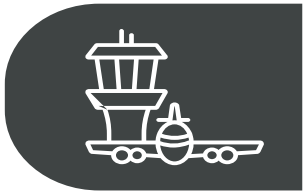
Regulatory Framework for SAF
RE Fuel EU Aviation

Airlines

operating within the EU, which means all departures from EU airports irrespective of the destination. This means that every flight departing from major EU airports must include a minimum SAF blend, regardless of the airline's origin.



Airports

EU airports must provide the necessary infrastructure for SAF storage and blending to support fuel suppliers and airlines in fulfilling their obligations.

Fuel Suppliers

operating within the EU. Fuel suppliers must ensure that 2% of fuel made available at EU airports is SAF in 2025, rising to 6% in 2030, 20% in 2035, and gradually to 70% in 2050.

Regulatory Framework for SAF
RE Fuel EU Aviation – in Detail

SAF Targets

- Beginning in 2025, a minimum share of SAF is required, and from 2030, a minimum share of synthetic fuels becomes mandatory.
- These proportions will progressively increase, culminating in the year 2050.
- The stipulated targets demand that fuel suppliers include
  - 2% SAF in 2025,
  - 6% in 2030,
  - and a substantial 70% in 2050.
- Additionally, starting in 2030, 1.2% of the fuels must be synthetic, rising to 35% by 2050.

Regulatory Framework for SAF
RE Fuel EU Aviation – in Detail

SAF Certification Scheme

- ReFuel EU Aviation refers to the certification scheme established under RED III, which aims to help consumers make informed choices about the environmental performance of aircraft operators using SAF.
- For SAF to qualify as a CEF (Certified Emission Factor), it must meet certain criteria as certified by an independent approved Sustainability Certification Scheme (SCS).

Regulatory Framework for SAF
RE Fuel EU Aviation – in Detail

Type of eligible SAF

Certified biofuels

These are biofuels produced from agricultural or forestry residues, algae, and bio-waste.

Recycled carbon aviation fuels

These are fuels produced from recycled carbon sources, such as carbon dioxide captured from industrial processes.

Renewable fuels of non-biological origin

This category includes renewable hydrogen and other non-biological renewable fuels.

Low-carbon aviation fuels (LCAF)

This category includes low-carbon hydrogen and other low-carbon fuels that do not fall under the biofuel or non-biological renewable fuel categories

Regulatory Framework for SAF
RE Fuel EU Aviation – in Detail

- These fuels must comply with the RED III **sustainability** and **emissions saving criteria**.
- The maximum share of SAF and synthetic aviation fuels in the total aviation fuel consumption is set at **70%**, with the exception of biofuels from food and feed crops.
- **Low-carbon aviation fuels** can also be used to reach the minimum shares in the respective part of the regulation.
- This approach aims to promote the use of sustainable and low-carbon alternatives while **ensuring a balance between different types of fuels**.

Regulatory Framework for SAF
RE Fuel EU Aviation – in Detail

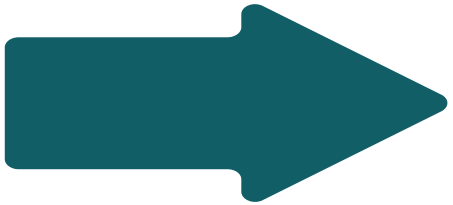
Anti-Tankering Provisions

- Tankering practices refer to the practice of aircraft operators uplifting more aviation fuel than necessary at a given airport, with the aim of **avoiding refueling partially or fully** at a destination airport where aviation fuel is more expensive.
- This practice can lead to **additional emissions from the extra weight** of the aircraft carrying excessive amounts of fuel.
- Airlines must **carry only the fuel necessary for safe flights**, reducing emissions from excess weight.
- Aircraft operators must **uplift at least 90% of their annual fuel needs** at EU airports to discourage fuel hoarding or tankering practices.

Regulatory Framework for SAF
RE Fuel EU Aviation – in Detail

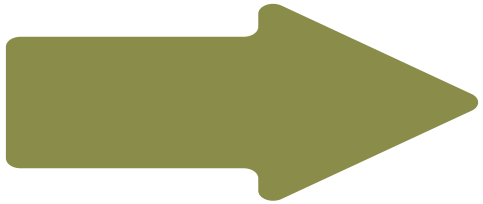
Enforcement

The ReFuel EU Aviation initiative will be enforced through a combination of measures:.



Member State Authorities

Member state authorities will propose penalties for fuel suppliers and airlines but should adhere to the criteria defined by the European Commission.



Reporting Obligations

Reporting obligations for fuel suppliers and aircraft operators will be enforced by designated competent authorities, with revenues from fines for non-compliance being directed to research and innovation into bridging the price differential between sustainable and conventional fuels.

Consequences for non-compliance with ReFuel EU

The ReFuel EU legislation includes financial penalties for fuel suppliers and operators failing to comply with the obligations laid down in the regulation. The penalties will be significant. .

Speaker

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Maximilian is a Partner in the Regulatory, Public Law and Competition Group.

With a strong focus on the energy (conventional, renewable and grid-related) sector, Maximilian has extensive expertise advising clients on regulatory matters and the drafting and negotiation of supply and trading and project contracts, as well as on M&A and finance transactions. He also regularly represents clients in energy specific litigation and arbitration procedures.

Maximilian also has considerable experience in environmental, water protection and mining law, again especially as they intersect with the energy sector, for example advising on the permit and licensing procedures of several power plants. This advice also includes dealing with environmental claims against granted permits and/or licenses.

Finally, Maximilian advises on chemical law matters, in particular regarding the European REACH regulation. Maximilian has also been awarded “The Best Lawyers in Germany” in the field of Energy Law by Best Lawyers in cooperation with business magazine Handelsblatt.

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Project SkyPower

Analysis of the SAF market in Europe

Dr Maximilian Held
Aviation Lead at Systemiq
Manager at Project SkyPower

11 July 2024

Agenda for today

Global SAF pipeline vs net-zero targets

European e-SAF pipeline

Regulatory support for SAF in the EU

Barriers to Final Investment Decisions

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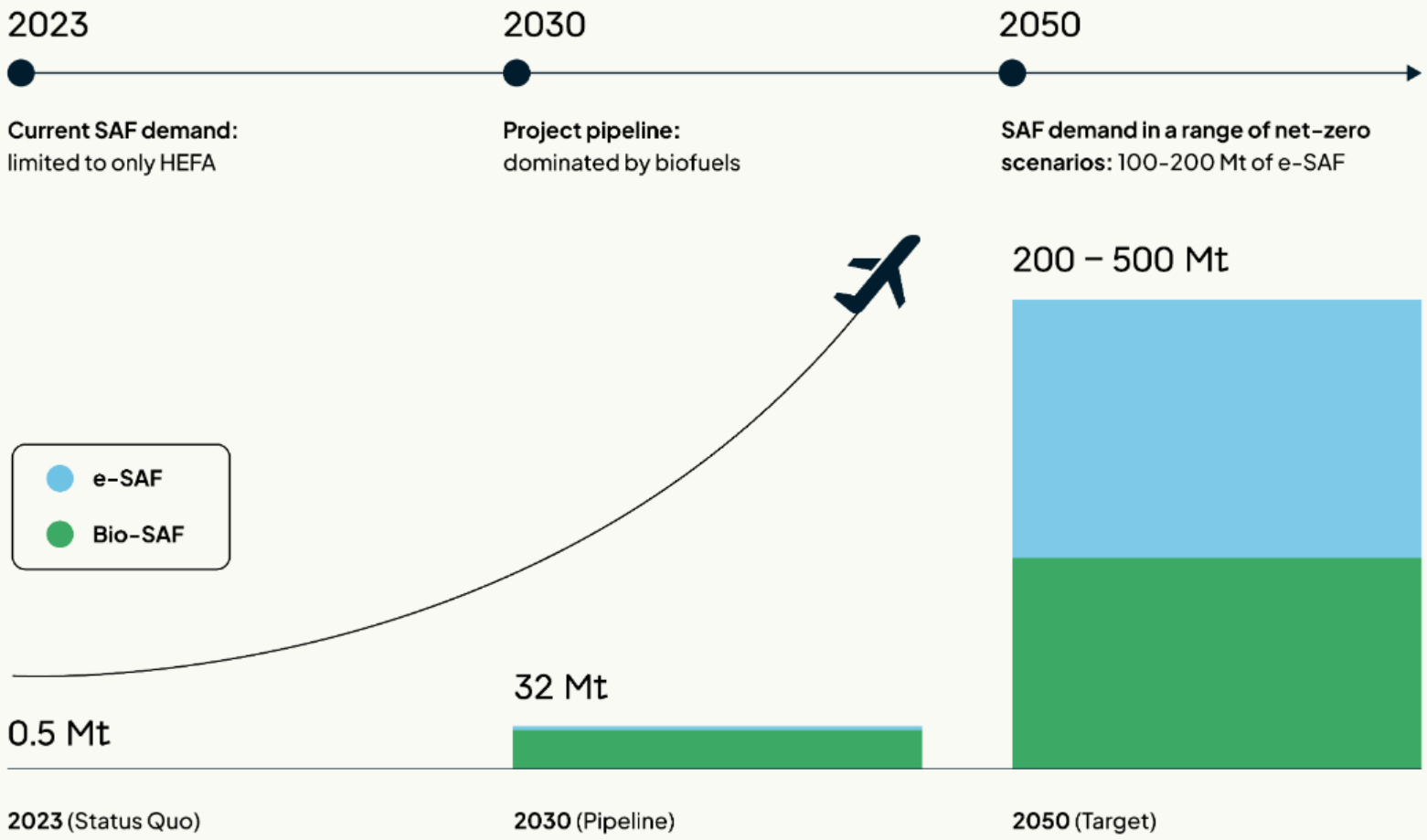
While 25-75% of the global SAF use by 2050 needs to come from e-SAF, the current SAF pipeline is dominated by HEFA.



1. IATA (2023) 2. Announced projects include projects that have not yet reached FID. HEFA: Hydroprocessed Esters and Fatty Acids.
3. MPP (2022) Making Net-Zero Aviation Possible. The low-e-SAF scenario relies on 40% e-SAF (share on total SAF use) by 2050, the high-e-SAF scenario on close to 75% e-SAF.

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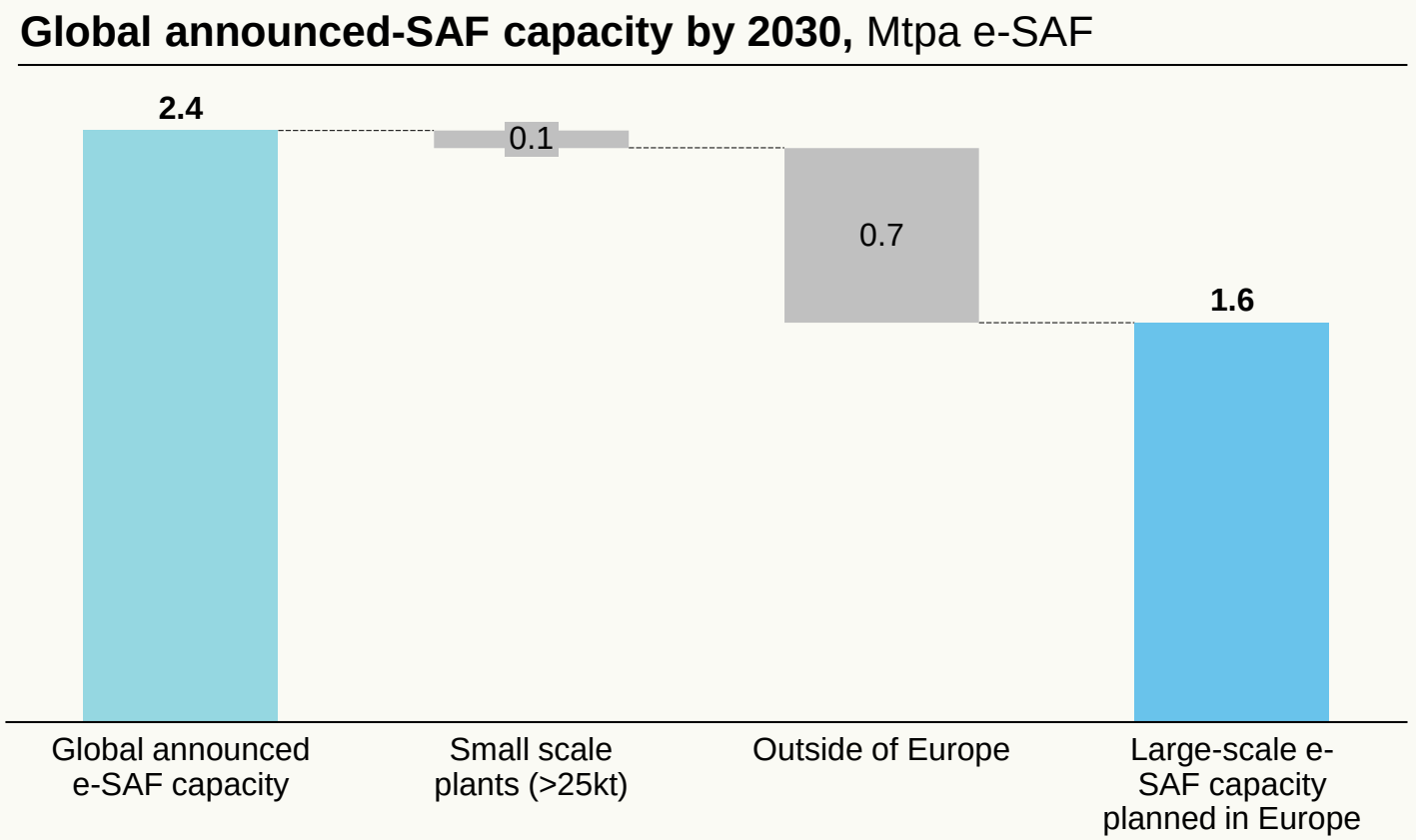
Two thirds of the globally announced e-SAF production capacity is planned in Europe.



Sources: Systemiq analysis based on public information, Misson Possible Partnership decarbonisation project tracker, Transport & Environment (2024) The challenges of scaling up e-kerosene production in Europe. Note: status January 2024

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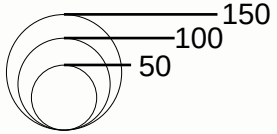
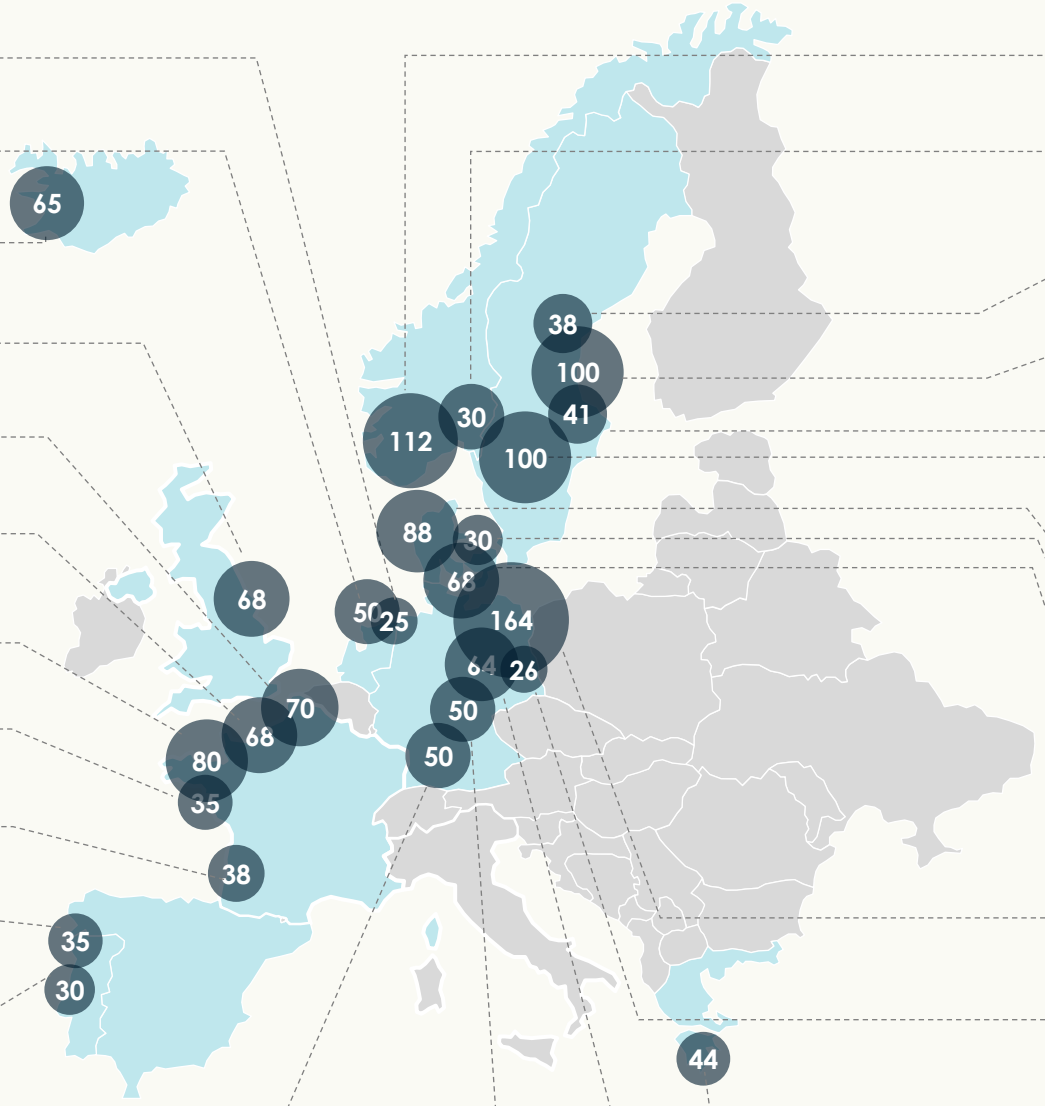
Preliminary analysis

27 large-scale e-SAF plants (~1.6 Mt) in Europe announced

Legend: Capacity, kilotonnes of e-SAF per year



Source: Systemiq and MPP (2024), based on public announcements and press search.



Ineratec-Zenith Energy (2027)	Nordic Electrofuel 'E-fuel 2' (2029)
Synkero (2027)	Norsk e-Fuel 'Alpha' (2027)
IdunnH2 (2028)	SkyFuelH2 (2028)
Naboo (2029)	BioÖstrand (2029)
Reuze (2028)	HySkies (shelved)
KerEAUzen (2028)	HyX (2030)
SAF+ / Lhyfe (2030)	Fjord PtX (2028)
Take Kair (2028)	Green Fuels for Denmark (2029)
BioTJet (2028)	Endor (2027)
Smartenergy, Ren, Lipor (N/A)	HH2E (2030)
P2X – Portugal (2027)	Concrete Chemicals (2027)
EGHAC (2029)	Jangada (2027)

Announcement of location and project partners expected by H1/2024

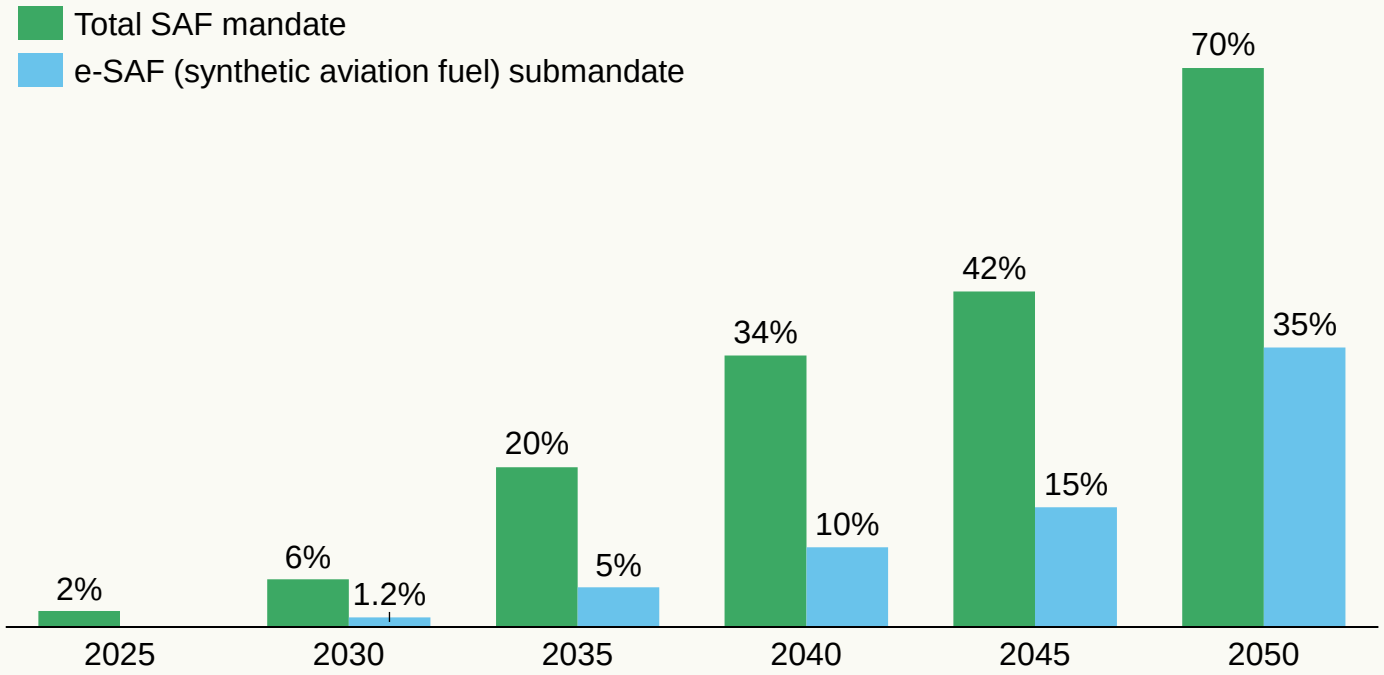
SkyNRG (2028)	Hykero (2028)
Dimensional Energy (N/A)	

Expected start of operation

Notes: All projects plan to use biogenic CO_2. Some projects also plan to use point source CO_2 from cement or steel production. Map excludes projects <25 ktpa e-SAF capacity.

The EU has a comprehensive regulatory framework on SAF, but novel SAF production pathways (e.g. e-SAF) struggle to scale.

SAF blending mandate in the EEA, in %



Public financial support

Non-exhaustive selection of public support mechanisms from the EU or Member States:

- **SAF Allowances:** 20 mn allowances (representing support of ~EUR 1.6 bn)
- **EU Innovation Fund:** EUR ~100 mn grants
- **European H2 Bank:** EUR ~3 bn
- **EU Catalyst Partnership:** EUR 820 mn
- **Invest EU / EIB low-interest loans**
- **National instruments** (e.g. H2Global)

Source: ReFuelEU legislation (2023); Systemiq analysis (2024)

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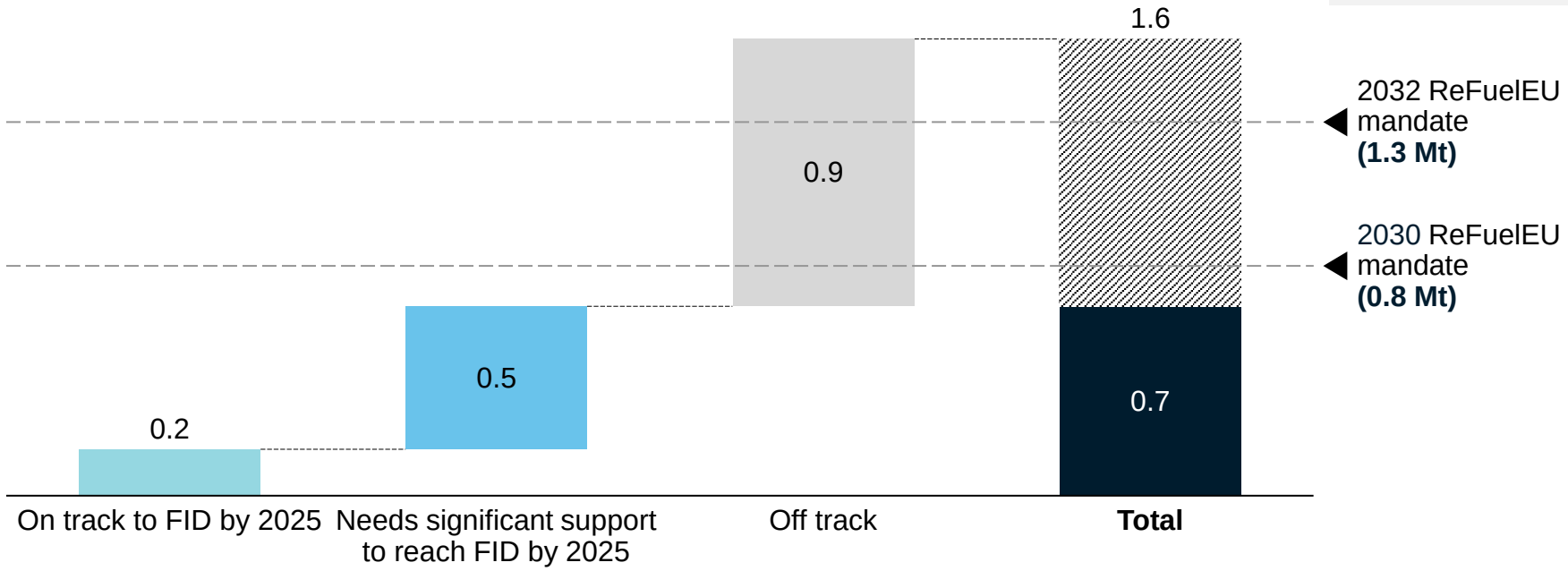
The majority of the planned e-SAF production capacity in Europe is not on track to reach Final Investment Decision.

European announced e-SAF capacity, in Mtpa e-SAF output, ranked by likelihood of reaching FID by 2025

Preliminary analysis



Notes: Planned e-SAF capacity only refers to e-SAF output and does not include byproducts such as e-naphtha or e-diesel/gasoline. If announcement does not state SAF fraction of total product output, a SAF share of 70% is assumed. Some plants are hybrid power and biomass to liquid plants (PBtL), for which the e-SAF share on the total SAF fraction is assumed as 50%, the rest being classified as biofuel. The European (EEA+UK) fuel consumption by 2030 is assumed as 67 Mt (from Destination 2050 report).
Source: Press search. Non-exhaustive data, upsides possible. Data status: 8 Feb 2024.

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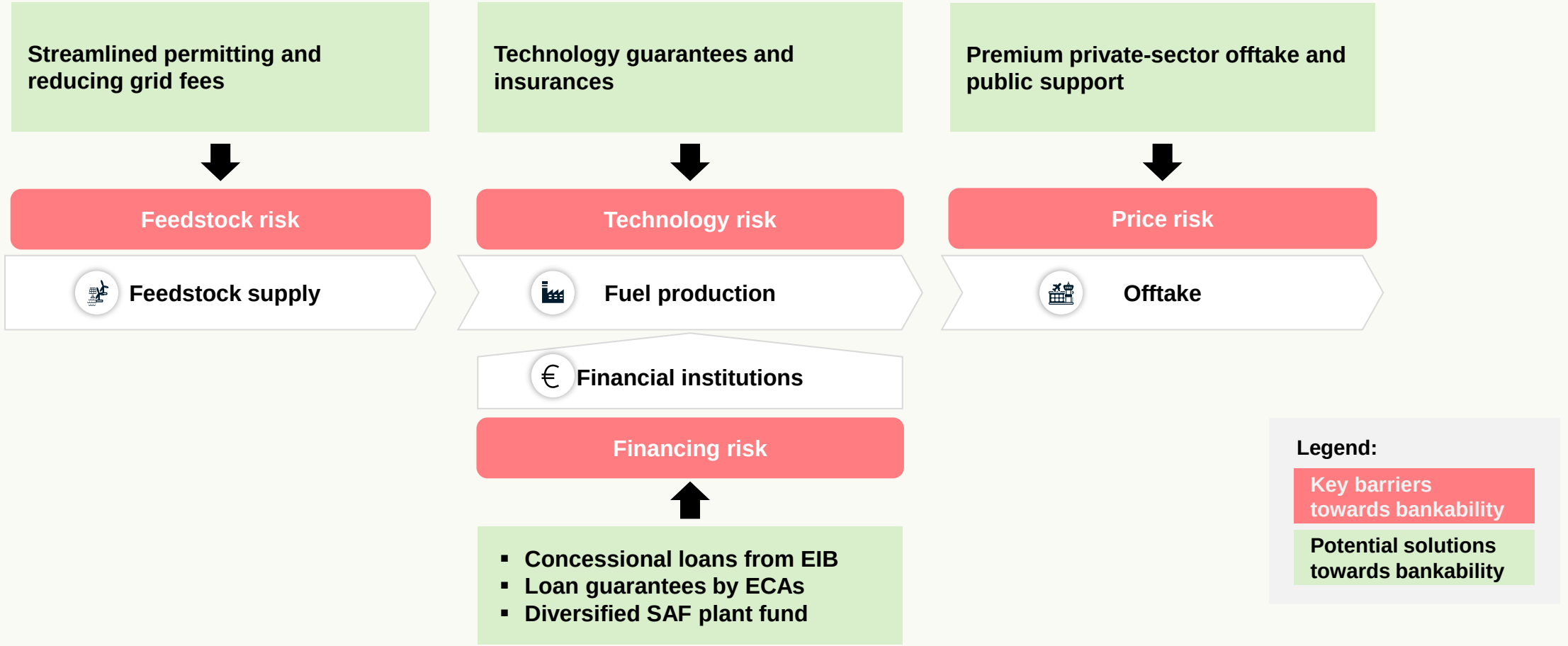
Four main barriers prevent e-SAF projects to getting to FID but can be overcome by a combination of solutions.



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Summary: e-SAF can improve the energy trilemma but needs to reach commercial scale by 2030 to unlock its cost-down potential and achieve the required production volumes for net zero by 2050.

Energy sustainability

0.5 Gt CO2e abatement potential by 2050, while avoiding indirect land use change emissions and biodiversity loss

Energy affordability

Potential to become the **most affordable SAF** type in the long run; **40bn market opportunity** in Europe alone[1]

Energy security

Europe will likely not be the best location to produce e-SAF at low cost, however, a certain level of **intra-European domestic production can improve supply security.**

Note: [1] Number refers to offtake in Europe not production, as production may occur also outside of Europe. High-level estimation assumes total SAF demand of 70 Mt by 2050; 35% of SAF to be e-SAF, price of e-SAF in the long run to be 1,500-2,000 EUR/tonne.

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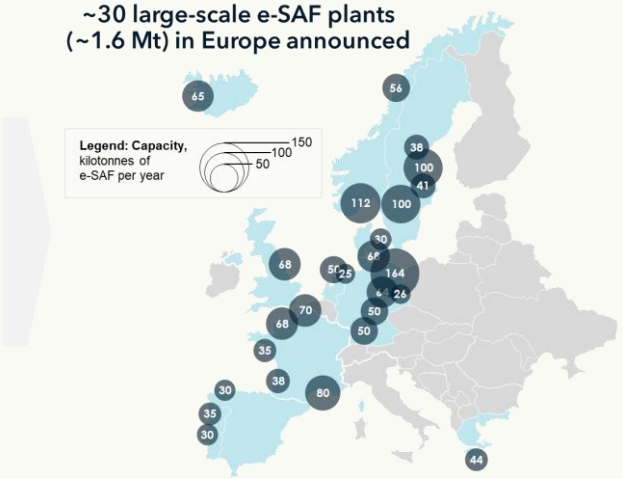
Project SkyPower

A **CEO-led cross-value chain initiative to make e-SAF a commercial reality by 2030**

FIND OUT MORE

What?

Paving the way for the **first large-scale e-SAF plants in Europe to reach Final Investment Decision** by end of 2025



Who?

- **Led by 12 CEOs from across the European aviation value chain**

KGAL · AIRFRANCE KLM GROUP · Arcadia eFuels · Copenhagen Airports CPH · ING · NATIXIS CORPORATE AND INVESTMENT BANKING · ROCKTON · SKYNRG · TEN TECHNIP ENERGIES · TOPSOE · VELOCYS · VICTOR A BETTER WAY TO FLY

- **10+ additional companies in working groups. Open for others to join**
- **Powered by** SYSTEMIQ · MISSION POSSIBLE PARTNERSHIP · Green Finance Institute
- **Supported by** Breakthrough Energy · CIFF CHILDREN'S INVESTMENT FUND FOUNDATION · climateworks FOUNDATION

How?

Through a series of **working group meetings and investment fora** (at pan-European and country-level):

1. **Creating transparency around value chain economics**, key risks, barriers and solutions
2. **Raising the confidence of investors** to finance e-SAF projects
3. **Unifying the voices of the e-SAF ecosystem** behind a solution set required to create positive business cases for e-SAF projects

When?

May 2024 – Dec 2025

Thank you.

Reach us at: maximilian.held@systemiq.earth or secretariat@project-skypower.org

SYSTEMIQ

Project SkyPower

Arcadia™

eFuels

July 2024 SAF Webinar: Producing eSAF

Amy Hebert, CEO

Time is of the Essence

- Carbon emissions are a global issue
- We **cannot afford to wait**, now is the time for energy transition
- We need to decarbonize and eFuels are a key to this transition

Market Demand is Here

- We are **less than 6 years away from eSAF mandates** in the EU
- **Demand is driven** by mandate compliance and voluntary energy transition strategy
- Arcadia eFuels meets the market demand with one of the **largest scale and most advanced eSAF plants**
- **The world is relying on all of us!**

Building a cleaner future starts now

What are eFuels?

eFuels are considered Sustainable Aviation fuel but do not use farmland or use waste oils

Fossil Fuels

CRUDE OIL BASED

NATURAL GAS BASED

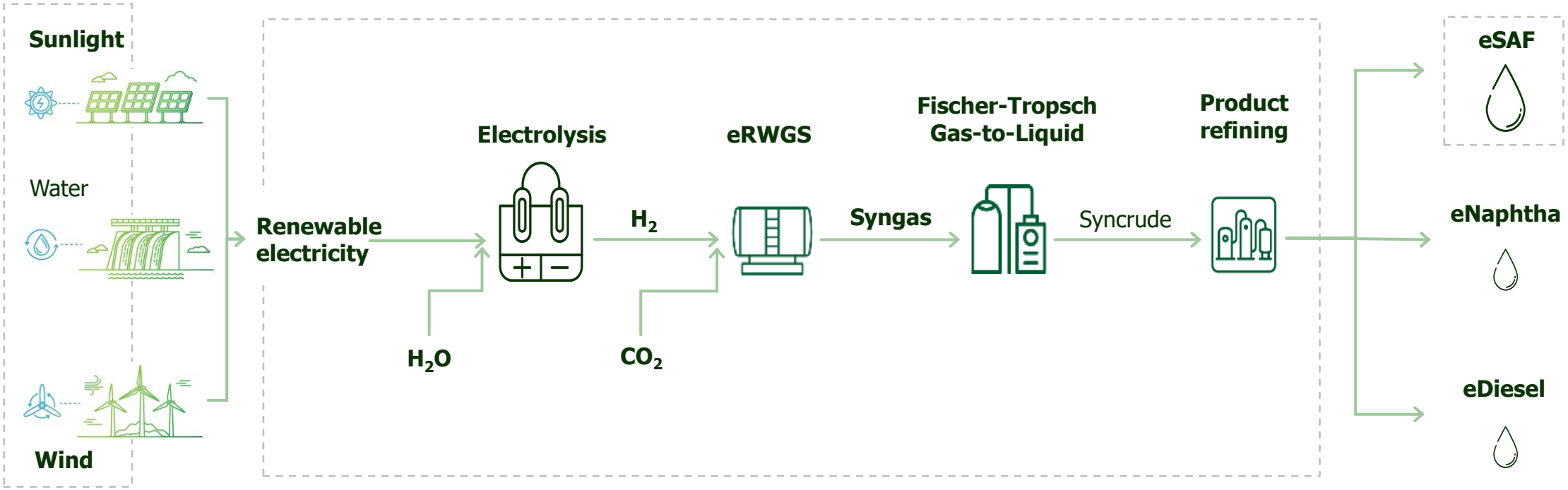
Sustainable Aviation Fuel (SAF)

BIO FUELS
Transesterification
Alcohol to Jet

RENEWABLE FUELS
HVO; Hydrotreated vegetable oil or other waste feedstocks

eFUELS produced from water and captured carbon

eSAF Production Process Overview



Innovative integration of proven technology building blocks

About Arcadia eFuels

- Pure-play eFuels (**eSAF**, eDiesel, eNaphtha) developer and operator
- Three projects underway in **Denmark, UK** and **USA** with others in the queue
- Highly capable **international team** with **extensive GtL project**, operating, marketing experience
- "Design, build and operate"; standardized commercial scale plant design (**80 KT/yr**)
- Innovative design leveraging **proven technology**

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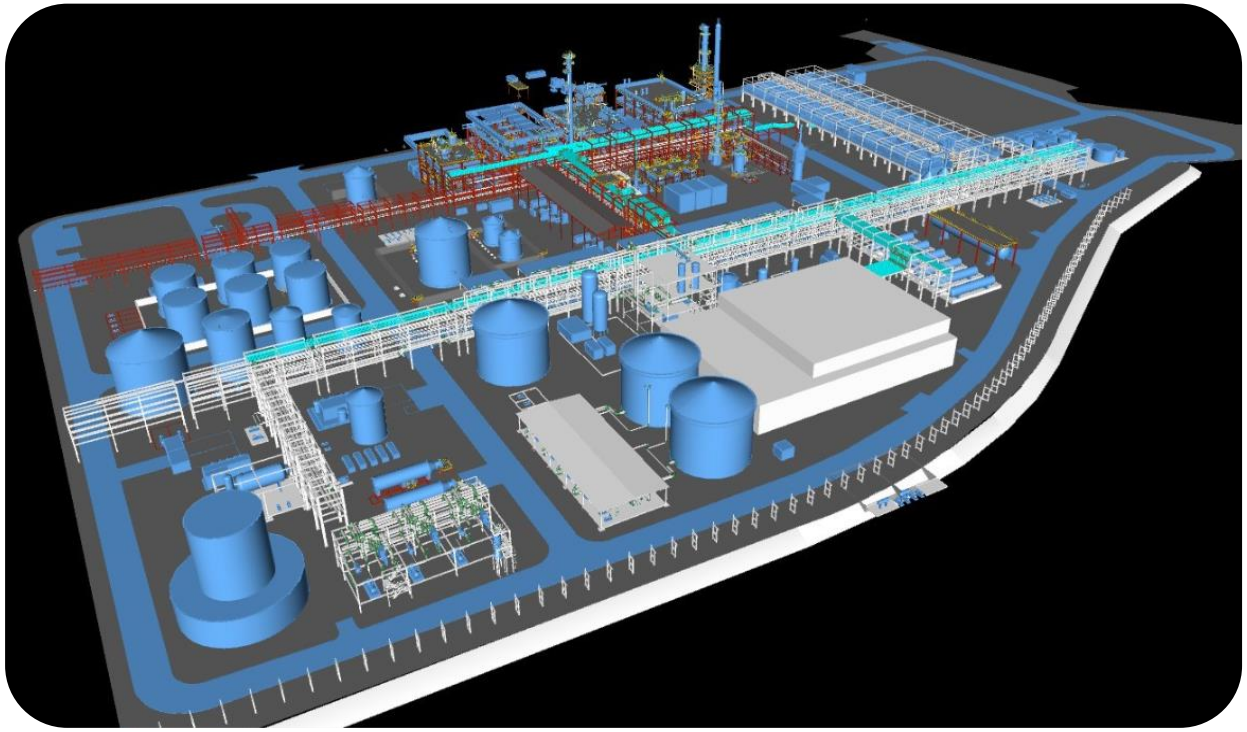
Project ENDOR (Vordingborg, Denmark) Highlights

- **Fully electrified** commercial scale eFuel/eSAF
- Will **reduce CO2 emissions by 260 KT/year**
- Raw Materials are **renewable electricity, biogenic CO2 and sea water**
- Project size:
  - **80 KT eFuels/year**
  - **360 MW substation**
  - **280 MW electrolyzer**



Project ENDOR Status

- **Completed FEED** with Technip Energies and Hitachi
- **Working towards FID** and Financial close with BNP Paribas as our financial advisor
- **Finalizing** extensive **project documents**, equity and debt commitments as well as govt funding and support
- 3+ year construction; **Product to market in 2028**

Market Challenges

- RFNBO compliance
- Capital costs and fully wrapped lump sum EPC
- The green premium
- Project Finance

Challenge: RFNBO Compliance

Arcadia eFuels

Options overview

	1. Direct connection	2. Grid connection			
		(2) >90% RES	(3) <18 gCO_2eq/MJ	(4) Imbalance settlement period	(5) Electricity from the grid with further requirements
Additionality +	✓	✗	✗	✗	✓
Temporal correlation	✗	✗	✓	✗	✓
Geographical correlation	✗	✗	✓	✗	✓
Renewable PPA	✗	✗	✓	✗	✓

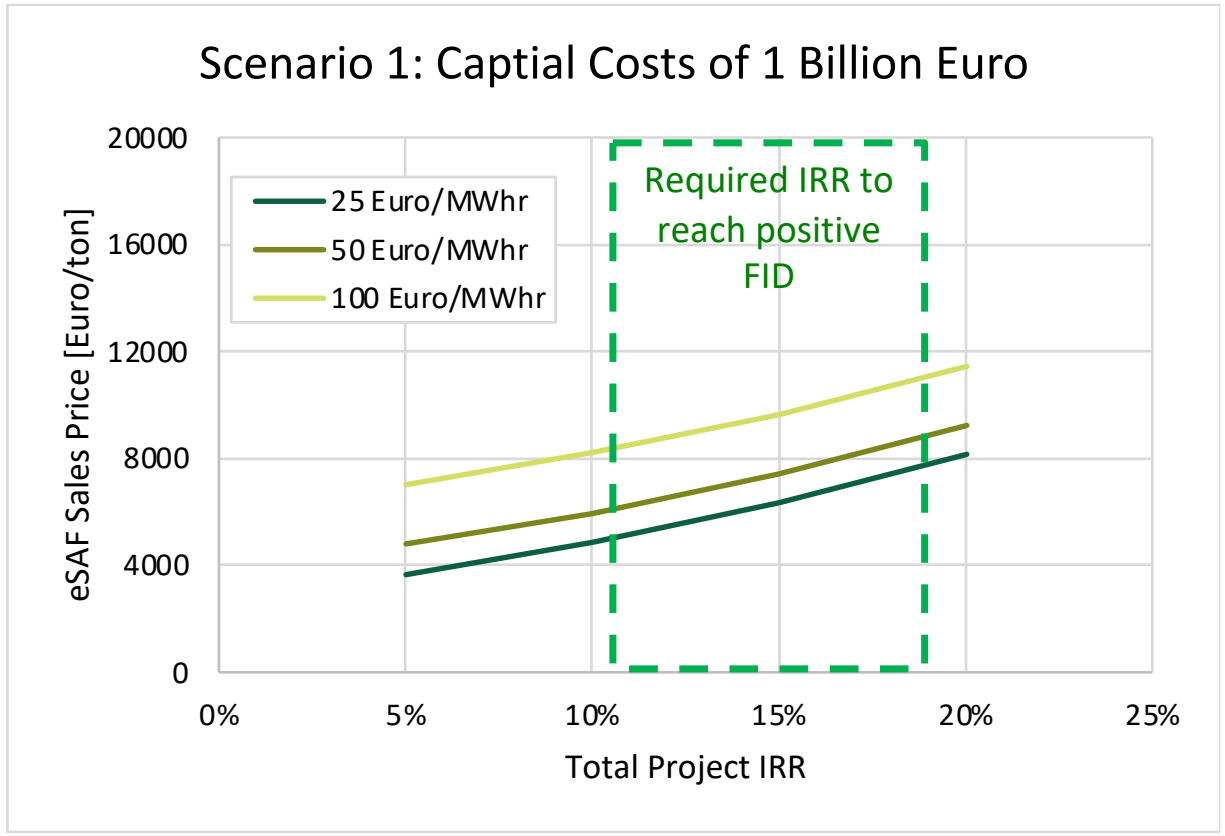
ISCC International Sustainability & Carbon Certification

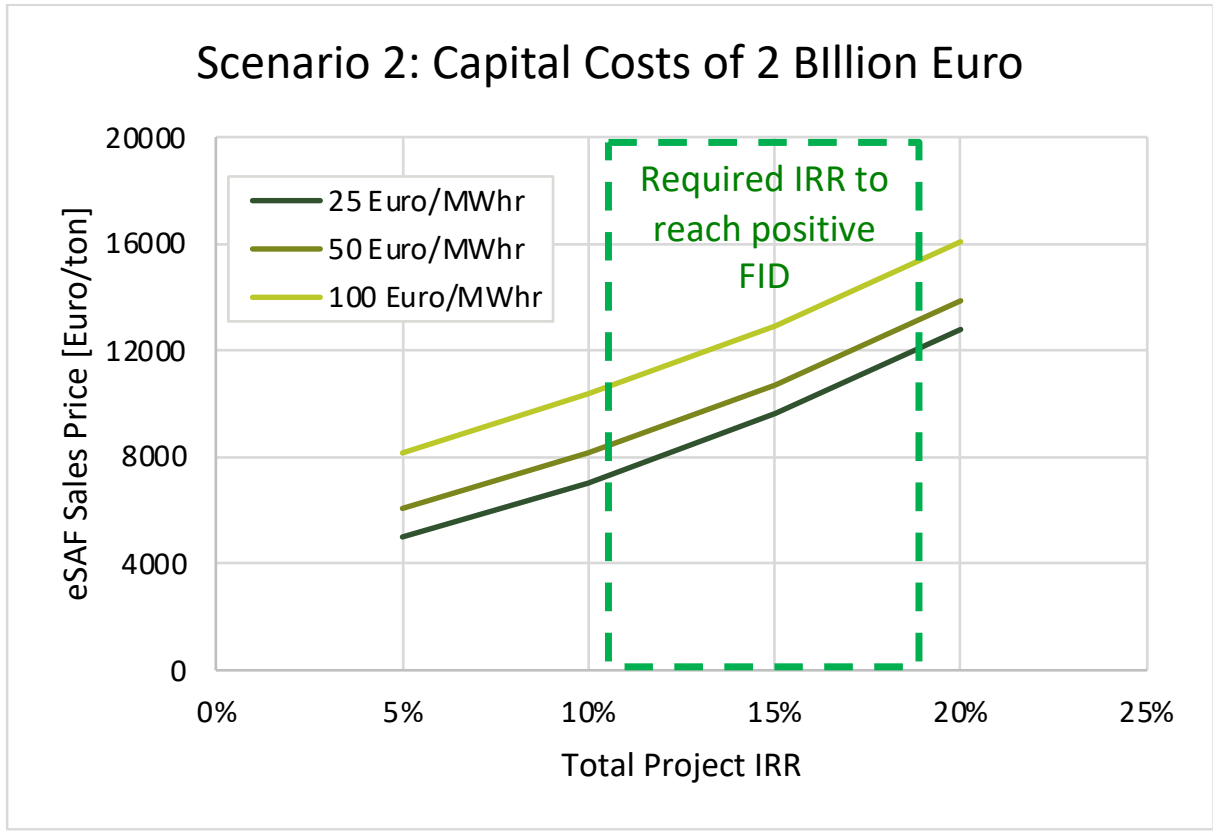
Challenge: EPC LSTK (Lump Sum Turn Key)

- Banks and ECA's requiring LSTK EPC contracts
- EPC's not willing to take risks for LSTK
- If an EPC will do a LSTK, then will charge 15-20% premium

LSTK increases capital significantly; could make some eSAF projects unaffordable

Generic Business Case eFuels Project



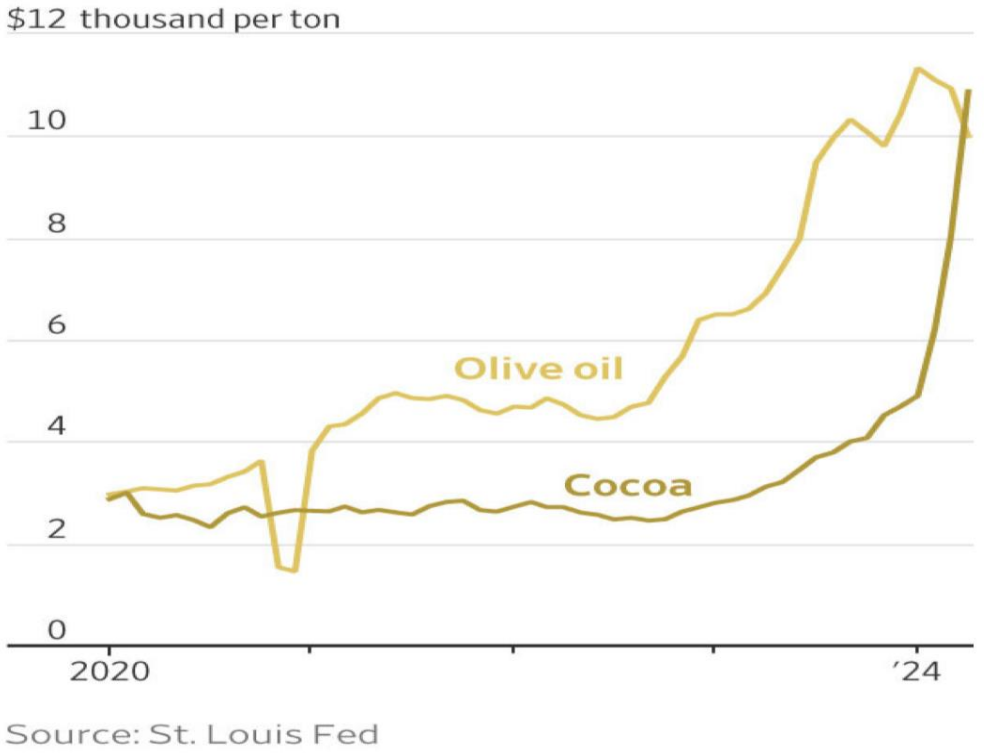


- Any pathway to eSAF will be capital intensive (1B – 2B EUR)
- **6 - 16x** costs above fossil kerosene

Challenge: Green Premium

- Mandates for drop in fuel
- Incentives to bridge green premium
- Debt support at low costs
- Revenue certainty

Climate Change is far reaching: Causing everyday food items to increase



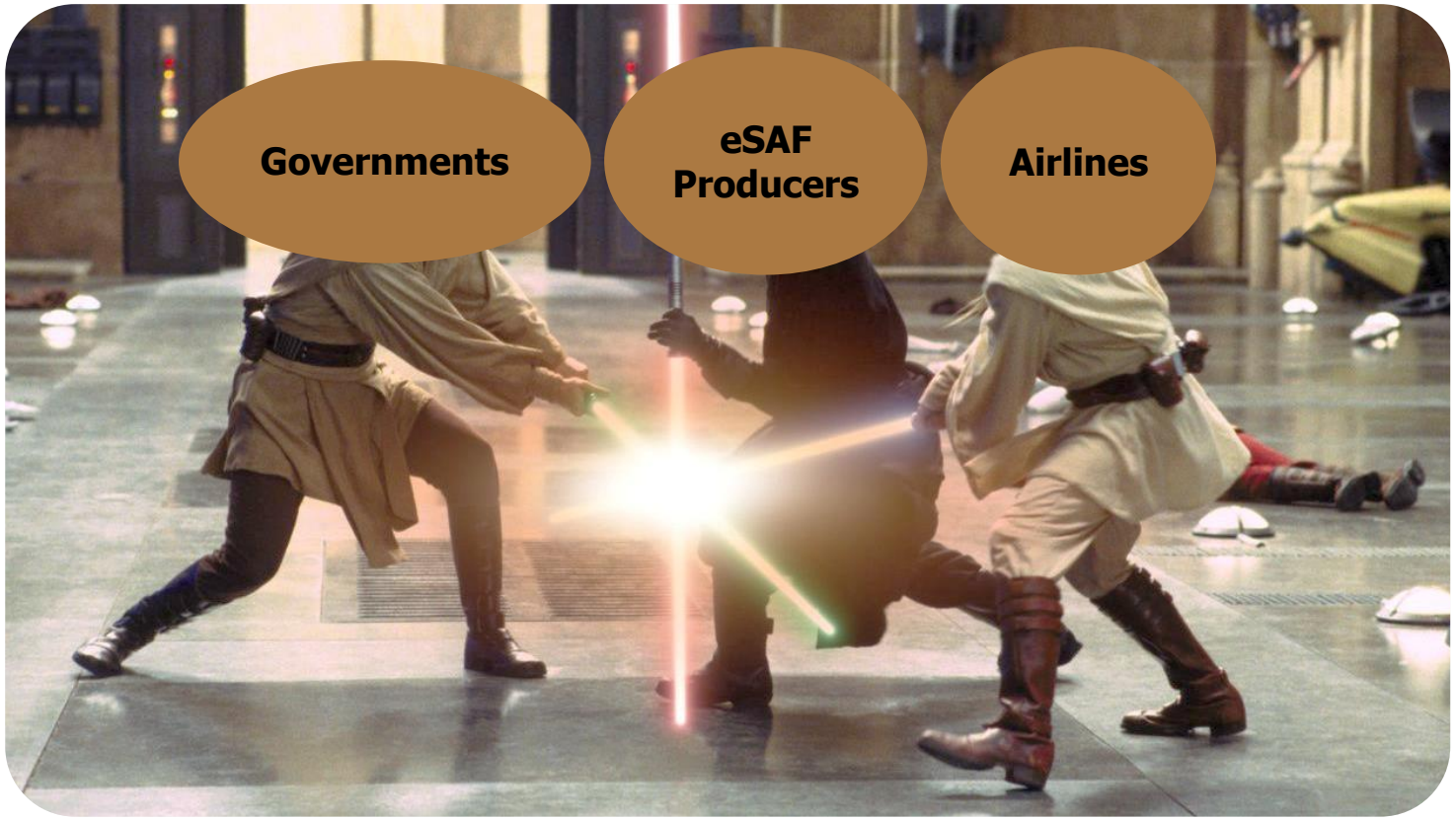
Climate change is significantly affecting crop pricing

Challenge: Project Finance

- Numerous project documents needed
- Fully binding long term offtake and raw material agreements
- Equity Raise Process
- Debt and ECA Raise Process

Summary

- No shortage of Challenges
- Need to work together to solve
- Time is of the essence



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LUFTHANSA GROUP

Sustainable Aviation Fuel

How does Lufthansa Group deal with it?

July, 11th 2024

Jan Pechstein, FRA CE

Background: SAF will be required to achieve Lufthansa Group's CO_2 mitigation goals

CO_2 Emissions Target system

First European Airline to be SBTi validated

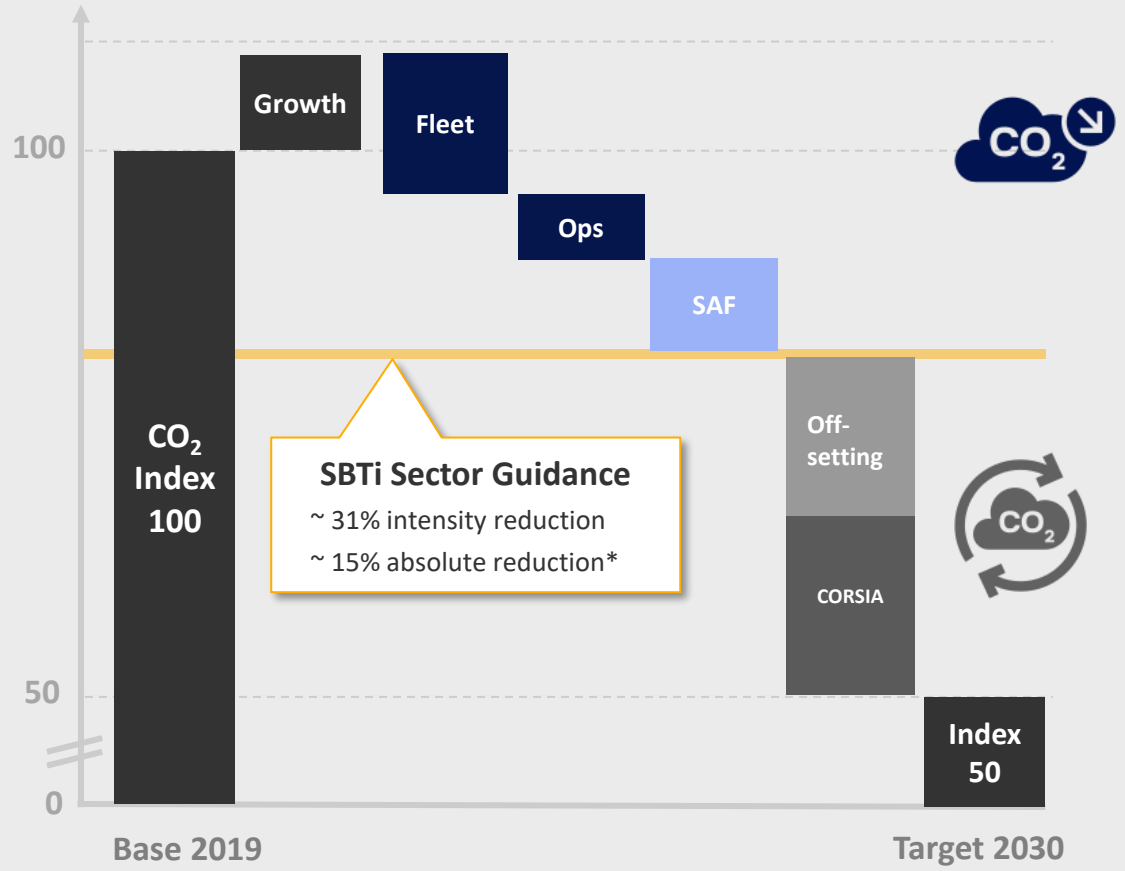
SBTi target

-30,6% gCO_2/RTK
until 2030 vs. 2019

-50% net CO_2
until 2030 vs. 2019

CO_2-neutral
until 2050

Target Breakdown 2030
(not to scale)



*) Based on CAGR forecast

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Market view: SAF uplift will be driven by regulation and voluntary demand

Mandates

- Fuel suppliers must blend SAF into jet fuel
- Besides EU members also other countries investigate the introduction
- **Challenge:** Preserve level playing field among airlines

Voluntary

- Customers ask airlines to use SAF on their flights
- Mainly driven by corporates with CO_2 reduction targets or SAF targets
- **Challenge:** Viable product portfolio and “claimable” benefit

EU mandate: Jet fuel at EU airports will contain 2% SAF from 2025

Suppliers to ensure defined SAF share in EU jet fuel

SAF share
2% 2025
6% 2030
20% 2035

Supersession of national mandates
(still pending)

Submandate for
SYNFUEL
from 2030

RED compliant feedstock

Flexibility mechanism to avoid complex **physical supply**

Increasing fuel expenses for airlines

Competitive distortion
especially for long-haul

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Voluntary demand: A broad range of products increases customer involvement

Private customers (B2C)

BOOKING → INFLIGHT → POST FLIGHT

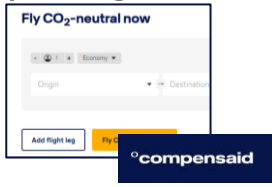
Deep Integration

Travel ID on the fly

Miles & More (Mindful flyer)

Green Fares Europe

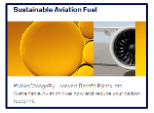
Travel ID post-flight



Corporate customers (B2B)

SAF AS PACKAGE

Partner Plus Benefit



Bulk deals (incl. Charter)

Corporate Value Fund

FLIGHT-RELATED SAF

(Sustainable) Corporate Value Fares

AWB (Cargo only)

Scope 3 mitigation certificate

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Technology: Only one conversion path is available at industrial scale today

Sustainable aviation fuel (SAF)

Biofuel

Oils and Fats

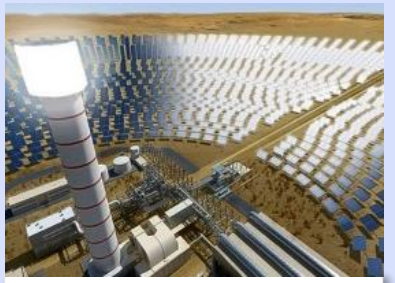
only scaled process today

Sugar and Starch

Wood and Straw

Synfuel

Electricity



Sunlight

Scope of involvement: The adequate role of airlines in the SAF supply chain is yet to be determined

„supply follows demand“

„supply could fall short“

Short-term offtake

Purchase agreement for 1-3 years or purchase on spot market

Flexibility vs. limited choice of technology and feedstock

Major sourcing concept for most airlines

Long-term offtake

Purchase agreement for a period of 10-20+ years

Lock-in vs. choice of technology and feedstock (+ reliable supply)

Multiple examples across the industry

Vertical integration

(Co-)Investment in production facility linked to supply volume

Technology risk and lock-in vs. transparency and reliable supply

Very few examples of airlines investing in production facilities

Do not mistake for SAF ventures

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SkyFuelH2

SkyFuel H2

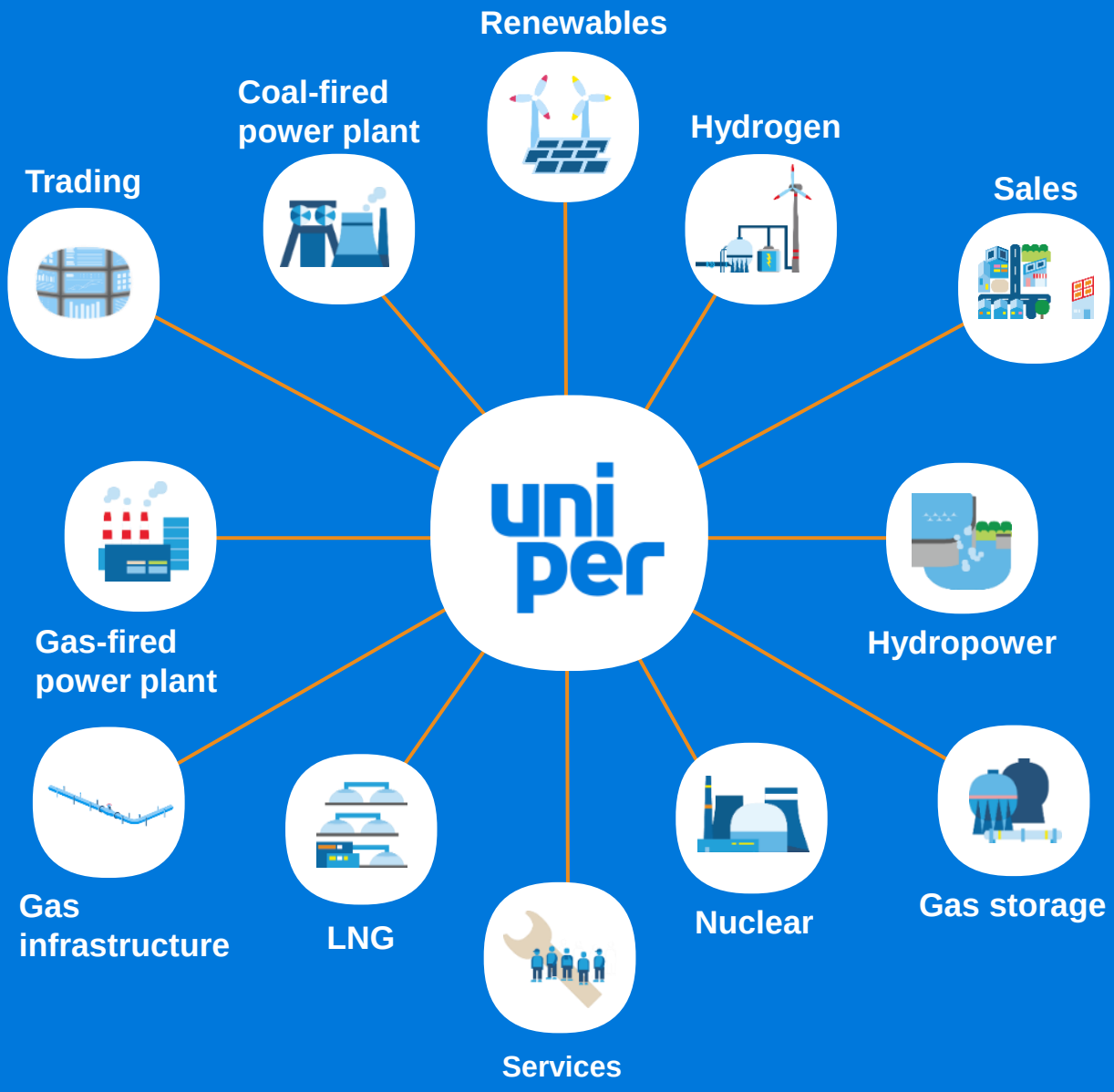
Co-financed by

Swedish Energy Agency

uniper

Uniper at a glance

- **7,000 employees** ensure security of supply in Europe
- Active in more than **40 countries**
- **~ 22.5 GW** generation capacity
- Gas portfolio consisting of roughly **200 TWh**
- **€6.3 billion** adjusted EBIT (2023)
- Entire business to be carbon-neutral by **2040**
- **Investing >€8bn 2023-2030 in growth and transformation**



SkyFuelH2: A fully integrated industrial sized SAF (75 kt) + Naphtha (15 kt) production facility, developed by Uniper

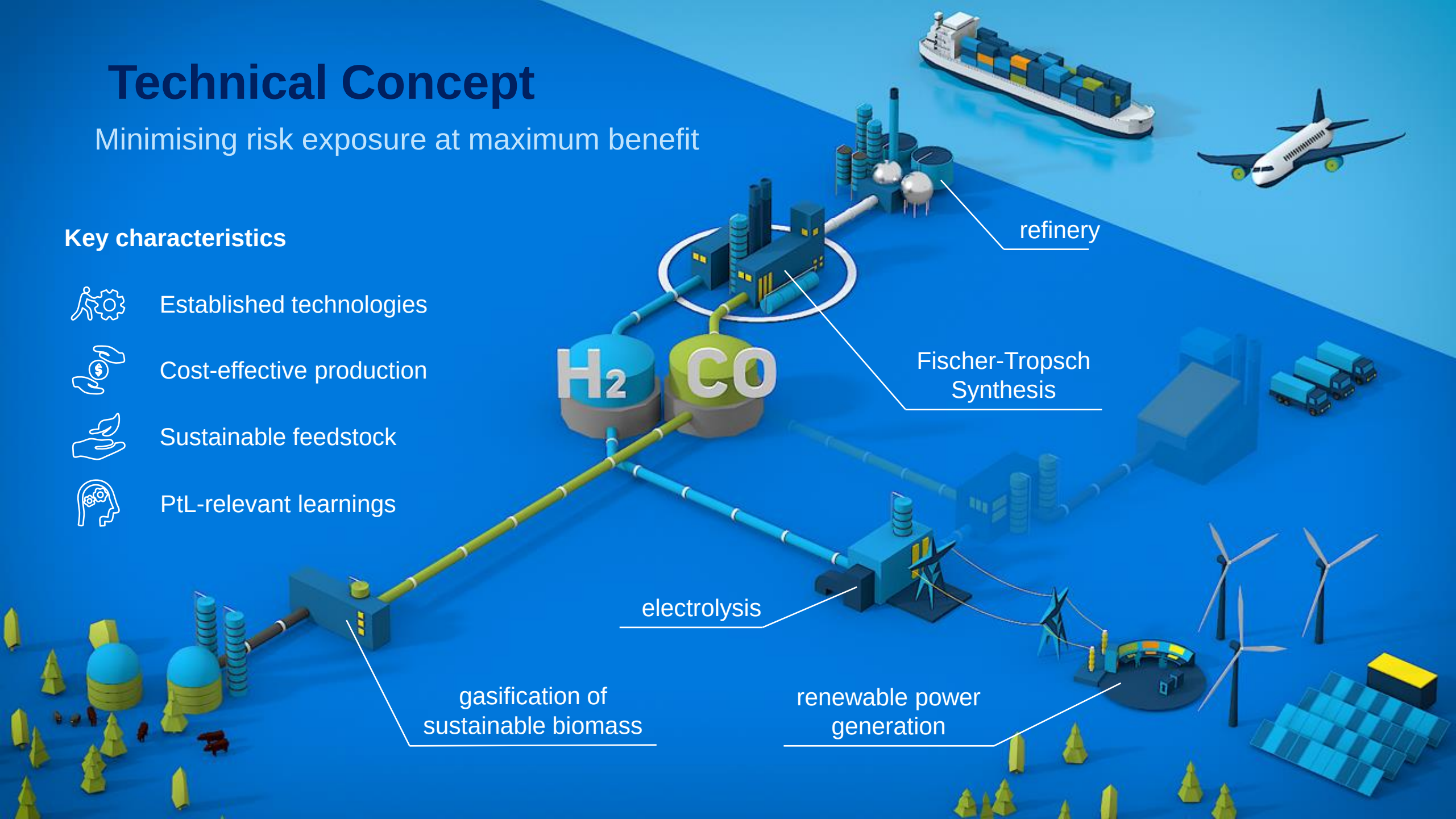
- Established technologies
- Low GHG footprint
- Global scalability
- Feedstock availability
- RED2 compliance
- Resource efficient process

Technical Concept

Minimising risk exposure at maximum benefit

Key characteristics

- Established technologies
- Cost-effective production
- Sustainable feedstock
- PtL-relevant learnings



About SkyFuelH2

Highly innovative

SkyFuelH2 is a highly innovative industrial project by Uniper which aims to establish one of the first production facilities for sustainable aviation fuel

Green hydrogen and biogenic carbon

The ambition is to use a processing technique called Fischer-Tropsch at industrial scale to produce sustainable aviation fuel by combining green hydrogen and biogenic carbon

Substantial volumes

With this technology, SkyFuelH2 could provide the aviation industry with the equivalent of 8% of Swedish domestic aviation's yearly fuel consumption with a sustainable alternative

Accelerating the climate transition

SkyFuelH2 is more relevant now than ever. Not least considering the global decisions to start phasing out fossil fuels, which leads to a need for accelerating the transition to sustainable alternatives

For further questions, please contact

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New Commodities Development SAF

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www.uniper.energy

SKYNRG

The role of SAF Certificates in reducing carbon footprints and building the SAF industry

SKYNRG IS A PIONEER IN SUSTAINABLE AVIATION FUEL

We develop SAF capacity and partner in sourcing SAF with third parties

We supply SAF to aircraft operators

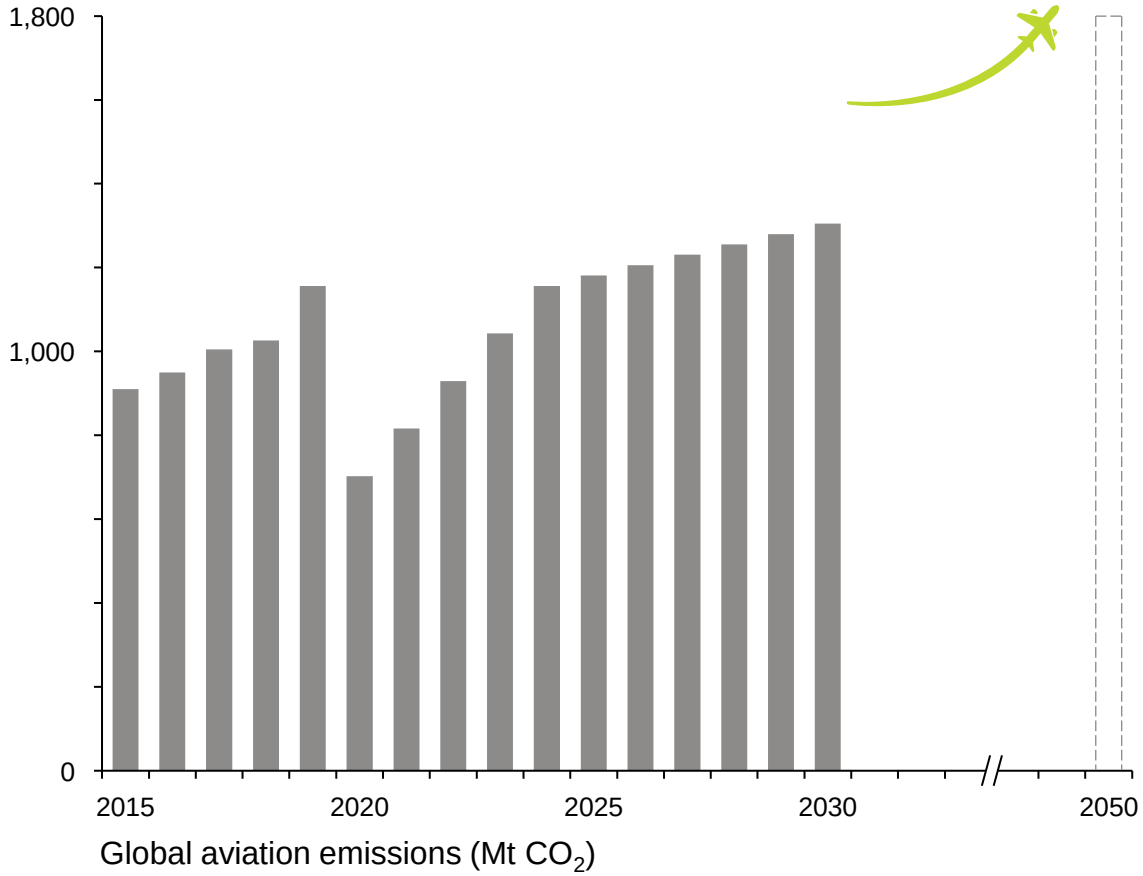
We provide SAF solutions for corporate- and individual travelers

We provide advisory services on SAF

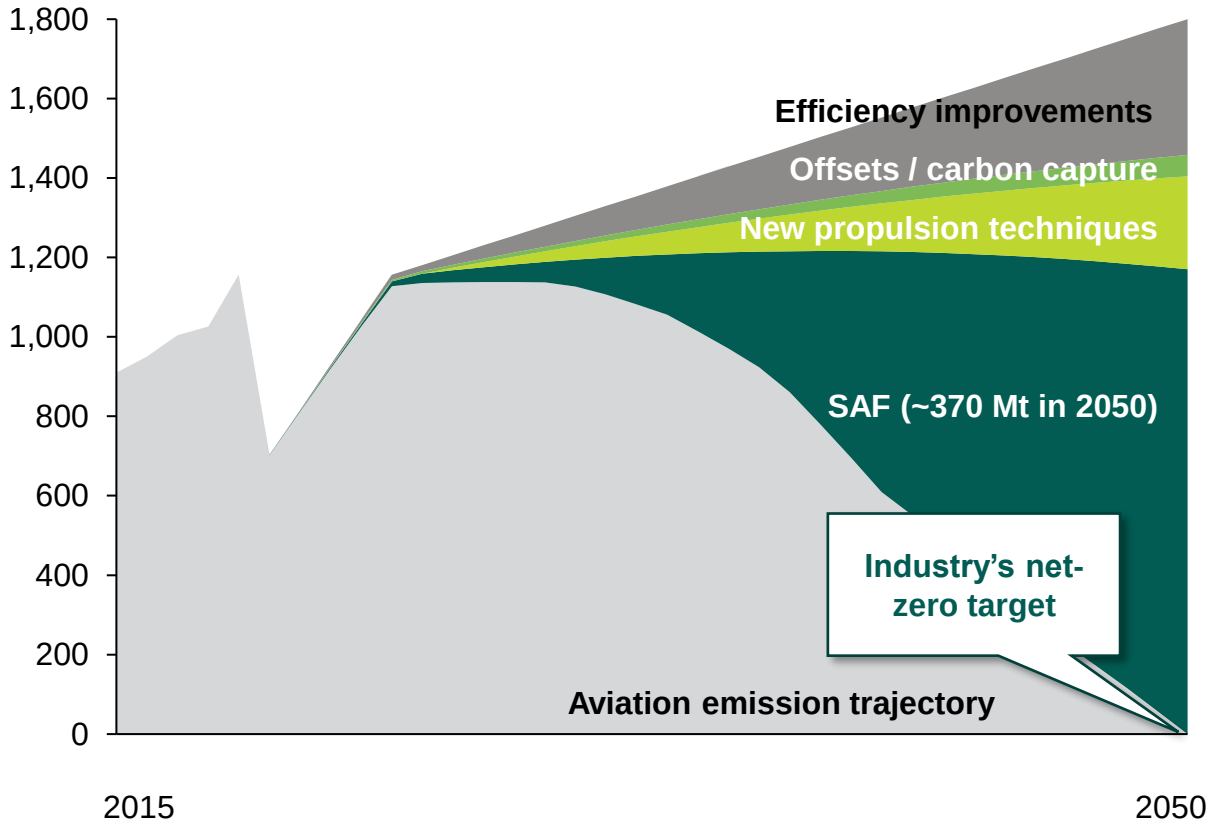
We are recognized as a sustainability leader

WHY SAF?

Without reduction efforts, global aviation emissions can grow to 1.8Gt by 2050



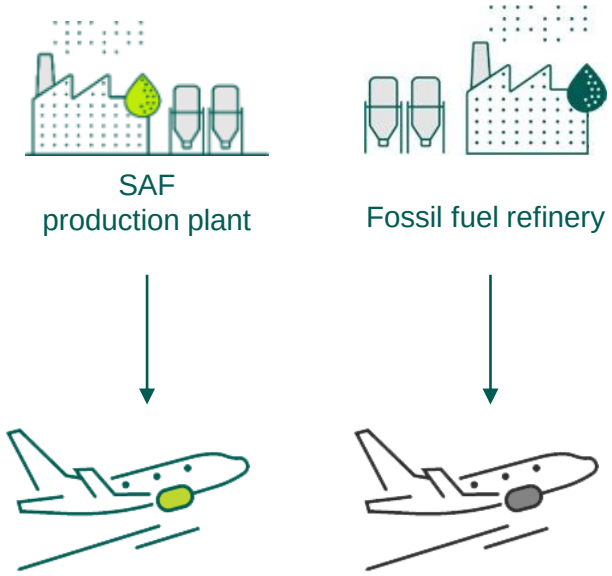
SAF is a major lever to achieve the industry's net zero targets



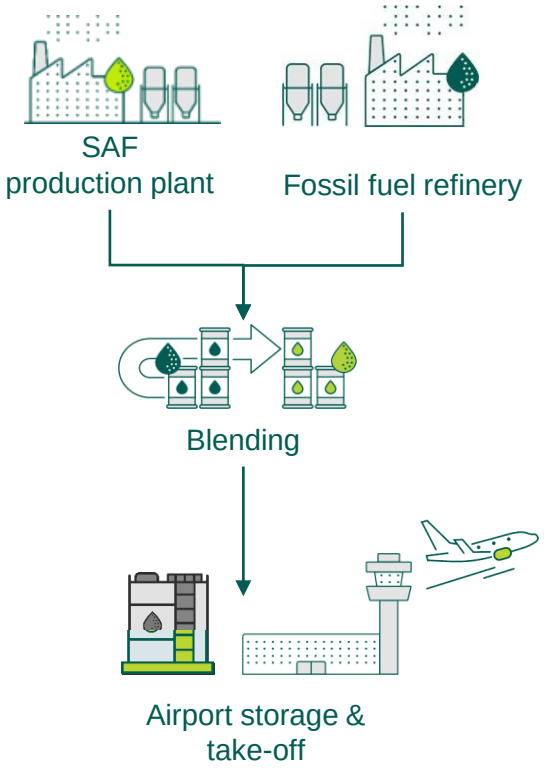
Source: Wall Street Research on Aerospace and Defence Data, IATA 2021;

THERE ARE THREE MAIN WAYS TO SUPPLY SAF AND ITS BENEFITS

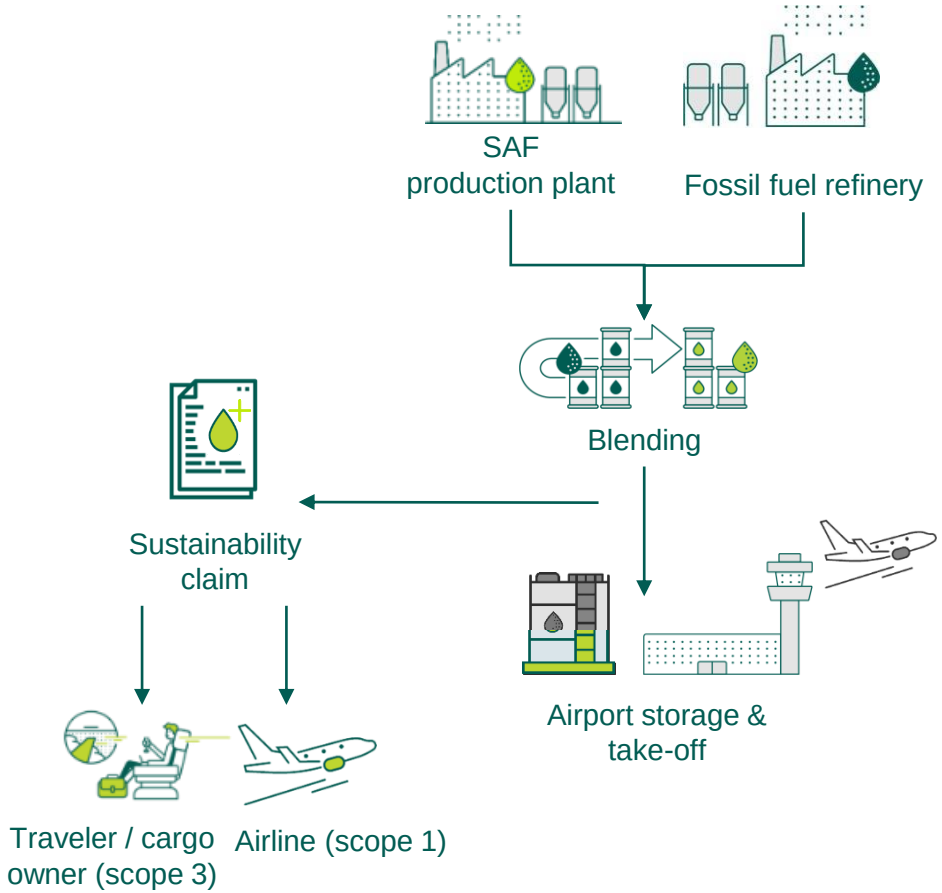
1. Physical segregation



2. Mass balance

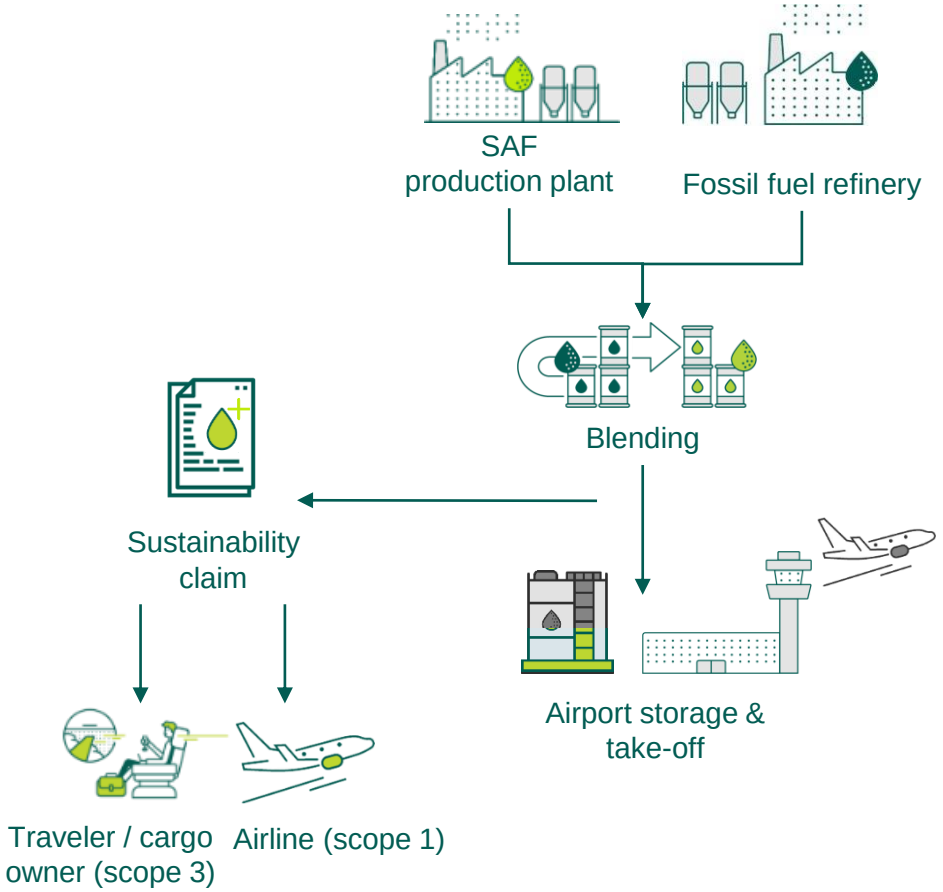


3. Book & claim



Note: simplification of processes

WHY BOOK & CLAIM?



Industry

- Efficient supply chain:
  - Reduces cost
  - Reduces supply chain emissions
- Location-independent
- Increases the market for SAF producers → faster scale-up

Airlines

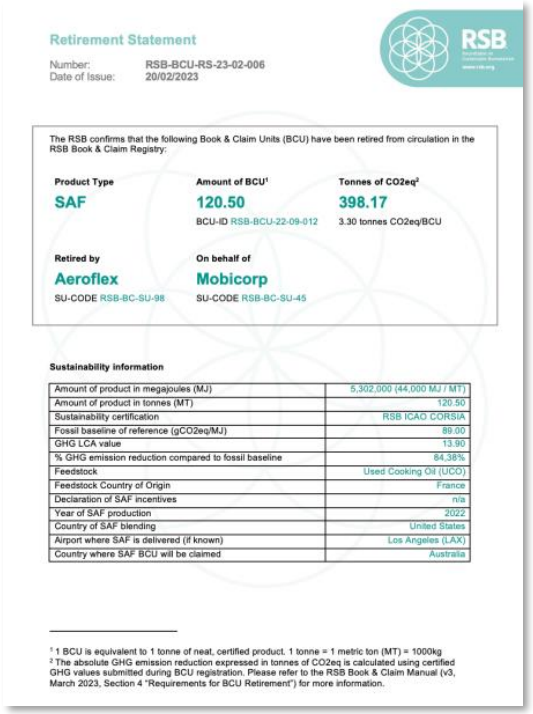
- Source SAF efficiently and independent from location
- Overcome infrastructure challenges
- Share sustainability benefits with customers willing to pay a premium
- Ability to source smaller volumes

Corporates

- Demonstrate market demand and support SAF industry growth
- Achieve carbon reduction targets
- Overcome limitation of SAF availability with all airlines
- Source efficiently

SAF CLAIMS CAN BE USED FOR GHG ACCOUNTING AND REPORTING

SkyNRG SAF Claim documentation and audit certification



Example BCU (Book & Claim Unit) from RSB registry[1]

Deliverables

- Transparency over the supply chain of custody
- GHG disclosure
- Sustainability certifications
- Feedstock specifications

Third-party auditing

- Prevent double issuance of claims
- Prevent double use of claims

Accounting and reporting guidance available

- RSB Book & Claim Manual[1]
- WEF CST SAF Policy Toolkit[2]

[1][RSB-PRO-20-001-002] – Version 3.0 – RSB Book & Claim Manual [2]World Economic Forum (WEF): Clean Skies for Tomorrow: Sustainable Aviation Fuel Policy Toolkit

QUESTIONS?

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