

ENAC - ADR Economic Regulation Agreement

Consultations with the users

Trend of environment indicators (july 2016 – june 2017)



August 2017 – Leonardo da Vinci Airport

☐ INTRODUCTION

☐ ENVIRONMENT

☐ FINAL BALANCE OF ERA INDICATORS

Reference period for the final balance

- JULY 2016 – JUNE 2017

Content of the report

The report shows the values for each environmental protection analytical indicator

Data final assessment methodology

As specified on the sheets in annex 10 of the ERA

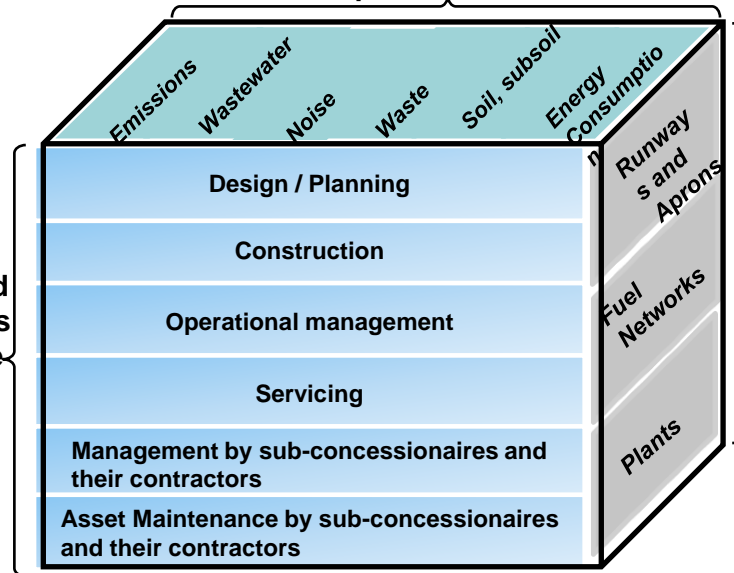
The Context: Environmental Protection at ADR

In the first half of 2017 the environmental system of ADR was radically innovated, pursuant to the ISO 14001:2015 standard:

➤ **Systemic approach: involvement of all the operators, by:**

- ✓ workshops
- ✓ focus groups

B. Environmental compartments



➤ **Risk-Based Structuring by:**

- ✓ Risk-opportunity analysis in the context of the organization
- ✓ Identifying and sharing **processes and sub-processes** potentially exposed to environmental risks, as well as the clusters of **assets** and the most relevant "**environmental compartments**". These aspects represent the three dimensions on the basis of which the identification and the consolidation of environmental risks were carried out

➤ **Control system by means of:**

- ✓ carrying out checks in the field on the environmentally sound management of the activities carried out by third parties operating in the FCO and CIA airports
- ✓ documentary analysis of environmental compliance

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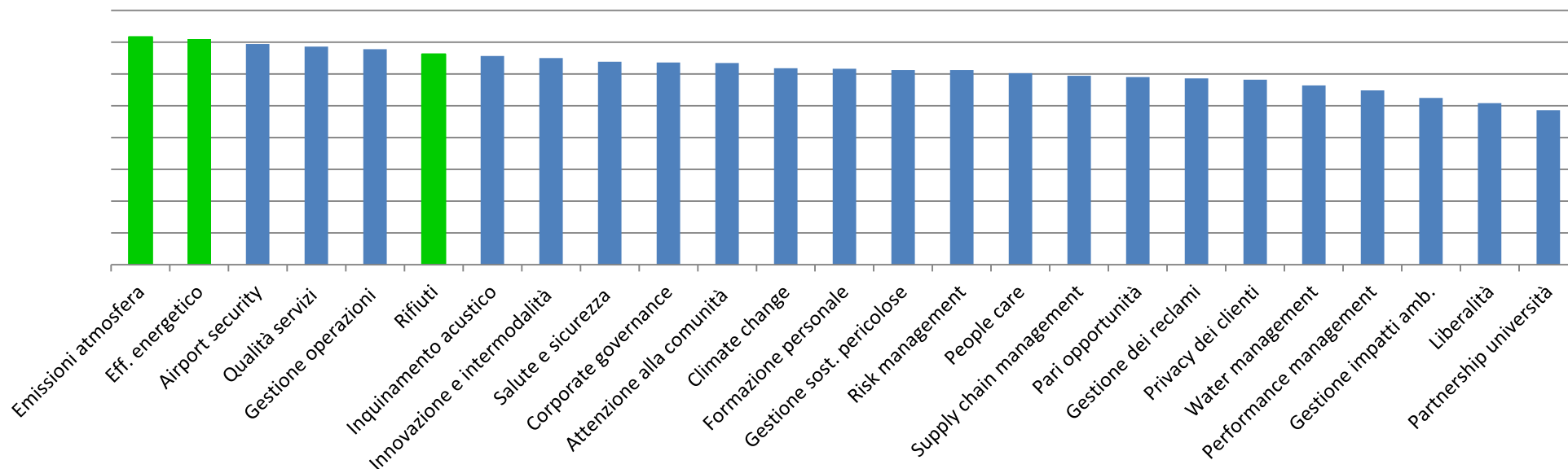
Environment: Priority for Stakeholders

In 2015/16 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 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.

Ranking main environmental issues



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

- 1. Saving energy and reducing emissions into the atmosphere**
- 2. Optimizing waste management**
- 3. Development of efficient and sustainable infrastructure**
- 4. Reducing water consumption**
- 5. Contributions to sustainable development of the local area**

1.a – Energy saving

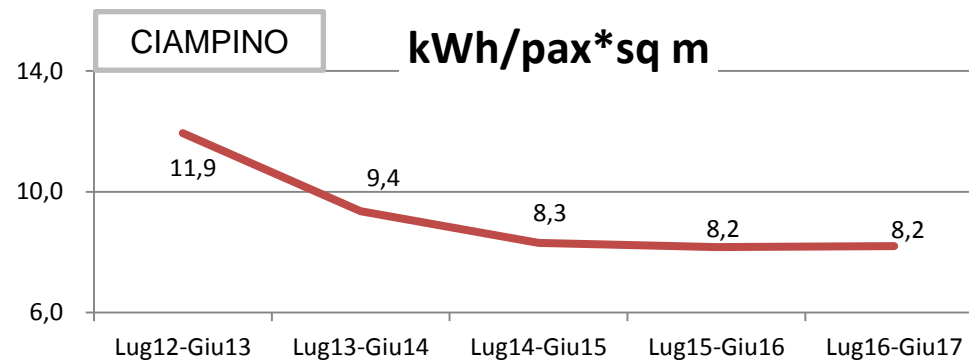
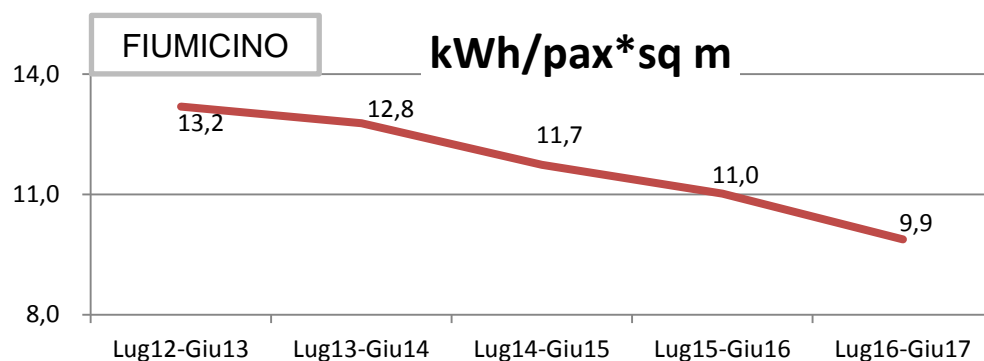
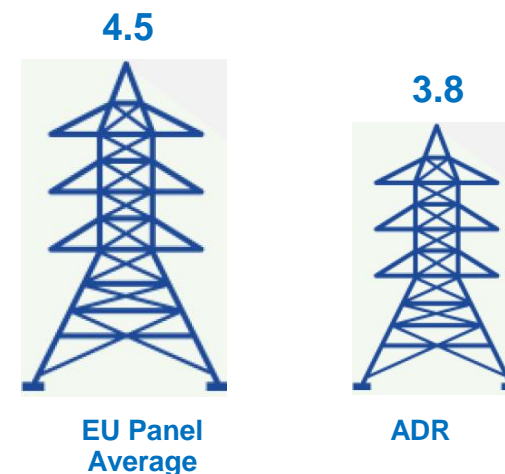
Objective

*"Continuation of the reduction of energy consumption per pax*m² and the development of energy production from renewable sources"*

THE MEASURES

- replacement of lighting fixtures with LED technology in many areas of the terminal and in the runways and aprons
- replacing motors with high efficiency units for electromechanical systems in the baggage sorting system
- installation of inverters
- extraordinary maintenance of refrigerating units and of evaporative cooling towers
- installation of an air conditioning and heating monitoring system at CIA to provide automated management

Electricity consumption per pax
(data in kWh/pax)



1.b – Reduction of CO₂ emissions: ADR “best in class”

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

**116 certified
airports
worldwide**

Airports worldwide that handle over 30 million passengers

3+ Neutrality

Fiumicino

Amsterdam

London Gatwick

3 Optimization

London Heathrow

Paris Charles de Gaulle

Frankfurt

Munich

Hong Kong

Istanbul Ataturk

others

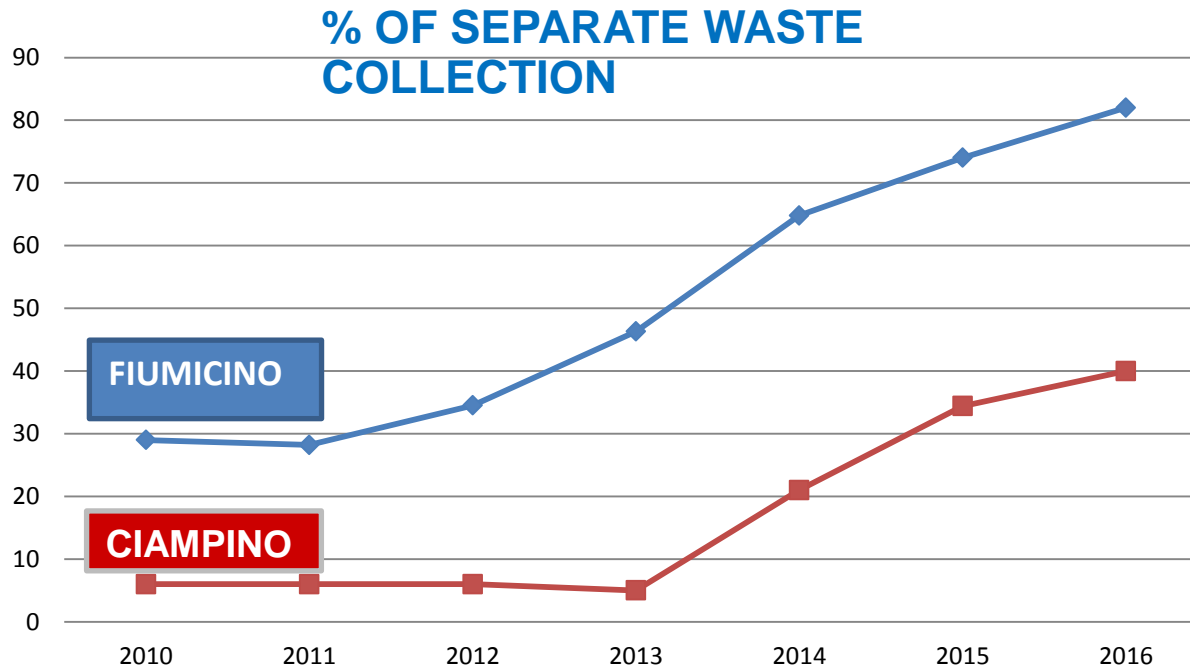


FCO is one of the few airports in the world that handles over 30 million passengers to have achieved the neutrality level (3+) under the ACA emission certification system

2 - Optimal Management of Waste

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



UE benchmark

Waste produced per pax (data in kg/pax)

0.4



EU Panel Average

0.2



ADR

3 - Development of efficient and sustainable infrastructure

Objective

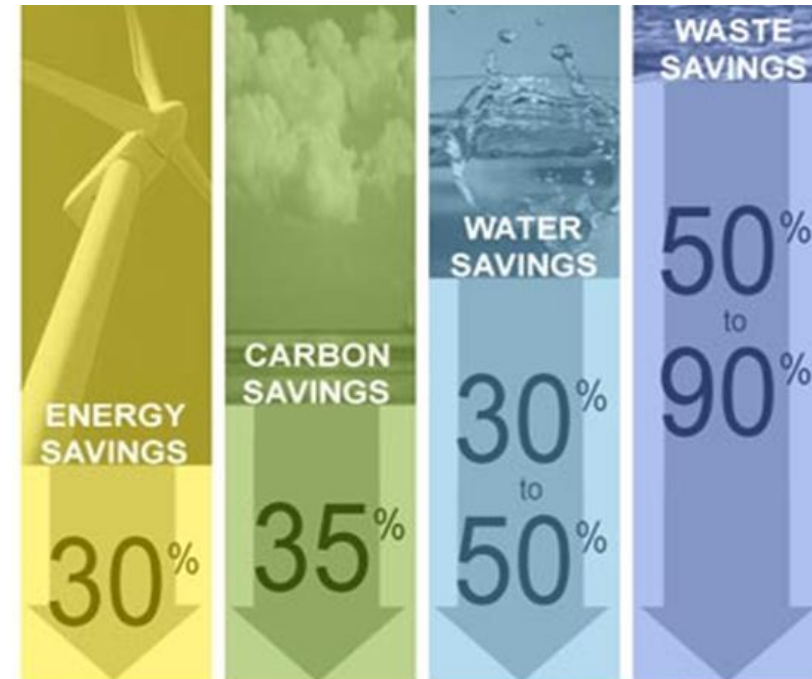
Develop the capital's airport system, ensuring the necessary levels of connectivity, and minimizing its environmental impact

THE MEASURES

- The new gate area E was inaugurated in 2016: this is an infrastructure of about 150.000 m² built according to the most advanced criteria of environmental respect
- The general aviation area of CIA was inaugurated in 2016, designed, built and managed according to the LEED standards
- The new boarding area A of FCO is being designed according the LEED standards

LEED (leader in Energy and Environmental Design)

- A voluntary certification programme for sustainable buildings
- It promotes the construction of environmentally friendly, sustainable, 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

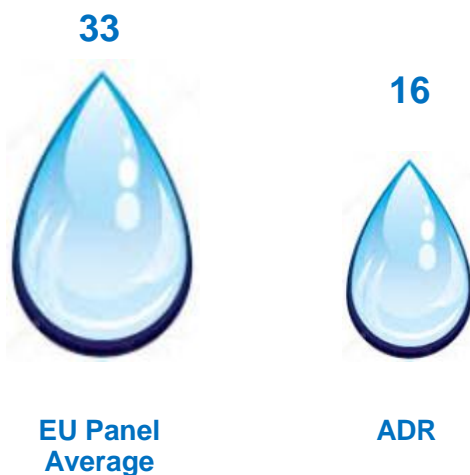


THE MEASURES

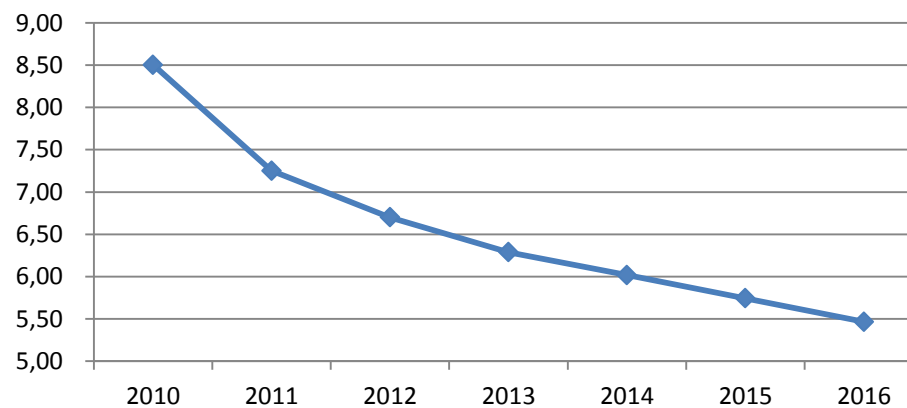
- Analysis and monitoring of consumption by installing meters distributed on the network
- Optimization of utilization by identifying the uses that can be served by other types of water
- Optimization and upgrade of distribution networks

UE benchmark (liters of water used/pax)

Water consumption per pax (data in l/pax)



Liters $(\text{pax}/100) * (\text{sq m}/1000)$



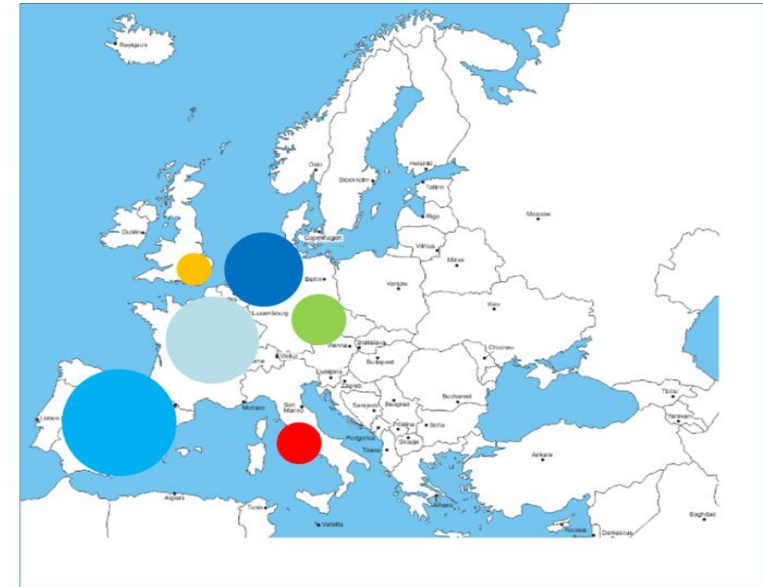
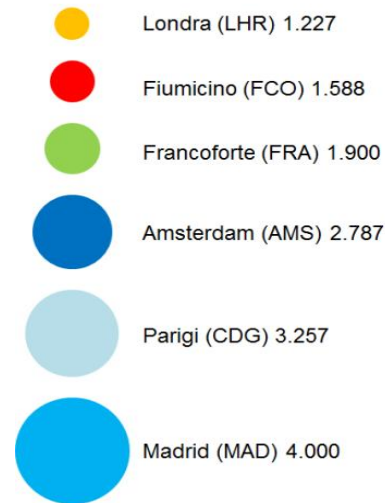
Objective

Develop the capital's airport system, ensuring the necessary levels of connectivity, and minimizing its environmental impact

THE MEASURES

- The infrastructural interventions that led to the improvement of the quality offered to passengers (as shown by the rankings of ACI Europe in 2016) 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 0.5 m² 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

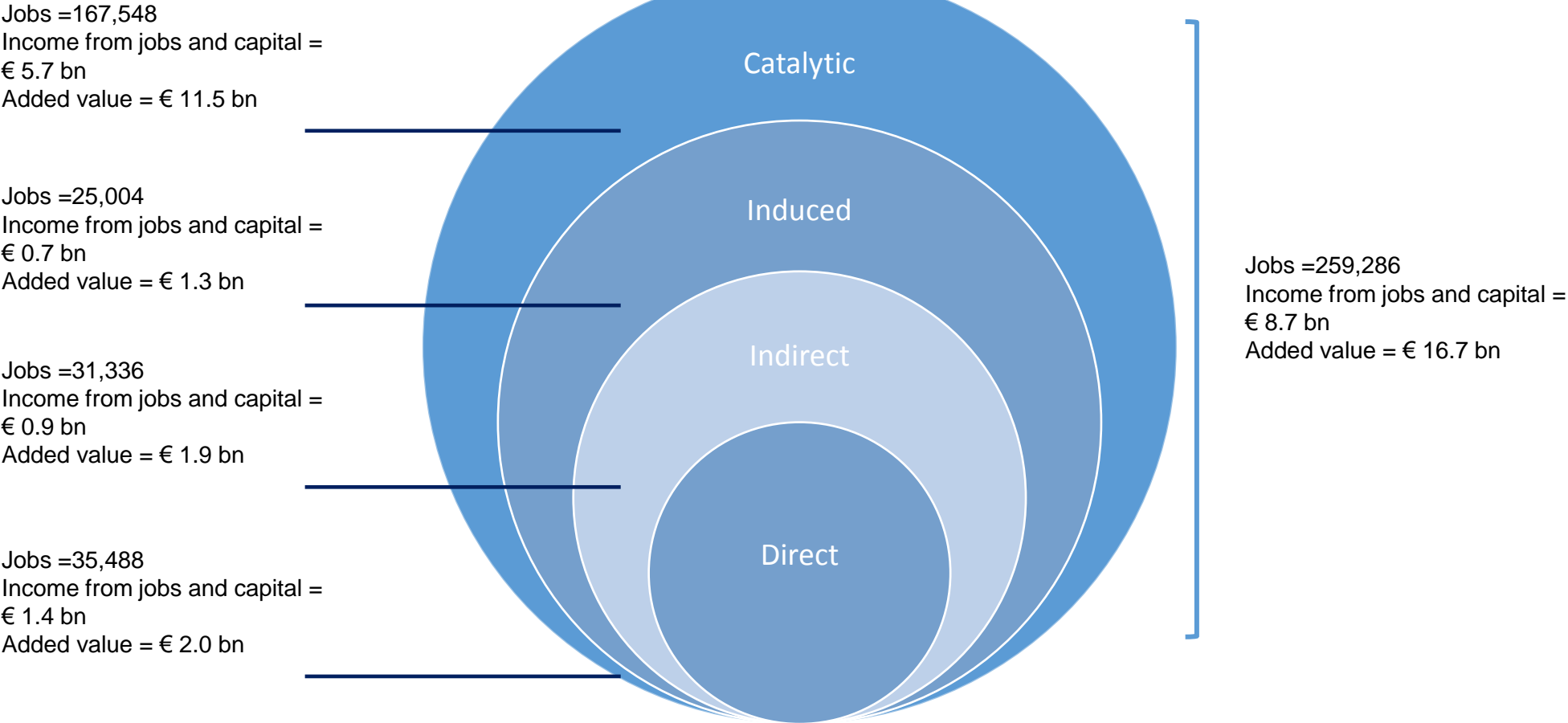
Land occupied by the main European airports (data in ha)



5 - Sustainable Development of the Local Area

Objective *To contribute to the development of the country, paying maximum attention to the respect of the environment and the long-term sustainability of the capital's airport system*

The economic impact of the Fiumicino and Ciampino airports on the Italian system



Source: ADR processing from Economic Impact of European Airports – A critical Catalyst to Economic Growth - (ACI Europe, January 2015)

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Environmental Indicators	Unit of measurement	weight	2017 objective	ADR performance (Jul 16 – Jun 17)
1) Noise detection central units	No. fixed detection central units for noise/aircraft movements x 100,000	20.0%	6.05	6.06
2) Noise monitoring network uptime	% time operating out of airport opening hours	11.0%	93.0%	93.14%
3) Separate waste treatment (1)	100 kg units of waste collected separately/total 100 kg units of waste	20.0%	36%	80.0%
4) a. Waste water treatment - COD (mg/L of O2)	% compliance with the Legal Limit (125 mg/L) of the average annual concentration of oxygen necessary for the chemical oxidation of the organic and inorganic compounds in the waste water samples of the treatment plants	9.0%	45%	22.60%
4) b. Waste water treatment - BOD5 (mg/L of O2)	% compliance with the Legal Limit (25 mg/L) of the average annual concentration of oxygen necessary for the biochemical oxidation of the organic compounds in the waste water samples of the treatment plants	8.0%	64%	26.50%
4) c. Waste water treatment - Total Suspended Solids (mg/L)	% compliance with the Legal Limit (35 mg/L) of the average annual concentration of total suspended solids in the waste water samples of the treatment plants	8.0%	22%	19.20%
5) Energy efficiency	KWh of energy used in the terminal/m3 of terminal	10.0%	162	131.75
6) Use of renewable energy sources	kWh of energy not produced by renewable sources/kWh of energy used by the airport	14.0%	0.990	1.00

Environmental Indicators	Unit of measurement	weight	2017 Objective	ADR performance (Jul 16 - Jun 17)
1) Noise detection central units	No. fixed detection central units for noise/aircraft movements x 100,000	20.0%	17.87	18.11
2) Noise monitoring network uptime	% time operating out of airport opening hours	11.0%	93.0%	93.6%
3) Separate waste treatment (1)	100 kg units of waste not collected separately/total 100 kg units of waste	20.0%	85%	62.0%
4) Waste water treatment	% average annual concentration of oxygen necessary for the chemical oxidation of the organic and inorganic compounds in the waste water samples of the treatment plants	25.0%	100%	100%
5) Energy efficiency	KWh of energy used in the terminal/m3 of terminal	10.0%	155.00	124.37
6) Use of renewable energy sources	kWh of energy not produced by renewable sources/kWh of energy used by the airport	14.0%	1.00	1.00