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 passenger cars for any travel. Buses can be also highly efficient modes with low levels of local emissions, CO₂ and other GHG emissions, even with modest occupancy.

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
- to operate more environmentally friendly vehicles.

METHODS AND RESULTS

EBSF, 3iBS and ZeEUS are all based on demonstrators and the related performance assessed through Key Performance 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

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.

A paradigm shift is then needed......