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A EUROPEAN VISION FOR MORE ENVIRONMENTALLY FRIENDLY BUSES

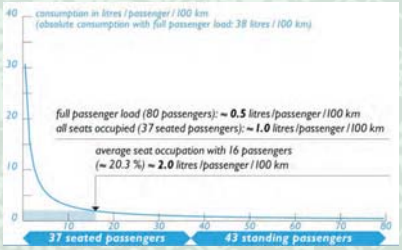
Maria Vittoria Corazza and **Antonio Musso**
"Sapienza", University of Rome
e-mail: mariavittoria.corazza@uniroma1.it, antonio.musso@uniroma1.it

Umberto Guida and **Michele Tozzi**
UITP - International Association of Public Transport
email: umberto.guida@uitp.org; michele.tozzi@uitp.org

INTRODUCTION

Public Transport is accredited for being a smart solution to problems such as congestion and poor air quality; since bus systems move around 50 to 60% of all transit passengers (30 billion per year) in the EU, buses are in the front line in competing with passengers cars for any travel.

Buses can be also highly efficient modes with low levels of local emissions, CO_2 and other GHG emissions, even with modest occupancy.



However, the level of satisfaction for Public Transport may be very low, due to poor performance (regularity, speed, comfort and design), which contribute to the modest attractiveness of this mode

A paradigm shift is then needed.....

THE BUS SYSTEM OF THE FUTURE: EBSF, 3iBS and ZeEUS

An opportunity to bring about such a radical change is represented by three research projects funded by the European Commission, with the aim to develop a new generation of buses across Europe

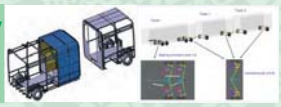
For the three projects, the common task is two-pronged:
- **to develop and test innovative solutions to increase the attractiveness of this mode and**
- **to operate more environmentally friendly vehicles**

Main case studies

Main areas for innovation tested in the projects

Comfort and design

Capacity

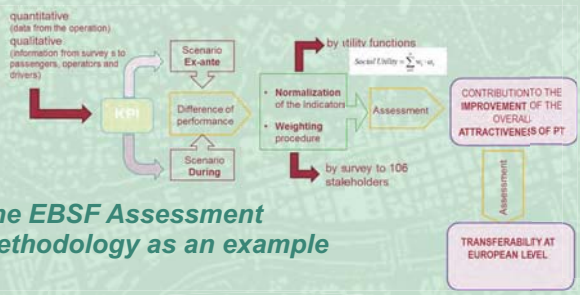


Smart driving

Energy management

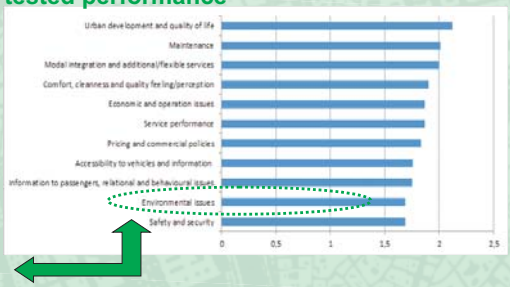
METHODS AND RESULTS

EBSF, 3iBS and ZeEUS are all based on demonstrators and the related performance assessed through Key Perfomance Indicators (KPIs). The assessment is a before-and-during-the-implementation comparison of results, with KPIs measuring the performance variations at case study and cross-case, also fostered by additional activities, such as modelling and surveys.
For EBSF a Transferability Exercise (TE) was also performed, i.e the assessment of the tests results to outline the points of strength achieved by the best performance as drivers which can make each innovation worth to be transferred elsewhere in Europe



The EBSF Assessment Methodology as an example

The most "convincing" tested performance



Transferability Exercise
performed by 20 European cities

Poor relevance of "Environmental issues": a lack of green awareness.....
innovative measures can be transferred, if rewarded by reduced fuel consumption, but in any case they do not have to increase operating costs.
Energy consumption is considered just for its saving potentials.....

Surveys on Energy Efficiency
submitted to a panel of European companies

- **Smaller companies seem to be more efficient than those with a higher energy balance**
- **The majority of fleets is doomed to obsolescence within a very short term, 60% being Euro I to III –compliant, and about 70% of companies stated their will to purchase (or have already purchased) either EEV or Euro VI vehicle, *but...***
- **More than 90% of the buses in operation use standard propulsion systems (diesel, biodiesel, gas and biogas) and around 3% of them are hybrids**
- **More than 60% of the respondents is willing to change in favor of more hybrids and more fully electric with batteries**
- **57% of the companies already produce energy from photovoltaic systems, partly to supply their own electric fleets, but not new installations or different systems are planned**

more at: www.ebsf.eu, www.3ibs.eu and http://zeeus.eu/