POLIS ANNUAL CONFERENCE 2024

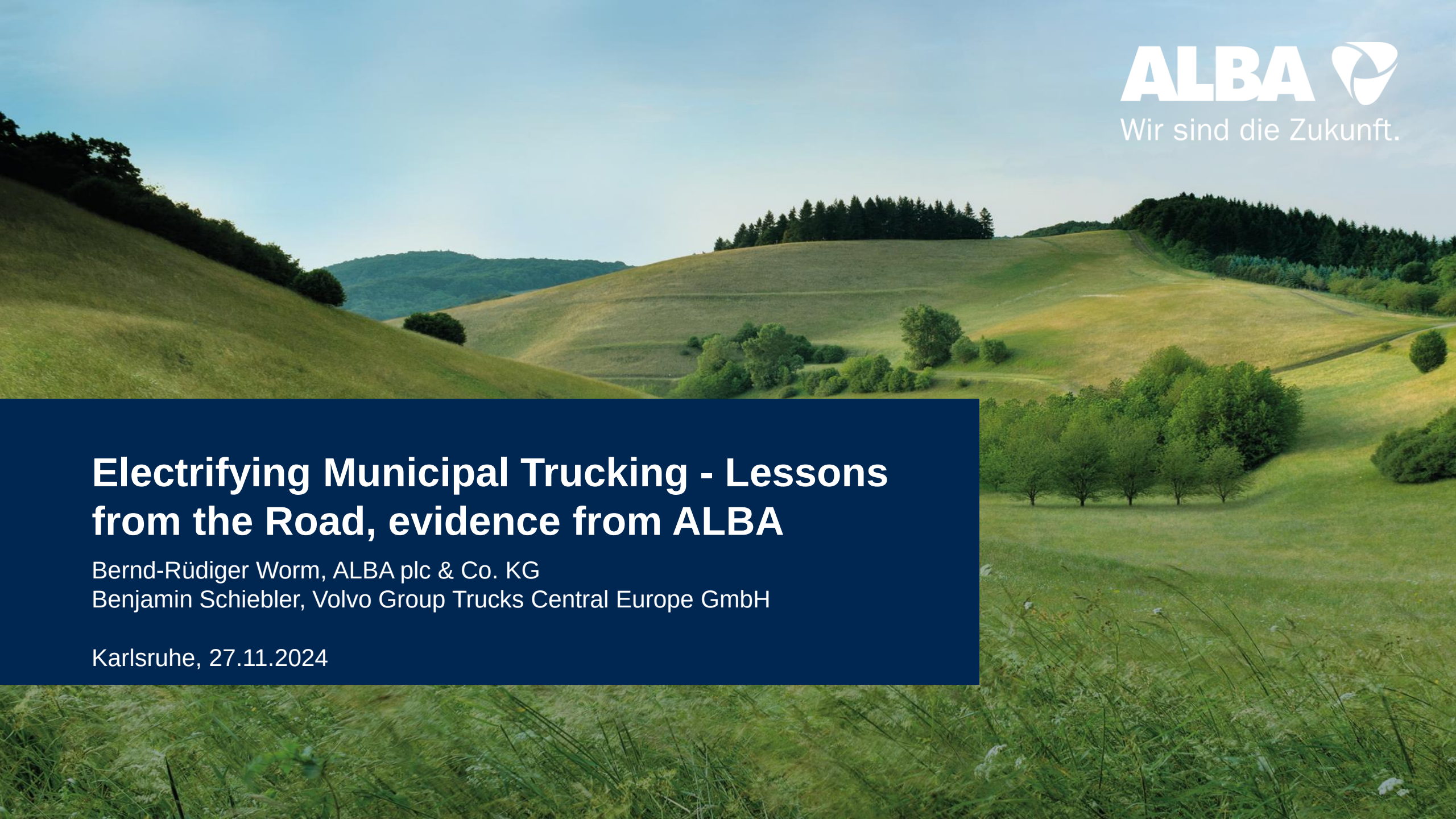
CITIES AND REGIONS FOR TRANSPORT INNOVATION

27-28 NOVEMBER 2024

KARLSRUHE (DE)

Baden-Württemberg
Ministry of Transport

Karlsruhe



Electrifying Municipal Trucking - Lessons from the Road, evidence from ALBA

Bernd-Rüdiger Worm, ALBA plc & Co. KG
Benjamin Schiebler, Volvo Group Trucks Central Europe GmbH

Karlsruhe, 27.11.2024

A lot to offer

VOLVO LEADS THE TRANSFORMATION

we started selling electric trucks in 2019

widest truck offer in the industry

over 7,000 trucks sold globally

over 1,000 customers in 45 countries

> 750 trucks delivered in Germany

Volvo Trucks: widest offer of E-trucks for public sector

Skiploader

Vacuum tanker

Tipper

Refuse collector

Refuse collector

Winter service

General cargo

Hooklift

02 Electromobility @ ALBA
Retrospective and overview

29.07.2021

Agreement for testing the battery electric Volvo Trucks demo fleet at ALBA

16.08.2021 – 14.04.2023

Vehicle tests with three different truck applications for waste collection

Refuse collector	Hooklift	Box body
Volvo FE Electric	Volvo FE Electric	Volvo FL Electric

September 2021 – April 2022

Application for and approval of 7 battery electric vehicles via ALBA and 5 additional electric vehicles via Volvo Trucks & Volvo Financial Services

23.01.2023

Handover of the first battery electric refuse collector to ALBA

Februar 2023 – August 2023

Start of operations of the first 12 battery electric trucks

August 2022 – August 2023

Application for and approval of over 30 battery electric vehicles including charging infrastructure

03 Current electric vehicle operations @ ALBA
Truck applications & KSNI funding programme

KSNI Programme – 1st call for funding

Refuse collector		Hooklift		Box body	
	6		5		1

Status: In operation

KSNI Programme – 2nd call for funding

Refuse collector		Hooklift / skiploader		Box body	
	19		10		3

Status: Ordered, partly delivered and in operation

In 2024, a total of 44 electric trucks will be in operation at ALBA (incl. one Hydrogen truck)

Charging infrastructure
ALBA in Germany

Set-up of different charging solutions at six locations

Mobile charging stations with 30 kW, fast charging stations with 150 kW

Further charging infrastructure locations under development

03 Current electric vehicle operations @ ALBA

Range & practical experiences

Refuse collector

Ø Energy consumption

136,3 kWh / 100 km
bis 265,73 kWh / 100 km

Range min.
375 kWh-battery
113,21 km

Range max.
375 kWh-battery
220,59 km

Skip loader

Ø Energy consumption

99,70 kWh / 100 km
bis 125,18 kWh / 100 km

Range min.
375 kWh-battery
240 km

Range max.
375 kWh-battery
303,03 km

Box body

Ø Energy consumption

67,11 kWh / 100 km

Range max.
265 kWh-battery
316,42 km

Positive feedback on the operation of the vehicles

+

Positive feedback from drivers

=

Available and ready-to-use technology

04 Electric trucks in operation @ ALBA

Experiences & learnings - “Lessons from the road”

Preparations and tests

- Selection of suitable use cases and fields of application
- Extensive preparations and individual range simulations for each use case together with Volvo Trucks
- Several weeks of tests carried out with different truck applications

Charging infrastructure

- Early start of planning for set-up of charging infrastructure at different locations together with municipalities & charging infrastructure suppliers
- Infrastructure depends on the location and the respective energy requirements: different technical charging solutions possible
- Challenges for cities and municipalities to provide enough energy and charging infrastructure

Positive feedback on the operation of the vehicles

+

Positive feedback from drivers

=

Available and ready-to-use technology

05 Electric trucks in operation @ ALBA

Experiences & learnings - “Lessons from the road”

Handover & start of operations

- Vehicle handover and start of operations: driver trainings on vehicle and charging infrastructure is crucial
- Initial problems (charging interruptions, communication between the truck chassis and the body) solved in close cooperation with the truck manufacturer and charging infrastructure supplier

Electric trucks in daily operation

- Integration into regular logistics processes:
  Vehicles maintained and supported by the ALBA Logistics Competence Centre - extensive evaluations/analyses are being carried out
- Monitoring tools:
  Charging infrastructure analysis and connectivity tools (i.e. Volvo Connect) for regular follow-up and evaluation of energy consumption - showing very positive results

Positive feedback on the operation of the vehicles

+

Positive feedback from drivers

=

Available and ready-to-use technology

05 Alternative drivelines & renewable fuels @ ALBA
Summary and challenges

12 Electric turcks already in daily operation

Refuse collector	6
Hooklift	5
Box body	1

> 3 years
Of engagement and work, gaining experience in the field of alternative drivelines

> 10 truck tests
with different truck types and applications

Current **Challenges** for operating battery electric waste logistics

- Total Cost Of Ownership: strong dependance on national funding programmes
- Charging infrastructure: Development and funding of the charging infrastructure as a prerequisite for Electric truck operations

> 30 additional Electric trucks planned for 2024 / 2025

Refuse collector	6
Hooklift	5
Box body	1

Charging infrastructure

Stationary:
5 locations

Mobile:
3 locations

Addition charging Infrastructure locations planned for 2025

4 alternative drivelines and renewable fuels are currently considered more closely

- Battery electric: in standard operation
- Hydrogen: Test in 2023, standard operation planned for 2024
- Gas-to-Liquid: Tests with synthetic fuel completed g (Apr 2024 – Apr 2024)
- HVO100: Tests with synthetic fuel ongoing (since Apr 2024)

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