



The CIVITAS eLIPTIC project

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Project Coordination

Working Group Sustainable Mobility

Der Senator für Umwelt,
Bau und Verkehr



Freie
Hansestadt
Bremen

10th November 2016, London



Horizon 2020
Programme



- Research and Demonstration project in EU Program „Horizon 2020“ (Mobility for Growth 5.1)
- Funding primarily for research and promotion (only small share for hardware)
- 33 partner in 8 Countries
- Duration: 01.06.2015 – 30.05.2018
- Coordinator: Freie Hansestadt Bremen
- Budget: 5,9 Million Euro



Project coordinator: Bremen
Project manager: Rupprecht Consult

- Public transport company/operator
- Research and innovation
- Industry
- Associations

+ UITP, POLIS, VDV,
ASSTRA, LCVP

20 Use Cases

+ 11 Twinnings

+ User Forum (PTO / PTA)



Three thematic technology pillars



A

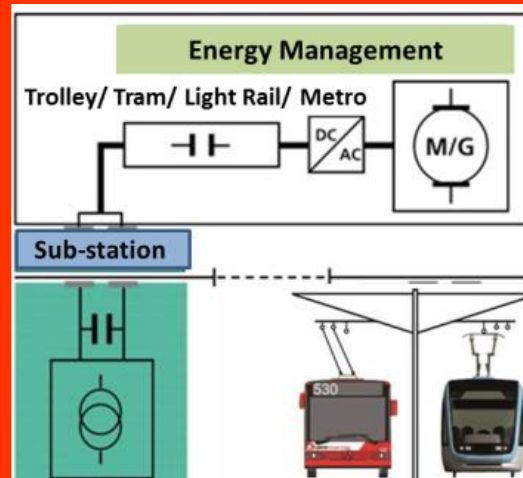
E-buses

Safe integration
into existing electric
PT infrastructure



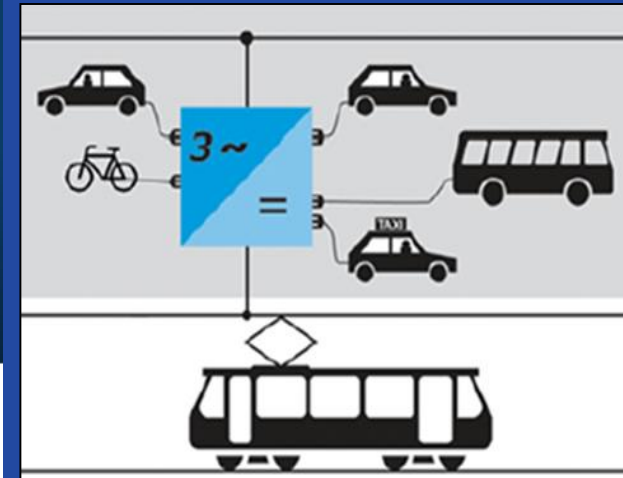
B

Energy efficient electric PT system



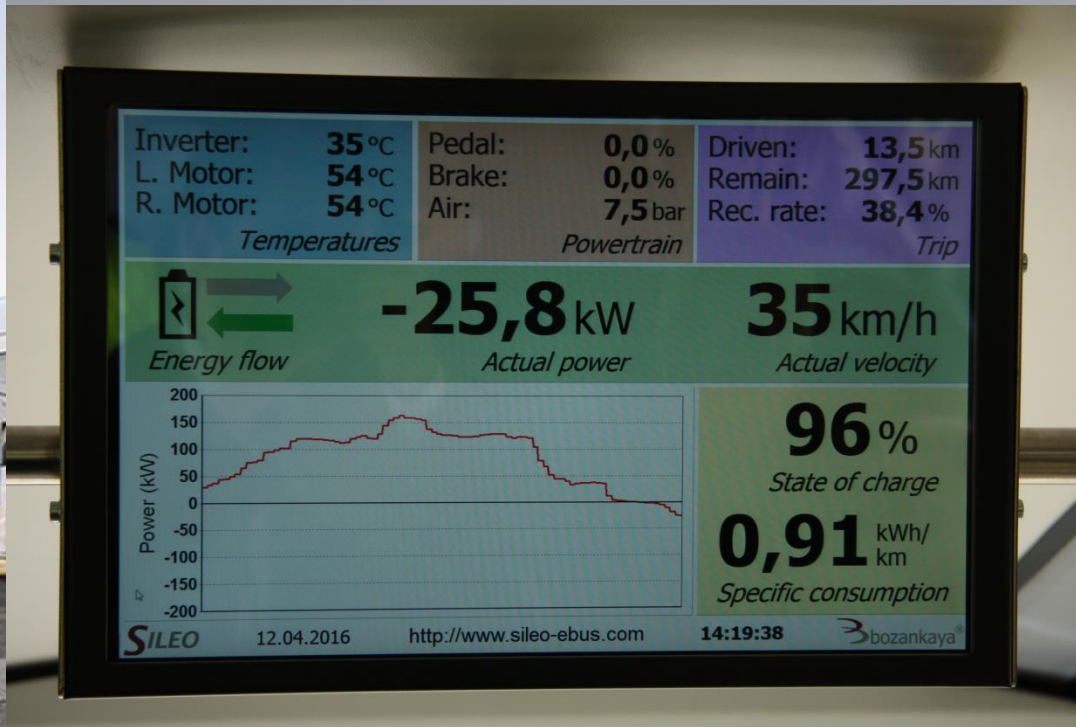
C

Multi-purpose use of electric PT infrastructure



Electric buses tested in real life at BSAG

18m battery bus long range



2016:

2 12m full electric battery buses (SILEO and EBUSCO)

1 18 m SILEO full electric battery bus

Charging at combined tram/ bus depot

Electric buses in regular service in Oberhausen



2015:

2 12m battery buses(SOLARIS Urbino 12),
charging at tram stop and tram substation

Battery-trolley-hybrid without overhead wire



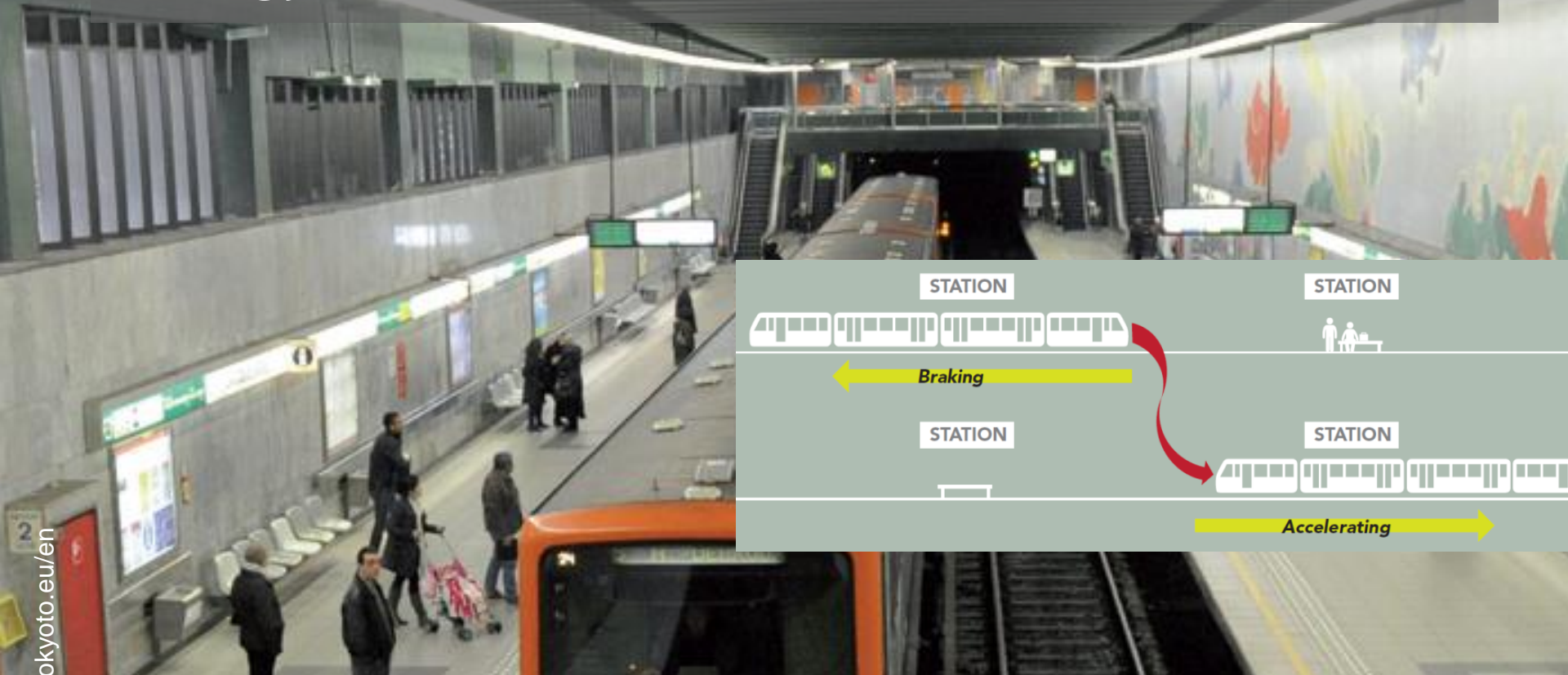
Extended service on regional route without overhead wire
Tests of automated wiring and de-wiring for more flexibility in
Eberswalde, Szeged and Gdynia

Innovative hybrid-trolleybuses in Gdynia (Poland)



2015: Hybrid-Trolleybus in regular service without catenary

Energy efficient tram / metro



Source: www.tickettokyoto.eu/en

2014: Energy storage in tram substation in regular operation

2016: Feasibility study on potential to extend recuperation through braking in Brussels

2017: Feasibility study on potential to extend recuperation through braking in trolley network in Gdynia

Multi-modal (e-)mobility



Public transport + Carsharing in Bremen by BSAG and MOVE
ABOUT
Feasibility study on integration in existing network

Multi-purpose use of electric infrastructure



Test on Underground power grid to be used to charge TfL fleet cars and utility vehicles + potentially Taxis:
2018: Taxis must be „zero-emissions capable“

Factor 100

Passenger car

< 1 hour

Small (- medium)

50 - 60% Diesel

Diesel: $PM_{10} + NO_2$
Gasoline: low

500 l gasoline/
Diesel

~ 1,2 to

Daily usage

Engine size

Fuel

local pollutants

Annual fuel
consumption

CO_2 emission p.a.

Bus (18m)

12 - 16 hours

big

95 – 98 % Diesel

Diesel: $PM_{10} + NO_2$

40,000 l Diesel

~ 100 to

Total impact

Equals to app.
100 electric
passenger cars



Factor 100



x 100



... but not 100 fold financial support!



White Paper on transport

Halve the use of 'conventionally-fuelled' vehicles in urban transport by 2030, phase them out by 2050

achieve essentially CO₂-free city logistics by 2030 - in major urban centres

No targets for urban public transport

Factor 100



Besides indirect funding (no / less + operational benefits) funding

For buses an equivalent support would mean
~ 500.000€ / bus

Germany = 4.000€

Data: 2015



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Thank you for your attention



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Free Hanseatic City of Bremen

Ministry for the Environment, Transportation and
Urban Affairs

Project-coordination sustainable mobility

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Bau und Verkehr



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