



eBussed
Interreg Europe



European Union
European Regional
Development Fund

SUMMARY

Interregional Learning Event

Technical Requirements in E-Bus Deployment
Thematic Working Group 2



Hamburg | Bezirksamt
Hamburg-Mitte

Online event | 20 January 2021

Event summary

On 20 January 2021 the Borough of Hamburg-Mitte organized the **Interregional Learning Event: Technical Requirements in E-Bus Deployment.**

Impulse talks by Sami Ojamo (Managing Director of VDL Bus & Coach Finland) and János Szász (e-mobility expert, CAE Consulting, Hungary) as well as a video from the e-bus depot in Hamburg-Bergedorf provided detailed insights into relevant issues.

During the second part of the event, the participants joined breakout rooms where they took part in workshop sessions.

The event was concluded with a panel discussion moderated by Mareike Hannes (REM Consult, Hamburg). In addition to Sami Ojamo and János Szász, Dr. Markus Dietmannsberger (Project Leader E-Mobility, Hamburger Hochbahn AG, Germany) joined the vivid discussion.



Video

Welcome to Hamburg!

[Watch the Video](#) on eBussed website

Agenda

- 9:00 Welcome, introduction & warm-up
- 9:20 Impulse talk I - Sami Ojamo
- 9:40 Video from the depot in Hamburg-Bergedorf
- 9:50 Impulse talk II - János Szász
- 10:10 Coffee break*
- 10:25 Workshop session (three groups in breakout rooms)
- 11:10 Panel discussion
- 11:45 Summing up & closure
- 12:00 End of the event

Warm-up poll results

Have you ever been in Hamburg?

55% Yes

45% No

Which stakeholder group do you represent?

Ranking:

1. Public authority/administration (more than 50%)
2. Others
3. Academia & research
4. Manufacturers
5. Transport provider
6. Private sector



Impulse talk I: Procurement and challenges of electric buses

Sami Ojamo

Managing director of VDL Bus & Coach Finland

Sami is working in the commercial vehicle business (mainly public transport) for more than a decade focusing on different areas: change management, sales, after sales and business management in Nordic countries.

Procurement and challenges of e-buses

Key messages:

- E-mobility is coming: Denmark (78%), Luxembourg (67%) and the Netherlands (66%) lead the way to emission-free buses
- However: Italy, Poland, Germany, the UK, Spain and France, who buy 70% of the urban buses sold in Europe, are lagging behind. In 2019, less than 10% of their newly registered urban buses were electric or hydrogen.
- The transition is complex and willingness to put value on
 - *sustainability* (battery lifecycle management, transparent supply chains, battery sizing - easy operations vs. environment, vehicle production) and
 - *social responsibility* (EU's fundamental values, workforce) is crucial.

For more information, see the presentation and the recording on [eBussed website](#).

Video

Bus depot Hamburg-Bergedorf

[Watch the Video](#) on eBussed website



Impulse talk II: New technological developments in e-bus production

János Szász

Public Service and E-Mobility Consultant, CAE Consulting, Hungary

János has been involved in understanding and promoting e-mobility and related public procurements, from 2012 focusing on the emerging e-bus field. 2013 he joined the cabinet of the Deputy Mayor of Budapest responsible for urban development (advisor on mobility). Nowadays he is active in the consulting sector.

New technological developments in e-bus production

Key messages:

- Pécs e-bus demo city of Hungary since 2015
- Tasks towards e-mobility:
 - Convince (technical & economical data)
 - Compare (range, capacity, TCO) and
 - Communicate (provide knowledge)
- Challenges: smaller range, passenger capacity, service life and reliability
- Game changers - tender driven, cross-over, articulated, technical evolution - are needed

For more information, see the presentation and the recording on [eBussed website](#).

Workshop session - Technical Requirements in E-Bus Deployment

Workshop Summary – Group I

1. Based on your experiences, where do you see **challenges** with regard to **large-scale implementation and optimization of e-bus operations**?

One of the biggest challenges is lack of cooperation between all stakeholders: city permits, PTA, PTO, utility company (grid), city architects, bus supplier and infra supplier

Interoperability of chargers and buses

Availability of adequate basic information. The second speaker's contribution today was very useful to that effect

Securing governmental support, as a direct player or a political/financial/administrative supporter

Attitudes of the drivers

Electric grid, good charging places

Take care of connecting to the power grid. Is there enough energy available?

Procurement process if it limits the dialogue of the suppliers (procurement without RFI and one on one talk)

Workshop Summary – Group I

2. Where can we work together or learn from each other to overcome challenges?

Please note down **possible solutions or good practices** already in place in this regard.

Needs for international research, exchange of information as well as interregional actions and learning?

Possible solutions and good practices

International exchange is difficult for those countries where the Public Transport is driven by EU Tenders (line-tenders). There can only be an exchange on PTA level

Collecting practical experience made in e-bus tendering, procurement, testing and running fields is of crucial relevance.

I have my doubts that manufacturers are keen on sharing too much info publicly as it is (implementation) one our Unique Selling Points

Cont. : Candid admission of mistakes made and improvements introduced can be of high benefit to the other e-bus adoption regional promoters, rather than success stories alone.

In Finland we have or had a Group eKeko in which we discussed about operating e-buses.

Information sharing between PTAs for successful (and non-successful) implementation of e-bus systems. What went wrong, what went well, how was the infra topic solved etc.

Fields for interregional exchange and actions

stakeholder networks/forums

Share of information and experience

Workshop Summary – Group 2

1. What are your **regionally specific operational requirements** and how does it influence technical requirements?

different lengths.
Should be a real
good looking bus
but it may be
smaller than
standard 12 meter

In Turku, the
subzero winter
conditions have to
be handled. This
applies to charging
and interior heating,
especially the
driver's
compartment

doubts about the
reliability for peak
size e-buses
indispensable for
Tuscan cities Italy

Steep hills and
battery range
- in Pecs

Turku also has quite
steep hills that
require a certain
amount of driving
power from
standstill

Steady,
reliable, large
range without
charging

Size of
e-buses
required, due
to narrow
inner cities

Turning range
of e-buses in
narrow cities

South Transdanubia:
the issue is not
especially regionally
(topographically)
defined, but optional
e-bus technologies
compared in terms of
price and technology
offered suits
municipality budgets
matters

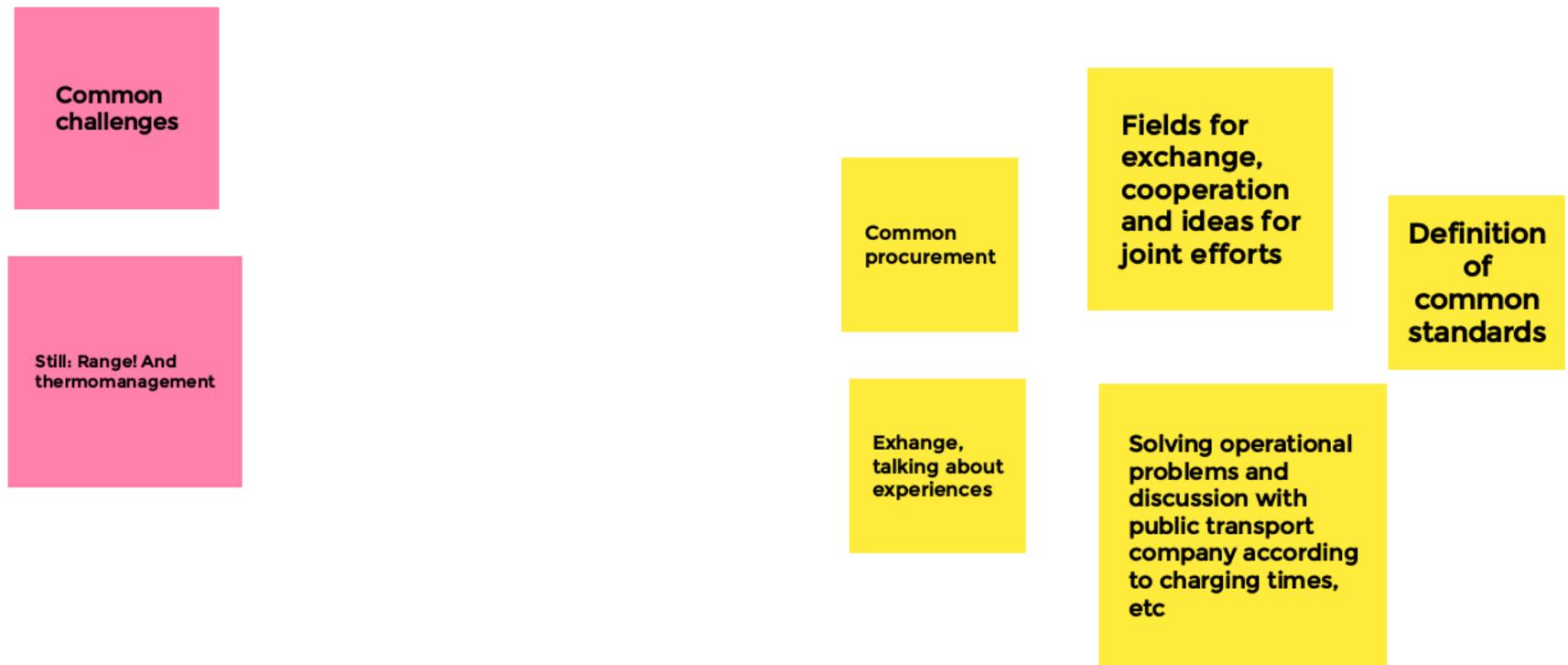
Province of Utrecht is
rather small, distances
are short, but little
space for
(opportunity)charging
stations underway
(urban area)

Tuscan cities Italy :
past experience with
40 small
lead-powered
e-buses, unreliability
of the product but
also difficulties in the
correct use by the
drivers in containing
the batteries

Hamburg, busses who are 21
metres long für
RapidTransidBusServices

Workshop Summary – Group 2

2. What are **common challenges**? Where do you see potential for **joint efforts** in order to overcome them?



Workshop Summary – Group 3

1. What are your **regionally specific operational requirements** and how does it influence technical requirements?

We are at the very beginning of implementing electric buses in public transport, and we are looking to procure technical expertise to help in the implementation.

Small island where no large buses can drive. For urban transport we are aiming at introducing electric minibuses.

Some lines are in operation with 24m double articulated buses; we want to replace them by e-buses. What is the best mix of batteries/OC and fleet size?

Cold weather in Finland increases the demand for interior heating.

In Gozo the purchased electric buses are planned to be operated along a route which has varying topography. High temperatures in summer are another factor to be considered.

Extreme temperatures and topography are not an issue.

In Hamburg we are driving in tours rather than having line specific routes. This makes OC less suitable.

For highway-lines (we have some in Utrecht): is e-bus the best technical solution or better fuel-cell-buses?

The environmental issue is crucial in our territorial context (Tuscany Region and Elba Island - Italy). The transition to e-mobility and the production of energy from renewable sources are very important.

However, before we go to the actual implementation stage we will not know for sure the effect of these factors on the operation of the buses.

Workshop Summary – Group 3

2. What are **common challenges**? Where do you see potential for **joint efforts** in order to overcome them?



Workshop conclusions

Key messages:

- More cooperation is needed to generate, communicate and spread knowledge as well as information to overcome technical challenges.
- Exchange and knowledge sharing are desirable, but also limited as private companies have to improve their competitiveness.
- There are many similarities, but also fundamental differences when it comes to operational requirements.
- Special requirements regarding topography and climate conditions as well as historical cities or inner-cities. Further research and guidelines are needed.
- Interoperability is a fundamental issue.

Panel discussion



Sami Ojamo

VDL Bus & Coach
Finland



János Szász

CAE Consulting,
Hungary



**Dr. Markus
Dietmannsberger**

General Project
Manager Electric
Buses, Hamburger
Hochbahn AG

Selection of panel questions

- Are PTOs able to cover the additional expenses or do you propose additional financial support mechanisms?
- When do you assume that the purchasing price of electric buses will match that of diesel buses and no further support will be required?
- Is there a general trend towards overnight depot charging (away from opportunity charging)?
- Some PTOs see the limited range of e-buses, compared to diesel buses, as a fundamental problem. In order to maintain the same quality of service, PTOs would have to operate more e-buses at the same time. What is your view on this, do you agree? What could be the solution?
- How can the different players better learn from each other or where to you see a need for deepened cooperation?

Panel discussion conclusions

Key messages:

- Unifying factor is the aspect of financing where innovation is still needed.
- Operators have to change their perspective when it comes to the lifetime of buses.
- Battery price is a decisive factor.
- Possibilities of harmonization are limited due to national specifics (e.g. subsidies, governmental support, weather conditions...)
- Operation of e-buses is different compared to diesel buses, but not more complex.
- Different national tenders are challenging.
- There is a need for better collaboration and discussion between all stakeholders in order to be successful.

Future headlines

Closing question to panelists: *What headline would you love to read in the newspaper when it comes to e-bus development in your region/Europe?*

Markus: *Finally, e-buses superseded diesel buses.*

János: *More frequent, safer, greener, more silent public transport for less*

Sami: *E-bus mobility - even more innovative.*



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Thank you!



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