2019 Charges: Proposal
Annual Environmental indicators and Action Plan
(Yr 1 of II five-yr period)
CRITERIA FOR CHOOSING INDICATORS

THE MEASURES

RESULTS OF THE FIRST YEAR OF THE SECOND FIVE-YEAR PERIOD
The Planning Agreement with ENAC is an opportunity to confirm and strengthen ADR's commitment to respect the environment and to encourage sustainability in its business. To choose and define the environmental indicators to add to the 2017-2021 Planning Agreement, ADR took into account the following 3 factors:

- ENAC's GUIDELINES FOR 2015
- ADR'S ENVIRONMENTAL MANAGEMENT SYSTEM
- ANALYSIS OF STAKEHOLDER PRIORITIES
ENAC's GUIDELINES FOR 2015

MORE EFFECTIVE AND MEANINGFUL INDICATORS

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
UNI EN ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEM (SGA):

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.

2017: SGA ADAPTATION ACCORDING TO THE ISO 14001:2015 STANDARD

• Systemic approach: involvement of all the operators
• Control system by means of:
  ✓ performing checks in the field on proper environmental management of the activities carried out by third parties operating at the FCO and CIA airports
  ✓ documentary analysis of environmental compliance
• Risk-based structure
During the base year taken as reference for the final accounting of the indicators, we analyzed the priorities of ADR's stakeholders, by interviewing a significant cross-section of employees, local and national institutions, environmental associations and consumers.

The analysis carried out on 25 factors showed that environmental issues are perceived as being particularly important.

The two areas found to be of greater importance are atmospheric emissions and improving energy efficiency. In sixth place, proper management of waste was also found to be a particularly sensitive topic.

* the environmental themes considered particularly significant according to the analysis conducted are highlighted in green
ADDITIONAL PRIORITIES: efficient and sustainable design

- Building of the new Departure Area E, an infrastructure of about 150,000 m² built according to the most advanced criteria of environmental respect;
- Inauguration of the general aviation area of CIA, designed, built and managed according to the LEED-Gold level standards;
- Departure Area A - LEED-Gold level certification (work in progress);
- Business City - LEED-Gold level certification (work in progress).

Voluntary certification programme for sustainable buildings
- It promotes the construction of environmentally friendly, energy efficient buildings, capable of integrating with the environment with the least possible environmental impact
- It allows the evaluation and monitoring of buildings during their entire life cycle (design, construction, operation)
- It ensures significant savings in terms of energy, CO₂ emissions, drinking water consumption, waste production.

Leader in Energy and Environmental Design

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ADDITIONAL PRIORITIES: controlling land consumption

The infrastructural interventions that led to the improvement of the quality offered to passengers (as shown by the rankings of ACI Europe in 2018) have not required a single square meter more of land.

Today, the airport occupies just over 1,500 hectares, with a per-passenger use of land area among the lowest in Europe in absolute terms. The ratio between the land area used and the passengers served is virtuous, equal to 0.39 m\(^2\) per passenger, 15% lower than the average of the other EU hubs. This is an indicator that ADR intends to keep at the best EU levels even after building the new runway.
One of ADR’s priorities/opportunities is to contribute to the development of the country with development of the airport area, paying maximum attention to the respect of the environment and sustainability.

Source: ERGO processing of 2017 traffic figures given by: Economic Impact of European Airports - A Critical Catalyst to Economic Growth
DEFINITION OF INDICATORS

Taking into account the Environmental Analysis, the guidelines set by ENAC and the priorities highlighted, ADR has identified 5 indicators on which it concentrates its commitment:

1. Saving energy and reducing emissions into the atmosphere
2. Maximizing the percentage of separate collection in the terminals
3. Replacing company vehicles with low-emission vehicles
4. Reduction of consumption of drinking water
5. Checking the observance of the environmental clauses included in contracts
CRITERIA FOR CHOOSING INDICATORS

THE MEASURES

RESULTS OF THE FIRST YEAR OF THE SECOND FIVE-YEAR PERIOD
1.a – Energy saving

**FIUMICINO**

- replacement of the conventional lighting units with LED technology units in many terminal areas, on the outside roads and in the lighthouse towers (air side);
- introduction of FDD software that predicts malfunctioning of the air conditioning systems with AI logics;
- installation of inverters;
- replacement of the refrigeration units and absorbers with **high efficiency units**

**CIAMPINO**

- replacement of the conventional lighting units with LED technology units;
- installation of inverters on the UTAs;
- implementation of the **free-cooling** system in the air conditioning system, which uses air coming from outside and considerably reduces energy consumption associated with the system;
- installation of an air conditioning and heating **monitoring** system to provide automated management;
1.b - Reducing emissions into the atmosphere

**FIUMICINO**

- Concentrating photovoltaic systems (20 kWht);
- 10 kW mini wind turbine;
- 3 kW mini wind turbine.

**FCO - MINI WIND SYSTEMS**

**FCO - CONCENTRATING SOLAR POWER**

**CIAMPINO**

- Photovoltaic system (General Aviation).
1.b - Reducing emissions into the atmosphere

**Europe**

Europe remains by far the most active region of Airport Carbon Accreditation. It comes as no surprise given that the story of the programme began here in June 2009. Each passing year has seen more airports – of all sizes – get involved. The most recent development was the massive entry of 17 airports implemented by EDEIS Group, which brought the total number of accredited airports in Europe to 133. There are now 35 carbon neutral airports in the region. The most recent upgrades to this level were made by Brussels, London Stansted, Rome Ciampino, Treviso and TAG Farnborough Airports. Well done!

### Mapping
- Carbon footprint measurement

### Reduction
- Reduction of the airport operator’s carbon footprint

### Optimisation
- Engaging others on the airport site to reduce their CO₂

### Neutrality
- Offsetting any residual CO₂ emissions from the airport operator

<table>
<thead>
<tr>
<th>Level</th>
<th>MAPPING</th>
<th>REDUCTION</th>
<th>OPTIMISATION</th>
<th>NEUTRALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Footprint measurement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td>+ REDUCTION</td>
<td>Carbon management towards a reduced carbon footprint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td>+ OPTIMISATION</td>
<td>Third party engagement in carbon footprint reduction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 3+</td>
<td>+ NEUTRALITY</td>
<td>Carbon neutrality for direct emissions by offsetting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 238 tot airports certified worldwide |

**2018 European Overview**

- 40 airports mapped their carbon footprints
- 42 airports actively reduced their CO₂ emissions
- 18 airports reduced their CO₂ emissions & engaged others to do so
- 35 carbon neutral airports

**2018 World Overview**

- 44 airports have achieved carbon neutrality. These airports represent 8.1% of global air passenger traffic
- FCO and CIA are globally two of the few airports to have achieved the level of neutrality (3+) under the ACA emission certification system
THE MEASURES

- Tariffs for separated waste collection based on incentives
- 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
2 - Increased separate collection in the terminals

- Introduction of "Door to door" collection.

- Positive competition between users for ongoing improvement;

- 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.

The following activities were also started up at both Rome airports:

- Monitoring of the waste delivery method of users;

- Development of culture by means of periodic meetings with the sub-licensees;

- Change in separate waste tariff based on rewarding mechanisms.
3 - Replacement of company vehicles

**TOYOTA YARIS HYBRID**

Consumption 32.3 km/l*

Emissions 123 gCO2/km**

* Toyota website

** Altroconsumo website

The efficiency of the Full Hybrid system is achieved from the synergy between the gasoline-powered engine and the electric motor, from energy recovery when braking and from the Atkinson-cycle internal combustion engine, which guarantees greater performance than the traditional Otto-cycle engine.

**CITROEN C-ZERO**

Citroën C-ZERO has a 49 kW electric motor powered by a lithium-ion battery with a 14.5 kWh capacity. This battery supplies the energy necessary for powering the engine, for the air conditioning and for the heating.
4 – Reduction of consumption of drinking water

- Optimization of utilization by identifying the uses that can be served by non-drinking water
- Optimization and upgrade of distribution networks
- Installation of continuous meters connected to the airport remote control platform
- Precise monitoring of the pressure and flow rate parameters
- Detection of concealed leaks and malfunctioning by studying the measured parameters
5 – Checking the observance of environmental clauses

ENVIRONMENTAL CLAUSES INCLUDED IN THE CSAs

ENVIRONMENTAL DOCUMENT
Contractual document containing the environmental requirements addressed to third-party companies operating in the Rome airport areas.

ENVIRONMENTAL BRIEFING NOTE
Contractual annex requiring third-party companies to declare how they manage any environmental impacts before starting up their activity.

ENVIRONMENTAL BEHAVIOR VERIFICATIONS
Verification that the environmental clauses have been implemented in the field.

VENDOR RATING
Tool for encouraging the certification and assessment of companies registered on the Suppliers List, aimed at assessing performance.
CRITERIA FOR CHOOSING INDICATORS

THE MEASURES

RESULTS OF THE FIRST YEAR OF THE SECOND FIVE-YEAR PERIOD
<table>
<thead>
<tr>
<th>FIUMICINO INDICATORS</th>
<th>WEIGHT</th>
<th>PARAMETER DESCRIPTION</th>
<th>Year 1</th>
<th>ERA’s Objective</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red. electricity con.</td>
<td>0,235</td>
<td>Reduction of energy consumption (in kWh) compared to base year</td>
<td>81,920,630</td>
<td>83,650,912</td>
<td>OK</td>
</tr>
<tr>
<td>Elec. gen. by photov.</td>
<td>0,19</td>
<td>MWh generated by traditional sources (not renewable) compared to the MWh consumed</td>
<td>99,84%</td>
<td>100%</td>
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<tr>
<td>Replacement of cars</td>
<td>0,10</td>
<td>% of non-low emission vehicles compared to the ADR vehicle fleet</td>
<td>85%</td>
<td>94%</td>
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<tr>
<td>Separated waste col.</td>
<td>0,235</td>
<td>% of separated waste at the passenger transit areas</td>
<td>56%</td>
<td>51%</td>
<td>OK</td>
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<tr>
<td>Red. consumption</td>
<td>0,19</td>
<td>% reduction of consumption of drinking water per pax</td>
<td>14%</td>
<td>1%</td>
<td>OK</td>
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<tr>
<td>Env. clauses in contr.</td>
<td>0,05</td>
<td>% of contracts not verified</td>
<td>81%</td>
<td>90%</td>
<td>OK</td>
</tr>
</tbody>
</table>
### CIA - RESULTS OF YEAR 1 (Jul 17 – Jun 18)

<table>
<thead>
<tr>
<th>CIAMPINO INDICATORS</th>
<th>WEIGHT</th>
<th>PARAMETER DESCRIPTION</th>
<th>Year 1</th>
<th>ERA’s Objective</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of electricity consumption at terminals</td>
<td>0,29</td>
<td>Reduction of energy consumption (in kWh) compared to base year</td>
<td>10.750.602</td>
<td>10.627.527</td>
<td>KO</td>
</tr>
<tr>
<td>Electricity generation by installing photovoltaic systems</td>
<td>0,24</td>
<td>MWh generated by traditional sources (not renewable) compared to the MWh consumed</td>
<td>100%</td>
<td>100%</td>
<td>OK</td>
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<tr>
<td>Replacement of car-pooling vehicles with low emission vehicles</td>
<td>0,13</td>
<td>% of non-low emission vehicles compared to the ADR vehicle fleet</td>
<td>80%</td>
<td>90%</td>
<td>OK</td>
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<td>Separated waste collection of non-hazardous waste</td>
<td>0,29</td>
<td>% of separated waste at the passenger transit areas</td>
<td>54%</td>
<td>35%</td>
<td>OK</td>
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<tr>
<td>Verification of environmental clauses included in contracts</td>
<td>0,05</td>
<td>% of contracts not verified</td>
<td>67%</td>
<td>90%</td>
<td>OK</td>
</tr>
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