SOLAR
Project

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Led by the Apulia Region – Department of Mobility, through the Mobility Infrastructure Section, and supported by important partners in the field of aviation and sustainable development, this project represents a new front in the search for solutions to tackle climate change.

Embarking on a Sustainable Journey to Enhance Airport Sustainability in Puglia, Albania, and Montenegro.

The SOLAR project, co-financed by the Interreg Italy-Albania-Montenegro Programme, aims to pave the way for a greener future by measuring the carbon footprint of airports in Puglia, Albania, and Montenegro.

Through strategic coordination of schemes and methodologies to assess emissions, the SOLAR project aims to make a contribution to the development of a comprehensive Joint Energy Plan that enhances energy efficiency and mitigates the environmental impact of airport infrastructure.

Project Results

SOLAR is dedicated to developing precise tools for measuring the carbon footprint of airports in Puglia, Albania and Montenegro, while also initiating effective policies for the reduction of carbon emissions.

The project has produced a carbon footprint report to detect, account for and report CO2 emissions, a low carbon/low energy plan containing possible strategies to reduce carbon footprint in the airports, and a study on environmental impact of connections between Puglia and Molise. Moreover, awareness and behavioural change campaigns for promoting sustainable management in involved airports, as well as training campaigns on energy efficiency and carbon management techniques were held. The partners also produced a study on how to reach neutrality for carbon offsetting in the involved airports. All actions have resulted in the creation of a joint toolkit for sustainable management of CO2 emissions in airports.

Go To future

SOLAR's legacy is therefore consisting of having explored technical elements that are often difficult to read in order to encourage and disseminate good practices aimed at improving the overall process of reducing carbon emissions with particular reference to the airport structures of partner countries.

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Partners

Puglia Region - Department of Mobility -

Mobility Infrastructure Section

The Department of Mobility of the Puglia Region oversees the management of the transportation system and its associated infrastructure. The Department is responsible for governing the spatial layout and infrastructure development within the Puglia region, as well as planning and managing the financial resources required for regional infrastructure investments identified within the Regional Transportation Plan.

REGIONE PUGLIA

REGIONE PUGLIA AEROPORTI DI PUGLIA Aerodromi Crne Gore AUTORITETI I AVIACIONIT CIVIL SviluppoItalia
BARI BRINDISI FOGGIA TARANTO Airports of Montenegro Molise

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Airports of Puglia S.p.A.

AEROPORTI DI PUGLIA
BARI BRINDISI FOGGIA TARANTO

Airports of Puglia S.p.A. (AdP) manages the entire the airport system in Apulia and constitutes a key factor for the economic and social development of the region. Its favourable position at the heart of a strategic area such as the Mediterranean constitutes an added value and an essential advantage in international transport networks.

Airports of Montenegro

Aerodromi Crne Gore
Airports of Montenegro

Airports of Montenegro is a state-owned company providing service activities incidental to air transportation. APM is a ground handling company and operator of two international airports in Montenegro – Podgorica Airport and Tivat Airport. Functioning of an effective and efficient transportation system is a crucial prerequisite for the economic and social prosperity of Montenegro.

Albanian Civil Aviation Authority

AUTORITETI I AVIACIONIT CIVIL

ACAA is the highest civil authority in Albania competent in the field of civil aviation. It works in ensuring highest standards of security and efficiency in compliance with European and International requirements.

Regional Development Agency of Molise Region – Sviluppo Italia Molise S.p.A.

SviluppoItalia
Molise

Sviluppo Italia Molise is the regional development agency of the Molise Region and works as in-house organization. It has enhanced the past experiences and competences specializing in services supporting territorial development, in creation and consolidation of business, in technical assistance to public administration, including the management of European, national and regional funds.

REGIONE PUGLIA

AEROPORTI DI PUGLIA
BARI BRINDISI FOGGIA TARANTO

Aerodromi Crne Gore
Airports of Montenegro

AUTORITETI I AVIACIONIT CIVIL

SviluppoItalia
Molise

This project is co-financed by the European Union under the Instrument for Pre-Accession Assistance (IPA II)

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Carbon
Footprint

The SOLAR Project, based on the Specific Objective 3.2 of the INTERREG ITALY ALBANIA MONTENEGRO Program, aims to measure and reduce the carbon footprint in as. Carbon Footprint is a significant environmental indicator that calculates the total greenhouse gas (GHG) emissions.

These emissions, measured in terms of carbon dioxide (CO_2), are evaluated in kilograms or metric tons. The indicator takes into account both direct and indirect emissions generated by a specific product, activity, or organization.

More specifically

The significance of the Carbon Footprint lies in the fact that it is not a subjective or randomly fluctuating index.

Instead, it provides an accurate, though simplified, representation of the total environmental impact of a good throughout its entire existence.

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Reduce, Reuse, Recycle

The philosophy of the three 'R's - Reduce, Reuse, Recycle - responds to the urgent need to counter the 'throwaway' consumption that harms the health of our planet. In fact, the production of any object entails an inevitable emission of carbon dioxide and increases the volume of waste destined for landfills.

The goal of carbon neutrality is the balance between the greenhouse gas emissions produced and those absorbed by the environment. This objective represents the culmination of a process that involves quantifying, reducing, and offsetting CO_2 and greenhouse gas emissions generated by products and services.

The virtuous circle

Airlines, passengers and economic operators, have the opportunity to actively participate in decreasing the CO_2 emission levels.

RECYCLE

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How Can Airlines Reduce Their Carbon Footprint

6 BEST PRACTICES

01. Fleet Modernization

By replacing older models with more modern and high-performance aircraft, such as the Airbus NEO, significant advancements in efficiency can be achieved. These aircraft offer a minimum of 15% improvement in efficiency compared to their predecessors.

02. Collaborations and Partnerships

By collaborating with industry partners and joining forces, it is possible to expedite the development of zero-emission technologies, such as hydrogen. This will enable passengers to fly on aircraft that produce no carbon dioxide emissions.

03. Plastic Reduction and Recycling Optimization

Significantly reducing the amount of single-use plastic on board aircraft can lead to a drastic reduction in CO_2 levels. By implementing recycling programs within warehouses and making changes to packaging, airlines can make an additional contribution to the environment.

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How Can Airlines Reduce Their Carbon Footprint

04. Sustainable Fuels

The use of Sustainable Aviation Fuel (SAF), created from sources like used cooking oil and agricultural residues, can significantly contribute to the sustainability of the aviation industry. With similar chemical properties to traditional fuels, SAF does not require modifications to aircraft engines or infrastructure

05. Spreading the Green Culture

Promoting information about initiatives to reduce CO2 levels can inspire passengers towards more environmentally friendly lifestyles. Providing tools to calculate one's carbon footprint and presenting solutions for offsetting it could be an option. Many non-profit organizations offset CO2 emissions through ecological initiatives such as mangrove reforestation, which absorb CO2 four times more effectively than tropical forests.

06. Green Uniforms

Introducing new crew uniforms made from eco-friendly fabrics or favoring local production of uniforms can minimize CO2 emissions associated with transportation while supporting local economies. Choosing clothing manufacturers with environmental certifications can further help minimize the carbon footprint.

How Can Economic Operators Reduce Their Carbon Footprint

6 BEST PRACTICES

01. Packaging

The production and disposal of packaging generate considerable greenhouse gas emissions and pollution. It is essential to opt for sustainable packaging materials, such as biodegradable alternatives, paper-based packaging, and reusable containers. These solutions, including recycled paper tape and biodegradable shoppers, reduce waste and respect the environment. Smaller sizes and fewer layers of packaging can further contribute to sustainability.

02. Clothing

Promoting eco-textile products and clothing can make a difference. For example, silk is the fiber that contributes the most to reducing CO_2 pollution and greenhouse gases due to its low carbon footprint and the agricultural aspect of its production. It can absorb over 700 kg of CO_2. Other fibers can also contribute, in various ways, to reducing CO_2.

03. Sustainable Menu

Food consumption has a significant impact on the environment. Relying on local farmers for the purchase of locally sourced fruits and vegetables can significantly contribute to reducing greenhouse gas emissions. Additionally, avoiding the use of plastic can provide an additional positive contribution to the environment.

04. Sustainable Lighting

A large part of the Co2 emissions produced by a store are caused by the lighting system.
Switching to all-LED lighting can reduce 50% to 70% of your carbon footprint compared to incandescent lights.

05. Responsible Management
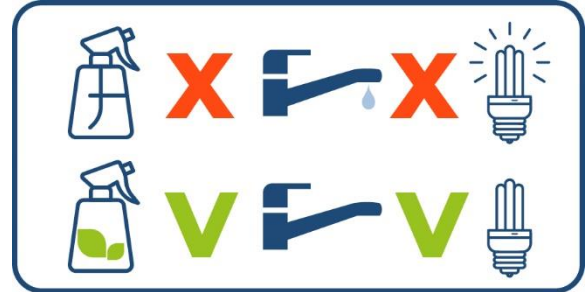
A responsible store management can contribute to CO2 reduction. Preferring environmentally friendly cleaning products, turning off lights when not needed, avoiding water waste, reducing paper use in favor of digital, and using plastics consciously will minimize the environmental impact. Choosing sustainable alternatives and promoting recycling can help further reduce waste and greenhouse gas emissions.

06. Reduction of food waste

Food waste, which contributes to almost 10 % of global CO2 emissions according to the 'World Wildlife Fund', is predominantly generated by restaurants and companies in the food industry. Innovative technologies and careful menu planning could limit this waste. Hot food preservation, for example, can extend the shelf life of products without altering their flavor or appearance.

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How Can Passengers Reduce Their Carbon Footprint

## 6 BEST PRACTICES

01. Fly Responsibly

Whenever possible, opt for direct flights as they are the most sustainable choice. Reduce weight and luggage: for short trips or accommodations with laundry service, you can bring only carry-on baggage. A lighter aircraft produces less CO2. Choose airlines committed to reducing CO2 emissions to promote a virtuous cycle of optimization.

02. Offset Your Emissions

Offsetting your CO2 emissions is possible through tree planting, such as mangroves, which can absorb approximately 308 kg of CO2 over their lifetime. Numerous organizations are available to assist you in this offsetting process, contributing to a more sustainable future.

03. Choose Eco-Friendly Transportation
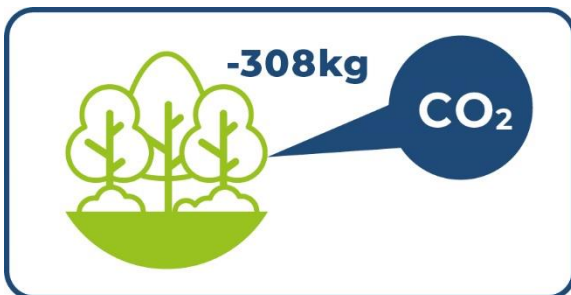
Arriving at the airport using sustainable transportation methods is an effective choice to reduce environmental impact. When possible, use bicycles, public transportation, car-sharing services, and electric vehicles as practical options that promote sustainability and respect the environment.

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How Can Passengers Reduce Their Carbon Footprint

04. Choose Online Check-In

By choosing online check-in, you can benefit from several advantages that streamline the entire departure process while simultaneously reducing environmental impact. You'll have all your travel information available directly on your device, eliminating the need to print documents on paper. By not printing, you will contribute to limit CO2 emissions associated with paper usage.

05. Recycle and Limit Paper

During your journey, try to limit the use of paper and maximize recycling. This not only avoids the production of new materials but also reduces CO2 emissions. Common items such as disposable water bottles, plastic bags, cups, wrappers, and containers incur a CO2 cost, not just in their production but also in disposal and potential recycling.

06. Choose Eco-Friendly Accommodation

Choosing eco-friendly   accommodation can make a big difference. Many hotels and B&Bs adopt measures to minimize their environmental impact, such as using renewable energy, efficient recycling programs, water conservation, and sustainable dining options. When booking, look for properties that have green policies, such as LEED certification or zero waste practices.

Choose Eco-Friendly Transportation

MEASURES FOR THE ACCESS PHASE TO AIRPORT

Integration of airport in the regional transport system

- Integration of the airport in the public transport system of the catchment area of the airport (rail transport also High Speed services, metro system, tramways or buses lines).

- Improving the connection of airports with close urban settlements by means of cycle paths capable of offering alternative and sustainable accessibility to the airport, especially for employees and smart passengers.

Landside electrification and use of green vehicles

- Promotion of different possible forms of intermodality using electric vehicles as alternative or in coordination to public transport system.

- Landside electrification for promoting the use of environmentally friendly vehicles for staff and passengers (for instance in the travel from parking areas to terminals), ground service providers and ground activities.

- Supporting passengers to use low-emission vehicles with reduced parking rates or availability of seats reserved for hybrid/electric vehicles.

Smart ticketing and services

- Implementation of different integrated single ticket solutions that allows the use of different means of transport by purchasing a single solution. This development would guarantee the choice of door-to-door more sustainable travel, integrating different means of transport with reduction in travel times, costs and emissions.

- Promotion of "Smart" services to improve accessibility to the airport by means of real-time information, advice and forecasts on optimal mobility solutions.

Home-work travel plan

- Implementation of the Home-Work Travel Plan for the airport employees. In this context, various actions can be envisaged such as: facilitations for the purchase of travel tickets for the use of local public transport (job ticket); offer of reserved seats for hybrid/electric vehicles equipped with charging column; activation of a "Car pooling" service; etc.

Examples of best practices:

Brussels:

The airport has long focused on sustainable travel to the airport. In recent years, cycling has gained popularity for commuters and this provides opportunities for employees at Brussels Airport and the many companies located in its surroundings. To encourage even greater use of bicycles, the province of Flemish Brabant and Brussels Airport have appointed a bike manager that will map the potential of bicycles at the airport and develop concrete measures and actions to boost the number of cyclists. Stargate project: https://www.greendealstargate.eu/

OLGA project:

The project develops and tests the integration of a decision support tool for planning the electrification of urban bus transport with the software solution for airports and their catchment areas. OLGA project (hOListic Green Airport): https://www.olga-project.eu/

Milan Airports:

New service adopted by SEA for promoting more sustainable access for workers and operators of all companies at both Milan airports. This service is the corporate carpooling service launched through the pilot project called LAirA (Landside Airport Accessibility). The service - accessible both via app and web - allows operators to find colleagues and other employees of different companies in the airport system for sharing their car with them for daily commuting from home to work, based on the compatibility of work shifts and the itinerary of each one. The service offers the estimated cost of the shared ride and the amount of CO2 emissions saved during the trip, finally employees who certify the highest number of shared rides are rewarded with fuel vouchers.
Milan Airports: https://www.milanairports.com/it

Linate Airport:

The airport will have a "Smart Mobility Area" as a new space dedicated to sustainable mobility located within the new intermodal hub to facilitate transfer with metro Line 4. This area will be designed to have electric charging systems and other innovative technologies, so as to encourage the use of shared and sustainable mobility. Linate Airports: https://www.milanolinate-airport.com/it/

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A little goes a long way

A few simple steps are all it takes to reduce CO2 levels in the environment around us

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