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**„Gheorghe Asachi” Technical University of Iasi, Romania**  
**Faculty of Electrical Engineering**

**Improving the cross-border public transportation using  
electric buses supplied with renewable energy - ELBUS**

**Project EMS-ENI, code 2SOFT/3.1/54**

**Scientific Seminar ELBUS - Academic character**  
**and**

**2<sup>nd</sup> Scientific Seminar ELBUS - Industrial character**

Project manager, conf.dr.ing. Costică Nițucă

Thursday, 24.03.2022, Friday, 25.03.2022



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## Meeting agenda

- A presentation on project management, procurement, financial issues, information and communication plan, results; Presented by Project manager, conf.dr.ing. Costică Nițucă;
- A presentation on scientific and research activity; Presented by Research Expert 2, s.l.dr.ing. Gabriel Chiriac;
- Discussions on presentations. Opportunities for the development of themes for the graduation papers of students and master students offered within the ELBUS project;
- Possibilities for implementing the project results in industrial practice (area). Miscellaneous.



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- A presentation on project management, procurement, financial issues, information and communication plan, results;
- Discussions on presentations. Opportunities for the development of themes for the graduation papers of students and master students offered within the ELBUS project. Miscellaneous.



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# Project identification

**Grant contract Joint Operational Programme Romania–Republic of Moldova - financed by European Neighbourhood Instrument (ENI), Cross Border Cooperation (CBC)**

**Implementation period:** Start date and end date of the implementation period: 01.04.2020, 01.04.2020, 02.06.2020 – 30.03.2022.

**Project title:** *Improving the cross-border public transportation using electric buses supplied with renewable energy* - **Project acronym:** ELBUS

**Name of the lead beneficiary organisation:** „Gheorghe Asachi” Technical University of Iasi, Romania

**Thematic objective:** 7. Improvement of accessibility to the regions, development of transport and communication networks and system

**Programme priority:** 3.1 Development of cross border transport infrastructure and ICT Infrastructure

**Priority expected results to which the project is expected to contribute:** 3.1.2 Improved integrated ICT networks and facilities to support the cross–border connections

**Type of action:** soft; **Type of project:** integrated



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# Project management

## G.A.No.1. Project management

### **Activity A.1.1:**

***Organizing the teams project and implementation of the project.***

**Planned:** Start month 1; End month 1.

**Executed:** Start month 1; End month 3.



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### **Activity A.1.2:**

***Monitoring, evaluation, technical report and financial report into the project.***

**Planned:** Start month 1; End month 21.

**Executed:** Start month 1; End month 21.

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No	Deliverable	Target value	Achieved
D1.2.1	Monitoring time sheets, TUIASI	90	81*
D1.2.2	Monitoring time sheets, UTM	108	90**
D1.2.3	Progress report no. 1	1	1
D1.2.4	Progress report no. 2	1	1
D1.2.5	Intermediate internal report	1	1
D1.2.6	Final Report	1	1
D1.2.7	Audit – UTM	1	1
D1.2.8	Practical guideline	1	1



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### **Activity A.1.3:**

#### **Equipments acquisition and promotional materials.**

**Planned:** Start month 2; End month 21.

**Executed:** Start month 4; End month 21.

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No	Deliverable	Target value	Achieved
D1.3.1	List of the acquired equipment, TUIASI	1	1
D1.3.2	List of the acquired equipment, UTM	1	1
D1.3.3	List of the promotional materials - visibility, TUIASI	1	1
D1.3.4	List of the promotional materials - visibility, UTM	1	1



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## G.A.No.2. Information and Communication plan

### Activity A.2.1:

*Design and update of a web site, to disseminate the project progress and results.*

**Planned:** Start month 1; End month 18.

**Executed:** Start month 1; End month 18.

No	Deliverable	Target value	Achieved
D2.1.1	Web page	1	1





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## **Activity A.2.2:**

***Final scientific project seminars (communication) organized at „Gheorghe Asachi”  
Technical University of Iasi, Romania.***

**Planned:** Start month 10; End month 21.

**Executed:** Start month - 10; End month 21.

No	Deliverable	Target value	Achieved
D2.2.1	Final scientific project seminars (communication) organized	2	2
D2.2.2	Number of participants at the first final scientific project seminar (communication)	60	60
D2.2.3	List with the participants at the first final scientific project seminar (communication)	1	1
D2.2.4	Number of participants at the second final scientific project seminar (communication)	60	60
D2.2.5	List with the participants at the second final scientific project seminar (communication)	1	1
D2.2.6	Press conference organized	1	1
D2.2.7	Press release published	1	1
D2.2.8	Seminars report	2	2



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### **Activity A.2.3:**

***Workshops organized at Technical University of Moldova, Chisinau, Republic of Moldova.***

**Planned:** Start month 10; End month 21.

**Executed:** Start month - 10; End month 21.

No	Deliverable	Target value	Achieved
D2.3.1	Workshops organized	2	2
D2.3.2	Number of participants at the first workshop	60	62*
D2.3.3	List with the participants at the first workshop	1	1
D2.3.4	Number of participants at the second workshop	60	79*
D2.3.5	List with the participants at the second workshop	1	1
D2.3.6	Press releases published	2	2



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## **Activity A.2.4:**

### ***Elaboration and dissemination of visibility materials.***

**Planned:** Start month 1; End month 21.

**Executed:** Start month - 1; End month 21.

No	Deliverable	Target value	Achieved
D2.4.1	250 flyers disseminated – TUIASI	250	250
D2.4.2	2 press releases published – TUIASI	2	2
D2.4.3	3 banner-rollup displayed – TUIASI	3	3
D2.4.4	50 portfolios disseminated – TUIASI	50	50
D2.4.5	250 flyers disseminated – UTM	250	250
D2.4.6	3 press releases published – UTM	3	3
D2.4.7	100 stickers for equipment – UTM	100	100
D2.4.8	15 portfolios disseminated – UTM	15	15
D2.4.9	1 short video about the project displayed – UTM	1	1
D2.4.10	1 article „telling the project’s story” published – UTM	1	1
D2.4.11	130 brochures disseminated – UTM	130	130
D24.12.	111 Brochures disseminated -TUIASI	111	111



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## G.A.No.3. Analysis of the electric bus optimal functionality

### Activity A.3.1:

#### *Analysis of the electric buses.*

**Planned:** Start month 1; End month 4.

**Executed:** Start month 2; End month 5.

No	Deliverable	Target value	Achieved
D3.1.1	Technical report related to the using of the electric buses	1	1



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### **Activity A.3.2:**

#### ***Analysis of the auxiliary loads.***

**Planned:** Start month 5; End month 9.

**Executed:** Start month 6; End month 9.

No	Deliverable	Target value	Achieved
D3.2.1	Automation system for auxiliary loads	1	1



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### **Activity A.3.3:**

***Thermal model of the indoor climatic environment.***

**Planned:** Start month 10; End month 13.

**Executed:** Start month **10**; End month **13**.

No	Deliverable	Target value	Achieved
D3.3.1	Thermal model	1	1
D3.3.2	Thermal map for the indoor climatic environment	1	1



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### **Activity A.3.4:**

#### ***Renewable energy for the batteries.***

**Planned:** Start month 14; End month 21.

**Executed:** Start month 14; End month 21.

No	Deliverable	Target value	Achieved
D3.4.1	Technical report related to the recharging of the batteries by renewable energy	1	1



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### **Activity A.3.5:**

***Elaborating a practical guideline regarding the improve of the energetical performances for an electric bus.***

**Planned:** Start month 4; End month 21.

**Executed:** Start month 4; End month 21.

No	Deliverable	Target value	Achieved
D3.5.1	Guideline regarding the improve of the energetical performances for an electric bus elaborated	1	1
D3.5.2	Guideline regarding the improve of the energetical performances for an electric bus disseminated	40	40
D3.5.3	List with the persons that received the guideline	1	1





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### **Activity A.3.6:**

***Work visit at Technical University of Moldova, Chisinau, Republic of Moldova.***

**Planned:** Start month 2; End month 9.

**Executed:** Start month 6; End month 9.

No	Deliverable	Target value	Achieved
D3.6.1	Work visit at Technical University of Moldova, Chisinau, Republic of Moldova	1	1
D3.6.2	Report on the work visit	1	1
D3.6.3	Press release published	1	1



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### **Activity A.3.7:**

***Work visit at „Gheorghe Asachi” Technical University of Iasi, Romania.***

**Planned:** Start month 6; End month 18.

**Executed:** Start month 6; End month 18.

No	Deliverable	Target value	Achieved
D3.7.1	Work visit at „Gheorghe Asachi” Technical University of Iasi, Romania	1	1
D3.7.2	Report on the work visit	1	1
D3.7.3	Press release published	1	1



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# The procurement

## TUIASI-LB:

Equipment	Pieces	Purchase value with VAT [Lei]	Supply Contract	Equipment supplier
Laptop	1	4.275,75	23836/16.11.2020//GC 0859/19.11.2020	Giros Company SRL
Multifunction laserjet printer	1	2.245,53	23836/16.11.2020//GC 0859/19.11.2020	Giros Company SRL
Programmable Logic Controllers	2	9.667,56	22656/03.11.2020	Siemens SRL
Thermal vision camera	1	6978,16	40630/08.12.2021	Chemical Lab SRL
Adjustable voltage source	4	5450,20	40630/08.12.2021	Chemical Lab SRL
Oscilloscope	4	11162,20	40630/08.12.2021	Chemical Lab SRL
Signal generator	4	9372,44	40630/08.12.2021	Chemical Lab SRL
Temperature sensor/thermocouple -kit control	10	5664,40	40630/08.12.2021	Chemical Lab SRL

Materials	Pieces	Purchase value with VAT [Lei]	Supply Contract	Equipment supplier
250 flyers disseminated - TUIASI	250	669,38	22844/29.07.2021	S.C. LEMINGS S.R.L.
3 banner-rollup displayed – TUIASI	3	428,40	22844/29.07.2021	S.C. LEMINGS S.R.L.
50 portfolio disseminated – TUIASI	50	416,50	22844/29.07.2021	S.C. LEMINGS S.R.L.
111 Brochures -TUIASI	111	1981,35	3077/31.01.2022	S.C. Delta Print S.R.L.
40 Practical guide	40	1344,00	3077/31.01.2022	S.C. Delta Print S.R.L.



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## Visibility. Dissemination of visibility materials

### The procurement

250 flyers disseminated - TUIASI	250
2 press releases published - TUIASI	2
3 banner-rollup displayed - TUIASI	3
50 portfolio disseminated - TUIASI	50
250 flyers disseminated - UTM	250
3 press releases published - UTM	3
100 stickers for equipments - UTM	100
15 portfolio disseminated - UTM	15
1 short video about the project displayed - UTM	1
1 article „telling the project’s story” published – UTM	1
130 brochures disseminated – UTM	130
111 Brochures disseminated - TUIASI	111



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## Outputs and results

### Project outputs

Outputs	Output indicator (value)	Achieved
Output 3.1. Increasing the energy efficiency of the auxiliary loads	1	1
Output 3.2. Increasing the overall energy efficiency of the electric bus	1	1

### Project results

Project results	Target value	Achieved
1.Improved automation system for auxiliary loads of the electric bus	1	1
2.Advanced thermal model related to the climatic environment within the electric bus	1	1



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## Programme outputs according to the description in the project proposal

Programme outputs	Description	Value	Achieved
Programme output1	<b>3.1.4 Number of environmentally friendly (carbon-proofed) cross-border transport initiatives developed</b>	4	4

In the project description were highlighted 4 initiatives, which fold on the programme outputs, as folloing

Initiatives developed	Value	Achieved
<b>1.Optimization of electric energy consumption</b>	1	1
<b>2.Increasing of power efficiency</b>	1	1
<b>3.Decreasing of the thermal losses</b>	1	1
<b>4.Theoretical solution for using the renewable energy as an ecological solution for recharging the batteries of the electric bus from a system with photovoltaic panel</b>	1	1



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## **Other results:**

- 3 scientific articles.

## **Perspectives:**

- Opportunities for the development of themes for the graduation papers of students and master students offered within the ELBUS project.
- Submission of a new project proposal on the same topic with TUM partners in the new RO-MD financial year.



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**Dear friends, thank you!**





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## **Invitation to participate**

**On the Activity A.2.2. Final scientific project seminars (communication)  
organized at**

**„Gheorghe Asachi” Technical University of Iasi, Romania**

# **Press Conference – ELBUS**

**Analysis, discussions.**