

ICAO EUR/NAT and ACI EUROPE

REGIONAL GREEN AIRPORTS SEMINAR

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



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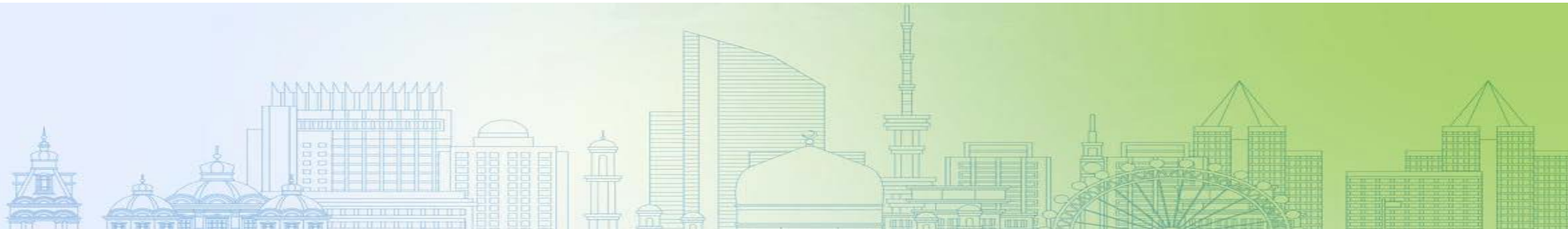


Innovations in Sustainable Aviation in Italy



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Italian Civil Aviation Authority



Decarbonisation of air transport



Lines of action for the decarbonisation of air transport:

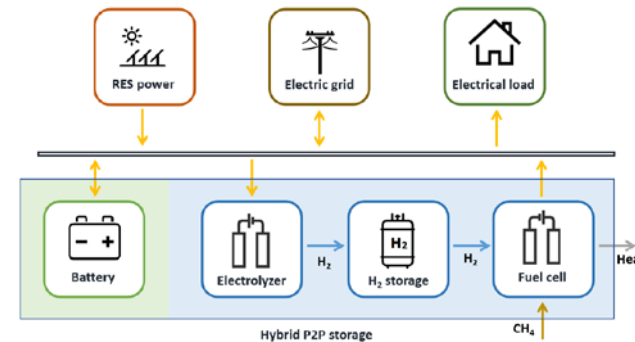


- Energy transition of airports
- Transition to the use of alternative fuels, such SAF and H2
- Intermodality and advanced air mobility



Energy transition of airports

- Reduce environmental footprint
- Reduction of consumption and use of energy from renewable sources (e.g. TULIPS project in Turin)
- New infrastructure without consuming additional land



- Protection and development of ecosystems adjacent to the airport
- Circular economy for waste recovery
- Sustainable management of water resources, building materials

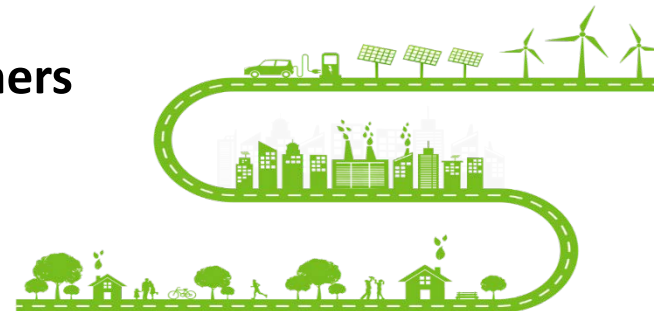


Study Project



ENAC, Italian Civil Aviation Authority, and **ENEA**, Italian public RTO on energy, climate change, circular economy, have signed an agreement with these objectives:

- ✈ Feasibility study of the implementation of hydrogen in airport hubs for decarbonization
- ✈ Analysis of the complete supply chain: production, storage and end uses
- ✈ Analysis of specific case studies
- ✈ Drafting national guidelines
- ✈ **SAF/H2 call for airport managers and partners**



Hydrogen projects in Italy



LHYFE TH2ICINO RENEWABLE HYDROGEN PRODUCTION PROJECT

- 5 MW of ELZ (PEM technology)
- 1835 kg / d of renewable hydrogen production
- 5000 – 7500 sm of land required
- 30 m³ / d of water necessary (15 is rejected)
- 40 GWh / year requested

Process area ~ 2 000 sq.m

Logistic area ~ 3000 – 5500 sq.m

Transformer

Cooling

ELZ 5 MW

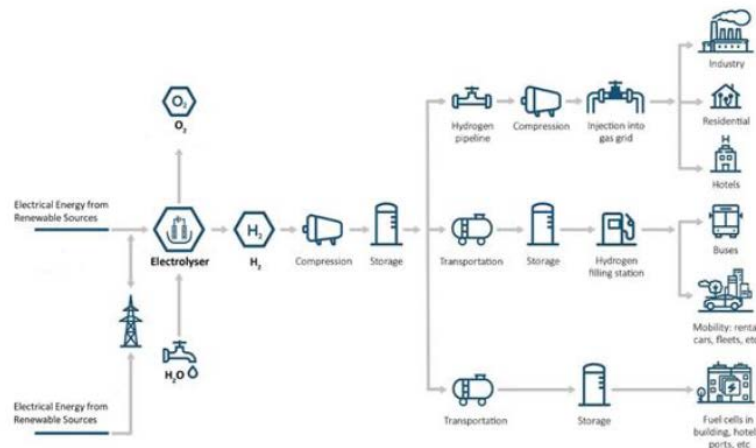
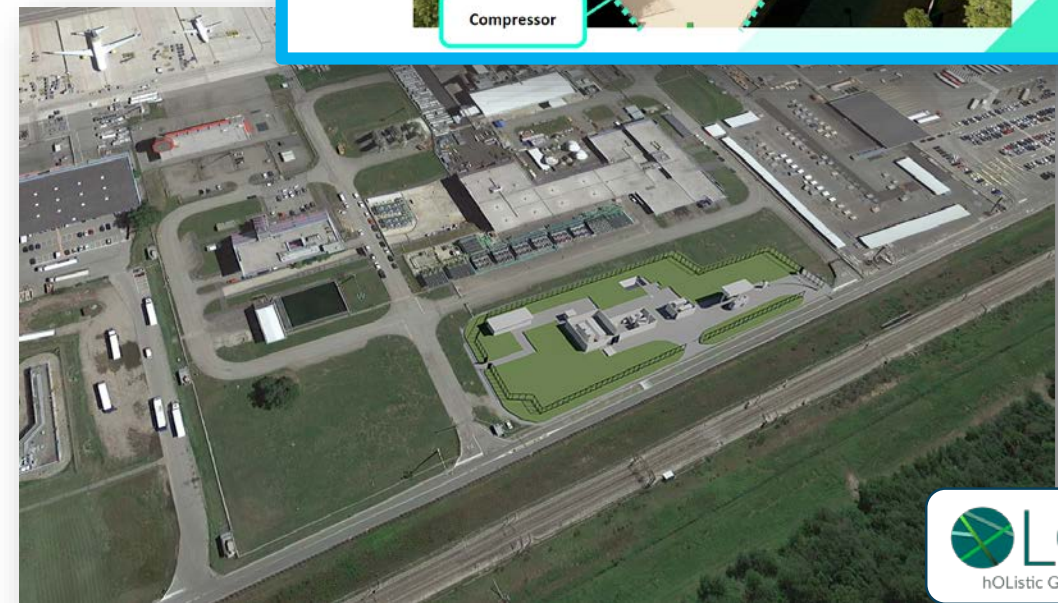
Compressor

Control-Room & welcome area

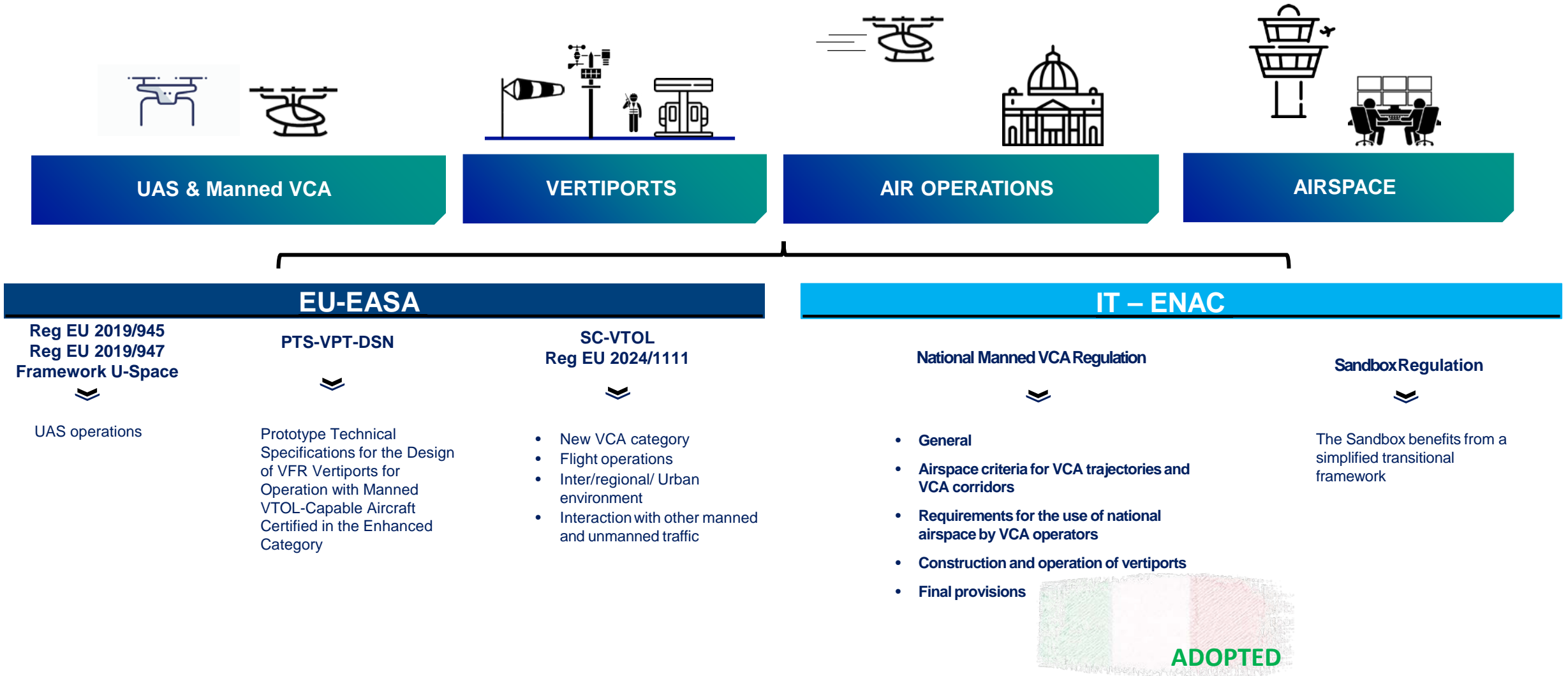
Trucks « turnaround » area

Storage & removal of containers

Lhyfe



Intermodality and Advanced Air Mobility

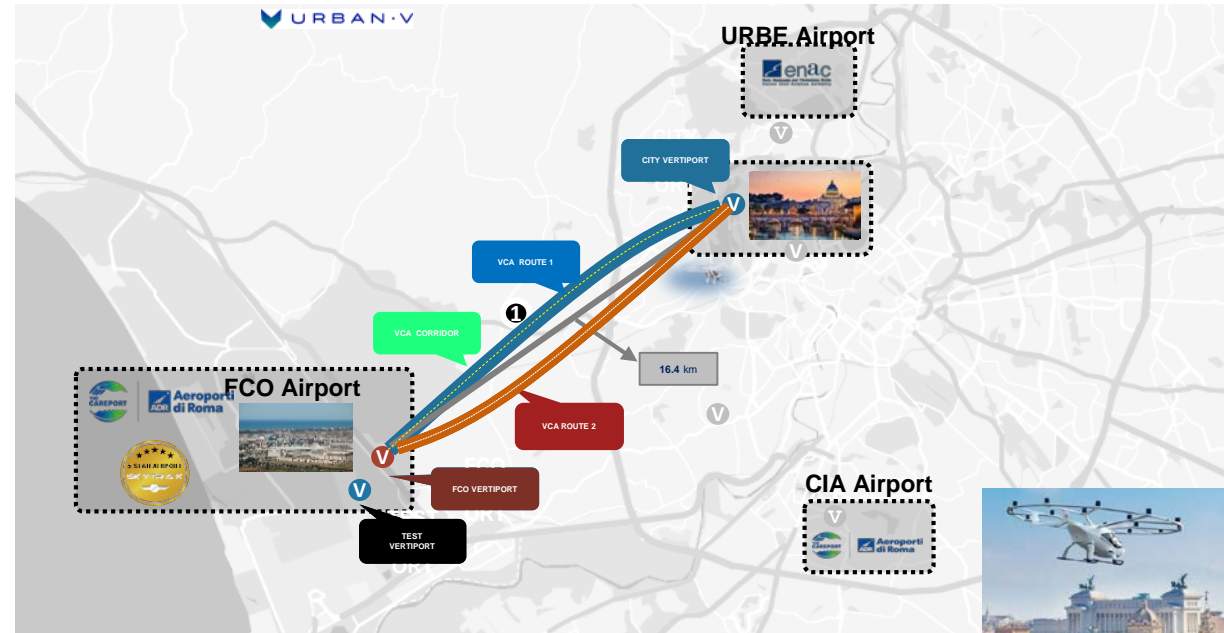


Intermodality and Advanced Air Mobility

Test of drones with Green Hydrogen propulsion in Padova airport



- ✈ Ground testing activities in the airport area relating to the KEB
- ✈ Ground testing activities relating to the interface of the KEB with the user (drone and/or goods handling vehicle)
- ✈ Flight testing activities of the drone within the airport area
- ✈ Testing activities outside the airport environment in BVLOS with drones powered by green hydrogen



Pilot Project Rome Air Taxi



- ✈ This first air taxi project has the goal of showcasing advanced air mobility with a commercial service, aimed at citizens and tourists.
- ✈ This service will be available during the 2025 Jubilee year, an important event for the Catholic Church, expected to draw millions of tourists and pilgrims to Rome.
- ✈ It also aims to demonstrate the benefits that can be obtained from AAM in the passenger transport and tourism sectors and for healthcare applications.

A Roadmap for SAF in Italy

SAF can cut GHG emission by 80% (on average)

VS

Available SAF on the market cover less than 2% of demand

General Objective:
Regulatory framework for SAF scaling-up in Italy

1. Demand-supply matching measures

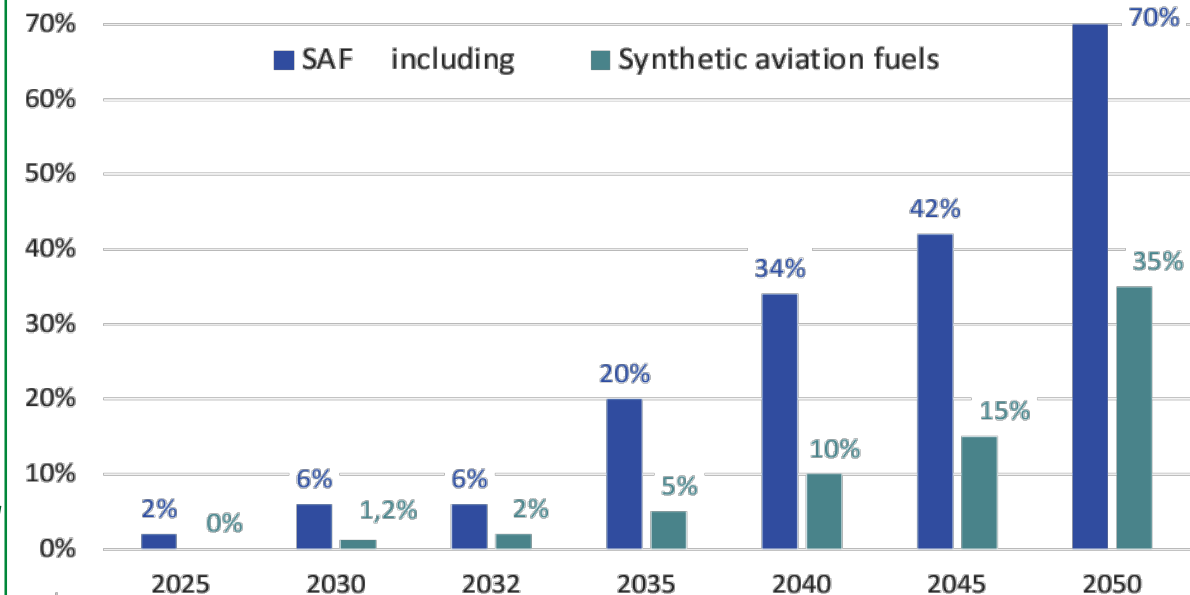
5. «RefueLEU Aviation» Regulation application

2. Supply-side measures

3. Demand-side measures

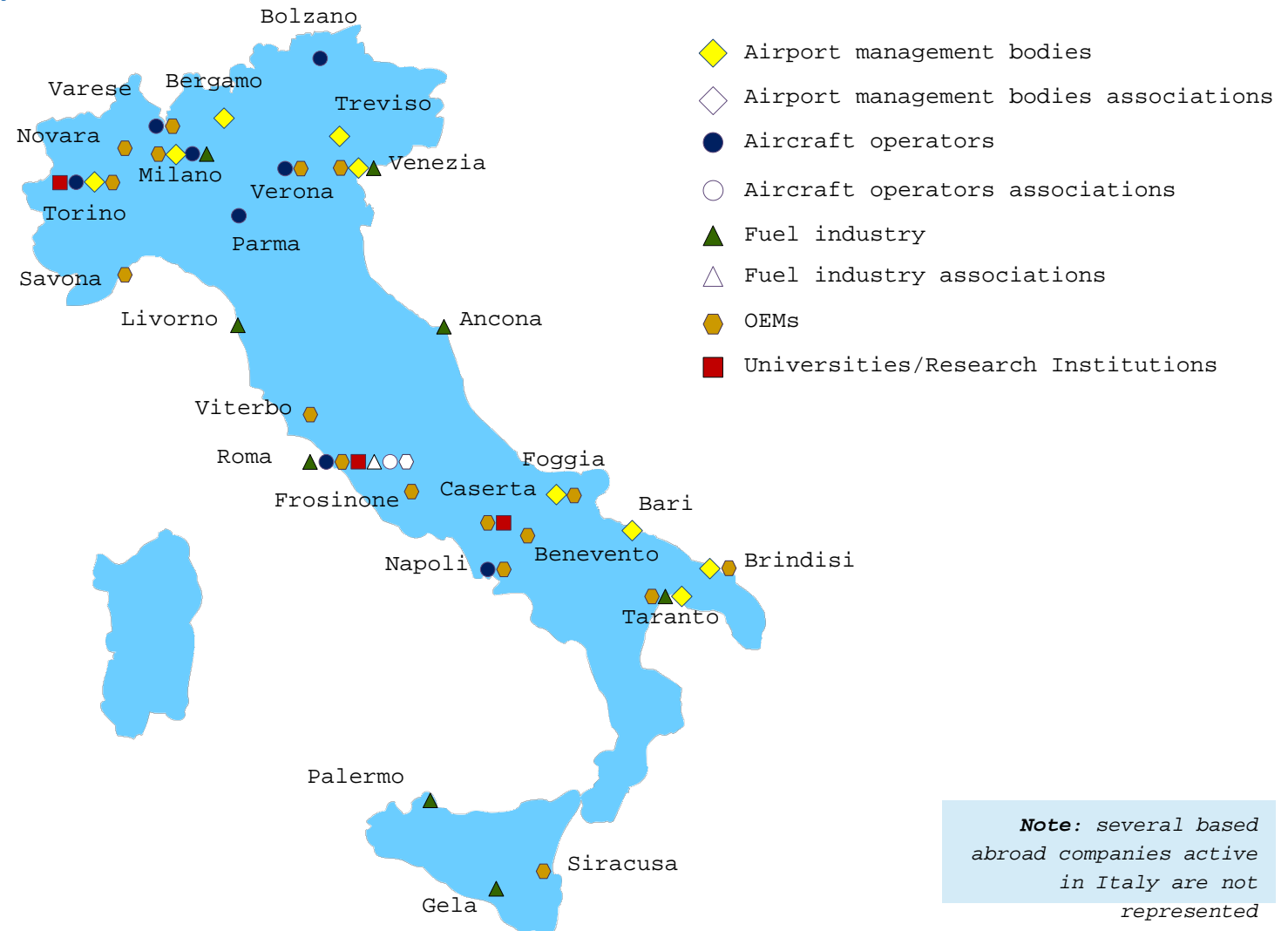
4. Measures for feedstock security

Regulation (EU) 2023/2405 «ReFuelEU Aviation»

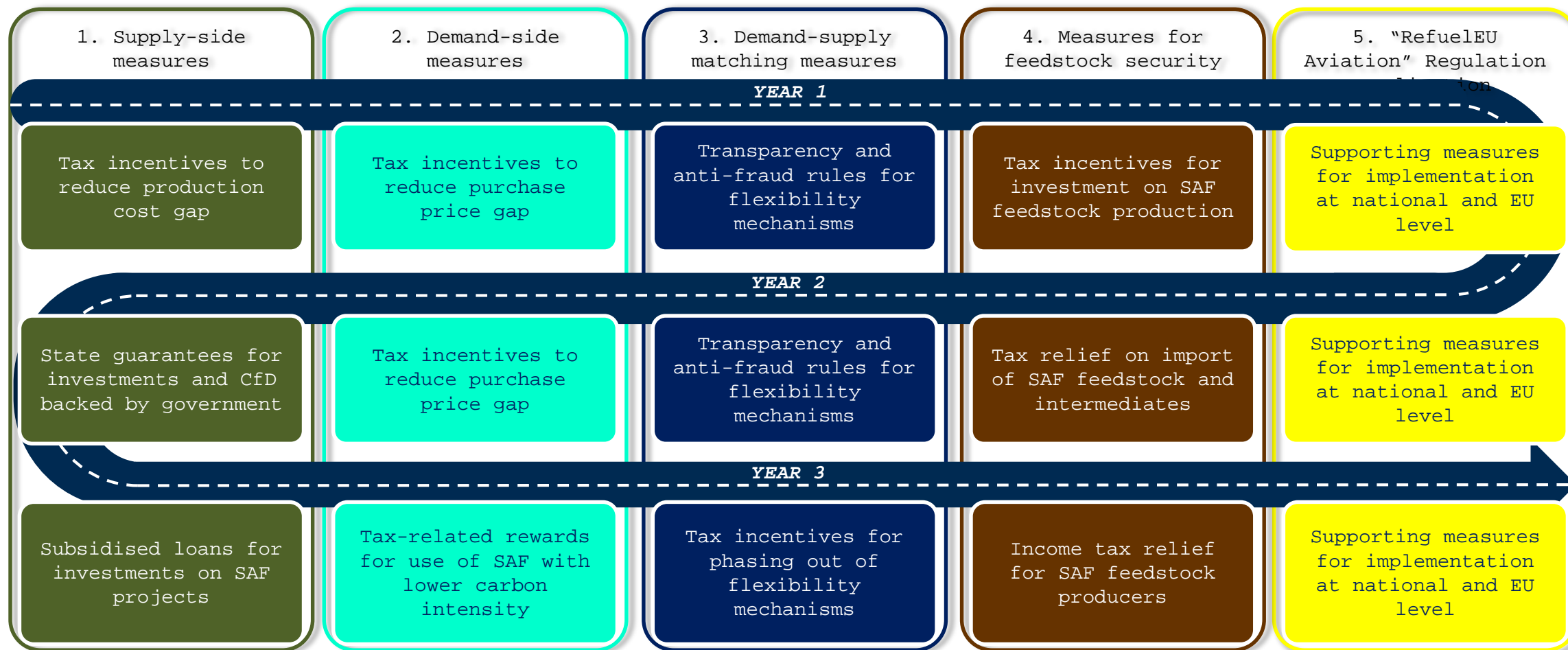


A Roadmap for SAF in Italy

- ENAC's National Observatory on SAF (since 2019)
- Stakeholders engagement (2023)
 - Informative meetings and workshops
 - Survey #1: SAF policy selection
 - Survey #2: SAF policy prioritization
- SAF Roadmap



A Roadmap for SAF in Italy



Thank You

