



**1st UITP SUSTAINABLE DEVELOPMENT
CONFERENCE**

***" Sustainable Cities and Public Transport
Bringing Quality to Life"***

Bilbao, 18-20 October 2006

Susana Carvalho

Thursday 19 October 2006, Session 2

The commitment of the Metro of Lisbon

1. Biographical note

Born in Lisbon in 1980, Susana de Carvalho, studied at Instituto Superior Técnico (IST, Lisbon) where she graduated in Environmental Engineering in 2004.

Her graduation thesis was "Efficiency Performance of a Refrigerated Plate based on the Peltier Effect Potentially Supplied by Solar Energy".

Under a scholarship from the Portuguese Science Foundation (FCT), she worked in the international project "Fire Star" for the study of forest fires.

In December 2004, she joined Secil Companhia Geral de Cal e Cimento, S.A., at the Outão plant. At this cement plant, she revised, updated and monitored environmental procedures defined by the Quality, Environment, Safety and Security Integrated System (SIQAS). She elaborated the "Energy Net Balance Report" for the plant' ovens and the technical part of the annual EPER report (European Pollutant Emission Register) for the European Commission. She also monitored the first real time essays of co-incineration of industrial residues in the country, at the plant.

In 2005, she was selected, through a program of the Ministry of Public works, Transportation and Communications, for a group of trainees in the Metro of Lisbon, where she remains at present. At the Metro of Lisbon, she collaborated in the elaboration of the Sustainability Report of 2005 and in the elaboration of bills of works for public project proposals. She analysed proposals for Environmental Impact Studies and initiated the update of the Integrated Plan for Waste Management of 2000. She initiated the environmental survey, which will support the implementation of the Environmental Management System, with a view towards the certification based on the Norms ISO 14001:2004. She followed Environmental Impact Assessments, as well as some Environmental Impact Studies and environmental follow up at construction sites.

2. Abstract

The main consequence of not accomplishing the Kyoto Protocol (currently called the Kyoto Treaty) targets is Global Warming. The most reliable climatic computational models foresee that the global temperature of the planet will rise to reach an average increase from 1.4 until 5.8 Celsius degrees by the year 2100. This rise will have implications for all ecosystems and human beings, forcing a necessary readjustment of all natural species to a change of habitat. The rise of the global temperature of the planet is a consequence of, as we all know, the emission of high amounts (i.e. by rate values that exceed the rates of absorption of the natural systems) of Greenhouse Gases Effect, such as the carbon dioxide, CO₂.

In the transportation sector, the European Commission estimated that until the year 2000 the carbon emission would be of 22% relative to the level of 1990 and that by the year 2010 this value shall represent 39% relative to the level of 1990. In the Energy sector, the emissions are expected to stabilize. In respect to the domestic and tertiary sector emissions, the levels shall increase about 4% in the next years. On the other hand, the CO₂ emissions proceeding from the industrial sector shall diminish 15% between 1990 and 2010.

The Commission presented already a series of initiatives that must be pursued.

Regarding transports, initiatives must be adopted to reduce the emissions of private vehicles, to improve price fixing systems, to magnify the domestic market of railroad transport and to develop an integrated modal transport. In the period between 1990 and 2005, the transportation sector in Portugal was characterized by the increase of the energy consumption in about 102%, corresponding to an annual growth rate of 4,8%. The main reason for this increase was road transportation, that registered an energy consumption growth of 107% (5,0%/year), in the period 1990-2005, corresponding to an energy consumption growth quantitative of 3,33 Ggep.

The commitment of Metro of Lisbon is to implement the orientation measures issued by the Portuguese Government, as our shareholder, in line with the National Program for Climatic Change.

Regarding the network expansion, Metro of Lisbon has several undergoing projects, which will allow the capture of a great number of passengers from private and public road transport. Because of this trend, and having for base the search assessments for the new extensions and the emission factors associated to road transportation, it is possible to achieve a reduction of about 20,000 ton of CO₂ per year.

Regarding the network operation, Metro of Lisbon is also improving the efficiency of the energy recovery process of the existing trains.

Taking into account only the measures undergoing implementation or already in effect, the total CO₂ emissions both from the network expansion and the network operation of Metro of Lisbon, will suffer a reduction of 35 684 ton of CO₂ per year.

Beyond these measures, we are concerned with the promotion of the subway transport. We promote campaigns for the European week of mobility, campaigns of awareness in schools and aimed at children and campaigns for the promotion of the intermodal pass Lisboa Viva. These initiatives aim at stimulating the use of the public transports in the city of Lisbon.