

**Alliance for Batteries Technology, Training and Skills
2019-2023**

LUKAS FOLBRECHT

Czech Automotive Industry Association / Work Package leader



Co-funded by the
Erasmus+ Programme
of the European Union

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What is **ALBATTIS**?



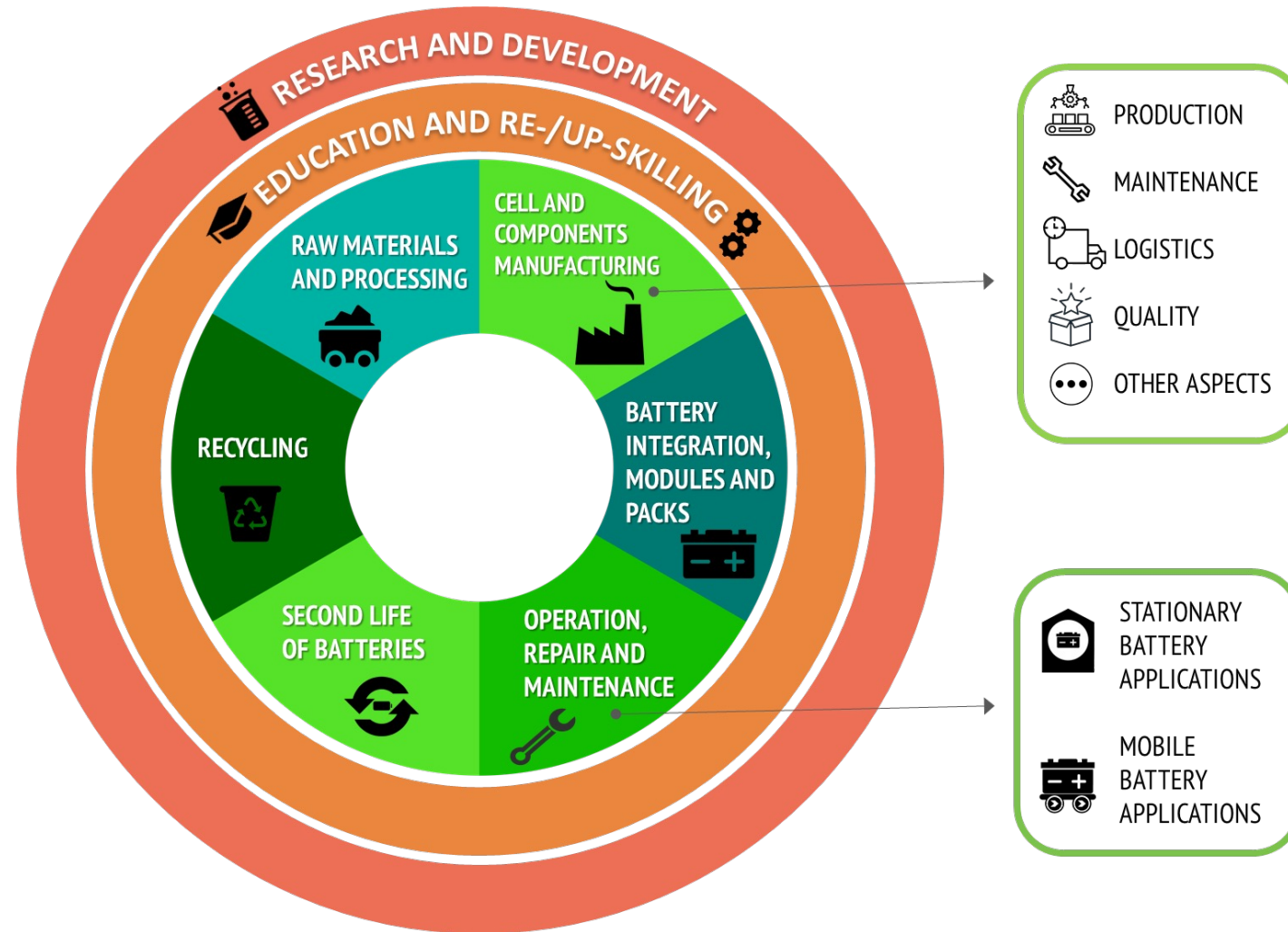
- ⚡ **20 Partners in 4-year** (2019-2023)
Erasmus+ funded project
- ⚡ What job roles, skills and competencies are missing to develop the **battery industry in the EU**
- ⚡ How to address **re/upskilling**, update **curricula**, develop **training materials**, train-the-trainer **guidelines** etc.



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ALBATTTS Focus



ALBATTIS Work process



Desk Research

Survey

Workshops



Sectoral Intelligence



To get involved with the **albatts** stakeholders group:

Stakeholder registration [here](#)

Follow us on:

Web: <https://www.project-albatts.eu>

LinkedIn: [LinkedIn](#)

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Twitter: [Twitter \(@ALBATTTS1\)](#)

Mail: info@project-albatts.eu



Thank you

Presenter

Lukas Folbrecht

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ELECTRIFICATION OF HEAVY DUTY TRUCKS

SKILLS AND COMPETENCES

Markus Döhn

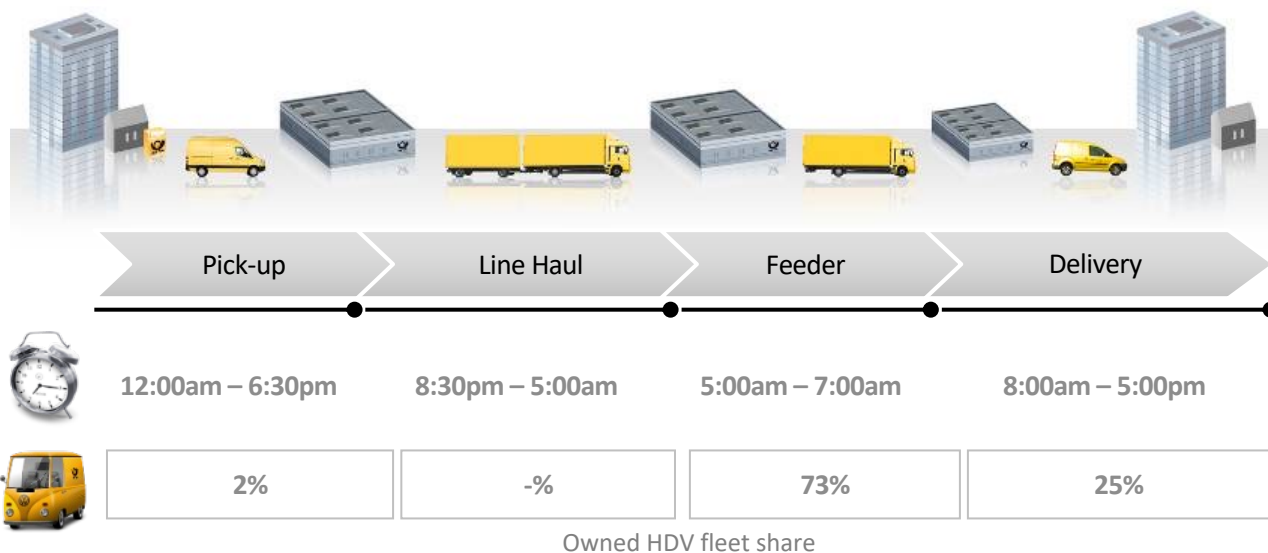
Corporate Development – CleanOPS Technology Center

**Deutsche Post DHL
Group**



Emission free trucks will play an important role to decarbonize urban freight

Illustrative

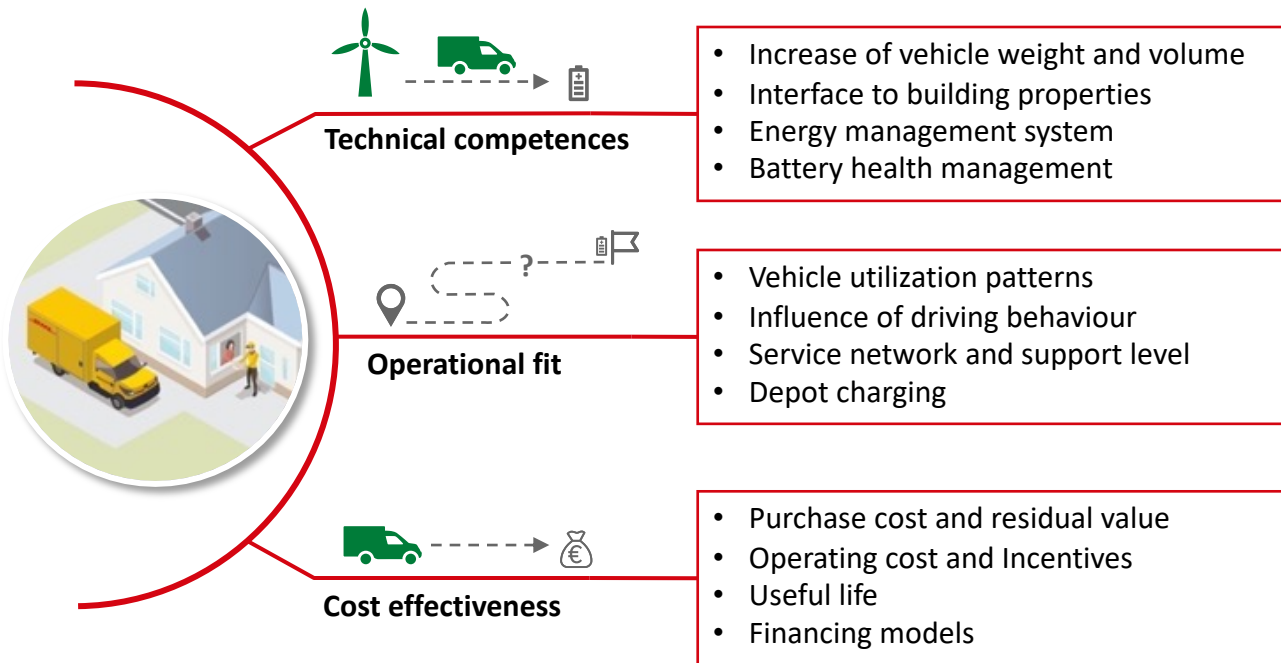


- **~11,000 owned or leased trucks** deployed in global network
- DPDHL networks synchronised with small storage capacities
- **300 days of use** per year require high reliability and contingency
- **Highest potential** for electrified trucks in **Feeder transport and last-mile**

Source: Deutsche Post DHL Group

ALBATTs ACEA webinar | DPDHL | 29 November 2022

Deployment of electric trucks affect multiple company competencies and require a more holistic skill set



- Introduction of greener vehicles in urban freight is a **business transition**
- **Operational feasibility** should be investigated first
- Overnight depot charging require coherent **energy management** (peak load)
- Main challenge will be **integration of various vehicle types** into Building Energy Management

Challenges using electric vehicles vary by use case. Vehicles are generally perceived positive by drivers

Electric Van 4,25 t (GER)



- Operated in Last-mile
- Volume and payload equal Diesel
- Decreasing damage and repair cost
- ! Charge up to 70 vehicle per depot

Electric Truck 16t (UK)



- Operated Last-mile and Regional
- Overnight charging at 22 kW AC
- High reliability and up-times
- ! Can not accommodate trailer

Electric Truck 60t (SE)



- Operated Regional and Linehaul
- Quiet, vibration free, high torque
- ! High Charging power (350 kW)
- ! High consumption amplitude

Source: Corporate Development, 032B; ICE – Internal combustion engine

A gradual conversion developing new skills will help businesses to gain experience and familiarize with Electric trucks

E-Trucks and Locations in Europe (by Nov 2022)



Iveco EuroCargo



Scania P 25



Volvo FL Electric



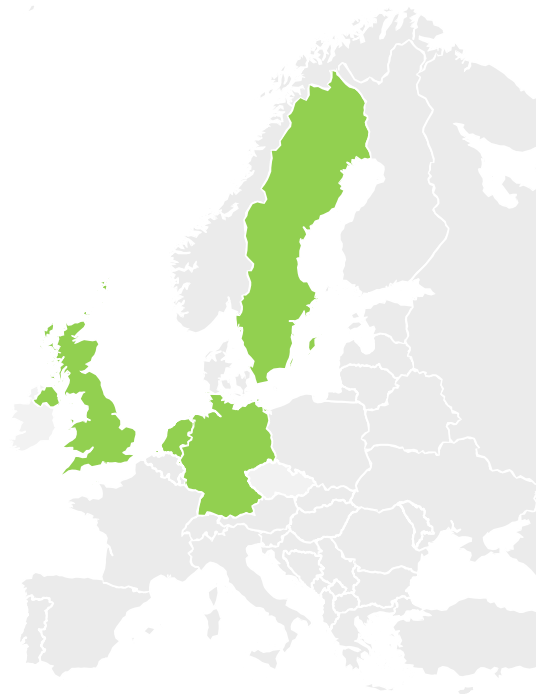
DAF XF H2



Volvo FH Electric

What challenges are we facing?

- High constraints with increasing charging power in depots
- Lack of commercial on-route charging
- Today, rather low battery autonomy
- Adaptions for winter / bad weather operations (Utilization)
- Financing models for small to medium transport partners (Leasing options)
- Necessary ramp-up in After Sales (return to operations)
- High lead-times on chassis, bodywork and grid connect upgrades



Source: 032 CleanOPS: Vans and Trucks collected from local fleet databases; CO2 Emissions from CREST 1) Line haul (LH) includes Regional traffic

Thank you!

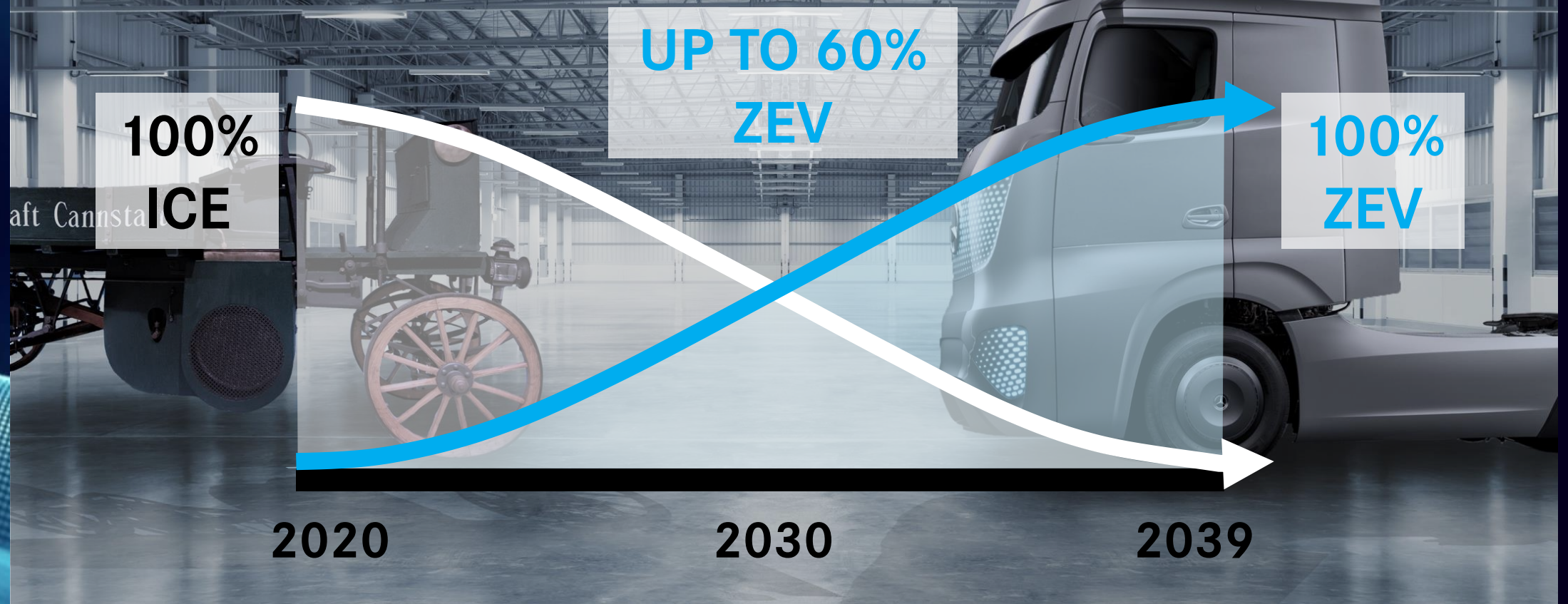
MISSION 2050
ZERO EMISSIONS
GO GREEN

Our ambition:
All of our new vehicles in Europe
to be CO₂-neutral by 2039.

Michael Wolf, Daimler Truck AG
Projectlead R&D eActros Longhaul
29.11.2022



The transition to ZEV:



Duel strategy on the way to zero emission transportation

Urban Areas

Long-Distance Transport

2021



eActros

2022



eEconic

2024



eActros Long Haul

2027

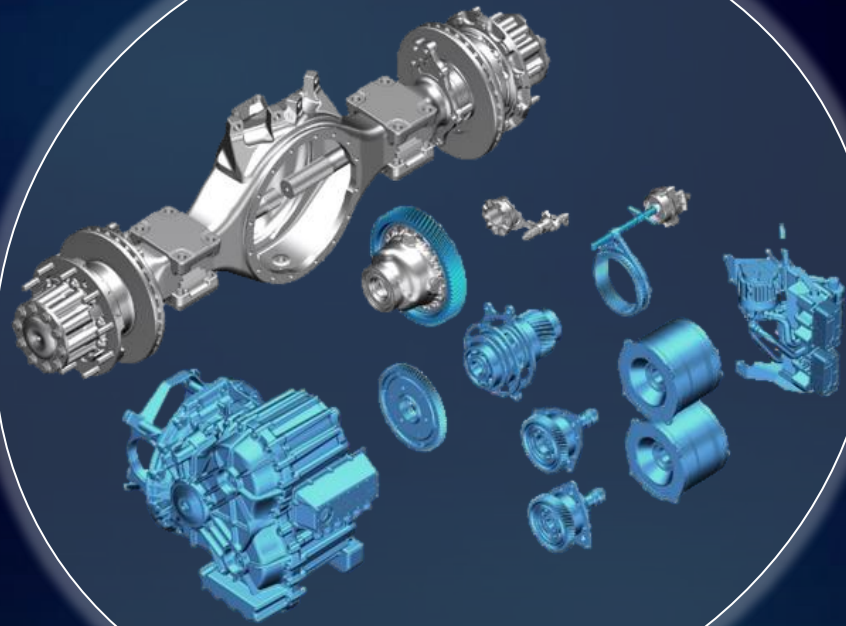


GenH2 Truck

BATTERY ELECTRIC

FUEL-CELL

Transformation needs new Competences in R&D



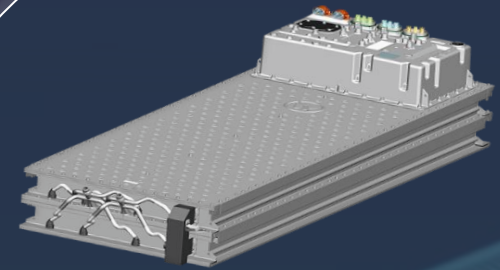
ePowertrain



H2 – Tanks/ Fuel cell

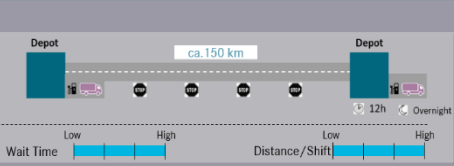
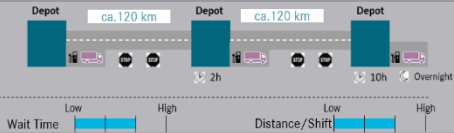
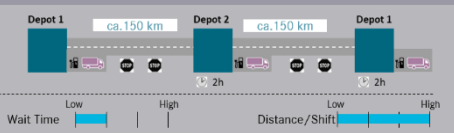


Sounddesign



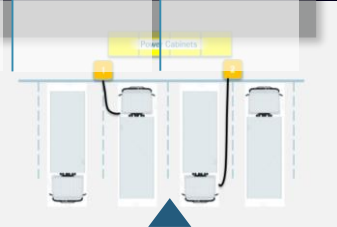
HV components &
Batterytechnology

eConsulting as new competence in sales & marketing

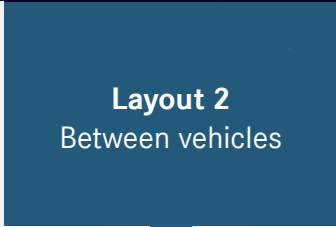
Use-Cases Examples	# of shifts	Average parking time	Average driving distance	Power needed /truck (overnight)	Power needed/truck (opportunity)
One-time Overnight Charging 	1	12-16 h	<150 km	50 kW	Not needed
Overnight Charging & Lunch Recharge 	2	6-10 h	150 - 250 km	100 kW	>75 kW
Continuous Operations 	2-3	0-4 h	150 - 400 km	Not needed	>150 kW

Use case analysis

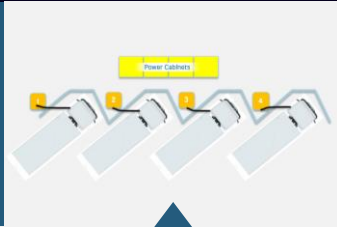
Charging Infrastructure



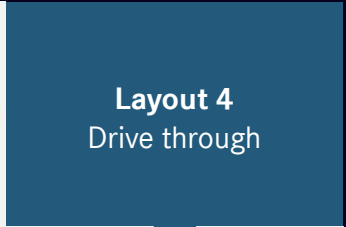
Layout 1
Out of the way



Layout 2
Between vehicles



Layout 3
At an angle



Layout 4
Drive through

Transforming the After-Sales organisation

24/7 365 days



Worldwide coverage



Service & Maintenance for eTrucks



Avoiding break down w predictive maintenance



Ranges optimized driving



Safe driving

Battery-friendly driving



Battery handling



eTruck specific Driver Training

Thank you



High Energy Li-ion based traction batteries for High-Duty-Vehicles

A blue electric bus is shown in a factory setting, with several other buses visible in the background. The bus is parked on a light-colored floor. The background shows the interior of a large industrial building with a high ceiling and structural beams. A semi-transparent circuit board pattern is overlaid on the left side of the image.

***EVC Group s.r.o.
ALBATTS SEMINAR PRESENTATION
29th November 2022***

Basic Company Overview

- ✓ Czechia Based R&D Company
- ✓ Established in 2007
- ✓ HQ and Production plant in *Hulín*
- ✓ 40 core employees
- ✓ 10 R&D workers
- ✓ Commercial and production background of *PILANA Knives a.s.* – the second world largest producer of *industrial blades and knives* (> 750 employees)
- ✓ BS EN ISO 9001:2015



2012 – Present: Industry Applications (B2B)



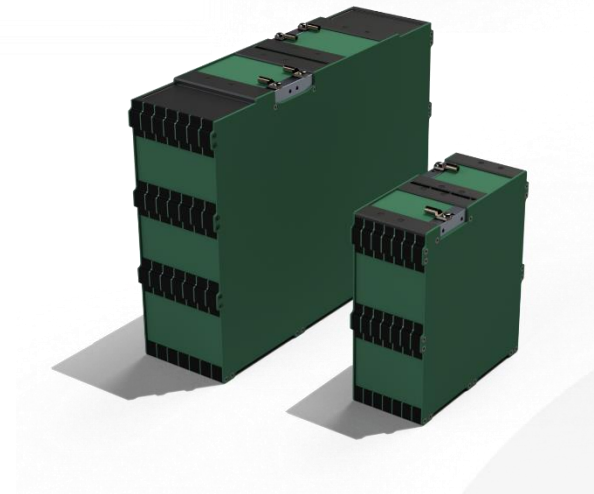
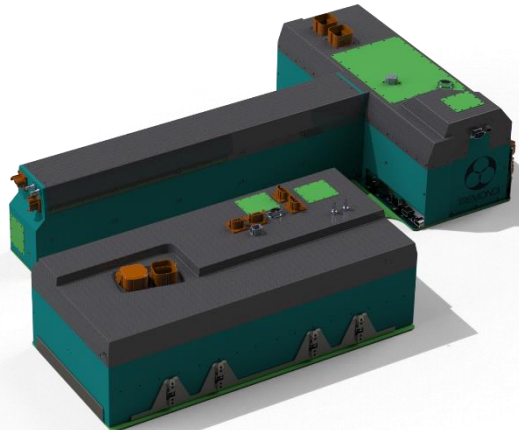
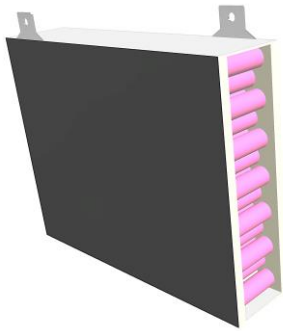
ELECTRIFICATION OF HEAVY-DUTY VEHICLES:

WHAT SKILLS AND COMPETENCIES WILL BE NEEDED?

Battery Expert Perspective



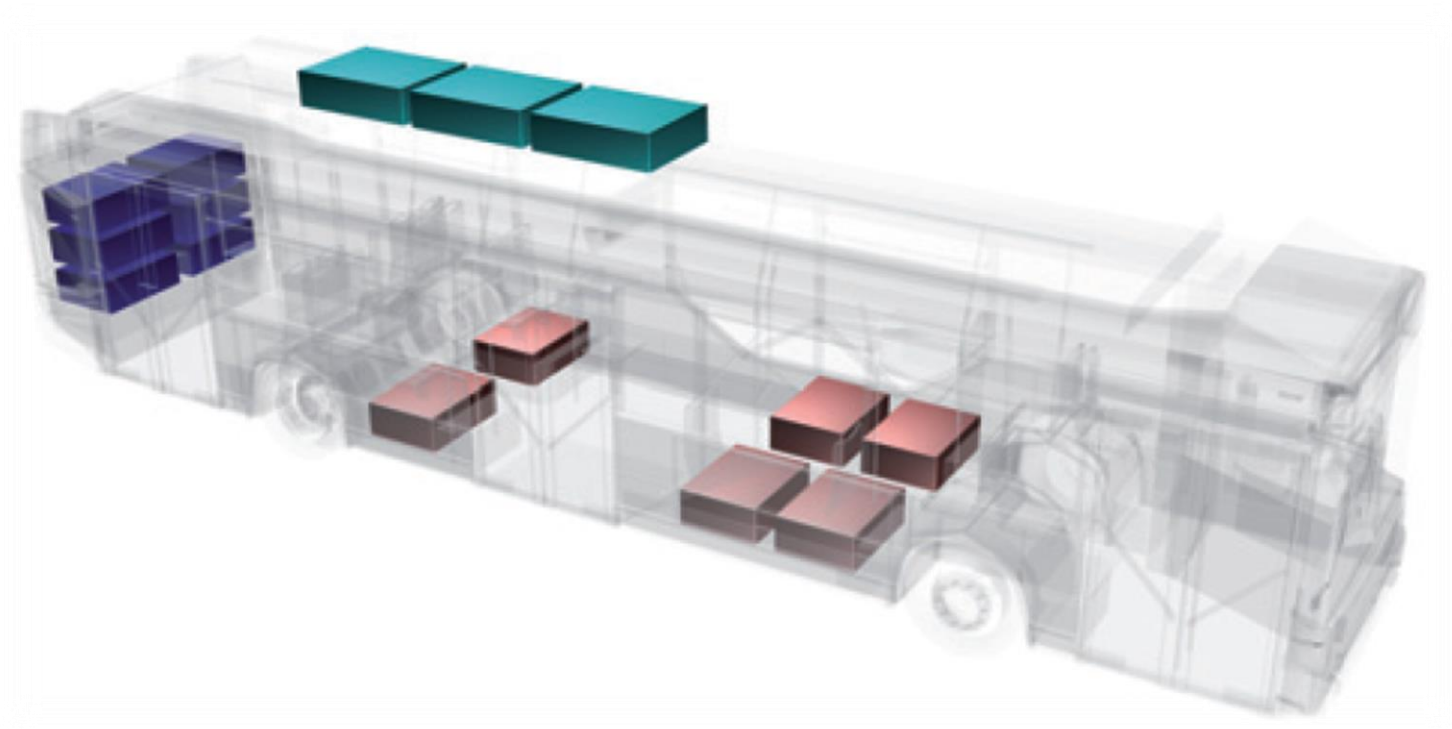
WHAT SKILLS AND COMPETENCES ARE NEEDED?



WHAT SKILLS AND COMPETENCES ARE NEEDED?

✓ SKILLS & COMPETENCES

- ✓ BUSINESS
- ✓ TECHNICAL

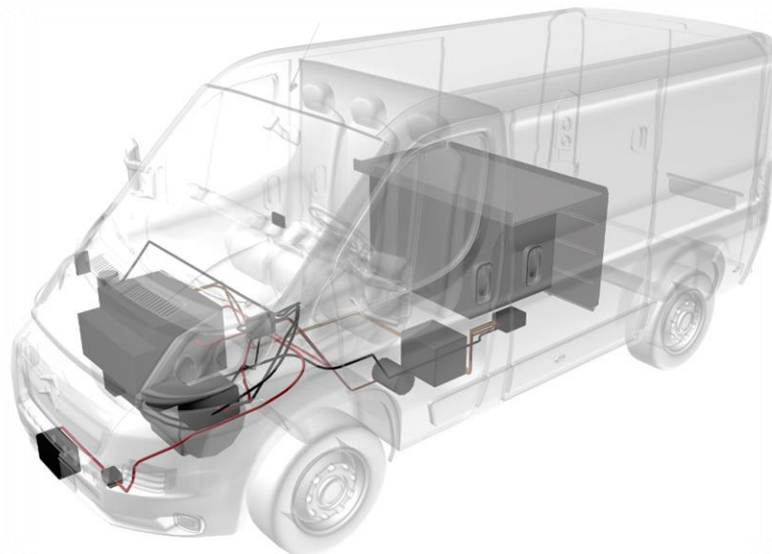


WHAT SKILLS AND COMPETENCES ARE NEEDED?

✓ SKILLS & COMPETENCES

✓ BUSINESS

- ✓ PROJECT/BATTERY ASSIGNMENT – understand the application, cut costs, do not forget to include important options
- ✓ BOTTLE NECKS – inform yourselves in order to anticipate possible problems in the project
- ✓ TIMING – even turn-key battery system may be developed fast, yet expect any R&D project to be prone to delays
- ✓ PROJECT LEADERSHIP – establish regular team meetings

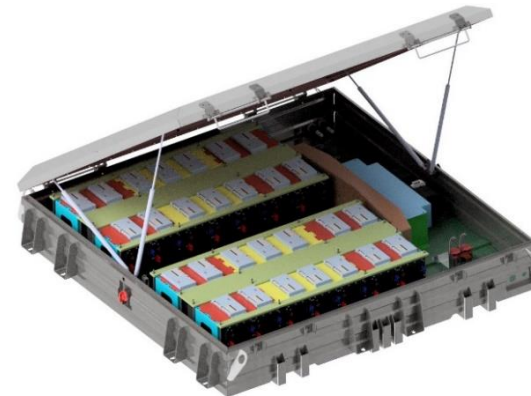


WHAT SKILLS AND COMPETENCES ARE NEEDED?

✓ SKILLS & COMPETENCES

✓ TECHNICAL

- ✓ PROJECT LEADER(SHIP) – on each side, crucial for steering multi-player projects which include development
- ✓ HW&SW DEVELOPMENT – having your own competence to enhance your flexibility
- ✓ HOMOLOGATION – local partnership; improvise - pre-test your product to know you pass
- ✓ AFTER-SALES – english speaking; have them present during the testing phase to propose from-the-field experience





Thank You For Your Attention

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Nádražní 1383
768 24 Hulín
Czechia***



A nighttime photograph of a city street. In the foreground, a curved pedestrian bridge with a metal railing and a glass-enclosed walkway leads towards the background. The street below is illuminated by streetlights, and long, colorful light trails from moving vehicles (red and white) are visible on the road. In the background, multi-story buildings with lit windows line the street. The overall atmosphere is urban and modern.

V O L V O

TECHNOLOGY COMPETENCE SHIFT

"next generation of innovation through the right skills"

FREDRIK ELIESON

Volvo Group

November 2022

A Volvo electric truck is driving on a multi-lane highway during sunset. The sky is filled with soft, colorful clouds in shades of orange, pink, and purple. The truck is a blue and white model with 'ELECTRIC' written on the front. The highway has a metal guardrail on the left side. The overall scene conveys a sense of modern, sustainable transportation.

V O L V O

**It is a technology shift for the
organization and for individuals!**

2040 100% fossil-free



VOLVO

Transforming our technology
competence base is
fundamental to our future
success

A hand is shown in silhouette, holding a bright, glowing orb (resembling a sun or moon) between the thumb and index finger. The background is a vibrant sunset or sunrise sky with hues of orange, yellow, and purple. The overall mood is inspirational and forward-looking.

V O L V O

**The technology shift is facilitated by
innovation and drive innovation!**

V O L V O

**The winners will take a
multifaceted approach**



V O L V O

Skills boost and development



Digitisation of work



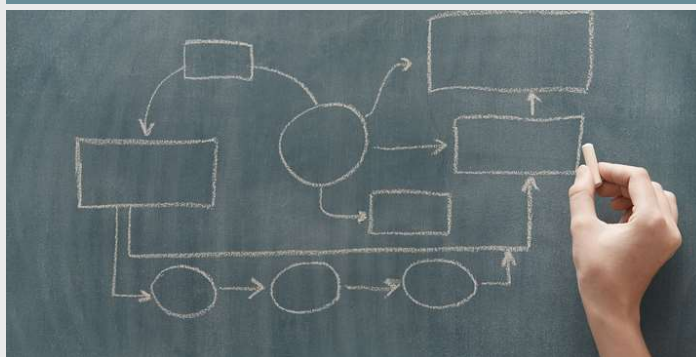
New way of working



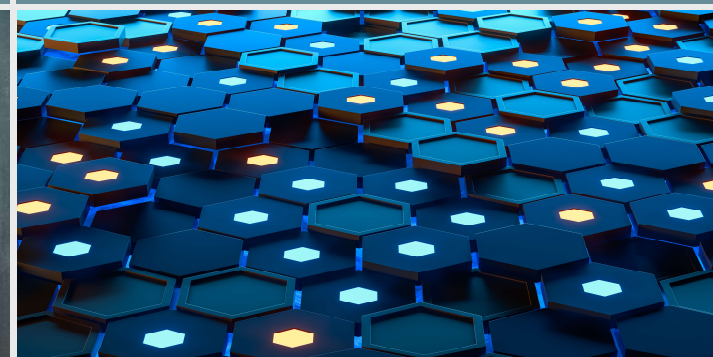
Innovation incubator



Multiple resourcing solutions

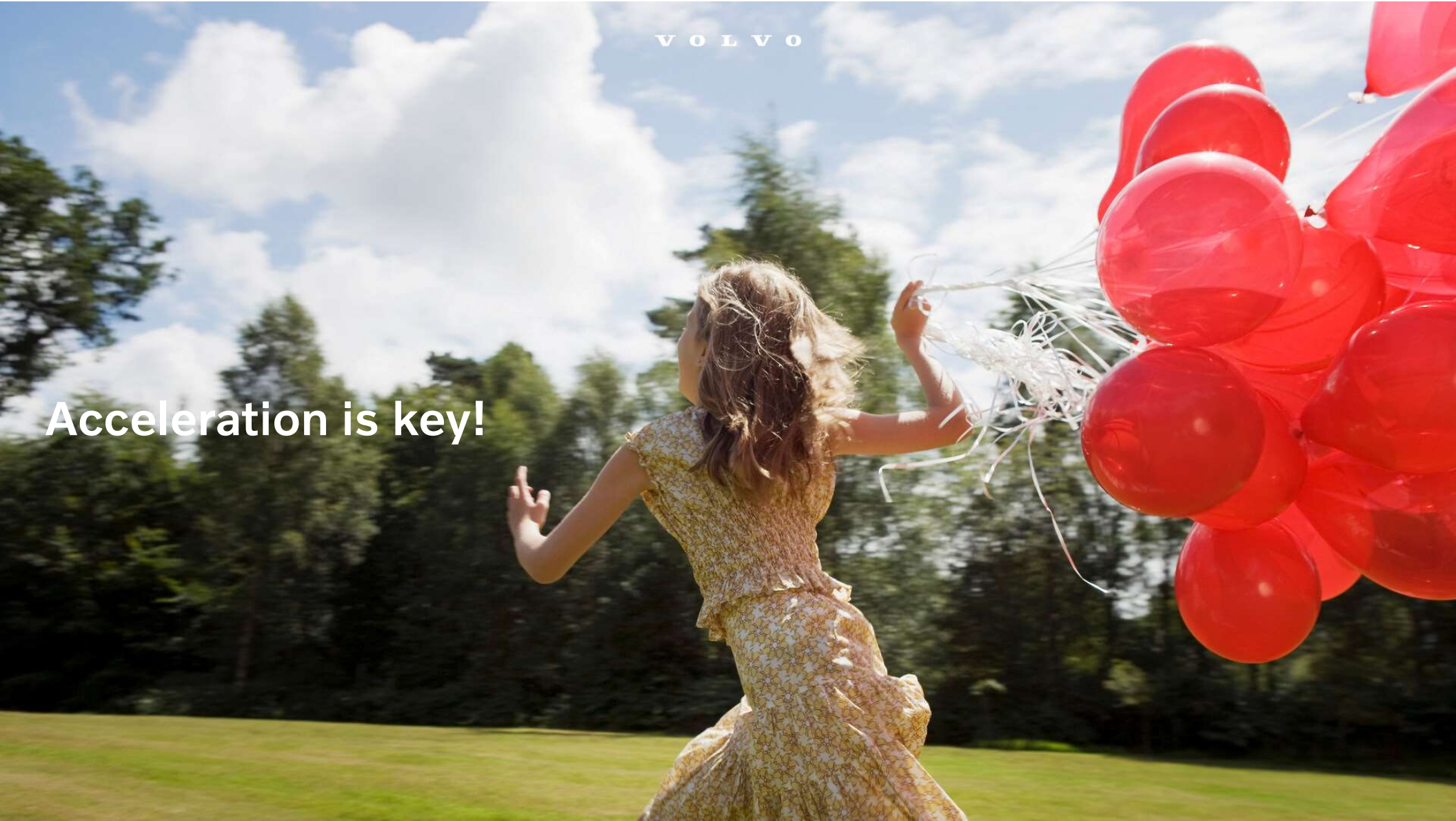


Footprint utilization



VOLVO

Acceleration is key!



A nighttime photograph of a city street. In the foreground, a curved pedestrian bridge with a metal railing and a glass-enclosed walkway leads towards the background. The street below is illuminated by streetlights, and long, colorful light trails from moving vehicles (red and white) are visible. In the background, a multi-story apartment building with many lit windows stands against the dark night sky. The overall scene conveys a sense of modern urban infrastructure and movement.

V O L V O

TECHNOLOGY COMPETENCE SHIFT

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November 2022