Supporting European Aviation

EUROCONTROL

# ICAO ENVIRONMENT TASK FORCE
# ICAO Environment Capacity building activities

## Session 3 - Regional initiatives to address CO2 emissions from international aviation

Marylin Bastin
Head of Aviation Sustainability Unit
Virtual Meeting, 21 March 2023

CONSORTIUM COORDINATOR sesar DEPLOYMENT MANAGER
FOUNDING MEMBER sesar JOINT UNDERTAKING
NETWORK MANAGER

# EUROCONTROL MEMBERS

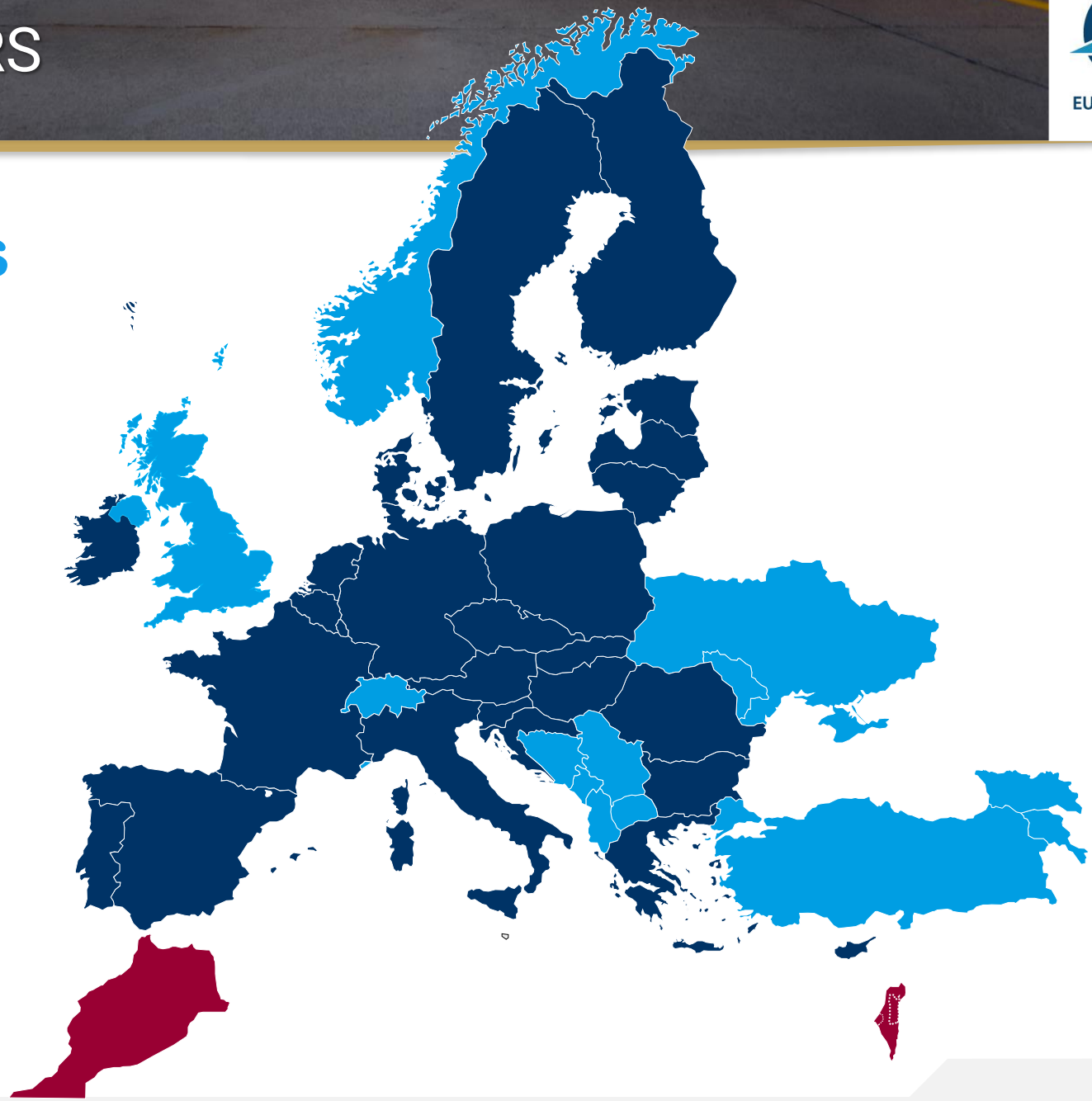
## 41 x Member States

**+ Iceland from 2025**

**EUROCONTROL and EU**

**EUROCONTROL but not EU**

**Two Comprehensive Agreement States: Israel and Morocco**



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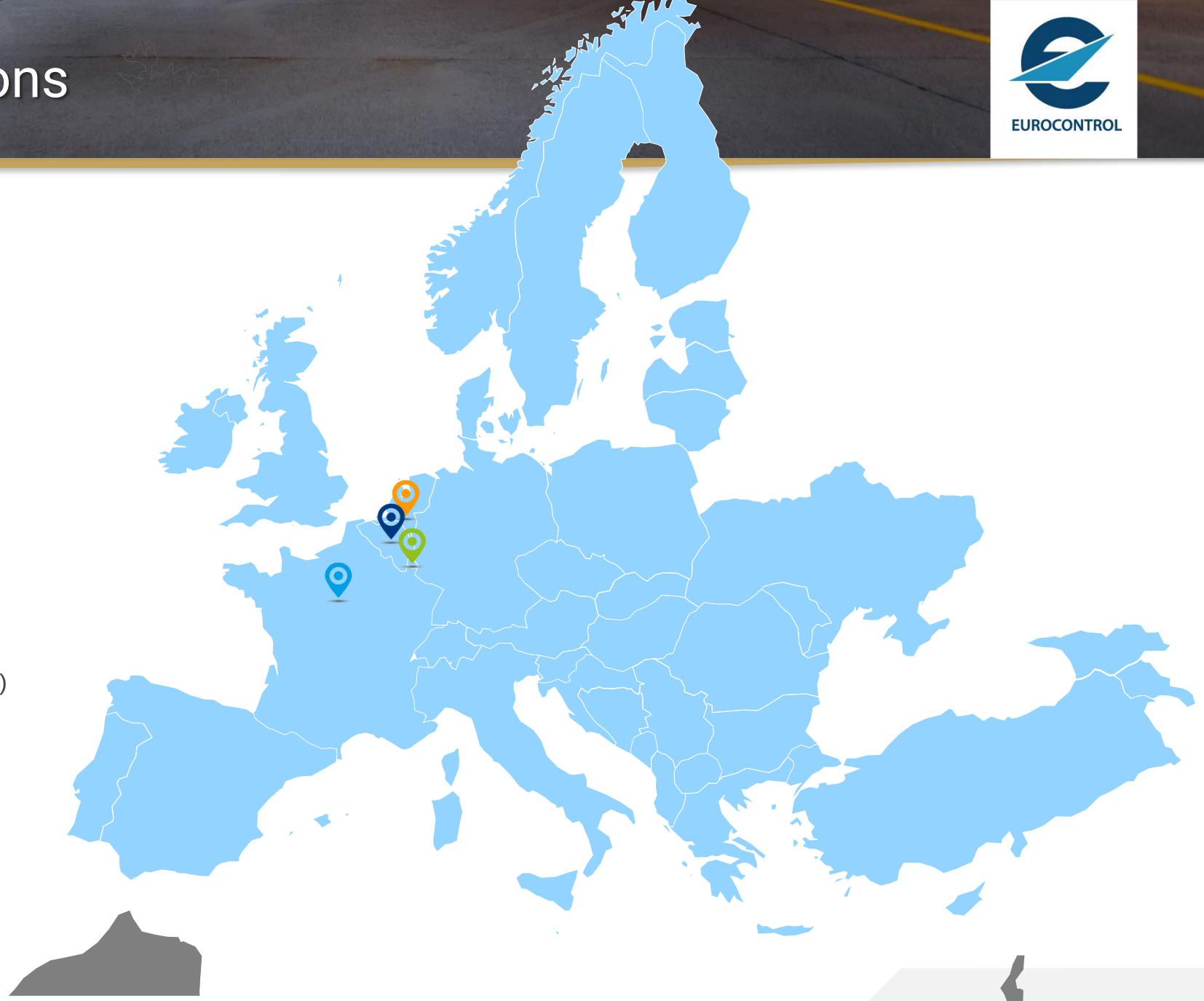
# EUROCONTROL locations

**BELGIUM**
**Brussels** (HQ & Network Manager)

**NETHERLANDS**
**Maastricht** (MUAC ANSP)

**FRANCE**
**Brétigny-sur-Orge** **(**Innovation Hub)

**LUXEMBOURG**
**Luxembourg** (Aviation Learning Centre)



# Boosting EUROCONTROL's support to aviation transformation

EUROCONTROL

## RAISING THE BAR: BUILDING "EUROCONTROL 2030"

Technology, innovation, international engagement, and people are the key drivers that will allow us to achieve our goals and keep delivering tangible added value to the aviation community.

## Flying Green

The decarbonisation of the aviation sector has been underway for several decades but still, **the pressure to speed up decarbonisation** has never been so high. Our latest traffic forecasts show that demand is still increasing, making the transition to net zero emissions even more challenging. Different decarbonisation roadmaps have been published and the recent long-term aspirational goal (LTAG) adopted during ICAO Assembly 41 shows the commitment of the whole aviation ecosystem. EUROCONTROL aims to play a **central role** by developing a brand-new platform of green services, **FlyingGreen** to support ECAC Member States and operational stakeholders to decarbonise.

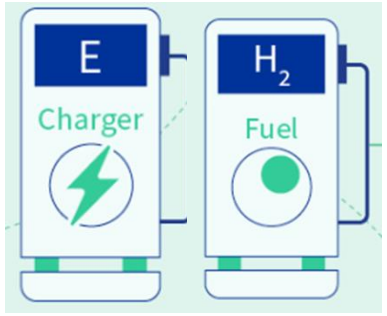
Besides the need to decarbonise, **other challenges** have also been identified. The recent inclusion of non-$CO_2$ into EU-ETS shows that climate optimised trajectories need to be further addressed. New entrants such as zero emission aircraft need to be integrated in our European network. The environmental footprint of the ATM infrastructure (e.g. CNS) needs to be optimised. Climate change financing, Sustainable Aviation Fuels and associated renewable energy, market-based measures such as ETS and CORSIA remain high on our agenda. The societal acceptance of a growing aviation sector also needs to be addressed. To this end, EUROCONTROL aims to provide even more studies, analysis, educational material, training, articles, and webinars targeting a broader audience.

Due to increased extreme weather conditions, understanding climate change impacts on our operations is also a **key priority**. The risks related to climate change need to be better assessed to mitigate or to adapt to those risks, and to avoid disruption of service. Together with our stakeholders, EUROCONTROL will further develop guidance and recommendations for climate change adaptation.

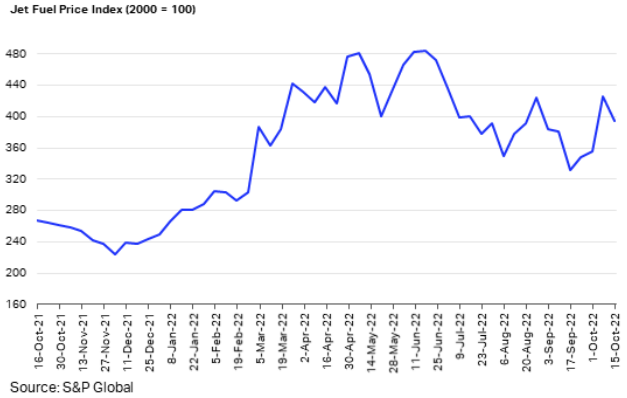
Ultimately, EUROCONTROL will further develop its **Corporate Social Responsibility** (CSR) strategy by developing ESG guidance and reporting, by decreasing the carbon footprint of its infrastructure and operations.

To address these challenges, EUROCONTROL will use its operational and technical expertise, working transversally inside the Agency, and will **support** the European Commission, ECAC Member States and the stakeholders **to decarbonise** aviation both **through specific initiatives** and through the **Network Manager** with the optimisation of flight profiles, airspace design and relaxation of measures with fewer flight restrictions.

# Aviation has a Plan: it comes at a cost & with challenges

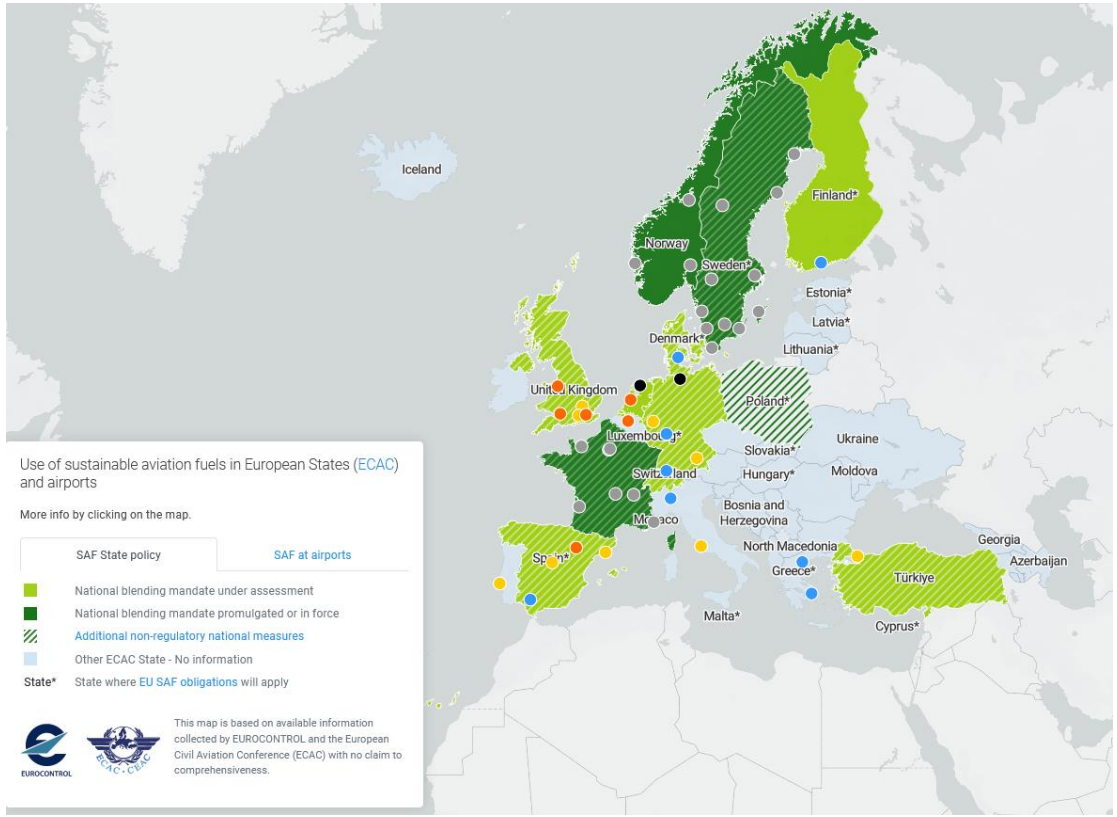









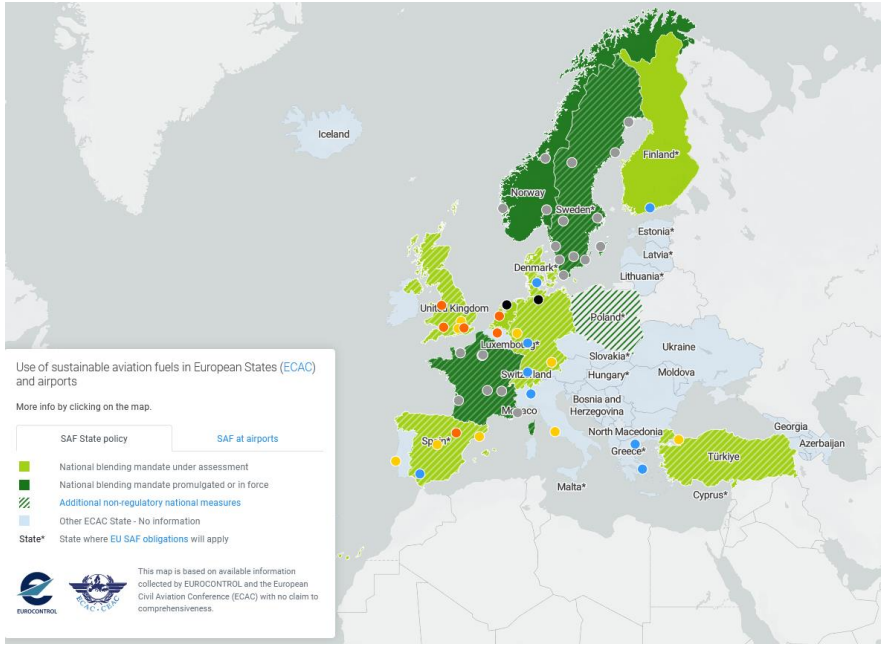

# European Sustainable Aviation Fuel (SAF) Map Evolution

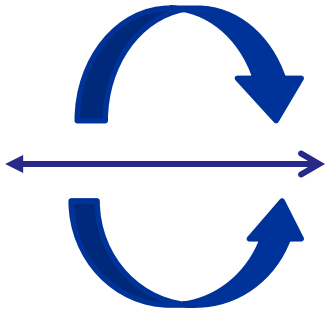


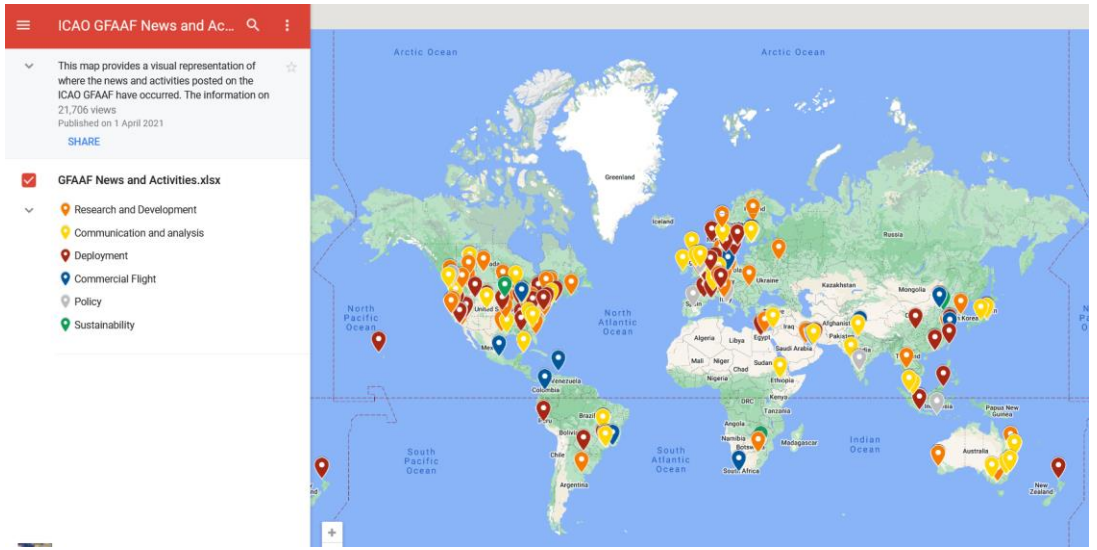

- Introduced on 18 February 2021 in EUROCONTROL's first Aviation Sustainability Briefing
- Joint product with ECAC

# European Sustainable Aviation Fuel (SAF) Map Evolution

- ICAO website to refer to the European SAF map





# Alliance for Zero Emission Aviation (AZEA) will

**Bring all actors involved in an holistic approach**

**Turn prototypes into commercial successes**

## Prepare the aviation ecosystem to the earliest possible entry into commercial service of hydrogen and electric aircraft

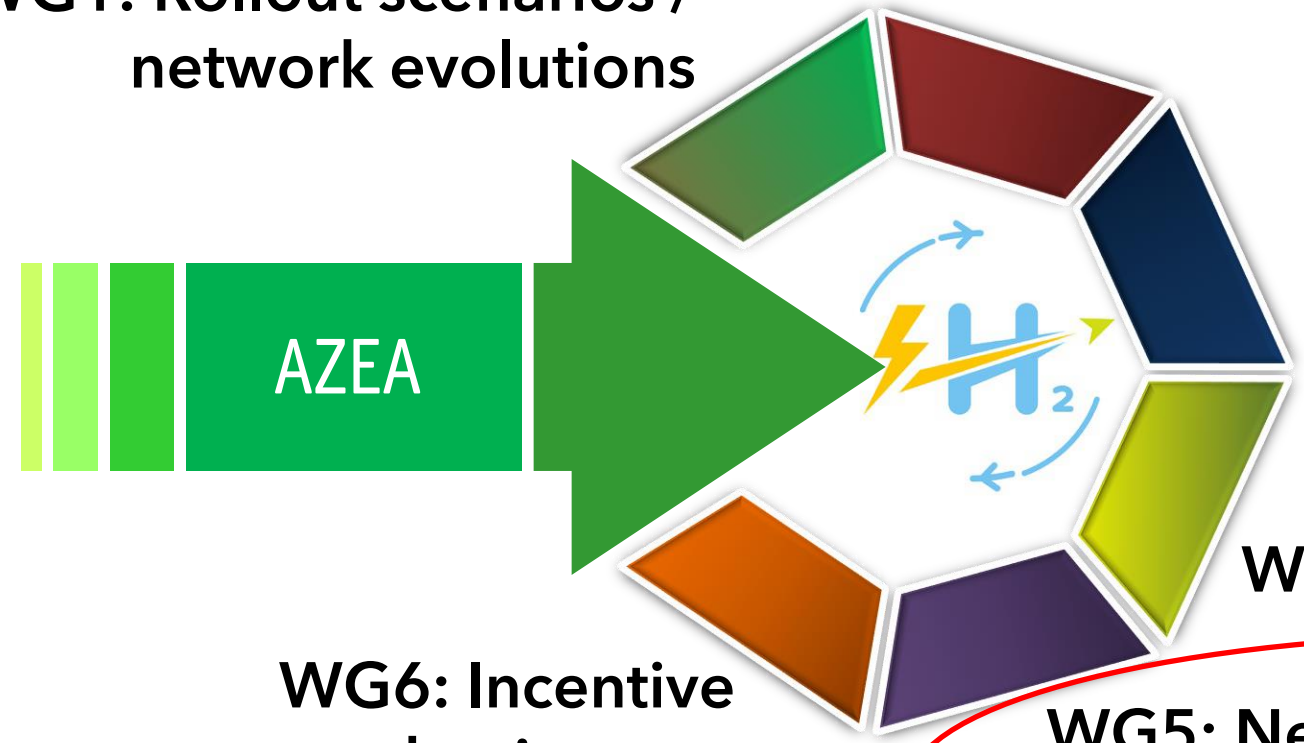
**Concentrate on disruptive a/c configurations**

# Alliance for Zero Emission Aviation (AZEA)

*EUROCONTROL is actively involved in each WG*

**WG1: Rollout scenarios / network evolutions**

**WG2: Energy infrastructure**




**WG3: Energy distribution, constraints and operational integration**

**WG4: non-$CO_2$ requirements**

**WG6: Incentive mechanisms**

**WG5: Network integration and efficiency of incentive mechanisms**

*EUROCONTROL/ASU is co-leading this working group*

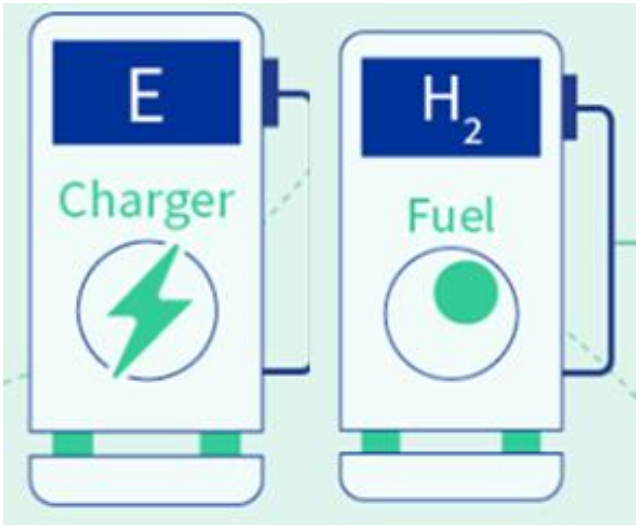
# Our support in Working Group 5 as co-leader


Forecast (number of a/c, types, traffic, routes)

Airport operations

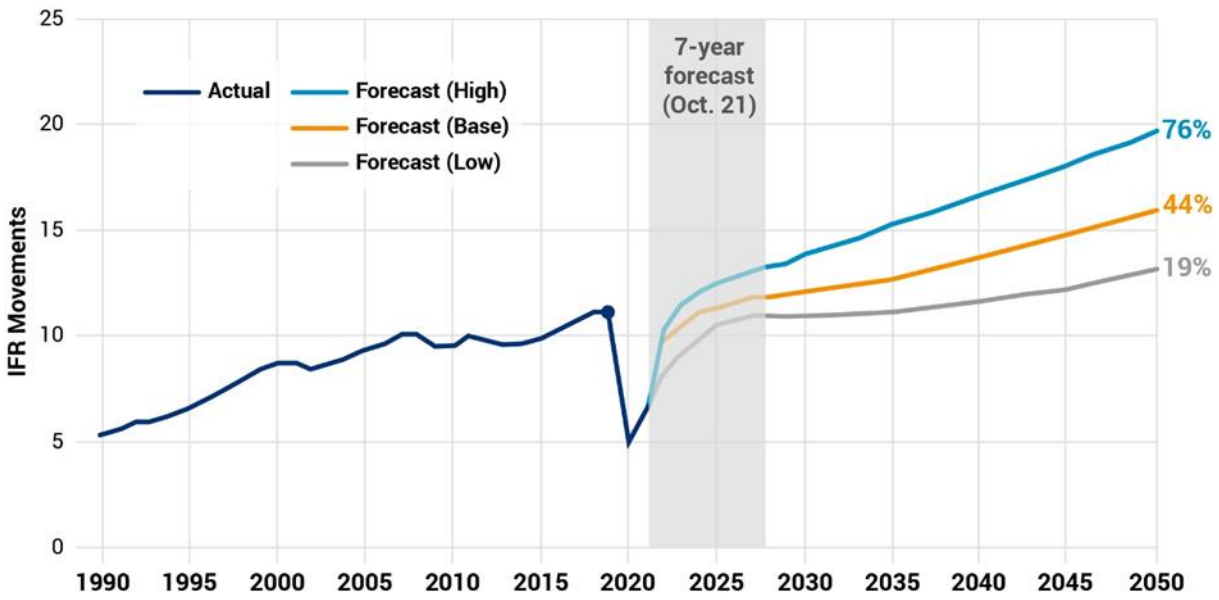

Integration into the European network

Operational and financial incentives (ATFCM, trajectories, pricing, modulation of charges)

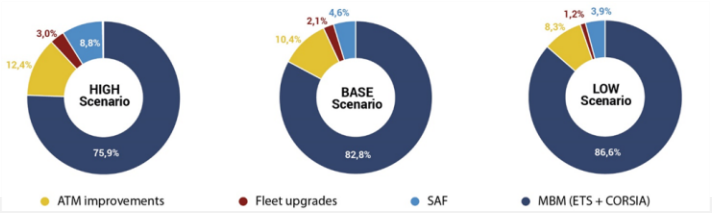


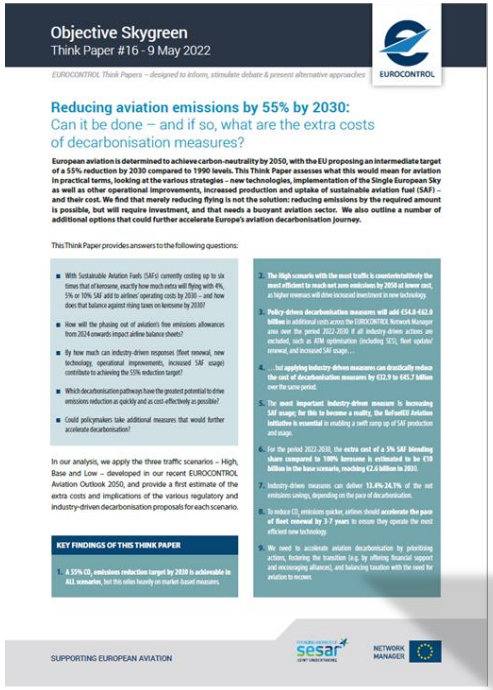

Fueling requirements and energy needs

# Objective Skygreen: the role of ATM to reduce costs of decarbonisation




| | High | Base | Low |
|---|---|---|---|
| Savings from ATM improvements | 25.5 $MtCO_2$ / 12.4% | 18.3 $MtCO_2$ / 10.4% | 13.0 $MtCO_2$ / 8.3% |
| Savings from fleet upgrade | 6.1 $MtCO_2$ / 3% | 3.8 $MtCO_2$ / 2.1% | 1.9 $MtCO_2$ / 1.2% |
| Savings from SAF | 18.0 $MtCO_2$ / 8.8% | 8.1 $MtCO_2$ / 4.6% | 6.1 $MtCO_2$ / 3.9% |
| Emission Reduction Potential | 49.6 $MtCO_2$ saving / 24.1% | 30.2 $MtCO_2$ saving / 17.2% | 21.0 $MtCO_2$ saving / 13.4% |

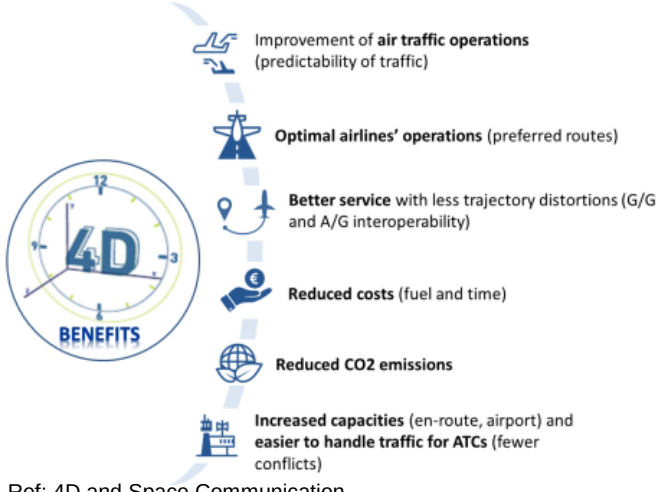


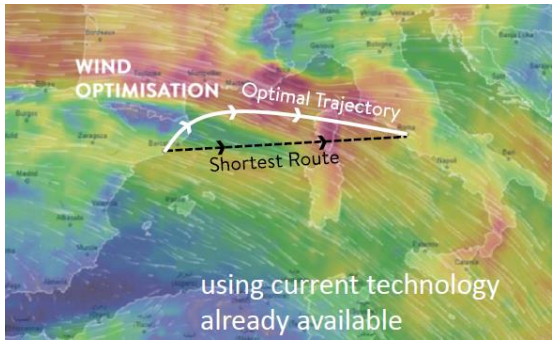


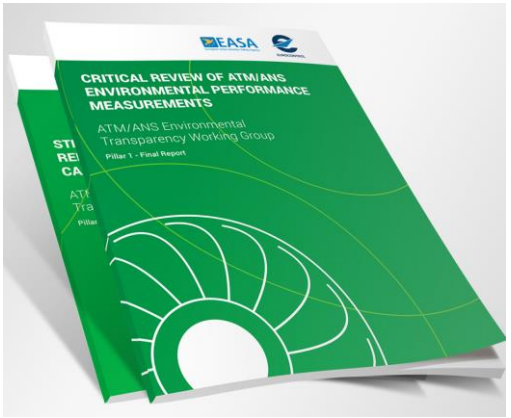
| Cost savings from industry-driven measures 2022-2030 (€ billion) | High (with 10% SAF uptake in 2030) | Base (with 5% SAF uptake in 2030) | Low (with 4% SAF uptake in 2030) |
|---|---|---|---|
| Fuel cost mix savings (SAF/kerosene) | €-30.6 | €-21.4 | €-26.7 |
| ETS cost savings | €-10.9 | €-8.3 | €-5.9 |
| CORSIA cost savings | €-0.7 | €-0.5 | €-0.4 |
| Taxation cost savings | €-3.5 | €-2.6 | €-1.9 |
| Cumulative cost savings | €-45.7 | €-32.9 | €-34.8 |

# Important Flagships for ATM transformation




Ref: 4D and Space Communication



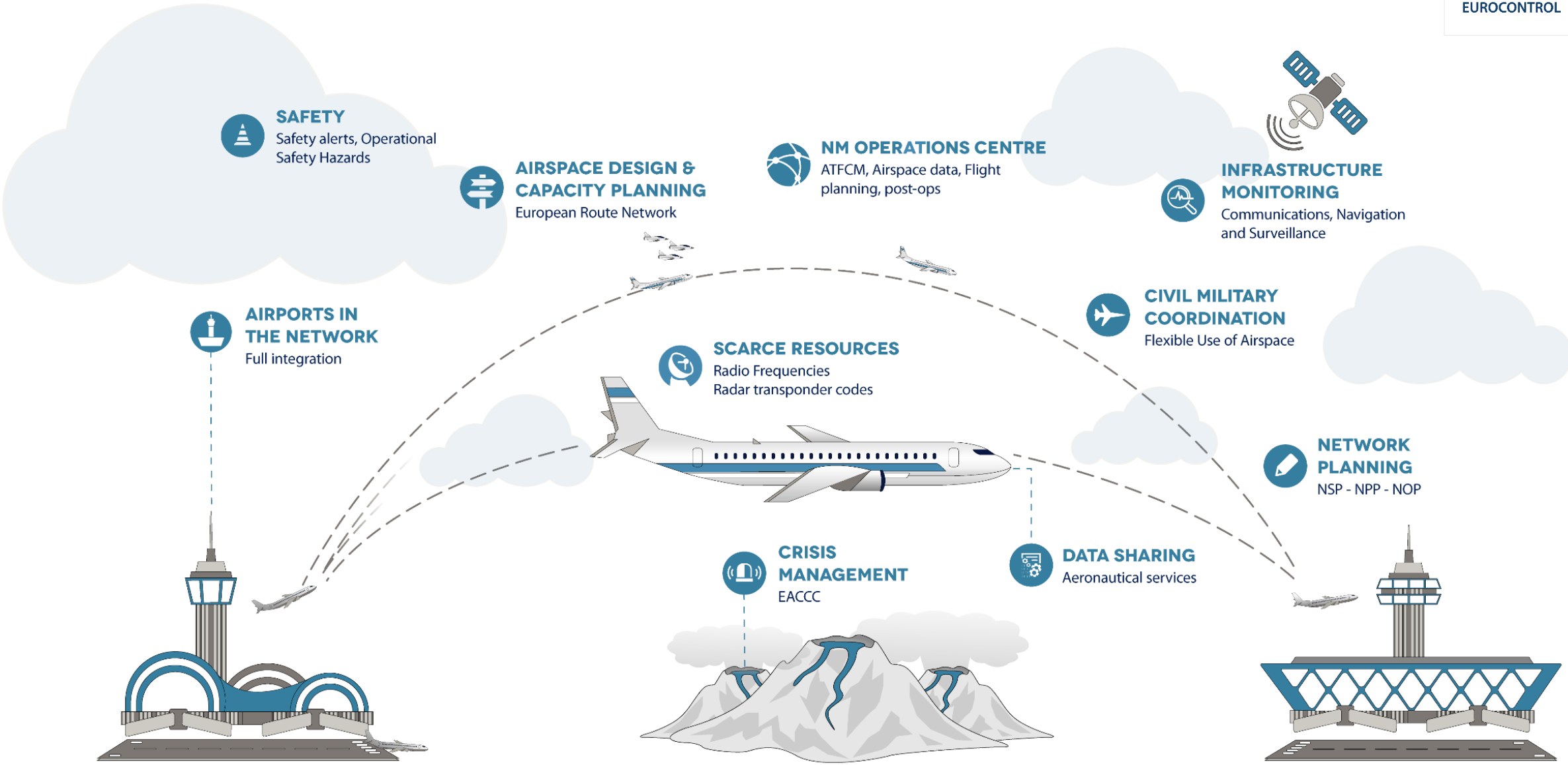

An optimised network to accommodate future demands — 2.48%

G2G operational measures to reduce fuel consumption — 4.32%

Aircraft operators to enhance their procedures — 2.14%


**8.94%**

# Connecting the Network to deliver Improved Performance



# Getting from Good to Excellent Flight Efficiency

*Making savings through improved flight planning*

significant economic and environmental impact

key component in the sustainable growth goal.

The NM flight efficiency - focus on *the improvement of the quality of flight planning*.

*OPTIMUM FLIGHT PLANNING* → *OPTIMUM (Network) OPERATIONS*

# SUPPORTING EUROPEAN AVIATION