

ICAO EUR/NAT – Webinar on Green Airports

Sustainability Highlights

5.12.2023 | *Fraport Slovenija (Ljubljana Airport)*



"We want to reduce CO₂ emissions and energy consumption to mitigate the effect the operation of an airport and air traffic have on the environment."

(Fraport Slovenija's Strategic Priority)

Trends/challenges in sustainability at airports



GREATER RESILIENCE OF ENERGY SUPPLY

- Balanced energy mix solution, which ensures less dependence on the price of energy sources
- Solution which ensures an acceptable level of 'business as usual' during times of uncertainty (instability of gas supply, electric eclipses)
- Low-carbon solution (use of renewable sources) to be compliant with future net zero targets



DECARBONIZING GROUND HANDLING OPERATIONS

- Financial constraints (high costs)
- Infrastructure constraints (insufficient connected electrical power)
- Operational constraints ("long" charging time of electric vehicles)
- Decarbonizing heavy vehicles (hydrogen?)



SUSTAINABLE INTERMODALITY

- Inflexible and bad connected public transport
- Absence of (or bad) rail connection to the airport (responsibility of the state)
- Shortage of public electrical charging stations

Best practices implemented at Ljubljana Airport



Emission free energy production (renewable electricity & photovoltaic solar plants)

- 2013 - 100% purchased electricity from renewable sources
- 2021 - installation of first heat pump
- 2021 - installation of photovoltaic solar power plant on the parking garage roof
- 2023 - further installation of solar power plants and heat pumps
- Green Capex plan for period 2023-2035



Reducing energy demand (energy efficiency systems)

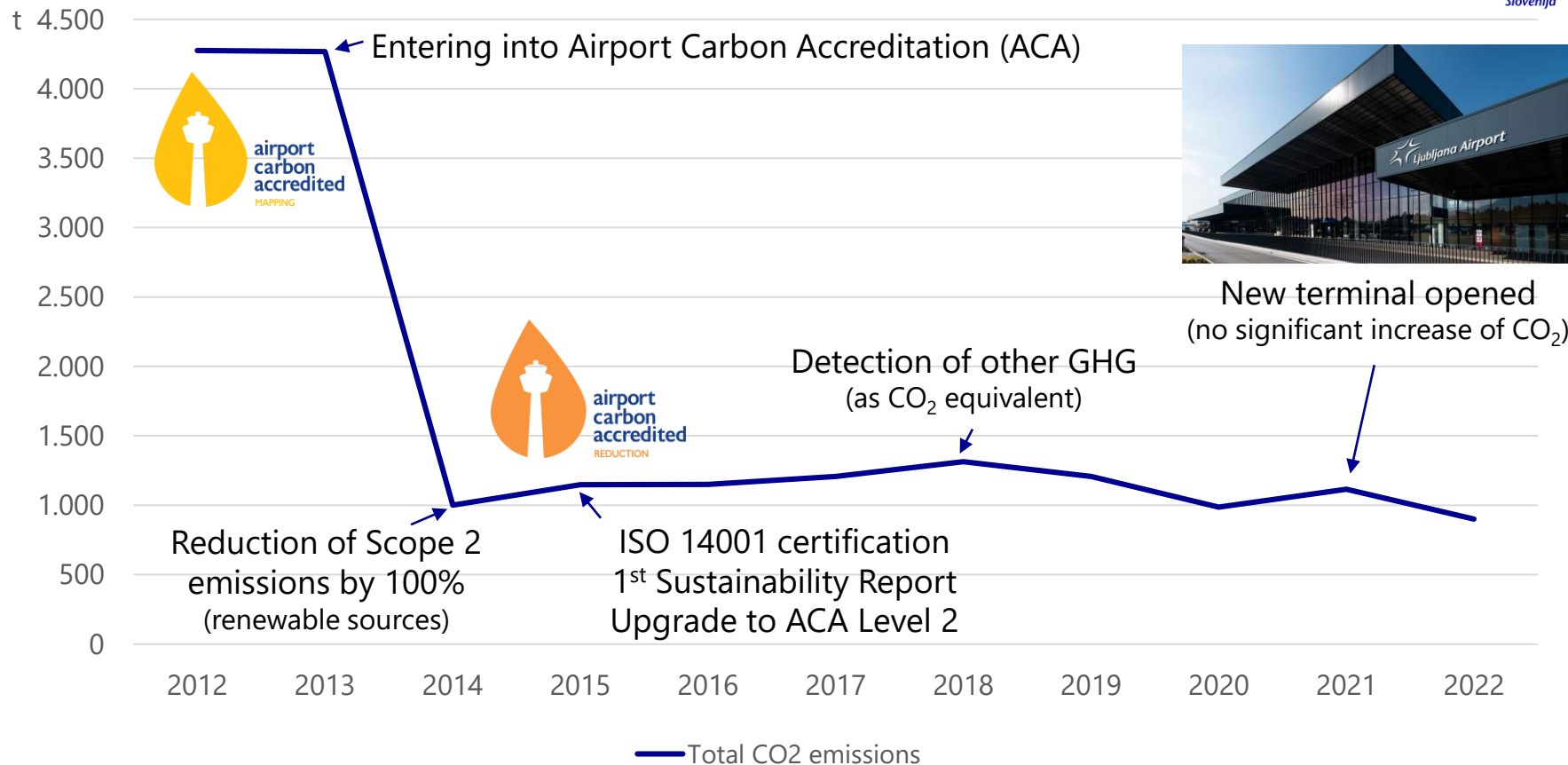
- HVAC optimization
- Installation of ball valves on pipeline to the terminal
- Refurbishment of heating stations in buildings
- Roof isolations
- Replacement of inefficient lighting with efficient LED lighting and installation of motion sensors
- Implementation of energy management system
- IBM E-power for electrical substations



Airport engagement – Forum of Dialogue (improving the lives of communities)

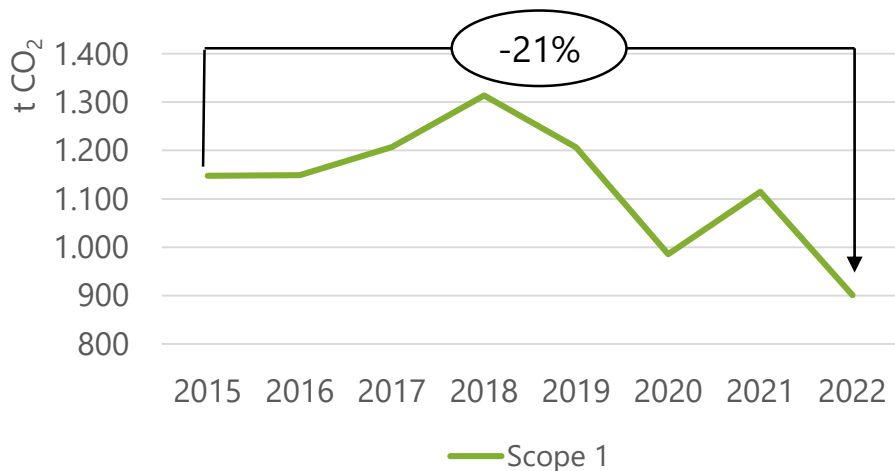
- 2019 - Establishment of Environmental Partnership expert group of relevant stakeholders (airport authority, ATC, CAA, state authorities)
- 2023 - Expansion of the group with representatives of municipalities and residents into Forum of Dialogue
- Priority group task: resolving open noise issues
- Annual noise measurements in the peak season
- Transparency: noise reports publicly available

Analysis of overall CO₂ emissions (period 2012-2022)



New terminal opened
(no significant increase of CO₂)

Analysis of Scope 1 emissions (period 2015-2022)

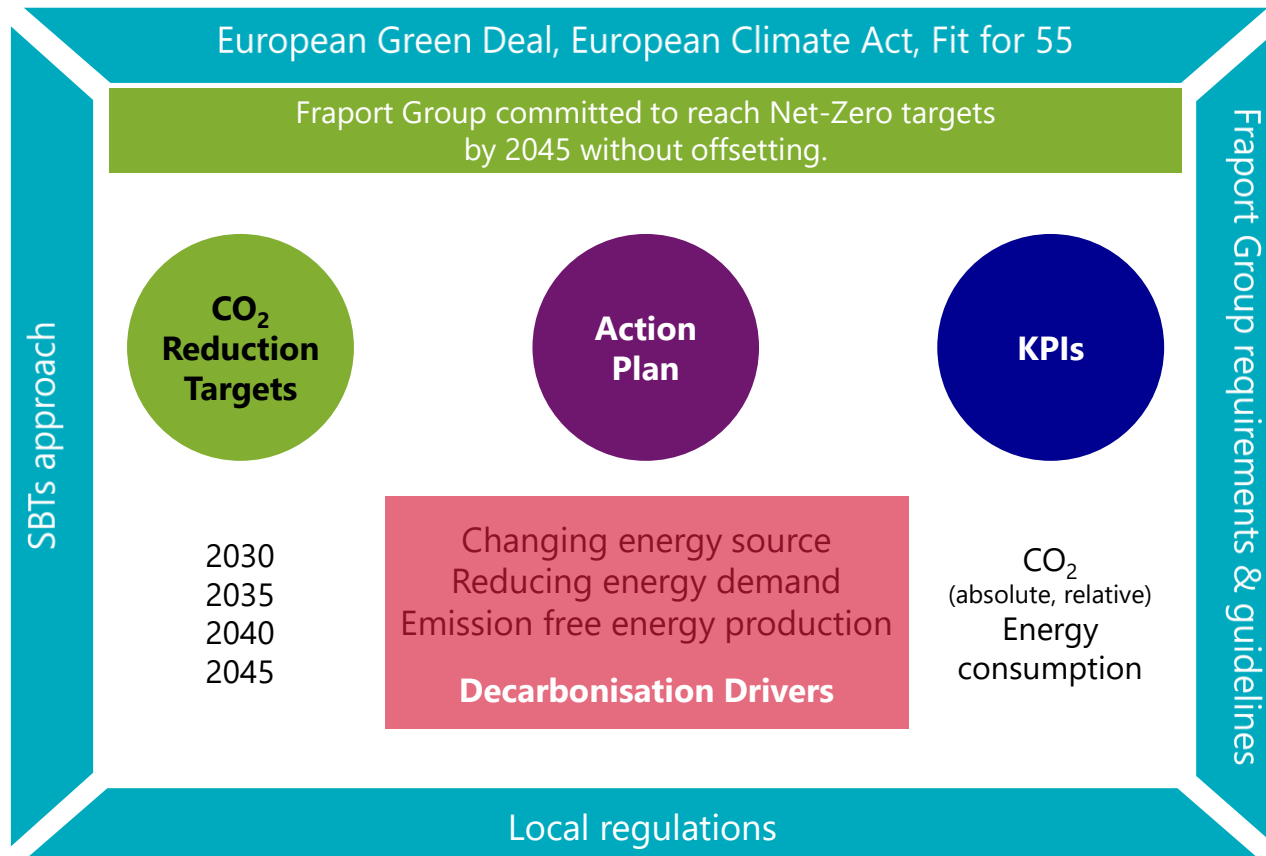


Main measures taken

- Switching from heating oil to natural gas for heating
- Implementation of LED technology
- Optimization of central power facility
- Installation of heating pumps
- Some vehicles converted to alternative drives



Decarbonisation Strategy (2023-2045) – overview



Decarbonisation Action Plan (top measures)

Targets

Target 2030: 551 tons CO₂

Target 2035: 478 tons CO₂

Target 2040: 219 tons CO₂

Top measures

Description

Energy savings*

CO₂ reduction (t CO₂)*

Capex (Euro)

Implementation (Year)

Short- and mid-term measures (2023-2035)

- Electrification of vehicle fleet (Plan 2023-2035)
- Establishing of electrical charging infrastructure
- Construction of electrical substation
- Installation of additional heat pumps (2023, 2026, 2027)
- Implementation of energy management system (EMS)
- HVAC optimization
- Energy power optimization and quality for electrical substations
- Conversion to LED technology
- Roofs isolation projects
- Construction of photovoltaic plant (Fraport II, 2023)

Electrification of vehicle fleet

Electrification vehicle fleet plan
Electrical recharging infrastructure
Electrical substation (new)



Energy efficiency systems

Heat pumps (new)
EMS
HVAC and energy power optimization
Conversion to LED
Roofs isolation
Electricity savings



Photovoltaic systems

Generation of emission-free energy
(Fraport I and II)
Two solar plants cover 20% electricity demand



133,000 liters
(+241 MWh 100% green electricity consumption)

348

4.4 mio EUR**

2023-2035

3,547 MWh

146

5.3 mio EUR

2023-2035

1.1 MWh

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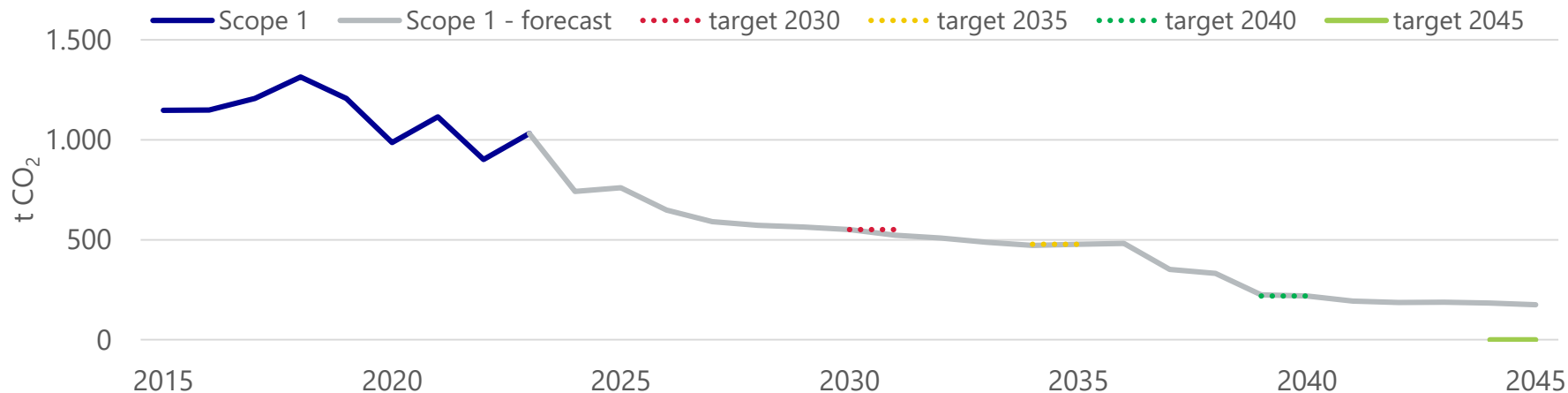
PPA

2022-2023

* traffic growth not included

** only included Capex for electrification that can really be attributed to decarbonisation (Capex difference between electrical vehicle and fossil-powered vehicle)

Forecast for Scope 1 emissions (targets)



Targets	Year	Emissions emitted
-52%	2030	551 t
-58%	2035	478 t
-81%	2040	219 t

Base for target formulation

- SBT approach (Paris Agreement: 1.5°C-limit)
- Net Zero Standard
- Baseline: Year 2015 (1,148 t CO₂)
- Fraport Group requirements (Net-Zero 2045)
- Comprises only Scope 1 emissions, (as Scope 2 emissions are already reduced by 100%)



***A pleasant journey!
We make it happen.***

Primož Primožič, Environmental Expert

primoz.primozic@fraport-slovenija.si