



ICAO EUR/NAT and ACI EUROPE

REGIONAL GREEN AIRPORTS SEMINAR

**Hosted by the Ministry of Transport
Republic of Kazakhstan**

Sustainable Aviation Fuels at Airports The Airport Enabling Role



ICAO



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Director Environment and Funded Initiatives
SEA Milan Airport - Italy


SAF – contributing to policies and EU/National Planning



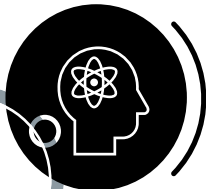
Refueling and Logistics Coordination Facility


- Established in 2022, the alliance development and adoption of Sustainable Aviation Fuels (SAF) within the aviation sector:

Enhancing Sustainability



Fostering Innovation





Facilitating Regulatory Frameworks


- Stakeholder Engagement
- Pilot Project
- Supply Chain Development
- Monitoring and Evaluation




National Observatory on SAFs


- In 2019, Enac established a “National Observatory on SAFs” with the aim of creating a **roundtable** participated by institutions:

Decarbonization of Aviation



Collaboration with Stakeholders





Development of a National Roadmap

- 1. Roadmap for SAF: ENAC is developing and regulatory frameworks.
- 2. Stakeholder Workshops
- SAF implementation.
- Pilot Projects
- Regulatory Framework Development:
- Research and Innovation Support
- Monitoring and Reporting

SAF Mandates across EU Countries

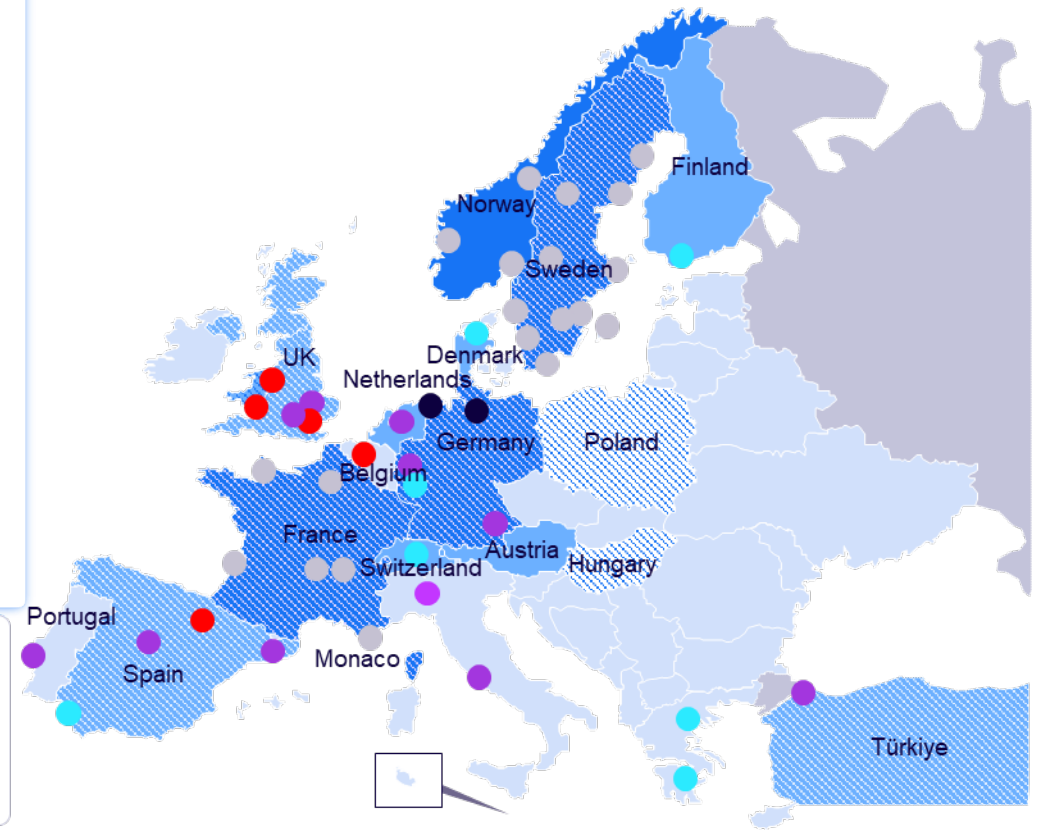


- Currently, **national blending mandates** are **operational** or **in the process of being enacted** in Norway, Sweden, France, and Germany. France, Germany, and Sweden have implemented supplementary non-regulatory measures.
- In the absence of a compulsory SAF mandate, as projected post-2025 according to **EU Directives Fit for 55/Refuel EU**, **there is a lack of incentives for SAF production**. Therefore, airlines encounter higher prices in countries without such mandates, opting for larger airports (hubs) like AMS and LHR, where SAF prices are comparatively lower

- Norway**
 - 2020 SAF blending mandate 0,5%
 - Target 2030 30%
- Sweden**
 - 2020 SAF blending mandate 0,5%
 - Target 2030 30%
- Germany**
 - PtL* blending quota of 0,5% (2026), 1% (2028) and 2% (2030)
- France**
 - SAF mandate 1% (2022), 2% (2025) and 5% in 2030
- Italy**
 - Waiting for EU regulation implementation)

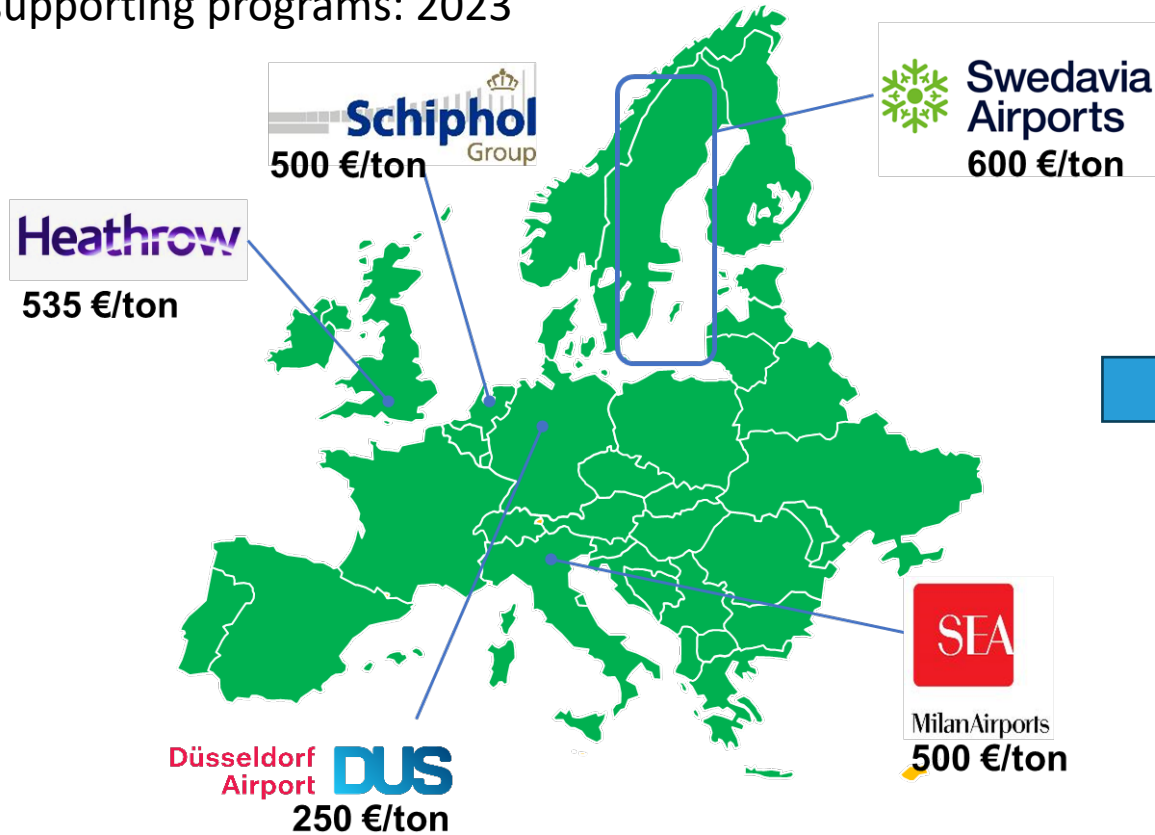
Legend

- SAF blending mandate in place)
- Base of Airline using SAF
- Apt offering SAF occasionally
- Other (e.g., manufacturer, military)
- Apt regularly offering SAF
- States where EU obligations will apply
- Additional non-regulatory national measures
- National blending mandate (promulgated/in force)
- National blending mandate under assessment



What's up to Airports ? SAF...

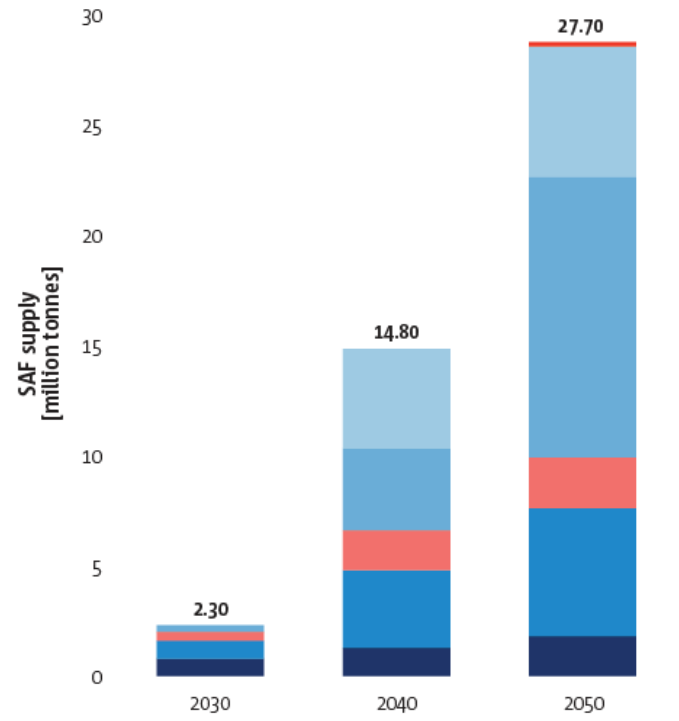
SAF supporting programs: 2023



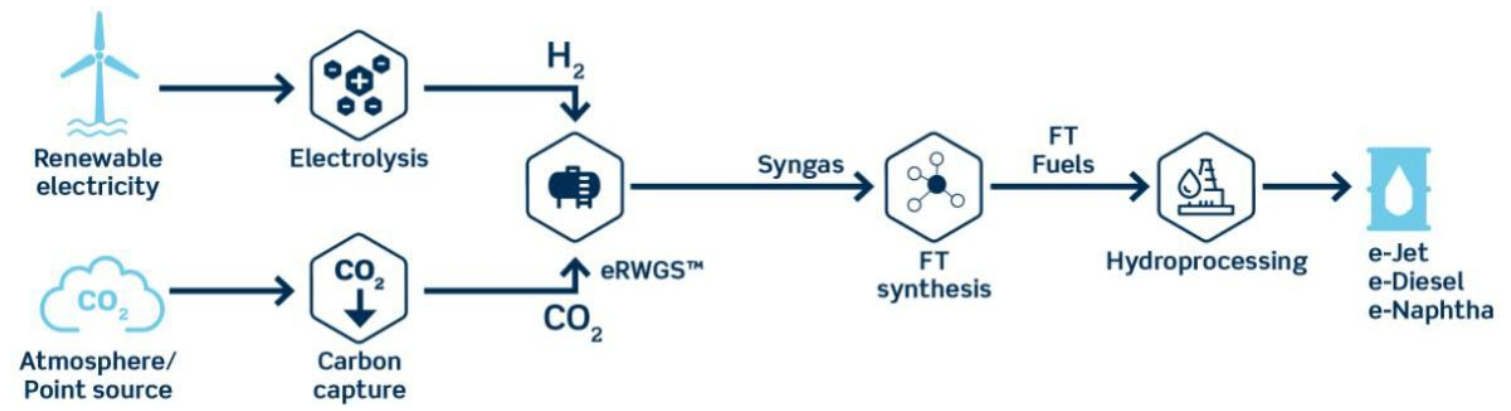
SAF supporting programs: 2024

	LHR	AENA*	AMS*	DUS	SWE	BRU	SEA
SAF Incentive (€/t)	535	500	400	250	n/a	1,000	800
e-SAF Incentive (€/t)	No	1,000	1,000	No	No	1,000	n/a
SAF Incentive type	50% SAF premium price gap	Fixed	Fixed	Fixed	50% SAF premium price gap	Up to 80% SAF premium price gap	Fixed
Subsidy CAP	Not specified	n/a	Not specified	€100k/y r./airline	Based on share of traffic	€200k/year/airline	n/a

ReFuelEU modelled SAF supply per production pathway in the EU27



	2030	2040	2050
Electricity	0.00	0.00	0.20
Gasification+FT	0.00	4.50	5.90
PtL	0.30	3.70	12.70
Imports	0.40	1.80	2.30
ATJ	0.80	3.50	5.80
HEFA	0.80	1.30	1.80

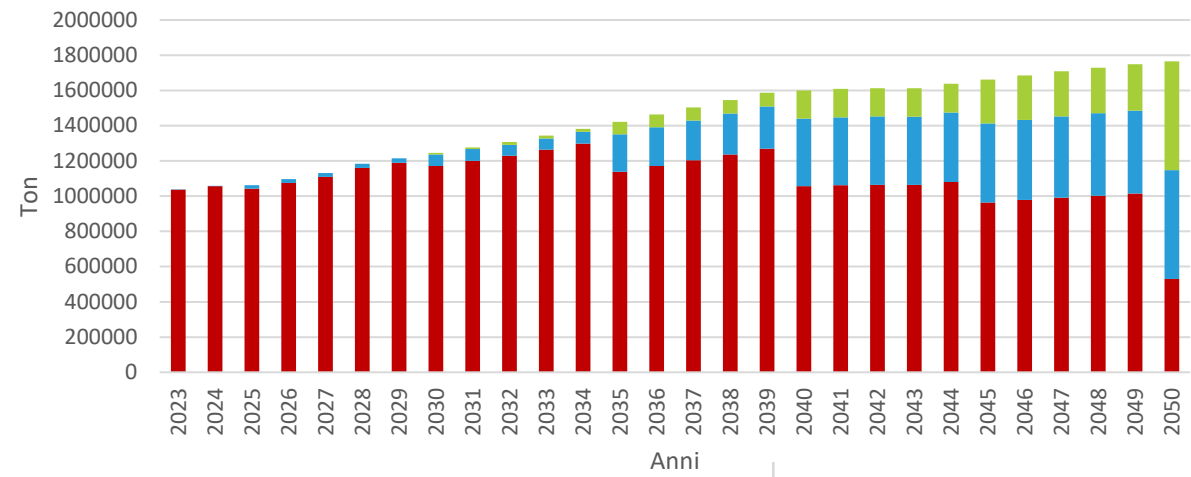


Mandate ReFuel EU Aviation

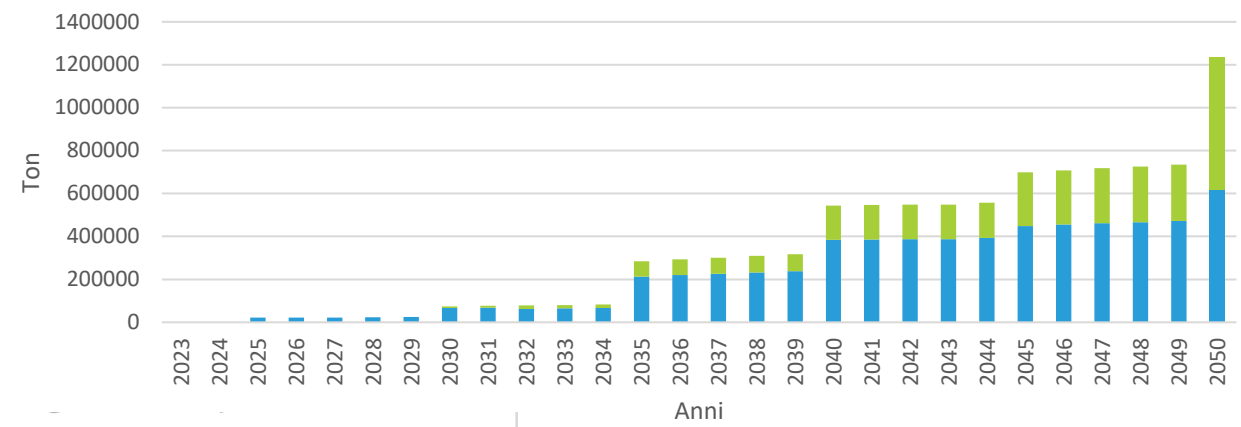
2025 → 2% SAF
 2030 → 6% SAF (0.7 % e-SAF)
 2032 → 6% SAF (1.2 % e-SAF)
 2035 → 20% SAF (5% e-SAF)
 2040 → 34% SAF (10% e-SAF)
 2045 → 42% SAF (15% e-SAF)
 2050 → 70% SAF (35% e-SAF)

JET A1, SAF, eSAF long term, «as is» flight mix and technology

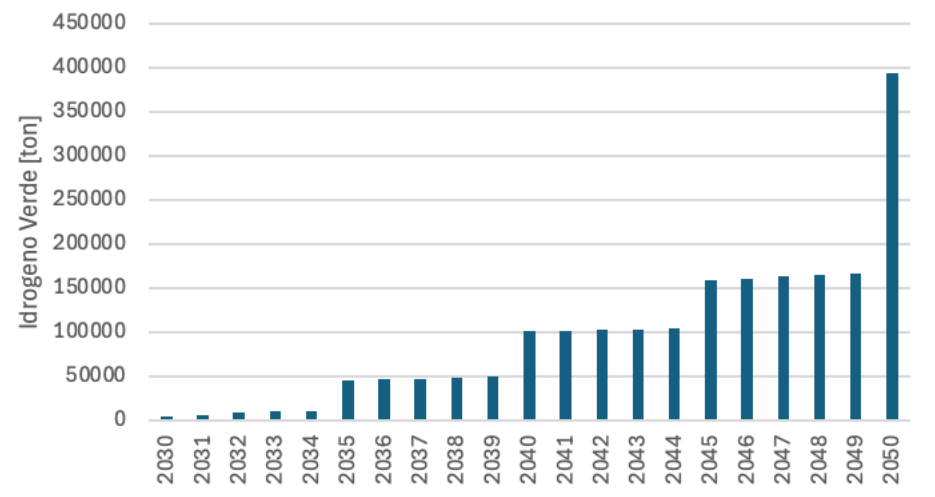
Jeta1, SAF e e-Fuel need [2023-2050]



SAF e e-Fuel need [2023-2050]

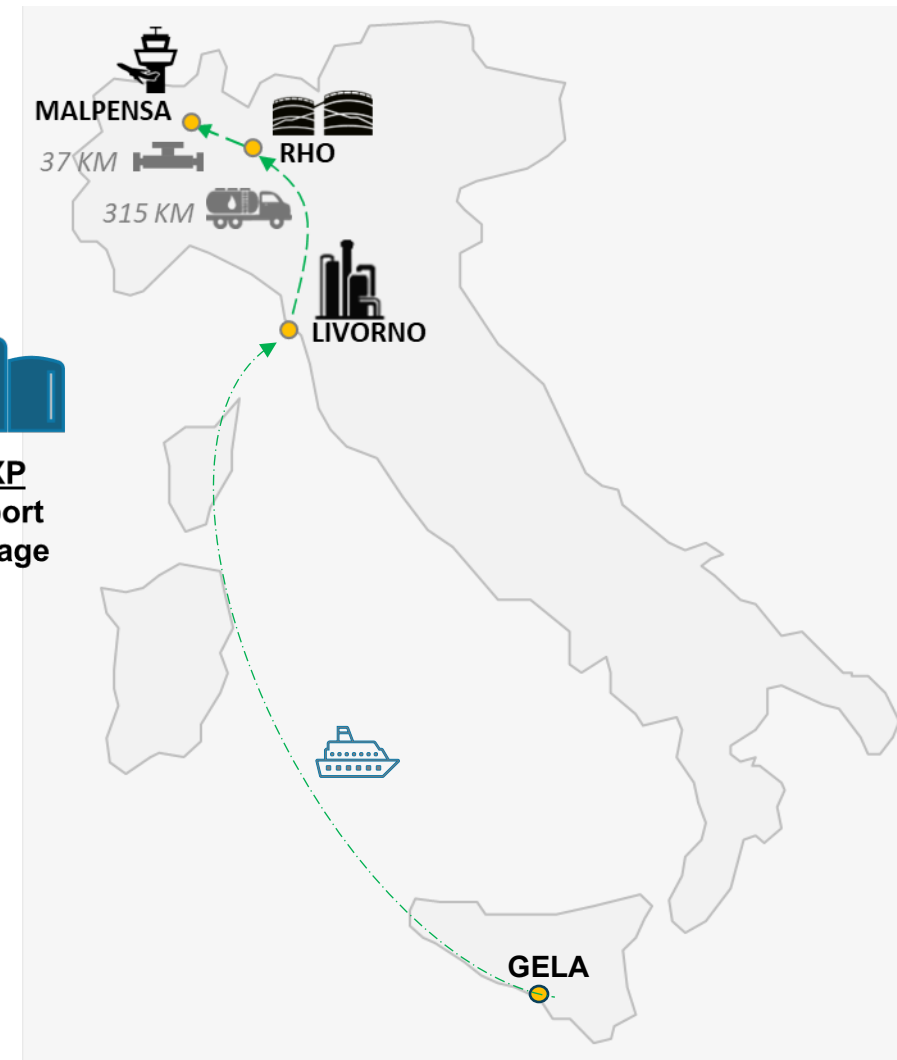
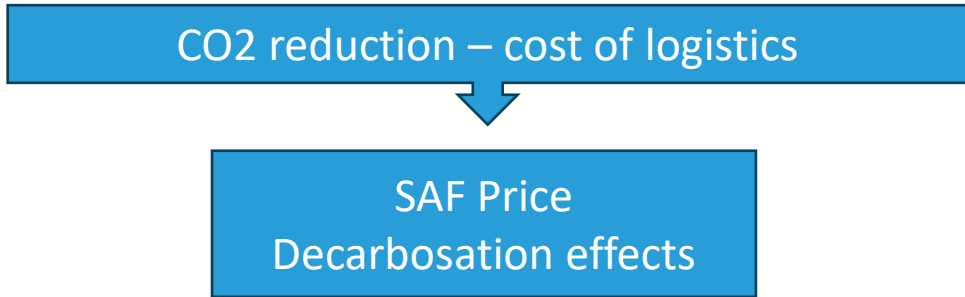


■ JetA1 ■ SAF ■ e-Fuel



■ SAF ■ e-Fuel

SAF – The relevance of the supply chain for CO2 reduction and cost



SAF – Should Airports actively support SAF use? How



Support strategy

- The mandate is applied to Fuel Suppliers and Airlines. Airports are requested to facilitate



Support target

- Airport may decide to put money **ONLY ON TOP** of mandates, if useful to decarbonize Scope 3 emissions, **ONLY** for SAF supplied at the airport (no covered with any “book and claim” scheme)



SAF availability and adoption

- Foster cooperation with:
 - ACI, EU, EASA to manage SAF data flows and reporting
 - Fuel suppliers to wide and ensure SAF supplies

Thank You

