

**Environmental protection Plan for the fee period March 2017 –
February 2021**

ADR Economic Regulation Agreement

- **REFERENCE CONTEXT**

- **UPDATE OF CDP ANNEX 10 – 2017-2021 SUB-PERIOD**

- **FINAL VALUES OF CDP INDICATORS – YEAR 4**

- For ADR combining economic growth with environmental protection, while implementing concrete measures for environmental sustainability, is a strategic priority
- As early as 1999, our corporate commitment to environmental protection and our stance towards sustainable development had led us to achieve the initial ISO 14001 certification of our Environmental Management System, for the Fiumicino airport
- The Ciampino airport also achieved its ISO 14001 certification in 2001
- In 2012, after implementing its Integrated Quality, Environment and Workplace Safety System, ADR Group issued its “Comprehensive Policy on Quality, Environment, Energy, and Occupational Safety and Health”
- The Planning Agreement with ENAC was a new opportunity to strengthen ADR's commitment to respect the environment and to encourage sustainability in its business

- REFERENCE CONTEXT

- UPDATE OF CDP ANNEX 10 – 2017-2021 SUB-PERIOD

- FINAL VALUES OF CDP INDICATORS – YEAR 4


To choose and define the environmental indicators to add to the update of the Planning Agreement for the 2017-2021 five-year period, ADR took into account the following 3 factors:

1. ENAC's guidelines for 2015

2. ADR's Environmental Management System

3. Analysis of Stakeholder Priorities

MORE EFFECTIVE AND MEANINGFUL INDICATORS



ENTE NAZIONALE PER L'AVIAZIONE CIVILE

Numero: 01/2015-APT
Ed. n. 1 del 20 luglio 2015

Le Linee Guida contengono elementi di dettaglio di tipo interpretativo o procedurale per facilitare l'utente nella dimostrazione di rispondenza ai requisiti normativi. Sono generalmente associate a Circolari. Data il loro carattere non regolamentare, i contenuti delle Linee Guida (LG) non possono essere ritenuti di per se obbligatori. Quando l'utente interessato sceglie di seguire le indicazioni fornite nelle LG, ne accetta esplicitamente le implicazioni sul proprio impianto organizzativo da esse come risultante ed esprime il proprio forte impegno a mantenersi aderente ad esse ai fini della continua rispondenza al requisito normativo interessato. I destinatari sono invitati ad assicurare che le presenti Linee Guida siano portate a conoscenza di tutto il personale interessato.

Linee guida per la proposta e la valutazione degli indicatori ambientali nei contratti di programma

SVILUPPATA ED EMESSA DALLA DIREZIONE CENTRALE INFRASTRUTTURE AEROPORTI E SPAZIO AEREO

LINEE GUIDA

RIFERIMENTI REGOLAMENTARI
APPLICABILITÀ

1. INTRODUZIONE
2. IL PIANO DELLA TUTELA AMBIENTALE
3. SCELTA DEGLI INDICATORI
4. PRIMA APPLICAZIONE DEI MODELLI TARIFFARI
5. CERTIFICAZIONI
6. ADEMPIMENTO DEGLI OBBLIGHI NORMATIVI
7. VALUTAZIONE DEGLI INDICATORI

ALLEGATO A

In July 2015 ENAC issued **new GUIDELINES** to define the methods to be used to prepare/assess environmental protection plans



GROUP I - PRIORITY TARGETS

- Energy saving
- Generation of electricity using renewable sources
- Reduction of emissions
- Noise abatement
- Treatment of waste water

GROUP II - NON-PRIORITY TARGETS

- Energy saving
- Renewable sources
- Waste management and treatment
- Treatment of waste water
- Soil

GROUP III – SECONDARY TARGETS

- Personnel training
- Indirect measures that impact the environment
- Efficiency of materials

A FUNDAMENTAL TOOL FOR ENVIRONMENTAL ANALYSIS AND PLANNING

Activities at the Ciampino and Fiumicino airports are governed by procedures and instructions that are compliant with the **UNI EN ISO 14001 Environmental Management System (SGA)**



Those systems are based on the Environmental Analysis document

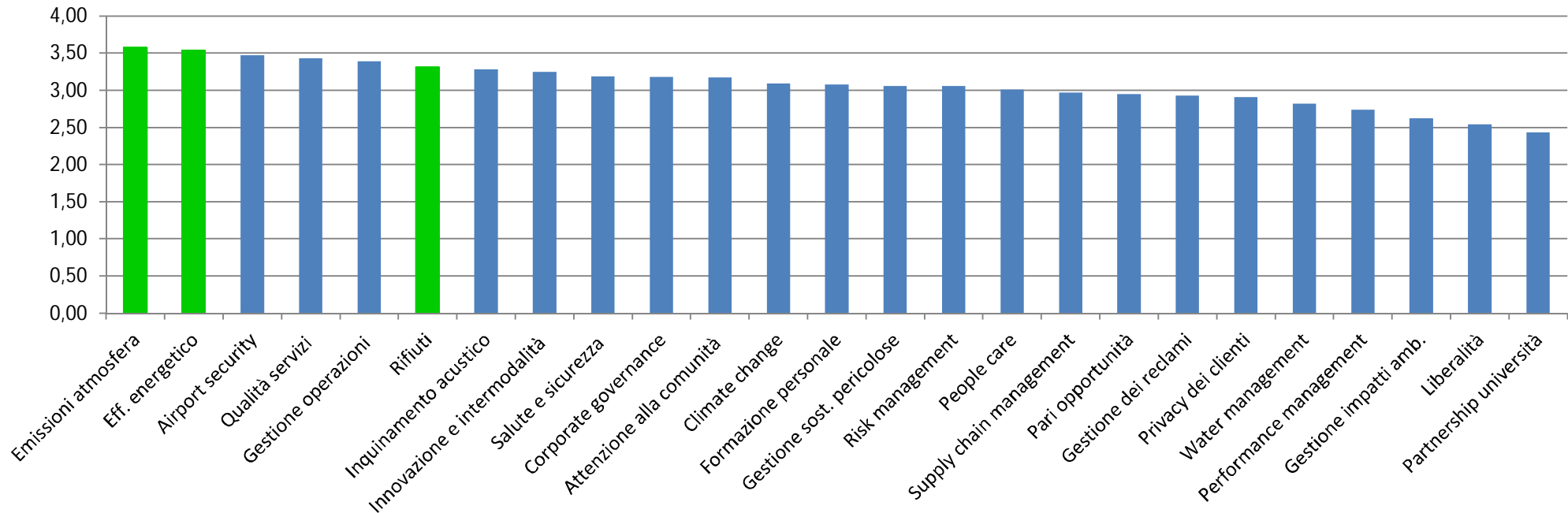


It provides a clear, complete, concise and up-to-date picture of both the most relevant aspects concerning the environmental impact of the company's business, and of the most significant organizational and management aspects

3 - ANALYSIS OF STAKEHOLDER PRIORITIES

In 2015 we analyzed the priorities of ADR's stakeholders, by interviewing a significant cross-section of employees, local and national institutions, environmental associations, consumers, etc.

The analysis carried out shows that, among the 25 factors considered, environmental issues are perceived as particularly important. The two areas found to be of greatest importance are atmospheric emissions and improving energy efficiency. Proper management of waste was also found to be a particularly sensitive topic, in sixth place.



MORE EFFECTIVE AND MEANINGFUL INDICATORS

For both Ciampino and Fiumicino, the indicators were selected among those included in ENAC's guidelines and based on the following assumptions:

- ❖ to prefer indicators with "greater environmental impact";
- ❖ to select indicators on which ADR can exert more influence;
- ❖ to focus on measures that can improve the performance of existing processes and infrastructure, not considering the improvements that will be provided by the planned new infrastructure.

Taking into account the Environmental Analysis and the priorities highlighted by our stakeholders, ADR has concentrated its efforts on **four action areas**:

- ❖ **saving energy and reducing emissions into the atmosphere**
- ❖ **optimizing waste management**
- ❖ **reducing water consumption**
- ❖ **implementing a change of culture**

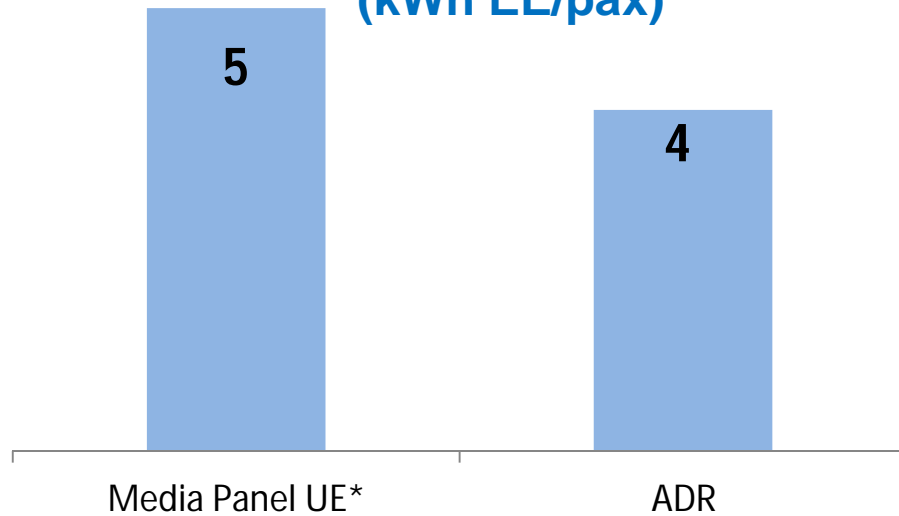
ACTION AREAS for 2017-2021 CDP ENVIRONMENT INDICATORS: continuation of the change process

- 1. Saving energy and reducing emissions into the atmosphere:** Over the last three years ADR has strengthened its commitment to reduce airport energy consumption by constantly reducing the kWh consumed per passenger from 4.25 kWh/pax to 3.76 kWh/pax. ADR has committed to measure and reduce CO₂ emissions into the atmosphere and in 2014 FCO achieved level 3+ ACA certification and level 3 for CIA. For the 2017-2021 five-year period ADR plans to continue to save energy, focusing on optimizing and automatically controlling air conditioning and lighting and on producing energy using renewable sources.
- 2. Optimizing waste management:** In 2013-16 ADR developed an innovative waste collection system that has made it possible to significantly increase the proportion of properly separated waste. At present, at FCO a 'door to door' collection system is in place, which involves paying a fee based on how well waste is separated. For the next 2017-21 regulatory period, we expect to further strengthen this approach by increasing the percentage of properly separated waste.
- 3. Reducing water consumption:** Over the past few years, water consumption has steadily declined; in fact, despite an increase in the number of passengers served, the consumption of drinking water has fallen by about 33% from 2013 to 2016, thanks to specific special upgrade operations. For the 2017-2021 five-year period, ADR plans to further lower its consumption, by continuing the upgrade works on the distribution networks and by installing meters throughout the network.
- 4. Implementing a change of culture:** environmental sustainability is tightly linked to a change of culture of all the operators that work in the airport area. To encourage this change, ADR will increasingly add to contracts with its suppliers, new clauses that include accountability for compliance with environmental regulations and adoption of environmental sustainability values. ADR plans to implement systematic tools to help its suppliers adopt and respect those principles.

1. Reduction of electricity consumption
2. Electricity generation by installing photovoltaic systems
3. Reduction of CO₂ emissions: Use of low emission vehicles
4. Separated waste collection of non-hazardous waste
5. Reduction of consumption of drinking water
6. Checking the observance of the environmental clauses included in contracts

1 – Reduction of electricity consumption

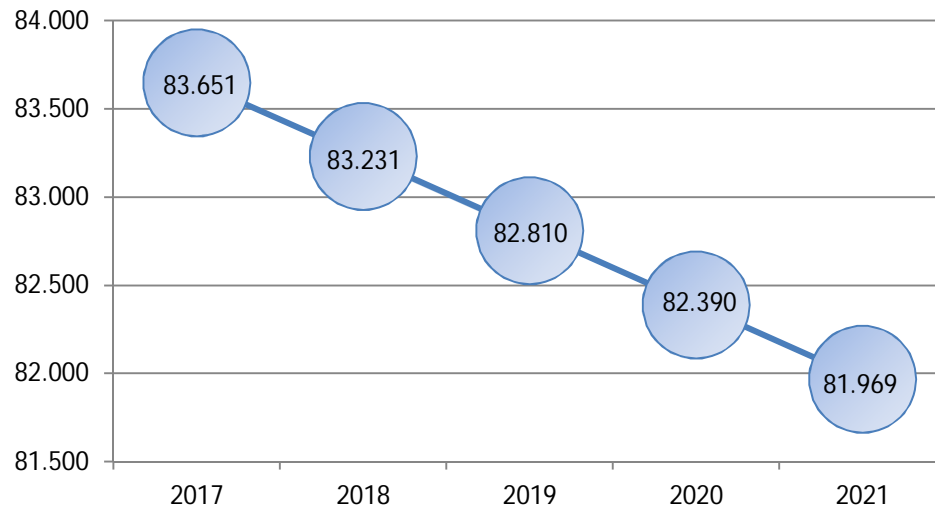
UE benchmark (kWh EE/pax)



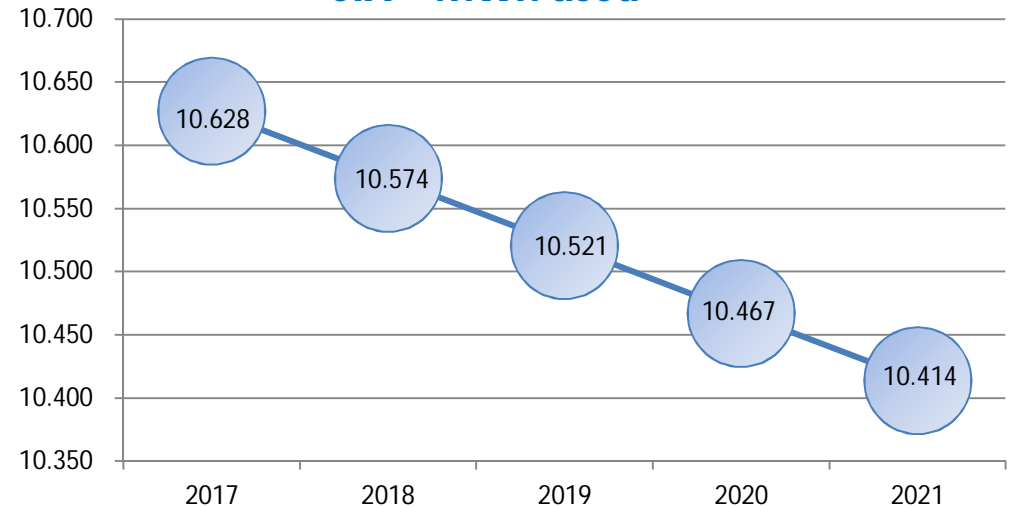
THE MEASURES

- Lighting equipment and air conditioning systems control systems (Building Management System, light sensors, motion detectors, etc.)
- Implementation of FDD system
- Implementation of lamp generation system
- Interfacing management systems with FIDS and video cameras
- Implementation of a consumption measurement system

FCO – MWh used



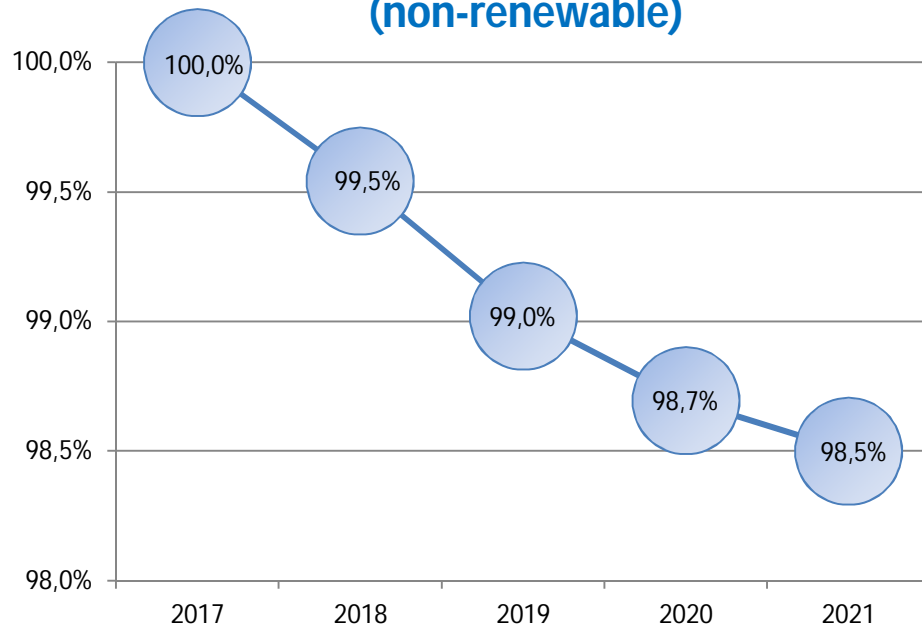
CIA – MWh used



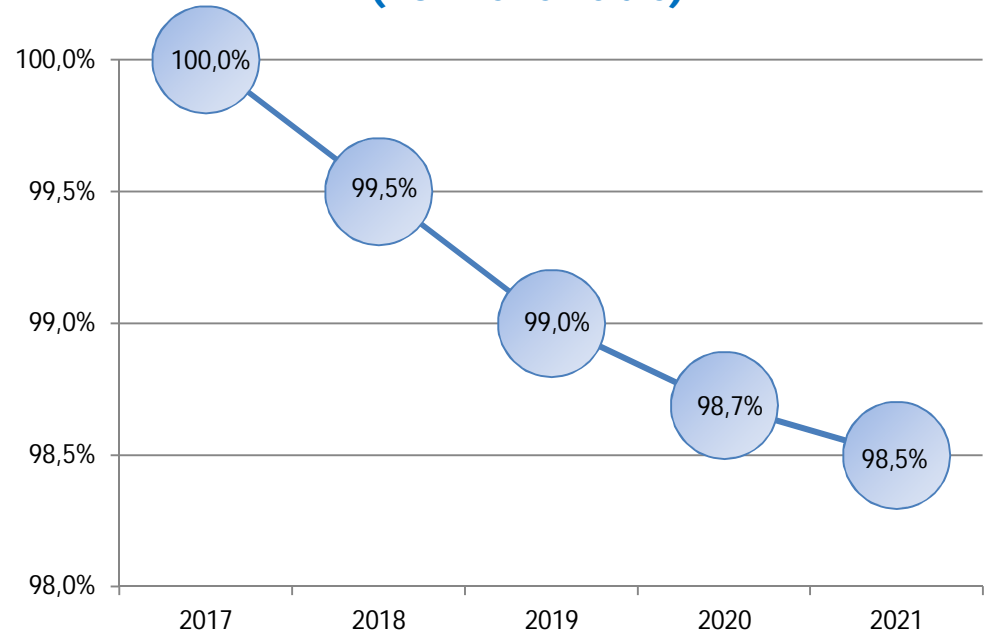
THE MEASURES

- Installation of latest-generation photovoltaic systems with high yields and low module degradation over time
- Installation of other RE plants (at FCO)

**FCO – Energy from traditional sources
(non-renewable)**



**CIA – Energy from traditional sources
(non-renewable)**



AIRPORT CARBON ACCREDITATION (ACA) – ACCREDITATION STEP



LEVEL 1

+ MAPPING

Footprint measurement

LEVEL 2

+ REDUCTION

Carbon management towards a reduced carbon footprint

LEVEL 3

+ OPTIMISATION

Third party engagement in carbon footprint reduction

LEVEL 3+

+ NEUTRALITY

Carbon neutrality for direct emissions by offsetting



The objective of the principle of compensation, that started with the Kyoto Protocol of 2005, is the **reduction of CO₂ worldwide**

GOAL WAS ACHIEVED BY FINANCING PROJECTS IN DEVELOPING COUNTRIES, WHICH COMPENSATE A PORTION OF THE CO₂ PRODUCED BY HUMAN ACTIVITIES

| 157 certified airports worldwide | | | | | |
|----------------------------------|--------------------|-------------------|------------------|------------------|------------------|
| Level | Europe | Asia-Pacific | Africa | North America | South America |
| 1. Mapping | 29 in 14 countries | 6 in 5 countries | 2 in 2 countries | 3 | 3 in 3 countries |
| 2. Reduction | 37 in 15 countries | 12 in 7 countries | 1 | 8 | 1 |
| 3. Optimization | 20 in 10 countries | 11 in 6 countries | 0 | 2 in 2 countries | 0 |
| 3+. Neutrality | 22 in 5 countries | 0 | 0 | 0 | 0 |

Airports worldwide that handle over 30 million passengers

3+ Neutrality

Fiumicino

Amsterdam



FCO is globally one of the few airports (with more than 30 million passengers) to have achieved the level of neutrality (3+) under the ACA emission certification system

3 Optimization

London Heathrow

Paris Charles de Gaulle

Frankfurt

Munich

Hong Kong

Istanbul Ataturk

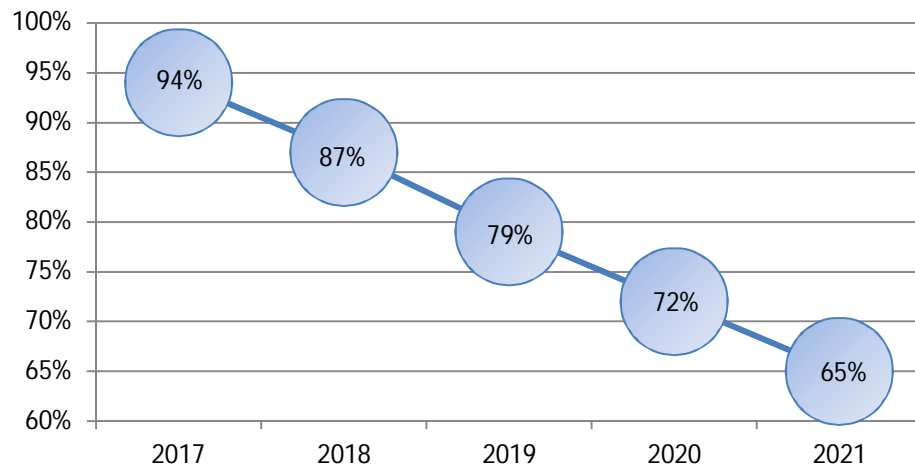
etc.

3 - Reduction of CO₂ emissions: Use of low emission vehicles

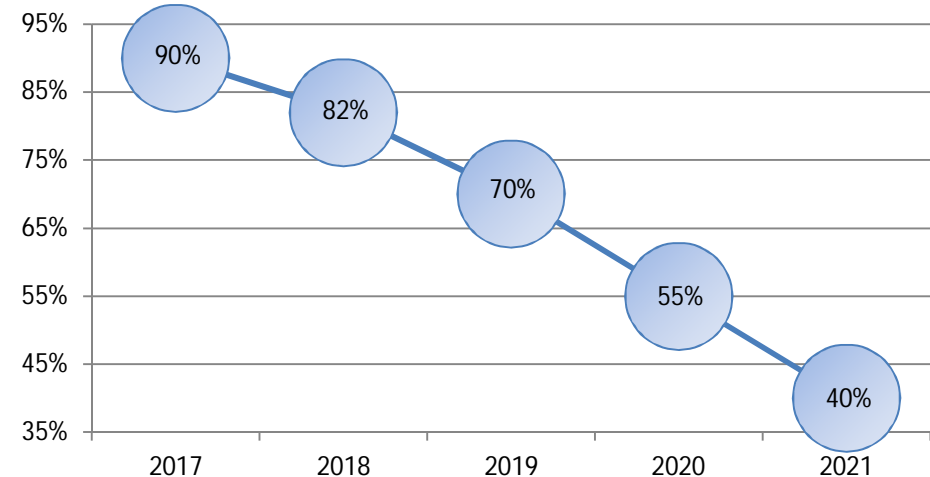
THE MEASURES

- Replacement of part of the current vehicle fleet with low emission vehicles (mainly hybrid/electric)

FCO - % of non low-emission vehicles

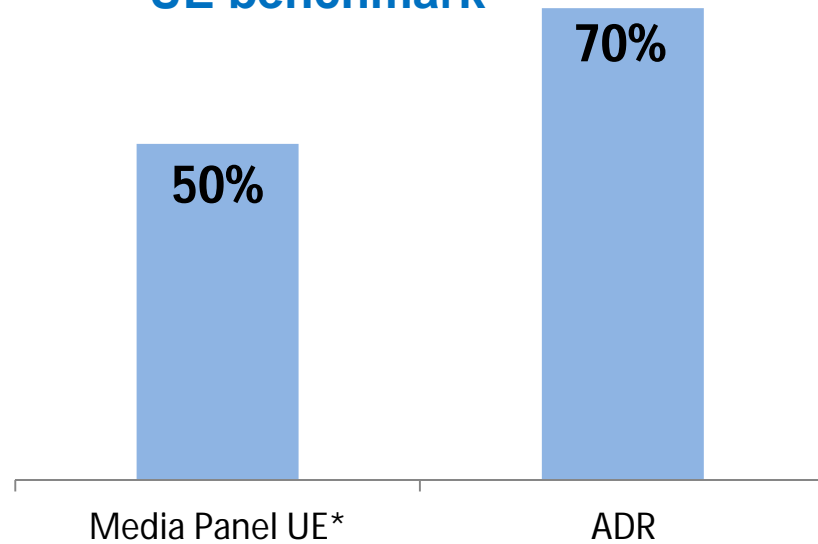


CIA - % of non low-emission vehicles



ADR's commitment to replace its corporate car-pooling vehicles with other low-emission models is part of its environmental policy aimed at reducing emissions from airport activities, primarily from directly managed assets.

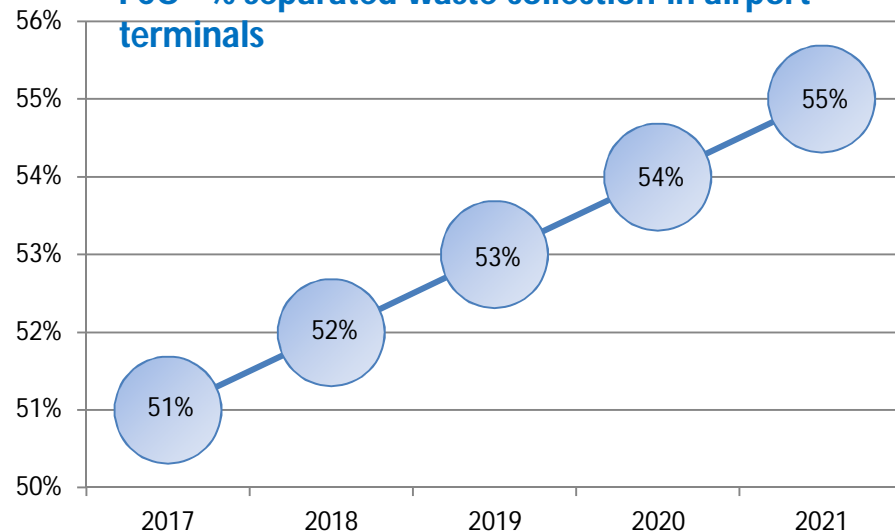
UE benchmark



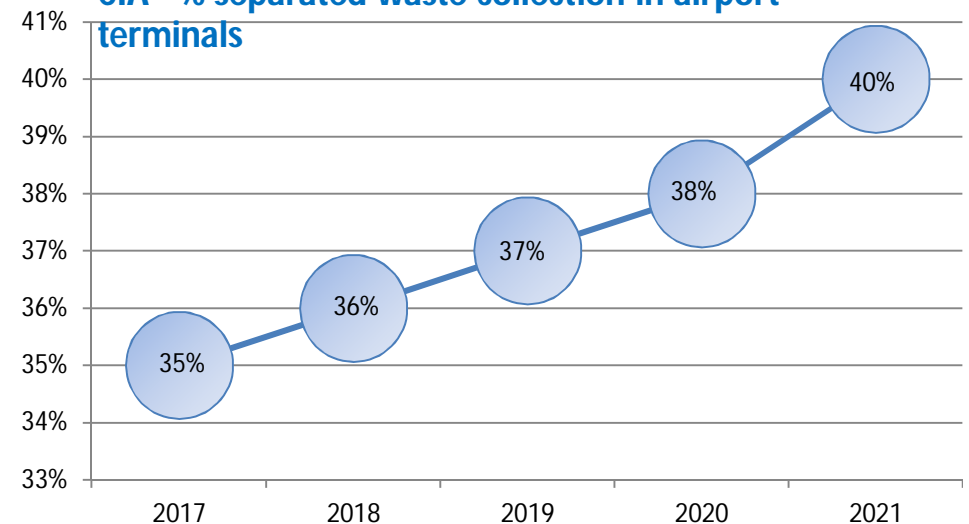
THE MEASURES

- Strengthening the control system by defining an analytical system to determine the fraction of waste collected with the "door to door" method, in order to optimize the different recycling lines
- Development of culture by means of periodic meetings with the sub-licensees
- Optimization of the waste disposal structure
- Rationalization of the waste collection service

FCO - % separated waste collection in airport terminals



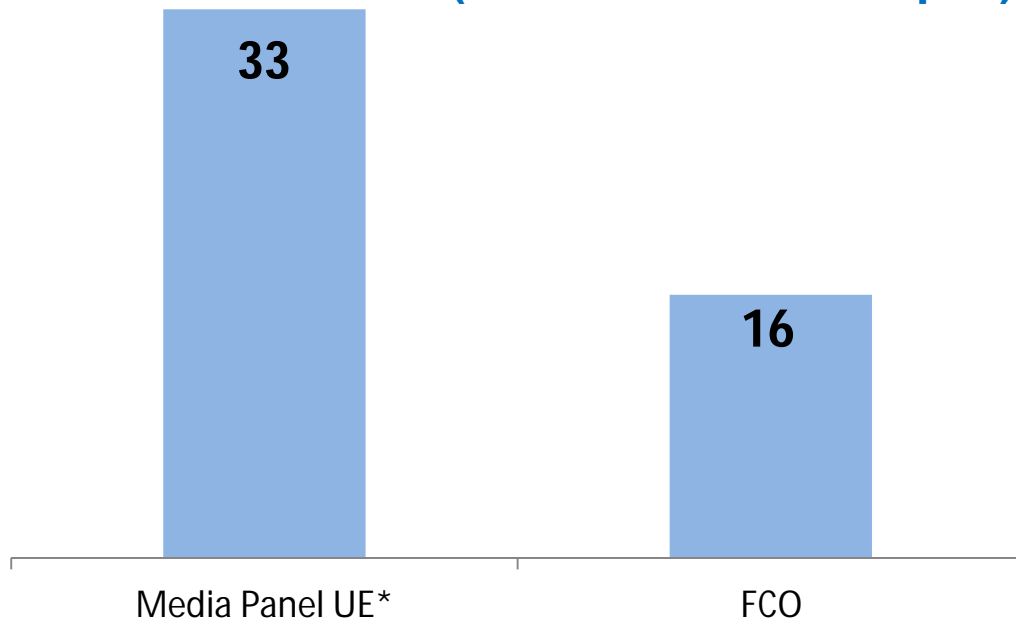
CIA - % separated waste collection in airport terminals



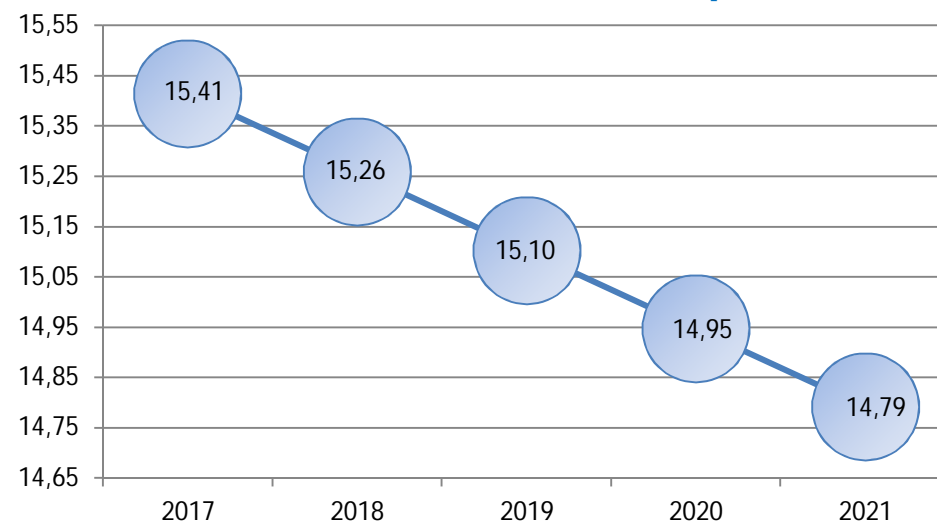
THE MEASURES

- Analysis and monitoring of consumption by installing meters distributed on the network
- Optimization of utilization by identifying the uses that can be served by other types of water
- Optimization and upgrade of distribution networks

UE benchmark (liters of water used/pax)



FCO – liters of water used/pax

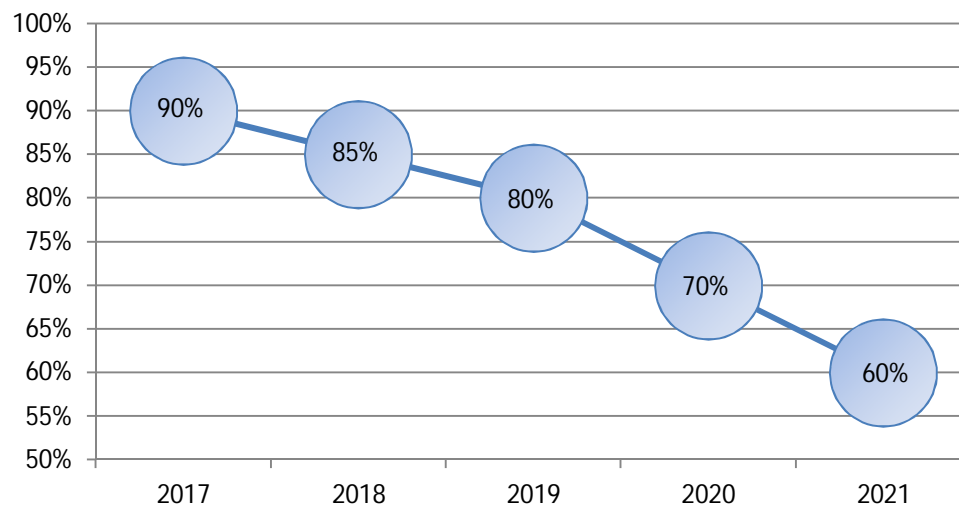


6 - Checking the observance of environmental clauses included in contracts

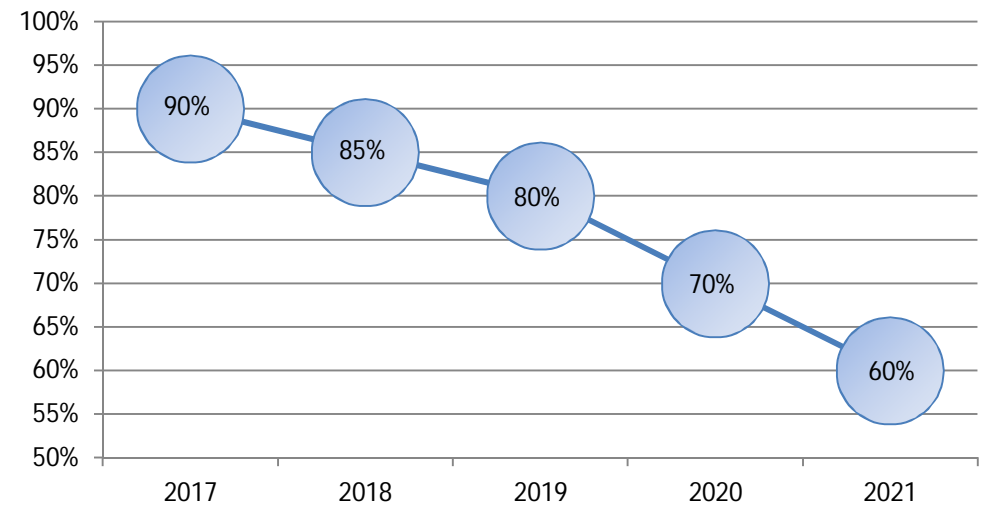
THE MEASURES

- Update of the ADR procedure that governs environment related behavior
- Strengthening of the clauses on environmental issues present in Special Tender Specifications
- Setting up an Audit team
- Environmental audits
- Implementation of an environmental Vendor Rating system

FCO - % of contracts NOT audited



CIA - % of contracts NOT audited



Environmental Indicators - FCO

| Indicator | UoM | Baseline year 2015 | CdP weight | Objectives | | | |
|--|--|--------------------|------------|------------|------------|------------|------------|
| | | | | 2017 | 2018 | 2019 | 2020 |
| Reduction of energy consumption at terminals | Reduction of energy consumption (kWh), compared to the baseline year | 84.071.268 | 0,24 | 83.650.912 | 83.230.555 | 82.810.199 | 82.389.843 |
| Electricity generation by installing photovoltaic systems | MWh produced by traditional sources (non-renewable), compared to the MWh consumed | 100% | 0,19 | 100,0% | 99,5% | 99,0% | 98,7% |
| Replacement of vehicles for car-pooling with low-emission vehicles | % of non low-emission vehicles compared to ADRs vehicle fleet | 94% | 0,10 | 94% | 87% | 79% | 72% |
| Separated waste collection of non-hazardous waste | % of separated waste in passenger transit areas | 50% | 0,24 | 51% | 52% | 53% | 54% |
| Reduction of consumption of drinking water | % reduction in consumption (in liters) of drinking water consumed per pax, compared to the baseline year | 15,57 | 0,19 | 15,41 | 15,26 | 15,10 | 14,95 |
| Checking the observance of the environmental clauses included in contracts | % of contracts NOT checked | 100% | 0,05 | 90% | 85% | 80% | 70% |

Environmental Indicators - CIA

| Indicator | UoM | Baseline year 2015 | CdP weight | Objectives | | | |
|--|---|--------------------|------------|------------|------------|------------|------------|
| | | | | 2017 | 2018 | 2019 | 2020 |
| Reduction of electricity consumption | Reduction of energy consumption (kWh), compared to the baseline year | 10.680.932 | 0,29 | 10.627.527 | 10.574.123 | 10.520.718 | 10.467.313 |
| Electricity generation by installing photovoltaic systems | MWh produced by traditional sources (non-renewable), compared to the MWh consumed | 100% | 0,24 | 100,0% | 99,5% | 99,0% | 98,7% |
| Replacement of vehicles for car-pooling with low-emission vehicles | % of non low-emission vehicles compared to ADRs vehicle fleet | 100% | 0,13 | 90% | 82% | 70% | 55% |
| Separated waste collection of non-hazardous waste | % of separated waste in passenger transit areas | 34% | 0,29 | 35% | 36% | 37% | 38% |
| Checking the observance of the environmental clauses included in contracts | % of contracts NOT checked | 100% | 0,05 | 90% | 85% | 80% | 70% |

- REFERENCE CONTEXT
- UPDATE OF CDP ANNEX 10 – 2017-2021 SUB-PERIOD
- FINAL VALUES OF CDP INDICATORS – YEAR 4

| FCO - AMBIENTE | | | | |
|--|--|--------|----------------------------------|-----------------------------------|
| Indicator | UoM | Weight | Increasing (i) vs Decreasing (d) | ADR performance (Lug 15 - Giu 16) |
| 1) Noise detection central unit | Number of fixed noise detection units/aircraft movements x 100,000 | 20% | <i>i</i> | 6,32 |
| 2) Up-time of noise monitoring network | % uptime/hours of operation of the airport | 11% | <i>i</i> | 93,1% |
| 3) Separated treatment of waste | Tonnes of separated waste collected/total tons of waste | 20% | <i>i</i> | 75,0% |
| 4) a. Wastewater treatment - COD (mg/L of O2) | % with respect to the legal limit (125 mg/L) of the annual average concentration of oxygen required for the chemical oxidation of organic and inorganic compounds in wastewater samples of the wastewater treatment plants | 9% | <i>d</i> | 27,8% |
| 4) b. Wastewater treatment - BOD5 (mg/L of O2) | % with respect to the legal limit (25 mg/L) of the annual average concentration of oxygen required for the biochemical oxidation of organic compounds in wastewater samples of the wastewater treatment plants | 8% | <i>d</i> | 42,4% |
| 4) c. Wastewater treatment - Total Suspended Solids (mg/L) | % with respect to the legal limit (35 mg/L) of the annual average concentration of total suspended solids in wastewater samples of the wastewater treatment plants | 8% | <i>d</i> | 21,9% |
| 5) Energy efficiency | KWh of energy used in the terminal/m3 of terminal | 10% | <i>d</i> | 143,5 |

| Indicator | UoM | Weight | Increasing (i) vs Decreasing (d) | ADR Performance (Jul 15 - Jun 16) |
|---|---|--------|-------------------------------------|--------------------------------------|
| 1) Noise detection central unit | Number of fixed noise detection units/aircraft movements x 100,000 | 20% | <i>i</i> | 19,4 |
| 2) Up-time of noise monitoring network | % uptime/hours of operation of the airport | 11% | <i>i</i> | 93,0% |
| 3) Separated treatment of waste | Tonnes of non-separated waste collected/total tons of waste | 20% | <i>d</i> | 64,5% |
| 4) Wastewater treatment | % of the annual average concentration of oxygen required for the chemical oxidation of organic and inorganic compounds in wastewater samples of the wastewater treatment plants | 25% | <i>d</i> | 100,0% |
| 5) Energy efficiency | KWh of energy used in the terminal/m3 of terminal | 10% | <i>d</i> | 124,1 |
| synthetic indicator | | | | 19,73 |