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Airport Regions Council

"GREEN AIRPORTS JOINT INITIATIVE"

AIRPORT REGIONS COUNCIL

Session 2: Key Drivers for Innovation – Sustainability

WHO ARE WE?

30+ member regions

70+ M residents

600+ pax/year

ARC in a nutshell:

- An organisation of local and regional authorities
- EU representation
- Knowledge creation and exchange
- A partner for European projects

WHAT DO WE DO?

Best practices

Representation

ARC
MEMBERS

Projects

Communication

Horizon 2020

OLGA
hOListic & Green Airports

hOListic & Green Airports (OLGA)

Presentation & Overview

Grant Agreement n° 101036871

OLGA innovates to reduce environmental impact

OLGA objectives

- Reduce the environmental impact of the aviation sector
- Reduce CO2 emissions
- Optimise energy efficiency
- Preserve biodiversity
- Improve air quality and waste management

Key developers

- Paris Charles de Gaulle (France) – lighthouse airport
- Milano Malpensa (Italy), Zagreb (Croatia), and Cluj Napoca (Romania) – fellow airports

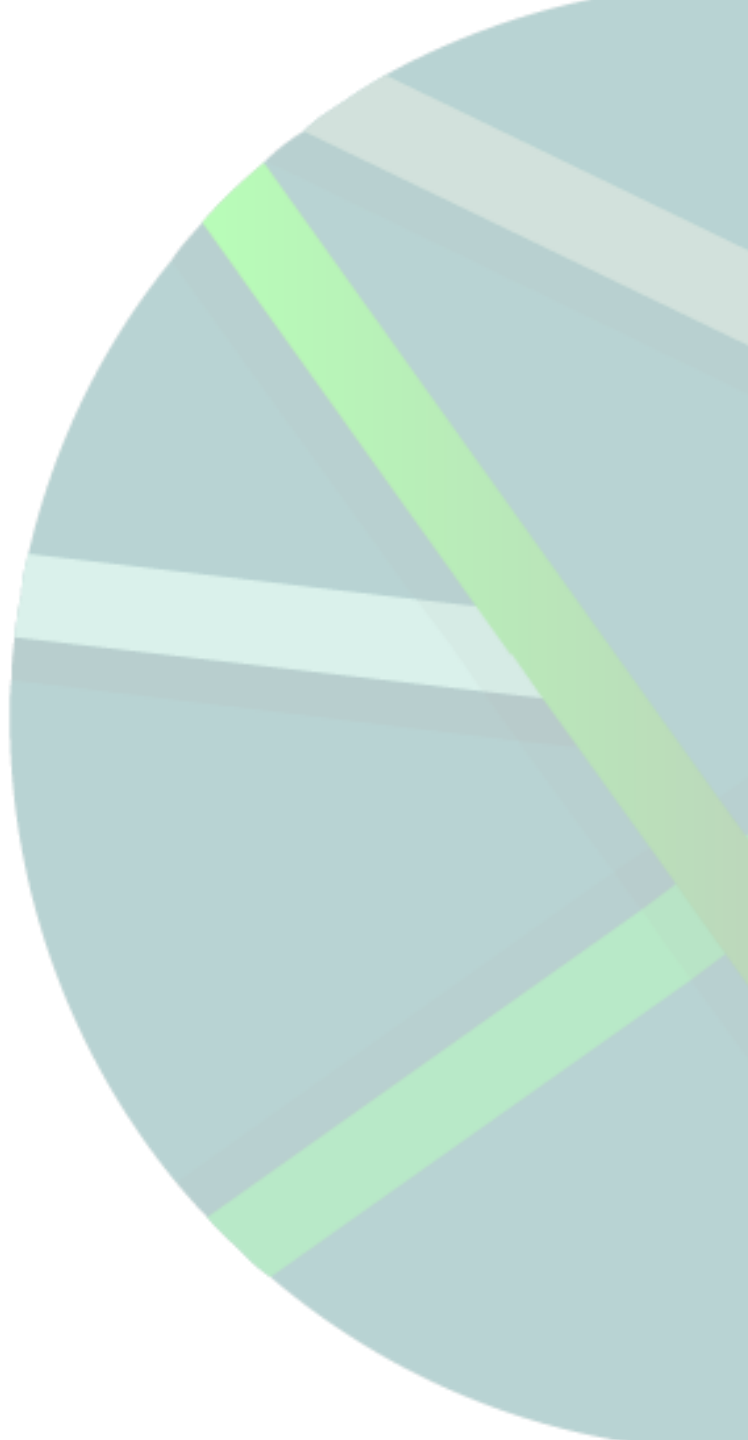
Main goal

- Foster replication of these innovations at airports worldwide



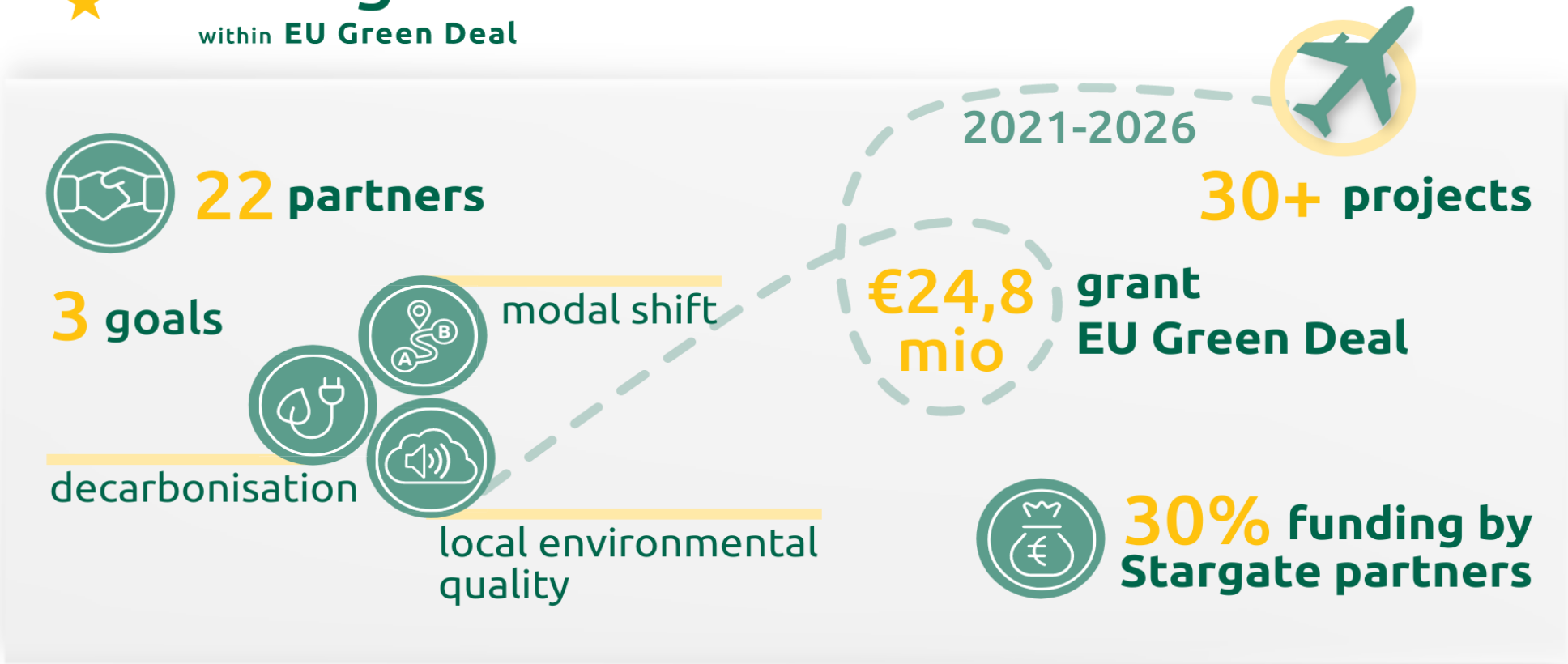

KEY FIGURES

34 M€	Project total budget
25 M€	EU grant
4	airports (CDG, MXP, ZAG, CLJ)
41	partners
17	third-parties
10	countries
60	months project
10	work packages
40	tasks
27	advisory board members



Stargate: accelerating greener aviation

Stargate
within EU Green Deal



www.greendealstargate.eu Stargate - EU Green Deal @Stargate_EU_gd

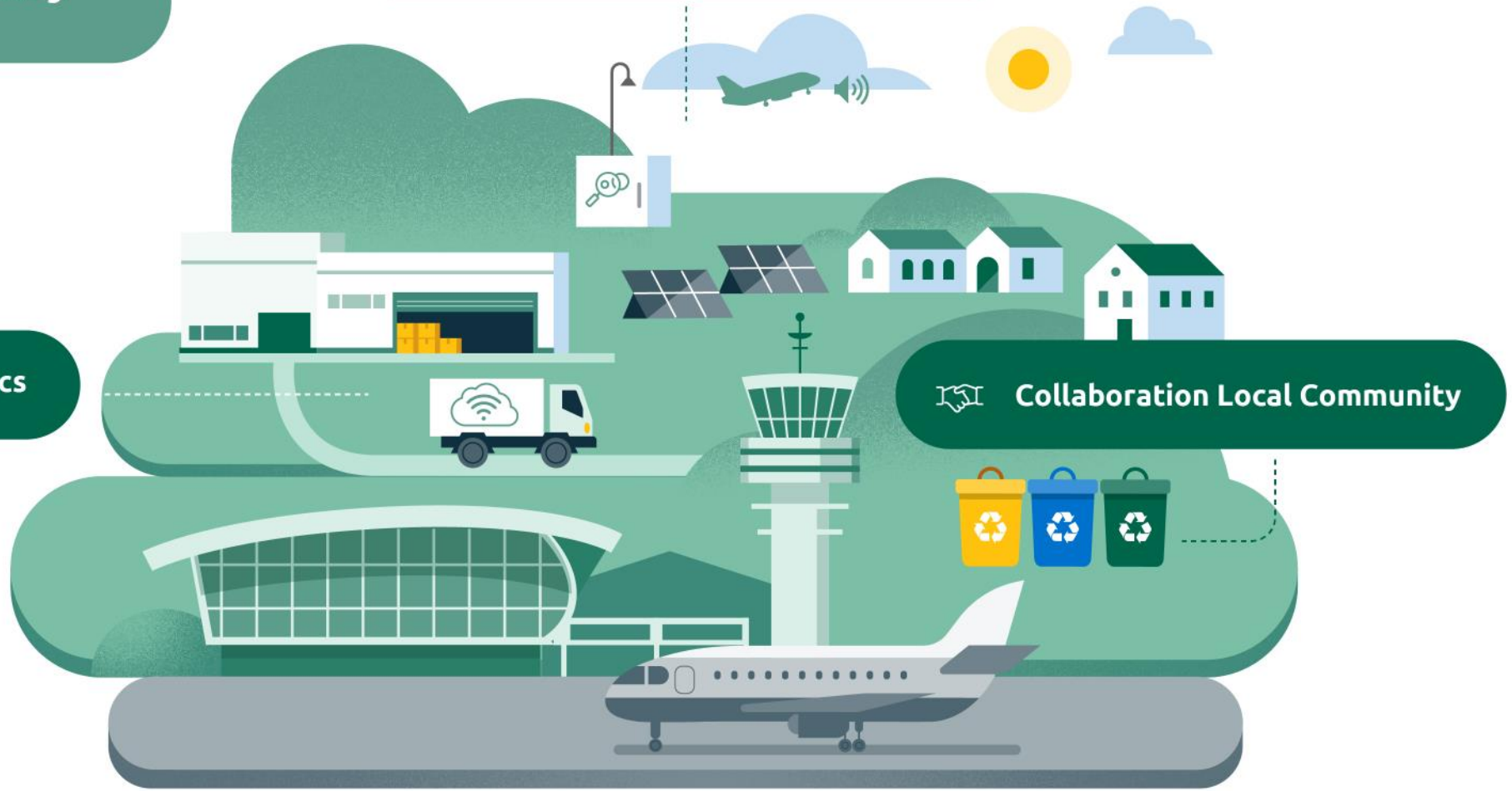
Enhancing Further Decarbonisation

Improving Local Environmental Quality

Local Air Quality & Noise Reduction

Digital Green Logistics

Collaboration Local Community



Stimulating Modal Shift

TULIPS

TULIPS => demonsTrating lower pollUting soLutions for sustaInable airPorts acrosS Europe

ROAD MAP to:

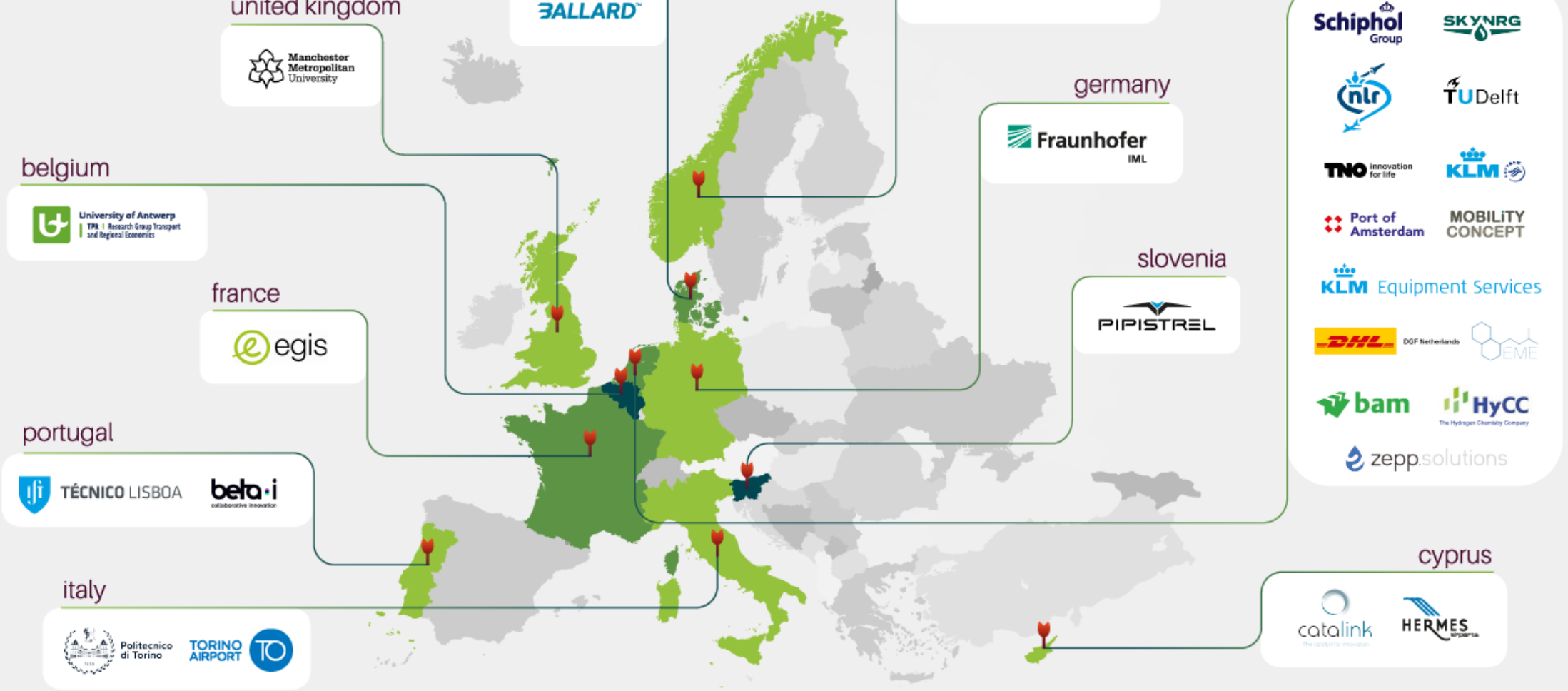
- Zero Waste & Zero Airport Emissions in **2030**
- Net Zero Aviation Emissions in **2050**

TULIPS Main Objectives:

- **Accelerate emission reductions** and the **efficient resource use** at airports in Europe 2030/50.
- **Demonstrate, measure and prescribe** innovative technologies and concepts that can support the ongoing **transiti towards sustainable airport operations** (‘green airports’)
- **Develop sustainability roadmaps** based on evidence from **7 focus areas** with a total of **17 demonstrations.**
- **25 millions EU grant**

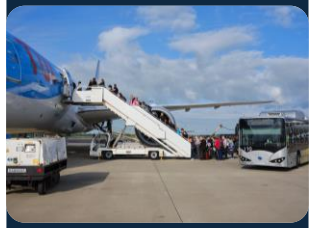
Grant Agreement No. 101036996

TULIPS Partners



Summary TULIPS on the involved demonstrators

WP1: Intermodal services



- Single source data & distributing information to services
- Increase use of:
  - electric freight transport
  - modal shift to green commuting modes
  - mobility as service
  - digital solutions for international green travel

WP2: Energy supply future aircraft

- Feasibility study incl. energy demand forecast (link with WP3)
- Demonstrate:
  - Unattended charging
  - Modular charging system
  - Airport-facilitated hydrogen flight

WP3: Smart energy hub

Implementing:

- Improved Airside electricity traffic incl storage and direct PV charging
- Fully integrated heat storage systems into existing hotel infrastructure

WP4: Zero emissions airside operations

Development & operation of:

- H2 GPU with a hydrogen fuel cell (H-GPU)
- Large size H2 tow tractor (able to move A380, B777 aircraft) which uses hydrogen powered fuel cells

WP5: SAF infrastructure

Scale-up of SAF market

- Set up EU Clearing house
- Enable airports to support the scale-up of SAF supply
- Demonstrate:
  - Large scale SAF supply
  - Incentives for airports to increase SAF usage

WP6: Circular airports

- Set up circular baseline for airport and circularity management system
- Demonstrate:
  - Application of circular building tooling
  - Elimination of operational consumer/ passenger waste

WP7: Green air & land

Focus at cross-cutting aspects through:

- Airside UFP mitigation measures and monitoring
- Airport land carbon sequestration with biochar, including nature based solutions

WP8: Performance monitoring

- Establish robust baselines for comparative analysis and implement an extensive data aggregation and collection toolkit
- Implement an extensive data aggregation and collection toolkit to facilitate the transfer of observable metrics and key data from demonstration activities
- Model target KPIs for emission and energy reduction
- Determine the achieved performance for each demonstrator activity
- Develop predictive scale-up scenario forecasting for use within deployment assessments (WP9) and building roadmaps (WP10)

ALIGHT Partnership

A Lighthouse for the Introduction of Sustainable Aviation Solutions for the Future

Copenhagen Airports CPH

Key facts about ALIGHT

- Grant from European Commission of 12 million EUR
- Project period: 2020 - 2025
- CPH leads the consortium consisting of 17 partners in 10 European countries
- High priority for EC – direct links to EC’s climate strategy
- Direct links to CPH’s own climate strategy

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 957824

The ALIGHT mission

Copenhagen Airport is the lighthouse for the H2020 Smart Airports project ALIGHT. CPH will showcase the way to the sustainable airport of the future. The mission is to give best practice recommendations that can be replicated by other airports.

A best practice guide for Sustainable Energy Fuel handling and logistics will be developed. An innovative concept for a cost-effective fuel supply chain will be demonstrated at CPH.

Solutions for renewable energy for ground activities and vehicles within the airport will also be found. This includes own production of sustainable energy, energy storage and electrification.

Example of ALIGHT key demonstration activity

- 3-week SAF Measurement Campaign at CPH Airport (Jan-Feb 2023) - **first of its kind under operational settings**
- 35 % SAF blend flying Arlanda – Copenhagen
- German Aerospace Centre (DLR) measures impact on local air quality when flying with SAF: *nvPM_mass, nvPM_number, BC, particle size distribution*
- Involves 6 out of 16 partners
- **Results: approx 30 % improvement in**

Thank You

ICAO