

First EEV buses in Baia Mare, Romania

Clean Fleets case study

- First EEV (Enhanced environmentally friendly) buses ordered in Romania.
- Emissions of NO_x, NMHC and PM considerably lower than current diesel Solaris buses.



EEV solo bus Solaris

Contract tendered

- 5-year contract concluded in 2012 for the leasing of 30 new EEV solo (standard) buses and 8 trolleybuses to be delivered between 2013 – 2016
- Contract awarded by SC URBIS SA Baia Mare, the main public transport operator for Baia Mare City



Solaris Trolleybuses Trolino 12

Targets and planning considerations

Background policy/targets – The City Council of Baia Mare has a stated policy to ensure new public transport vehicles should be as environmentally friendly as possible, taking into account the local market offer.

Technology choice – Following market consultation, it was felt realistic to require new buses to be equipped with EEV¹ engines, which was the least polluting engine available on the Romanian market in 2012. Both buses and trolleybuses were also required to have a low floor along the length of the vehicle, a platform and a suspension system permitting the vehicles to bend at kerbs, in order to improve accessibility for disabled people to the public transport system.

Infrastructure – The modernisation of a residential area with the assistance of European funds, additionally required the purchase of several trolleybuses. New overhead cables were also using European funds.

SC URBIS SA Baia Mare is operating both buses and trolleybuses as each technology has a distinct advantage:

¹ EEV = Enhanced Environmental Friendly Vehicles. This is an official voluntary EU emissions standard, which lies between the Euro V and Euro VI standards.



- Buses offer greater mobility than trolleybuses, demonstrated by an average speed of 20kmph for buses compared with 15kmph for trolleybuses,
- The lifetime fuel consumption costs are lower for trolleybuses than for buses.

Procurement approach

The process started with a pre acquisition and market consultation phase. An open tender was then published, in accordance with Baia Mare Council's competition rules. The Tender was public at <http://www.e-licitatie.ro> and www.urbisbaiamare.ro.

All tender and contract documents were developed by experts from SC URBIS SA Baia Mare.

Clean Vehicle Directive (CVD) Methodology

The tender used a combination of technical specifications and award criteria to take the environmental impacts listed in the CVD into account:

- 1) **Technical specifications** – Minimum standard: EEV for diesel buses.
- 2) **Award criteria** – points awarded for lower fuel consumption, based on the SORT test cycle.
- 3) **Approach for evaluating cost** – life cycle costing model used, including acquisition price, fuel consumption, maintenance and operational costs.

Contract Monitoring and Management

The contract with the supplier included several requirements related to environmental performance, specifically:

- Training drivers in eco-driving techniques
- Training technical staff on maintenance and repair works after the guarantee period.

New EEV buses were guaranteed for 48 months or 240,000 km and new trolleybuses for 39 months or 195,000 km. Spare parts availability is guaranteed for 12 years from the date of manufacture.

Results

The response from the Romanian market was quite limited, registering two compliant bids from Ager Leasing (SOLARIS) & EVO BUS (Mercedes) for buses and Ager Leasing (SOLARIS) for trolleybuses. The final cost of the tender was lower than foreseen.

The policy of environmentally friendly vehicles purchase was communicated to those concerned internally and also to other stakeholders, through workshops, roundtables, posters, and on the Internet.

The new acquired buses were very much appreciated by the end users mainly due to their design and comfort but also thanks to their on board information system about the bus stop name and real time arrival.

Costs

The total cost of the procurement (leasing costs, maintenance and spare parts) was €11.6 million for the 5 years. This is considerably higher than previous purchases but this is expected to be partly compensated by lower lifetime costs of the new vehicles. The buses will be owned by SC URBIS SA however Baia Mare City will cover the full leasing costs.

The new buses are representing 41% of the current fleet. The 20 new EEV buses delivered in 2013 replaced 15 non-Euro and 5 Euro II buses. The new trolleybuses represent 70% of the existing fleet which has been in operation since 1996.



Environmental impacts

Based on the technical specifications of the bus provider the level of the emissions is:

Engine type	CO2 (g/kwh)	NOx (g/kwh)	NMHC (g/kwh)	PM (g/kwh)
EURO 1	-	8.00	1.10	0.36
EEV	973	1.27	0.06	0.018

SC URBIS SA Baia Mare will measure these emissions in order to see the real values in operation.

Lessons learnt

No problems in operation or maintenance with this technology have been identified. The new vehicles are also insured for 12 years, including spare parts.

However a one-month trial phase should have been considered, in order to check the performance of the new buses in real traffic conditions of Baia Mare.

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Co-funded by the Intelligent Energy Europe Programme of the European Union

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