



JASPERS –Workshop, with Ministry of Regional Development Romania, April 24th, Bucharest

Bus fleet renewal through deployment of clean and efficient vehicles

Experience and Questions in EU countries drawing on ESI Funds and EIB/JASPERS support

The context:

Many local transport authorities in Romania are in need of replacing much faster ageing bus units within their fleets or of introducing bus transport to serve a growing urban population. The purpose is to meet current standards, increase efficiency and passenger comfort and reduce transport related emissions. EU funds – mainly from European Structural and Investment Funds (ESI) but also from Horizon 2020 and potentially from the Connected Europe Facility (CEF) – (could) contribute to modernise the urban and regional bus fleets and therefore to improve quality, efficiency, image and market share of public transport.

Policies at EU level strongly support the implementation of cleaner and more sustainable urban transport, with a particular focus on clean fuels and vehicles.

There is a wide choice of cleaner fuel and engine technology for urban bus operations, beyond lower emission Euro VI vehicles and the use of biodiesel blends:

- Fully electric buses, including trolley buses, battery electric, and fuelcell electric
- Hybrid electric (diesel, natural gas, hydrogen) and plug-in hybrids.
- Natural Gas (CNG or LNG), including biomethane;
- Other fossil fuels (e.g. , Bioethanol, HVO);

All of those technologies may contribute to the policy goal of gradual shift to low emission public transport.

Many cities in CEE countries, especially the larger ones, dispose of experience with testing and implementing bus services provided through Diesel Euro VI, CNG, LNG and several forms of electrical buses. The public (bus) transport providers in Warsaw and Sofia are among the lead cities in this transition process towards a carbon-free urban mobility future.

Warsaw MZA's roughly 1400 vehicle fleet has been substantially upgraded in the past years. While until 2014 the fleet was almost entirely based on Diesel Euro IV and (much) older, it now consists of a 25 % share of Euro VI, roughly 20 % Euro VI hybrid and a steadily increasing number of electrical only buses. Several years of experience with Diesel Hybrid and LNG fueled buses allow a solid calculation of operational and environmental improvements. A step change is ahead with a total of roughly 12 % of the entire fleet to be fully electric in 2020. Warsaw will then dispose of the one of the largest e-bus fleets in daily operation throughout Europe.

Sofia's public Bus Transport company "Stolichen Avtotransport" operates (more than) 400 of the total urban bus services composed of (more than) 600 vehicles. This fleet has equally been systematically and dramatically renewed in the past years, equally drawing on both EU structural funds and EIB loans. In 2012 more than two thirds of this fleet was composed of Euro 0 to III, today more than two thirds are Euro VI and cleaner. The "bus

fleet renewal program 2012-2016 has replaced 380 old though new(er) buses. The ongoing second stage of the renewal strategy (2016-2018) includes 140 CNG buses (12 and 18m), mostly based on a lease contract plus 20 full electric buses and 20 hybrid buses on a lease basis.

Those two examples show: a substantial improvement is possible, some testing of new technologies was necessary, yet successful, leading to a larger fleets in full daily operation. EU funds and, to some extent, EIB loans played an important role, especially in the beginning, and when moving in large scale operation of e-buses.

UITP has reported on the experience from the Horizon 2020 funded ZeEUS project which included a pilot implementation, testing and gradual operational experience with different types of e-buses. Most relevant experience was gained in 10 core participating cities.

The topics of the range of presentations are included in the agenda below and can be found on the NCC webpage via this link

The workshop brought together a total of about 90 policy makers, practitioners and planners from regional and local authorities in Romania and was considered useful, also to prepare funding applications for the TO4 transport attribution under the Regional Operational Program.

Time	Title	Speaker
09:00 – 09:30	Networking and Coffee	
09:30 – 09:40	Welcome Address	MINISTRY OF REGIONAL DEVELOPMENT
09:40 – 10:10	Introduction and an Overview of considerations for Fleet Investment	Alan O'Brien <i>Transport Specialist</i> JASPERS
10:10 – 10:40	Results and conclusions from the Zero Emission Urban Bus System research project ZeEUS	Aida Abdulah <i>Senior PM - Research and Innovation</i> UITP
10:40 – 11:10	Warsaw strategy for Low Emission transport – technical and operational challenges and lessons learned	Mateusz Szymański <i>Technical Manager</i> MZA Warsaw
11:10 – 11:40	Coffee	
11:40 – 12:10	Financing fleet expansion for Urban Public Transport	Kevin Cheung , Engineer, Regional Transport Programs, EIB
12:10 – 12:40	Experience in the deployment of CNG and Electric Buses in Sofia	Mr Pavel Vasilev <i>Head of Operations</i> Stolichen Avtotrasport, Sofia
12:30 – 13:00	Open Discussion	Moderator: Jochen Schneider <i>Network Competence Centre</i> JASPERS
13:00 – 14:00	Lunch	
14:00 – 14:10	Introduction to the afternoon. Common procurement for Small Cities	Mihai Grecu <i>Transport Specialist</i> JASPERS
14:10 – 14:40	Electromobility and the implications for Urban Energy Infrastructure	Prof. Mihai Sanduleac <i>Associate Professor,</i> University Politehnica of Bucharest
14:40 – 15:00	Mechanism for introducing new technologies in a city, and implications for the Public Service Contract	Stefan Roseanu <i>Urban Transport Consultant</i> COWI
15:00 – 15:20	Open Discussion	Moderator: Jochen Schneider <i>Network Competence Centre</i> JASPERS
15:20 – 15:30	Closing Address and key conclusions	Alan O'Brien

		<i>Transport Specialist</i> JASPERS
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