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Spain: AENA – Barcelona Airport, el Prat de Llobregat, case study

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About

Case study name:

[The greening of industries in the EU](#)

Country:

Spain

Organisation Size:

500+

Sectors:

Transport and storage

AENA aeropuertos (AENA) is a state-owned company that operates Barcelona's El Prat airport facility. AENA is responsible, among other tasks, for the planning, coordination, operation, maintenance, management and administration of Barcelona airport. The case study illustrates how developing alternative mobility programs, as opposed to predominating mobility patterns based on private motor vehicles, clearly improves and increases public transport services, reduces harmful environmental effects, generates social and economic benefits, and creates new jobs which, in this case, were promoted by AENA and other social partners and created in transport companies. The case study was carried out between January and March 2012.

Introduction

[AENA Group](#) is a corporate entity whose activity focuses on airport management and air navigation services.

AENA operates 47 airports and 2 heliports in Spain. The AENA Group is directly or indirectly involved in the management of 27 other airports in the rest of the world. AENA was founded in 1990 and currently employs approximately 13,000 employees, of which 1,000 work in Barcelona's airport facilities. They are the main beneficiaries of the measures described in this study.

In order to cope with environmental, social and economic difficulties associated with a mobility model based primarily on the use of private motor vehicles, AENA, in cooperation with public agencies and trade unions, has promoted the development of a Mobility Plan to encourage sustainable mobility for the 21,000 commuters who travel daily to workplaces located in the airport facilities. Workers are distributed among 300 companies involved in a great number of activities, which include tasks directly related to airport services (information, customer services, aircraft maintenance, air traffic control, catering, etc.), as well as many indirect services (retail business, hotels and restaurants, security and cleaning services). Barcelona airport is one of the top mobility zones in Barcelona's metropolitan area, and therefore action taken to promote green transport become even more exemplary and relevant.

The Mobility Plan resulted in the creation of new jobs related to new and improved public transport services. It has also promoted environmental indicators, safety, comfort and economic improvements for commuters who work in airport facilities, thereby improving working conditions.

Drivers and Motivations

AENA's awareness of environmental aspects (as part of the implementation of the airport's environmental management system, certified by ISO 14001) was a significant factor that brought about the company's involvement in the development of the Mobility Plan. This policy improved AENA's corporate image significantly and provided a policy model for other sectors and operating authorities.

Other factors affecting AENA's move towards sustainable mobility were the growth of social concern for environmental and social problems associated with transport, and awareness of the fact that an overwhelming majority of journeys were related to commuting. This also affected the intervention of trade unions in favour of an alternative mobility model. As a result, since 2003 the Trade Union Confederation of Workers' Commissions ([CCOO](#)) has demanded the improvement of access to airport facilities and suggested a number of measures, among them the proposal to develop a Mobility Plan.

Another significant motivation was the adoption by the Parliament of Catalonia of the Mobility Act in 2003 to promote sustainable mobility for all citizens. The act included the development of a governing mobility plan for Barcelona's metropolitan area which provided that the airport develop its own sustainable mobility plan. The transposition of EU Directives on pollution adopted in 2006 by Catalanian legislation to improve the quality of the air in Barcelona's metropolitan area was one more motivation to promote sustainable mobility to the airport.

The Spanish strategy on energy savings and efficiency developed by the Institute for Diversification and Energy saving (IDAE) of the Spanish Ministry of Industry, promoted mobility plans in economic activity centers and funded Barcelona Airport's Mobility Plan.

Green business practice

The prevailing use of private vehicles to travel to the airport has serious negative impacts on workers, on residents' quality of life, and undoubtedly affects business competitiveness.

Those effects include:

- a high rate of traffic accidents;
- social exclusion, since not all workers have access to private vehicles (often not having a driver's license is a decisive criterion for employers to reject job applicants);
- the scattering of work centres which extends the duration of commuting and creates traffic congestion;
- increase of direct family costs for the use and ownership of vehicles;
- emissions of polluting gases and compounds, such as nitrogen dioxide and micro-particles which affect significantly human health;
- traffic is also one the main causes of CO₂ emissions responsible for climate change and greenhouse effect, and transport is responsible for approximately 25% of Spain's total CO₂ emissions.

The Mobility Plan for airport facilities was developed between 2006 and 2008 to counteract the negative effects of the old mobility model and promote a more sustainable access to the airport. A Mobility Commission was set up as a stable participation negotiation body for the development and monitoring of the plan.

The Mobility Plan quantified the different sustainable mobility services and infrastructures to detect commuters' problems to access the airport. Subsequently an action plan was developed that included strategies and intervention measures to promote sustainable mobility.

These included:

- four new bus lanes linking the airport with the city of Barcelona and other municipalities in the metropolitan area;
- pedestrian and bicycle routes;
- increase in the running frequency of night bus lines;
- the promotion of carpooling;
- shuttle service to link air terminals and railway suburban station;
- mobility plans in airport companies;
- extension of the railway line to reach the new airport terminal;
- creation of a structure for mobility management;
- bus lanes in access routes to the airport;
- efficient driving courses for bus drivers.

As airport operator, AENA's involvement in this process was essential and decisive. AENA supported the project from the very start and participated in its drafting and development. Some of the measures had to be directly implemented in airport facilities and were funded by AENA.

The Mobility Plan showed that most airport workers used private motor vehicles to commute (cars or motorcycles) and just over a quarter (27%) used some form of public. This was due largely to a reduced and not very effective public transport service unfit to meet commuters' needs.

Therefore, the Mobility Plan included a long list of actions to solve these problems. Now the airport has five bus lines connected to the city of Barcelona and other metropolitan municipalities and linked to the rest of metropolitan transport networks. The improvement of transport services has contributed to a significant increase in the number of users.

A free airport shuttle bus service was also introduced to give continuous connection between the two terminals and the airport railway station. Most shuttle buses are low emission vehicles.

In the case of public transport measures, one regional and one metropolitan agency shared responsibilities in the execution of the Mobility Plan. Activities were coordinated and supervised by the Regional Transport Agency, the competent regional body. Barcelona's Metropolitan Transport Agency (a metropolitan authority that assumed the competences of all the municipalities in the area) was in charge of the management of the Mobility Plan.

AENA plans to implement additional measures for the improvement of mobility in the near future. Those measures include the management and regulation of parking places (offering free or cheaper fees to clean energy vehicles), introduction of environmental requirements for shuttle buses to reduce polluting emissions, as well as promoting carpooling to reduce the number of single-occupant cars and promote a less polluting and more energy efficiency-oriented practice.

Anticipation and management of the impact of green change on quantity and quality of jobs

Quantity of jobs

AENA's Urban Projects and Access department and the airport's environmental department participated and collaborated with the other agents (the Municipal Transport Authority, City Council and Regional Government) in the implementation and follow up of the measures included in the Mobility Plan. They also played a key role in the planning and execution of further actions to achieve a greener and safer mobility.

The introduction of new bus lines and the improvement of existing services (to 'green' AENA's and airport workers' mobility and linking all airport facilities with the metropolitan area) created 65 new jobs (drivers, technical and auxiliary personnel).

Airport shuttles (connecting both terminals, the airport railway station and terminal T1 and the employees parking lot and T1) managed by AENA generated 60 new jobs basically in driving and coordination services.

The creation of new transport services and the improvement of the existing ones, as stated in the Mobility Plan, beyond the obvious environmental, social and economic benefits, created 125 new jobs. This factor proves that the bid for a green, sustainable mobility is also positive in terms of creating new stable jobs.

These new 125 jobs were not created automatically from the start, they have been gradually generated during the last three years as bus lines improved and increased their services to meet users' needs, which have continued to grow. Constant improvement and adaptation of public transport services becomes more effective and therefore increases the number of users. This factor conditions the growth of public transport and the number of jobs necessary to provide such services.

If all the measures foreseen in the Mobility Plan are implemented, public transport will become more competitive and create even more jobs; for instance, the planned measure to increase the number of lanes exclusively reserved for buses on the main access routes to the airport would prevent them from being caught in traffic jams and allow a faster (higher commercial speed), more regular flow of buses and increase their reliability. The service would then attract potential new users and more vehicles would circulate to offer more capacity. The Spanish Association of Public Transport Companies (ATUC) estimates that each bus in service provides 3.5 jobs.

Quality of jobs

Skills development

The positive effect of the selected green business practice was the provision of training for AENA's employees from 2006 onwards. Since then, 346 workers from AENA's Barcelona facility have attended training courses on efficient driving as part of the measures included in the Mobility Plan. Workers who attended these courses drive airport vehicles on a daily basis, and 65% of the staff with tarmac circulation licenses (specific permits issued for airport personnel to drive various vehicles associated with airport operations such as tow vehicles or fuel tankers) were trained through these courses. AENA's airport vehicle fleet includes about 150 different types of vehicle.

Courses on efficient driving were supported by the Catalan Energy Institute (ICAEN) and the Spanish Energy Diversification Agency (IDEA), and were part of the agreements to implement measures included in National (Strategy for Energy Efficiency) and regional (Catalan Energy Plan) programmes. These courses change driving patterns and habits that, when eliminated, can deliver a 10% fuel saving, thus also reducing CO₂ and other polluting emissions. Efficient driving also increases safety.

Efficient driving reduces fuel costs, tyre wear and maintenance expenses which together account for up to 40% of the operational costs of vehicles, making companies more competitive.

As a result, fuel consumption of airport vehicles in Barcelona has dropped both in absolute terms (by some 17,000 litres) and in *air traffic units* (UT), a unit of measure that takes into account the yearly number of passengers and the equivalence of 100 kg of cargo (UTs are indicators of airport activity and in some cases are used to calculate environmental indicators).

At the end of the courses, trainees filled in a questionnaire to assess the quality of their training. All of the efficient driving courses proved satisfactory and were deemed valuable and highly efficient.

Other job quality dimensions

One of the most significant impacts of the implementation of the Mobility Plan on other job quality dimensions is the reduction of work accidents. Fewer AENA workers use their own vehicles to commute and rely on professional public transport drivers who are skilled and qualified operators. This reduces workers' exposure to the risk of commuting accidents. Under Spanish law, commuting accidents are considered work accidents.

Sustainable mobility does not only reduce accident rates, but it also improves workers' occupational health by reducing their fatigue, stress and tension caused by traffic jams which eventually have a negative effect on productivity.

The implementation of the Mobility Plan has also contributed to the reduction of the social exclusion of commuters who travel daily to Barcelona airport facilities. The improvement of public transport services grants all citizens who do not have private vehicles or a driver's license equal access to jobs.

Promoting sustainable mobility implies less polluting emissions of gases and particles into the atmosphere and improved air quality. Furthermore, the sum of sustainable modalities is always less expensive than the daily use of private vehicles both in terms of direct costs, such as fuel, maintenance and tolls, and the indirect costs of accidents and pollution.

Another significant effect of the Mobility Plan is the achievement of a cultural shift. In a social context with a culture based on the predominating use of private vehicles, cars have become a quintessential symbol of the consumer society. In contrast, public transport is frequently stigmatised and associated with personal failure. Knocking down those perceptions is a long-term process, but sustainable mobility and public transport become more and more accepted whenever their environmental and economic advantages represent a decent and effective alternative to private vehicles.

This experience would not be possible the participation of the different agents that have cooperated in the Mobility Commission (workers' representatives, employers, public agencies, transport operators, the Association for the Promotion of Public Transport and an external mobility consultant). Their collaboration proved essential in the promotion of green mobility.

Conclusions and Recommendations

- The promotion of public transport encourages the creation of green jobs and has a positive effect on job quality. It also implies environmental, social and economic benefits for society.
- The existence of a favourable legal framework on sustainable mobility for commuters is a necessary first step to promote sustainable mobility. But an adequate legal framework alone is not enough.
- Cooperation and understanding between all social partners is essential for the achievement of sustainable mobility goals. The Mobility Technical Commission is a good framework for dialogue and agreement although the views and interests of social partners often differ.
- The Mobility Plan is a clearly useful instrument to plan and manage sustainable mobility efforts.
- As a result of this action, 125 new jobs were created in a three-year period due to the improvement of public transport services. This service represents a potential future growth in the number of users and will deliver an estimated 3.5 jobs for every bus in service.
- In terms of improvement of job quality, the rate of commuting accidents has been reduced, occupational health indicators have improved significantly and 346 of AENA's employees have had specific occupational training. The fuel consumption of airport vehicles has dropped significantly in the last three years.
- A significant effect of the Mobility Plan is the shift of mobility patterns and habits, changing the prevailing private car culture among airport employees.
- The Mobility Commission must ensure that additional measures and actions are taken to quantify the full effect. The CCOO union federation strongly recommends measuring the specific effects of the plan on working conditions.

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