



ELIPTIC OBERHAUSEN USER FORUM

ELIPTIC User Forum Survey Oberhausen

SWOT and Cost Benefit Analysis for integrating electric mobility in ELIPTIC

Welcome to the ELIPTIC User Forum survey in preparation for our meeting in Oberhausen on 30-31 May 2017. Please note, completion of this survey is a required part of your participation in the User Forum and take the time you need to complete it carefully. It creates an excellent opportunity to learn from each other's experience and knowledge.

Please complete the survey by **12 May 2017** so that we have time to process the results before we meet.

Survey rules:

- The survey results will be presented in Oberhausen during the User Forum meeting.
- Results of the survey will be aggregated; individual data will be kept confidential.
- Each member of the ELIPTIC User Forum is to complete the survey, irrespective of their participation to the Oberhausen meeting.
- If you have more than one representative of your organisation attending the User Forum, please combine efforts and submit only ONE survey per organisation.

For further information, please contact Yannick Bousse, yannick.bousse@uitp.org



ELIPTIC OBERHAUSEN USER FORUM

SWOT and Cost Benefit Analysis for integrating electric mobility in ELIPTIC

The overall aim of ELIPTIC is to show how costs and energy can be saved by electrifying public transport and optimising the use of existing infrastructure and rolling stock by connecting traditionally separated domains and developing innovative approaches and business cases for them.

The ELIPTIC project is composed of demonstrations and feasibility studies. Technical and operational feasibility will be assessed according to the lessons learnt in the evaluation process. ELIPTIC would also like to use the User Forum SWOT (strengths/weaknesses/opportunities/threats) analysis for the implementation of the technological approaches to assess the viability of the technological concepts.

The first part of the questionnaire focuses on the charging approaches of local electric bus projects and the main criteria for decision making, in particular on **grid impact and standardisation related to charging infrastructure**.

The second part of this questionnaire focuses on Cost Benefit Analysis (CBA) to assess the cost-effectiveness of electric public transport measures with a special focus on **external cost factors**.



General

Please provide some basic information about the charging approach planned, or being implemented, for your local electric bus project.

1. Name of your organisation.

Open text box

2. What is the charging approach for your project?

Tick box

Overnight charging	
Opportunity charging, bottom-up	
Opportunity charging, top-down	
Inductive charging	
In-motion charging (for trolley-battery hybrid buses)	
Mix of overnight and opportunity charging	
Not yet decided	

Other, please specify the approach

Open text box

3. Please briefly describe your project, e.g. length of bus lines, number of buses, charging capacity, number of charging points, bus type (passenger capacity), elevation profile of line(s), passenger load on lines, average speed on lines, right of way (not separated, partly separated, fully separated), etc.

Open text box

4. If you use, or plan to use, overnight and/or opportunity charging (as opposed to in-motion charging), will you/do you use electricity from existing public transport grids (metro, tram or trolleybus grid) to power e-bus charging?
- Yes, we use/ will use existing public transport grids to power e-bus charging points
 - No, we do not/ will not use existing public transport grids to power e-bus charging points

If yes, then multiple options with tick boxes

Metro grid	<input type="checkbox"/>
Tram grid	<input type="checkbox"/>
Trolleybus grid	<input type="checkbox"/>

SWOT analysis

5. Which strengths, weaknesses, opportunities and threats do you see for your charging approach described above?

Strengths

Open text box

Weaknesses

Open text box

Opportunities

Open text box

Threats

Open text box

A. Effects on the Public Transport Grid

6. Please fill in the table below as follows:

- Row 1: Provide the effects on the grid that you have identified that are/could be caused by the implementation and operation of your charging approach (e.g. grid stability issues, voltage peaks or power surges on the network or disruptions in the electronics assembly of the tram, etc.).
- Row 2: How do/could you measure these effects?
- Row 3: How do you assess the effects on the respective public transport grid?
- Row 4: Please rate the strength of each effect as "1" (weak), "2" (medium) or "3" (strong).

Please number the effects and use the same numbering for the matching measurements, assessment and strength.

Effect	
Effect measurement	
Effect assessment	
Effect strength: 1: weak 2: medium 3: strong	

7. What technical or operational risks or barriers to the grid do you see in the operation of your charging approach?

Open text box

8. What measures have minimised/could minimise negative effects on the grid caused by operating the charging approaches? (e.g. load management, energy storage)

Open text box

B. Standardisation

9. Please provide the key enabling technologies that have played or could play a role in the success of your charging approach.

Open text box

For each technology, please check **one box** (insufficient, preliminary or global standardisation).

Insufficient standardisation of hardware, software and interfaces (e.g. lacking interoperability of systems, increased integration effort for technical system)	Preliminary standards of hardware, software and interfaces established; standardisation process is ongoing	Global standardisation of hardware, software and interfaces (e.g. ISO standards have been established)

10. Please describe:

- Which standards are relevant? (e.g. charging infrastructure, software and hardware, electric grid)
- Describe the standard.
- Which key enabling technology are affected?

Open text box

11. Name and briefly explain any laws or regulations which could hinder the implementation or operation of your charging approaches?

Open text box

12. Are there necessary unfavourable changes in the operational process (e.g. longer roundtrip times, change of maintenance staff) as compared to your current bus operation (e.g. diesel buses) which arise through the application of electric buses and especially through the application of your charging approach?

Open text box

Cost Benefit Analysis

13. What external costs do you take into account in feasibility studies on public transport projects?

Tick boxes

Air pollution	<input type="checkbox"/>
Accidents	<input type="checkbox"/>
Use of urban space/terrain	<input type="checkbox"/>
Climate change	<input type="checkbox"/>
Congestion	<input type="checkbox"/>
Scarcity costs (i.e. delay costs, loss of time for other traffic users)	<input type="checkbox"/>
Costs for nature and landscape	<input type="checkbox"/>
Additional environmental cost (e.g. water, soil)	<input type="checkbox"/>

Other, please specify. Also feel free to add other comments.

Open text box

14. How do you include noise as a cost category in economic appraisal of public transport projects?

Tick boxes

Technical data obtained from vehicle producers	
Your own data collection	
Data collected from market research processes	
National guidelines for noise assessment	
You do not include noise in your economic appraisal	

If you answered national guidelines for noise assessment, please specify the title of the national guidelines.

Open text box

If other, please specify. Also feel free to add other comments.

Open text box

15. If you take noise into account in your appraisal, what type of specific impact do you evaluate?

Property value (by exposure to increased traffic noise)	
Annoyance	
Health	

Other, please specify. Also feel free to add other comments?

Open text box

16. How do you include lack of local emissions in the economic appraisal of public transport projects?

Open text box

17. How do you include costs of health in economic appraisal of public transport projects?

Open text box

18. Any further comments not yet covered?

Open text box



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THANK YOU FOR COMPLETING THE SURVEY

We look forward to meeting you in Oberhausen and to discussing the results. For further information, please contact Yannick Bousse, yannick.bousse@uitp.org