



04

ZEFES

SCANIA

ELECTRIC

VOLVO

P31

Z-AAU-256

ZEFES



Stakeholder Symposium 2026

Welcome to Zeebrugge, 25.02.2026

Hosted by Procter & Gamble and ECS

www.zefes.eu



Funded by
the European Union

Morning program ABC Tower



 09:00hr	Welcome, P&G introduction	P&G-ECS
 09:10hr	Overview ZEFES project	VUB
 09:20hr	Overview demonstrations: Volvo Vehicle	VOL
 09:30hr	Overview demonstrations: Renault Vehicle	REN
 09:40hr	Overview demonstrations: Scania Vehicle	SCA
 09:50hr	Overview e-trailer and e-dolly	FHG
 10:00hr	Overview demonstrations: ABB-Charger	ABB
 10:10hr	Overview demonstrations: Hitachi-Charger	HIT
 10:20hr	Q&A	VUB
 10:30hr	Coffee break	
 11:00hr	Introduction use case P&G	P&G
 11:20hr	Introduction ECS site and demonstration site	ECS
 11:40hr	Q&A	
 12:00hr	Explanation afternoon program	VUB

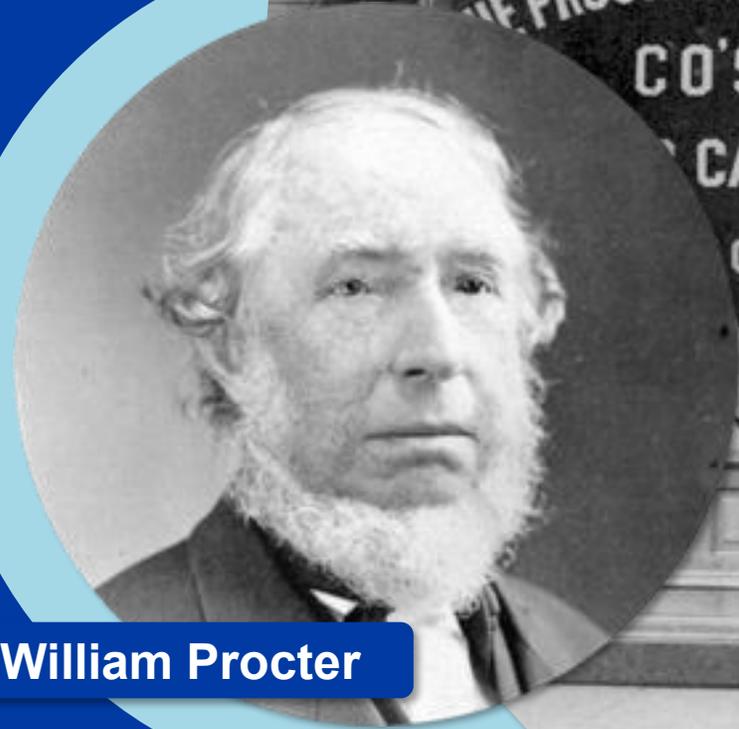


FY2025

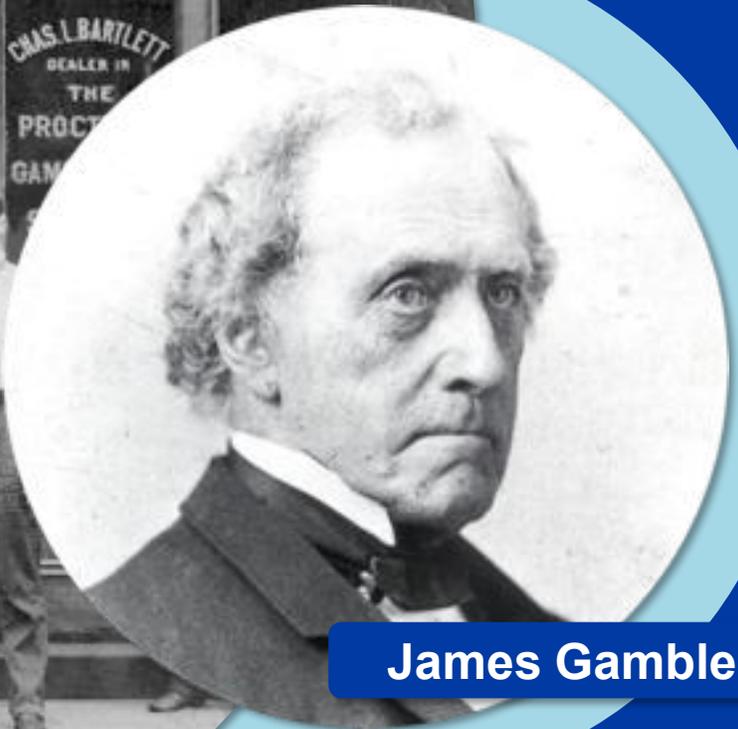
P&G OVERVIEW PRESENTATION

OUR HERITAGE

Founded 1837



William Procter



James Gamble

GLOBALLY TRUSTED BRANDS



P&G TODAY

FISCAL YEAR 2025 BY THE NUMBERS

Fiscal 2025 Net Sales **\$84.3 Billion**

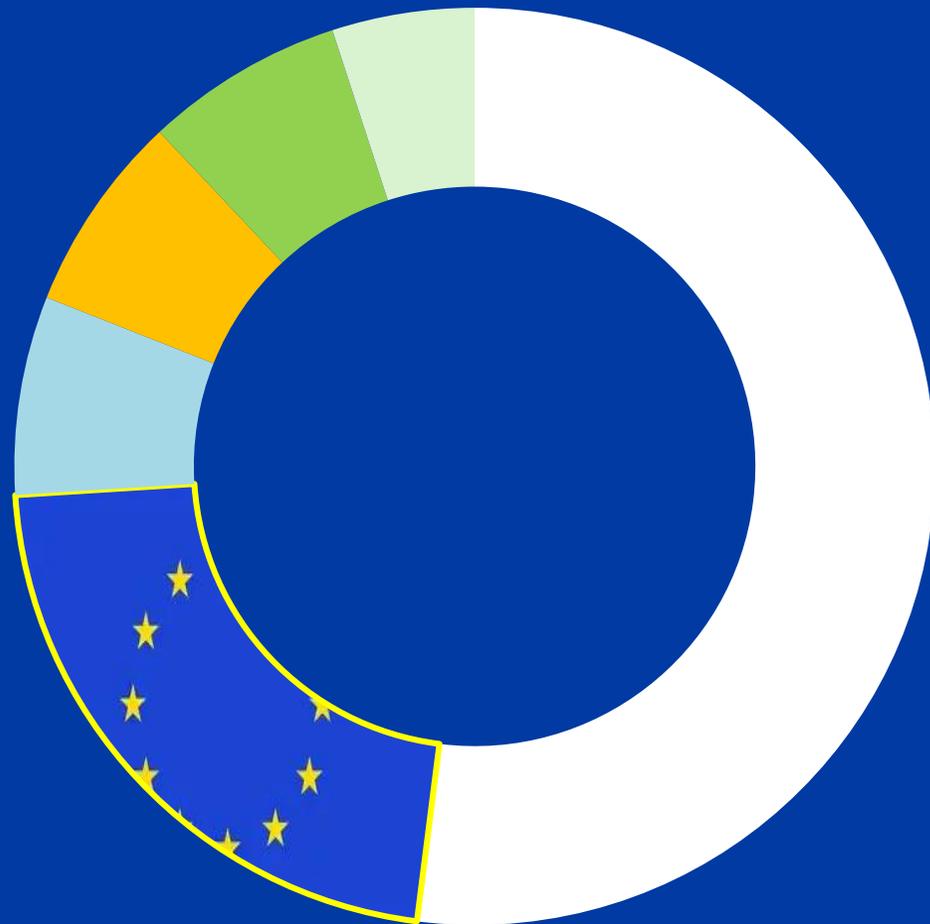
Countries of Operations **~70**

Countries and Territories where our products are sold **~180**

Number of Employees **~109,000**



FISCAL 2025 NET SALES BY GEOGRAPHIC REGION



● North America	52%
● Europe	22%
● Latin America	7%
● Greater China	7%
● Asia Pacific	7%
● India, Middle East & Africa (IMEA)	5%





P&G'S AMBITION TO NET ZERO

Including 2030 science-based targets for Scope 1, 2, and 3 emissions to accelerate progress.



2010

2021

2030

2040



OUR AMBITION

NET ZERO

ACROSS OPERATIONS AND SUPPLY CHAIN EMISSIONS — FROM RAW MATERIAL TO RETAILER

-  Cut most of our emissions
-  Balance any remaining emissions that cannot be eliminated with natural or technical solutions that remove and store carbon

Aligned with 1.5 °C ambition

P&G'S AMBITION TO NET ZERO

Including 2030 science-based targets for Scope 1, 2, and 3 emissions to accelerate progress.



2010

ACHIEVING INITIAL GOALS

- ↓ **Reduced operations emissions 52%***
- Reduced truck miles 25% per unit of production
- Avoided 200,000+ tons of plastic through package redesign
- Doubled use of recycled plastic resin
- 100% certified wood pulp in P&G brands
- 100% certified palm ingredients in P&G brands
- 15 million tons of CO2 reduced through consumer cold water washing

2021

ACCELERATING ACTION

OPERATIONS — Carbon Neutral for the Decade

- Reduce operations emissions, balance remaining emissions via natural climate solutions%
- Purchase 100% renewable electricity in global operations by 2030, already at 97%

MATERIALS & PACKAGING

- ↓ **Reduce supply chain emissions by 40% per unit of production††**
- Reduce virgin petroleum plastic in packaging 50%

TRANSPORTATION

- ↓ **Reduce finished product freight emissions intensity by 50%†**

2030

SCALING SOLUTIONS

- Scale renewable thermal energy innovation
- Scale renewable carbon, recycled carbon, and captured carbon technologies
- Grow rail and shipping while increasing renewable fuels and energy sources for transportation

2040



OUR AMBITION

NET ZERO

ACROSS OPERATIONS AND SUPPLY CHAIN EMISSIONS — FROM RAW MATERIAL TO RETAILER

- ↓ Cut most of our emissions
- Balance any remaining emissions that cannot be eliminated with natural or technical solutions that remove and store carbon

ADDITIONAL PROGRESS VIA OUR CLIMATE TRANSITION ACTION PLAN

- Reducing Consumer Use Through Product Innovation and Education
Avoid 30 million tons of CO2 via cold water washing by 2030

- Reducing Product End of Life
100% recyclable or reusable packaging by 2030
Enable more recycling in homes and communities
Pilot and scale materials from recycled carbon

Path to Net Zero by 2040

Aligned with 1.5 °C ambition

*Against a 2010 baseline. | Grant Agreement 101095856 | Stakeholder Symposium Zeebrugge

†Against a 2020 baseline.

††Inclusive of priority categories that account for over 90% of P&G's supply chain emissions.

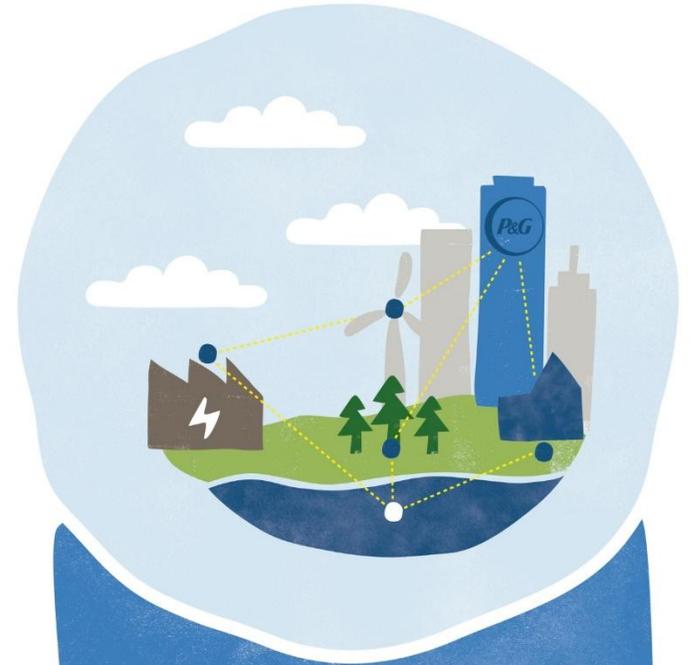
3 levels of impact



Reducing our impact



Enabling consumers to reduce their impact



Scaling industry-wide solutions that reduce environmental impact



If you want to go fast,
go alone.

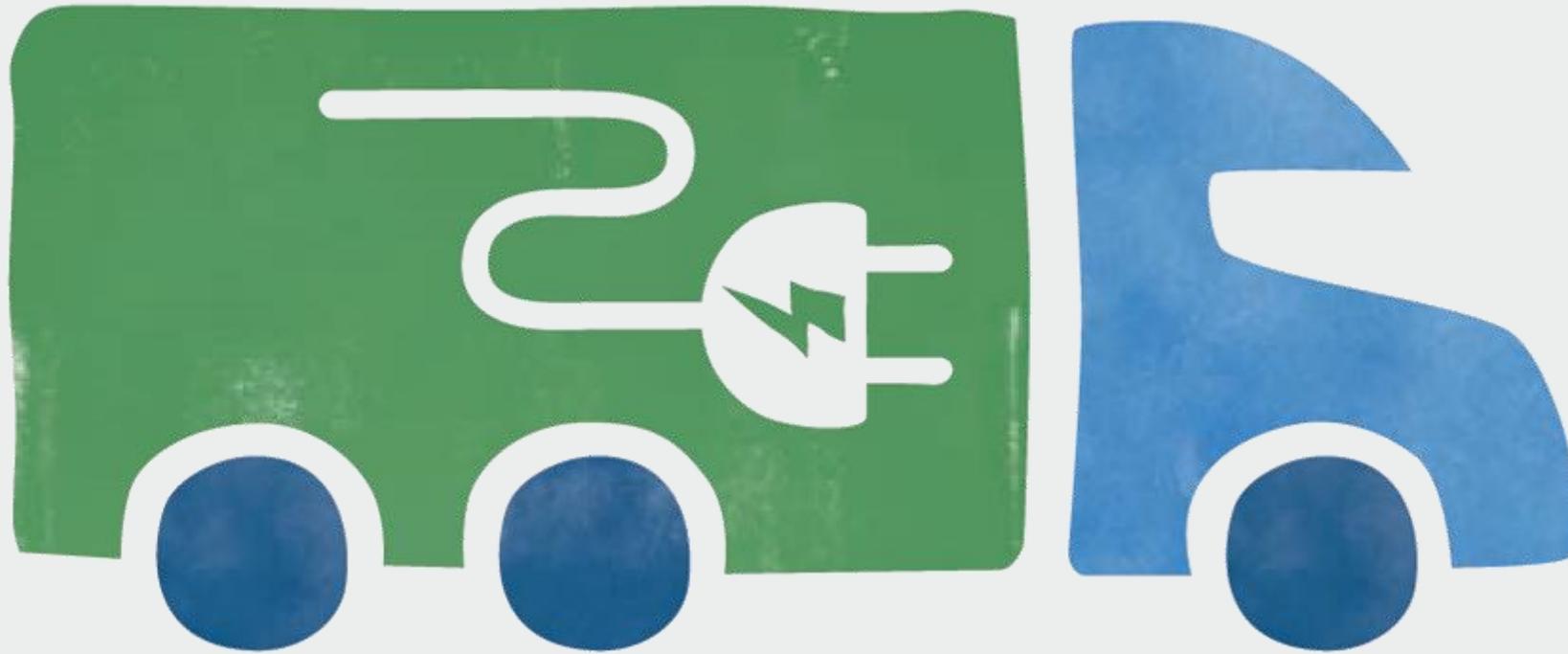
If you want to go far,
go together.

African Proverb





THANK YOU



ZEFES project overview

ZEFES Project, Introduction



40 Partners

- 6 OEM's
- 14 Suppliers
- 11 Shippers & retail
- 9 Research



23 Million EU funding

39 Million project costs



Start date 01 January 2023

Duration 42 > 48 Months



Zero-Emission Road Freight Transport



Coordinator AEVETO Cluster



ZEFES vision and story



Contribution to Europe CO₂ neutral by 2050

- Long haul freight transport needs transformation
- ZE-HDV are key to reduce 45% CO₂ by 2030

Focus on EU long-haul freight eco system by

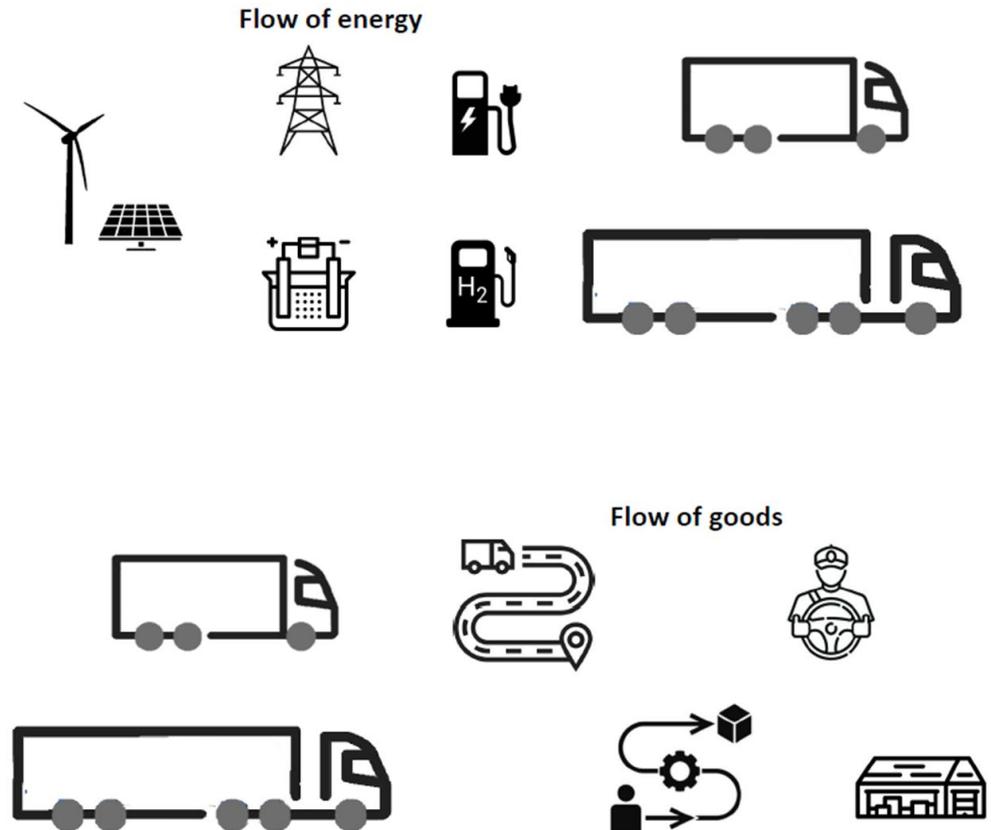
- Involvement, engagement all stakeholders
- Needs & requirements, challenges & barriers

Innovations to ease ZE-HDV implementation

- BEV, FECV, E-trailer, novel MCS & HRS concepts
- Digital platform for fleet implementation

Mission based demonstrations across Europe

- 15 demonstrations covering main cargo flows
- Intermodal, cross border, real time conditions
- Impact assessment and pathway for market take up



ZEFES project phases, where are we?



Phase 3 and 4 preparations ongoing

Demonstrations started Q1 2026 celebrating of demonstrations in Spain, CW 07 and in Belgium CW 09.

Q1/23

Stakeholder's engagement

✓ Needs & requirements to operate HD ZEVs in real time logistics missions

Flow of energy

Flow of goods

Q1/24

Project Developments

✓ Improved ZE-HDVs

BEV

FCEV

DT & FM Tools

Charging & Refuelling Strategies

Q1/26

Project Demonstrations

✓

Users, Energy supply, missions challenge based

Q2/26

Project Assessment

Impact on business, society and energy efficiency

Pathways towards price reductions

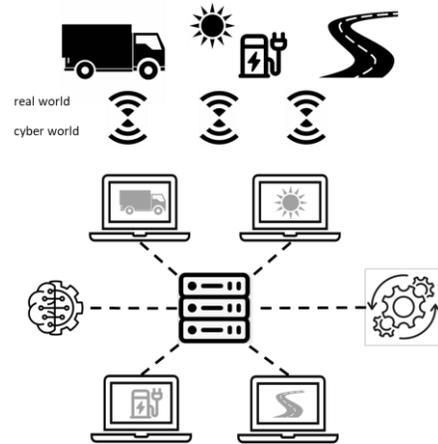
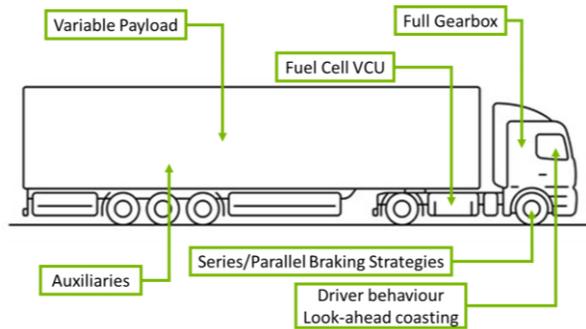
Market uptake increase > 2030

Q4/26

ZEFES achievements, we are on track



Tools



Vehicles

BEV



FCEV



Equipment



1,2 MW



Assessment

UC	OEM/LSP	Type demo	Powertrain	Feb 26	Mar 26	Apr 26	May 26	Jun 26	Jul 26	Aug 26	Sep 26	Oct 26	NOV 26	Dec 26
721	VOL/OVA	Dummy load	FCEV test run											
722	VOL/VOL	Log service	BEV											
723-1	VOL/PG	Log service	BEV											
723-2	VOL/PRI	Log service	BEV											
724	VOL/DPD	Log service	EMS1-BEV / VOL e-Trailer						?	?	?	?		
731	SCA/SCA	Log service	BEV / ECONOMY e-trailer						?	?	?	?		
732	SCA/GRU	Log service	FCEV											
733	SCA/PRI	Log service	BEV / e- & N-reefer											
734	SCA/GSS	Log service	EMS2-BEV											
741	REN/MIC	Log service	BEV e-tire											
742	REN/REN	Log service	BEV											
743	REN/DPD	Log service	BEV											
761	FOR/ECO	Cancelled	FCEV											
762	FOR/GBW	Simulation	FCEV											
763	FOR/PG	Log service	FCEV											
xxx	KAE/ZF	Dummy load	E-trailer test run						?	?	?			

However, we are facing challenges



🚛 From Fragmentation to Competitiveness, an EU-Wide Call for Collaboration

🚛 ZEFES sees positive opportunities

- 🚛 Lower OPEX
- 🚛 Corridor based scaling
- 🚛 Industrial leadership and competitiveness
- 🚛 **Driver's experiences, comfort and no vibrations**

🚛 ZEFES faces huge challenges

- 🚛 Regulatory fragmentation
 - 🚛 Vehicle certification and approval
 - 🚛 Road-access / weights-and-dimensions regimes
 - 🚛 Energy-infrastructure (charging and HRS) rules, grid connection & capacity,, permits
- 🚛 Technologies and standards

ZEFES hardware

Volvo | Overview vehicles and technologies



- 🚛 Volvo FH Aero Electric 6x2 tractor, with extended range.
- 🚛 600 km range, on one charge
- 🚛 MCS/CCS capability
- 🚛 e-axle driveline
- 🚛 Installed battery capacity, 780 kWh
- 🚛 Payload capacity 22-28 tons
- 🚛 GCW 48 tons

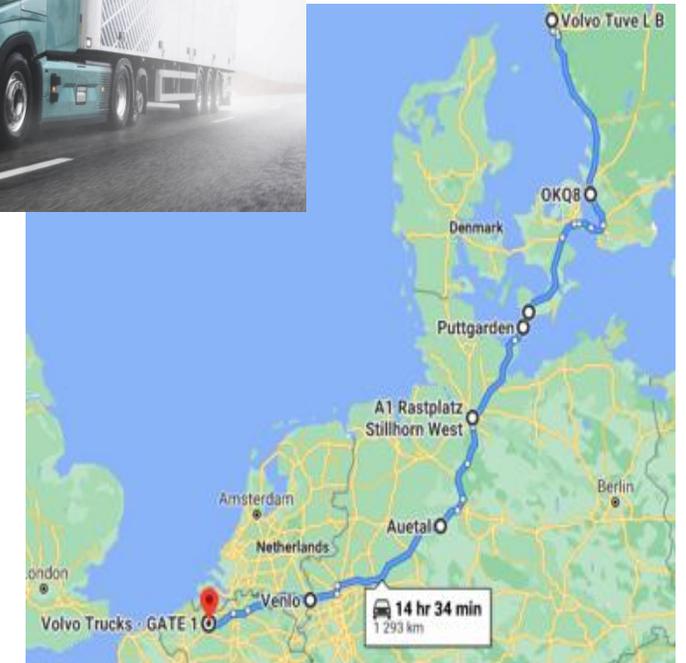


Volvo | Overview use cases and demonstrations



UC722 Volvo internal logistic company

- 🚛 Volvo FH Aero electric 6x2 tractor
- 🚛 The trip length is ~2500km, cross borders, ferry connection Puttgarden - Rödby.
- 🚛 Factory to factory between Volvo Gothenburg (SWE) – Volvo Gent (BEL), automotive products.
- 🚛 Different MCS stations along the route will be used.
- 🚛 The demonstration starts in March 2026.



Volvo | Overview use cases and demonstrations



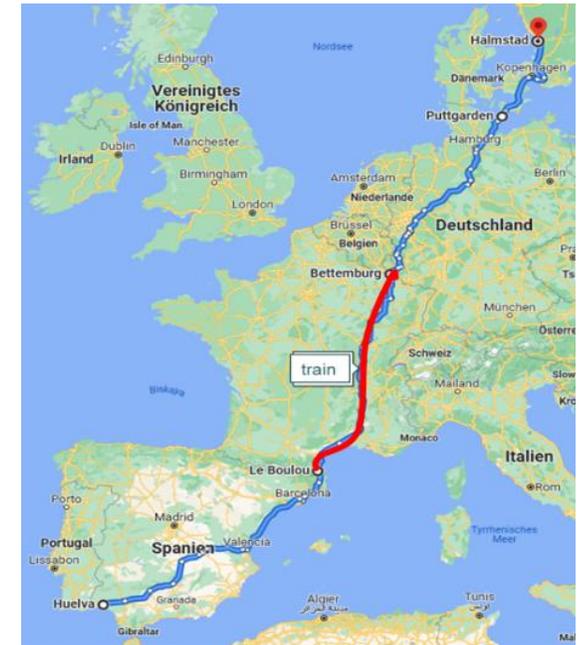
UC723-1 Procter & Gamble, operation starts now

- 🚛 Volvo FH Aero electric 6x2 tractor
- 🚛 European Container Service (ECS) will operate the vehicle
- 🚛 Container transport between Terminal Zeebrugge /BE) and P&G Plant Amiens (FR).
- 🚛 Transporting liquids (detergent) meaning maximum weight for the vehicle combination.
- 🚛 The trip lengths is > 400km, cross borders.
- 🚛 MCS station at ECS Terminal, Zeebrugge
- 🚛 The demonstration will start on 9 March 2026 and run for six months.



UC723-2 Primafrio

- 🚛 Volvo FH Aero electric 6x2 tractor
- 🚛 The trip length is ~2000km, as part of the intermodal long-haul transport from Spain to Sweden.
- 🚛 Multimodal temperature-controlled transport, fresh fruits chain from Spain to Sweden. The trailer will be fully loaded in both direction.
- 🚛 The demonstration will start in April 2026. The first trip will run from Murcia Spain to Halmstad Sweden.
- 🚛 The use case will then operate the Bettembourg – Halmstad route for a duration of six months.



Renault | Overview vehicles and technologies



- BEV T 780 - 600 km range
- MCS/CCS capability
- 720 KW embedded energy
- 6*2 tractor,
- 27.5T payload, GCW: 48T
- e-Axle driveline
- Michelin e-Tires



CASE n# 7.4.1 - MICHELIN INTERNAL LOGISTICS

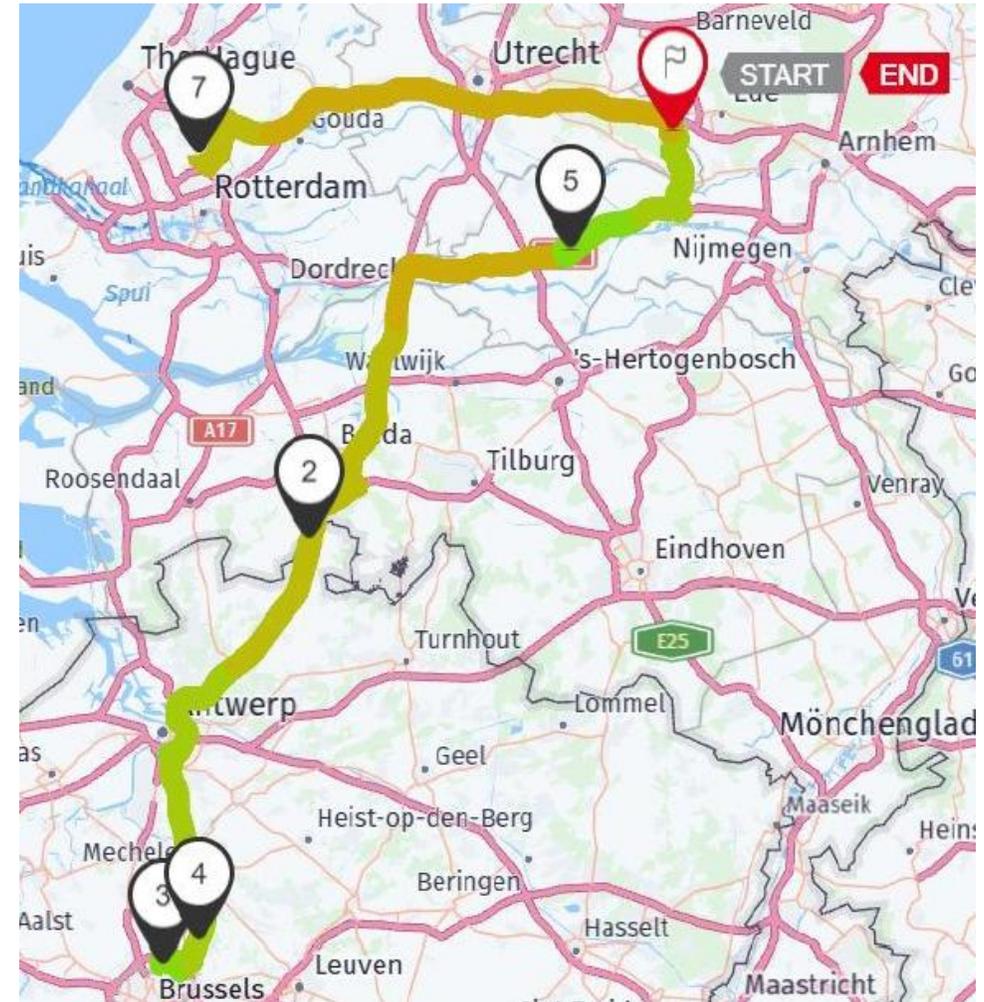


- 🚛 500 km French national road
- 🚛 Max elevation: 1100m
- 🚛 Daily rotation – from Blanzay to Blavozy
- 🚛 Demonstration : Sept 1st to Dec 2026
- 🚛 Operated by LTR / Vialon
- 🚛 Challenge, tough dual express roads and high GCW 44t with only one chargign point



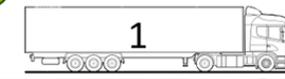
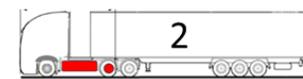
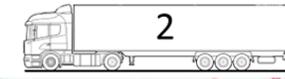
CASE n# 7.4.2 – DPD LOGISTICS IN B/NL

- 600 km mountain highway
- Elevation max: 70M
- Daily rotation
- Demonstration May 4th to 20 July 2026
- Operated by VanSetten
- Challenge, 24/7 operation in a night and day shift with tight time slots at the DPD depots



CASE n# 7.4.3 - RENAULT TRUCKS INTERNAL LOGISTICS

- 420 km mountain highway
- Elevation: 1000 m
- Daily rotation – swap of trailer on the French side of the Fréjus tunnel
- Demonstration May 4th to 20 July 2026
- Operated by Dupessey&Co
- Challenge, relay logistics model crossing Alps, being home in the evening, using depot charging



Scania

Christer Thorén

Scania | Overview vehicles and technologies



Scania BEV

-  Installed battery: 624kWh
-  Drive train: 400kW
-  Charging: MCS 750kW, CCS 375kW
-  GVW 42ton allowed
-  Extra length allowed
-  According to Directive 97/27/EC section 7.6 and 96/53/EC



Scania | Overview vehicles and technologies



Scania BEV lowliner

-  Installed battery: 624kWh
-  Drive train: 400kW
-  Charging: MCS 750kW, CCS 375kW
-  GVW 70ton allowed
 -  EMS2 duo-trailer
-  Extra length allowed
 -  According to Directive 97/27/EC section 7.6 and 96/53/EC
-  Extra low fifth wheel

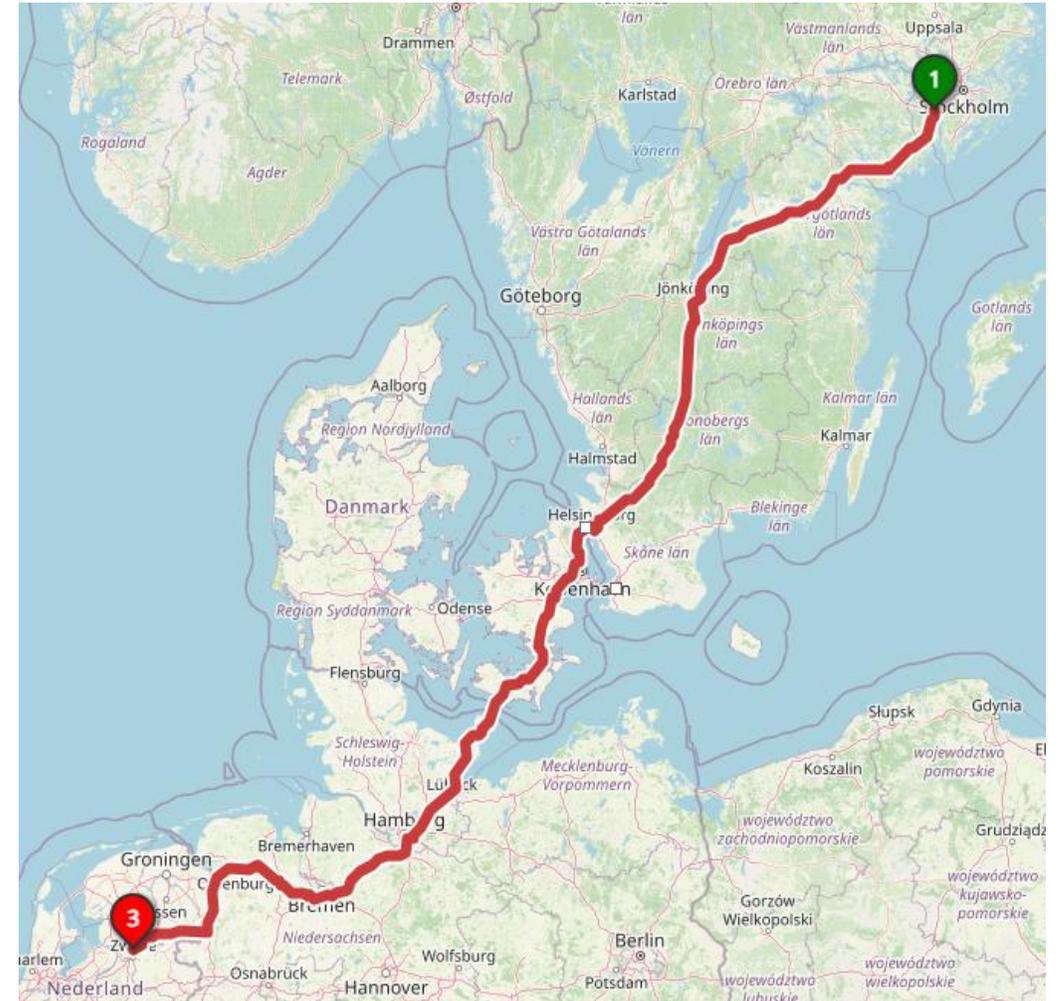


Scania | Overview use cases and demonstrations



SCA-SCA

- 🚛 Södertälje – Zwolle
- 🚛 Charging in Sweden, Germany and NL
- 🚛 Operation March-December 2026
- 🚛 3 stops for charging on route
 - 🚛 About 300km between each charging



Scania | Overview use cases and demonstrations



SCA-GSS

Two use cases

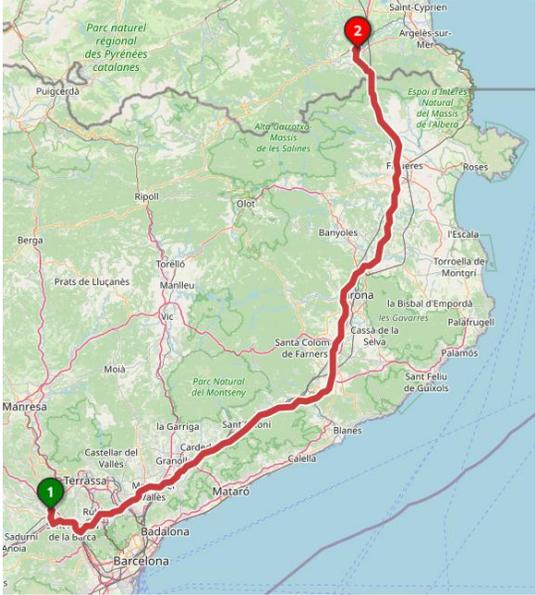
Spain – France

- EMS2 operation
- Charging at Martorell and Vilamalla

Germany – Luxembourg

- Charging in Mannheim and Bettembourg
- EMS1 operation

Operation Feb-Dec 2026



Fraunhofer IVI

Henning Wittig

E-Trailer | Overview technologies

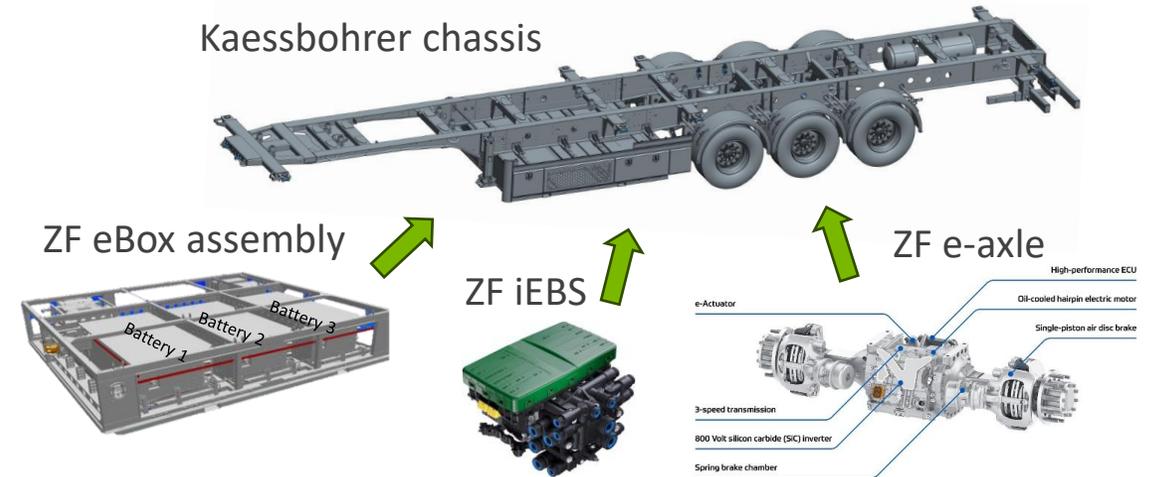


Vehicle and components

- 🚛 Kaessbohrer 3 axle container chassis
- 🚛 ZF TrailTrax system
 - 🚛 Drivetrain: 210 kW e-axle on middle axle
 - 🚛 Battery: 308 kWh
 - 🚛 Charging: CCS2, 210 kW
 - 🚛 System weight: 3200 kg

Operation

- 🚛 Self controlled e-trailer operation based on
 - 🚛 Information available on the standard ISO 11992-2 EBS interface
 - 🚛 Sensor system integrated into the e-trailer
- 🚛 No dedicated tractor – trailer interface required

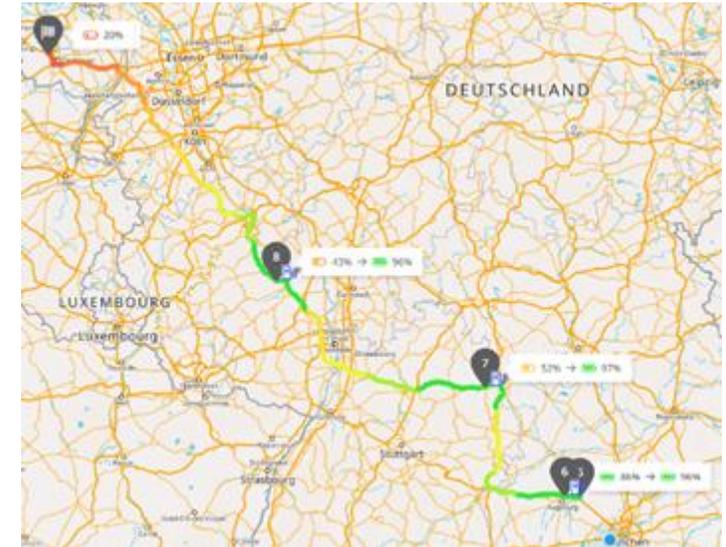


E-Trailer | Overview use cases and demonstrations



Test operation

- 🚛 Vehicle combination: BE tractor – e-trailer
- 🚛 Route: Oirschot (NL) to Aichach (DE), 1450 km per round trip
- 🚛 Total distance of 10.000 km
- 🚛 Route of DPD mission with dummy load, ZF test drivers



E-trailer charging on rail

- 🚛 Route: rail corridor Dudelange (LU) to Le Boulou (FR)
- 🚛 Charging: SPS power box installed on rail wagon
- 🚛 Physical test trailer fit on rail wagon



E-Trailer | Overview use cases and demonstrations



VUB-FHG **proposal** for an adapted UC 7.3.1

- Scania BEV with 400kW, 624kWh (UC 7.3.1)
- E-trailer:
 - Kaessbohrer base trailer
 - Econogy propulsion system



Volvo **proposal** for an adapted UC 7.2.4

- Volvo FH BEV 195kW @ 600V
- E-trailer:
 - Battery: 360kWh (252kWh useable)
 - CCS compatible, 42kW AC | 250kW DC
 - Control system: CPAC & PENTA
 - Base trailer: Ekeri
- The vehicle combination is today operating in Sweden via the REEL project.



Investigations and preparations ongoing



E-Dolly | Overview Technology

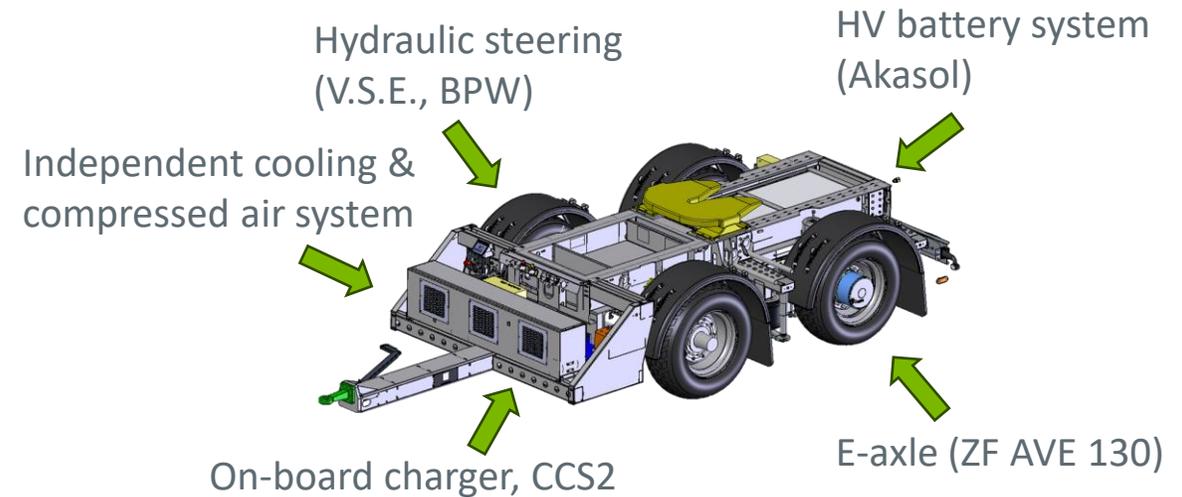


Vehicle and components

- VanEck custom chassis
- Drivetrain: ZF AVE 130 system, 250 kW (peak)
- Steering: hydraulically steered front axle
- Battery: 73 kWh
- Charging: CCS2, 22 kW
- Weight: 4,7 t

Operation

- Steer/drive-by-wire interface
- Operation on terminals/yards
 - Remote controlled by driver
 - Automated by control tower system



E-Dolly | Overview use cases and demonstrations



Automated yard operation at the CFL terminal Dudelange (LU)

- Automated shunting of semitrailers
- Splitting of EMS2 vehicle combinations
 - Remote controlled / automated handling of 2nd semitrailer on yards/terminals
 - minimum adaptation of infrastructure

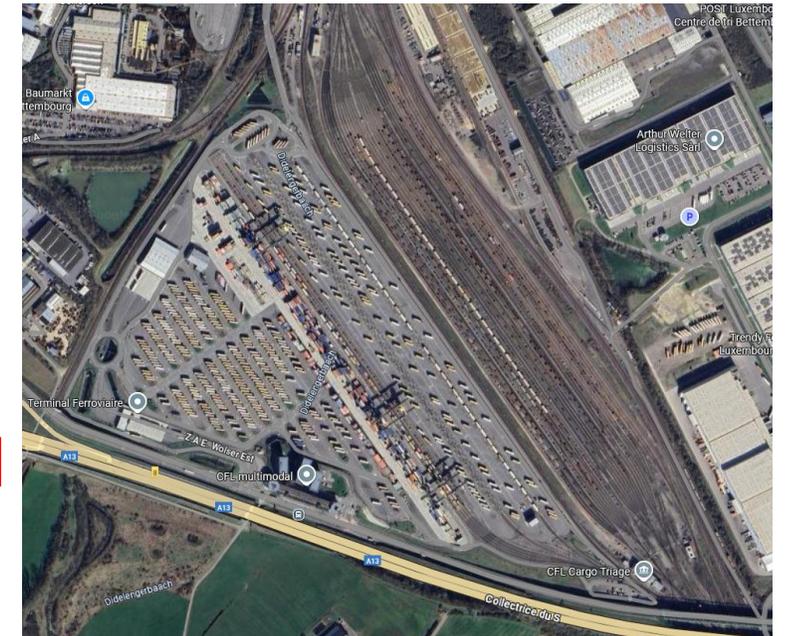
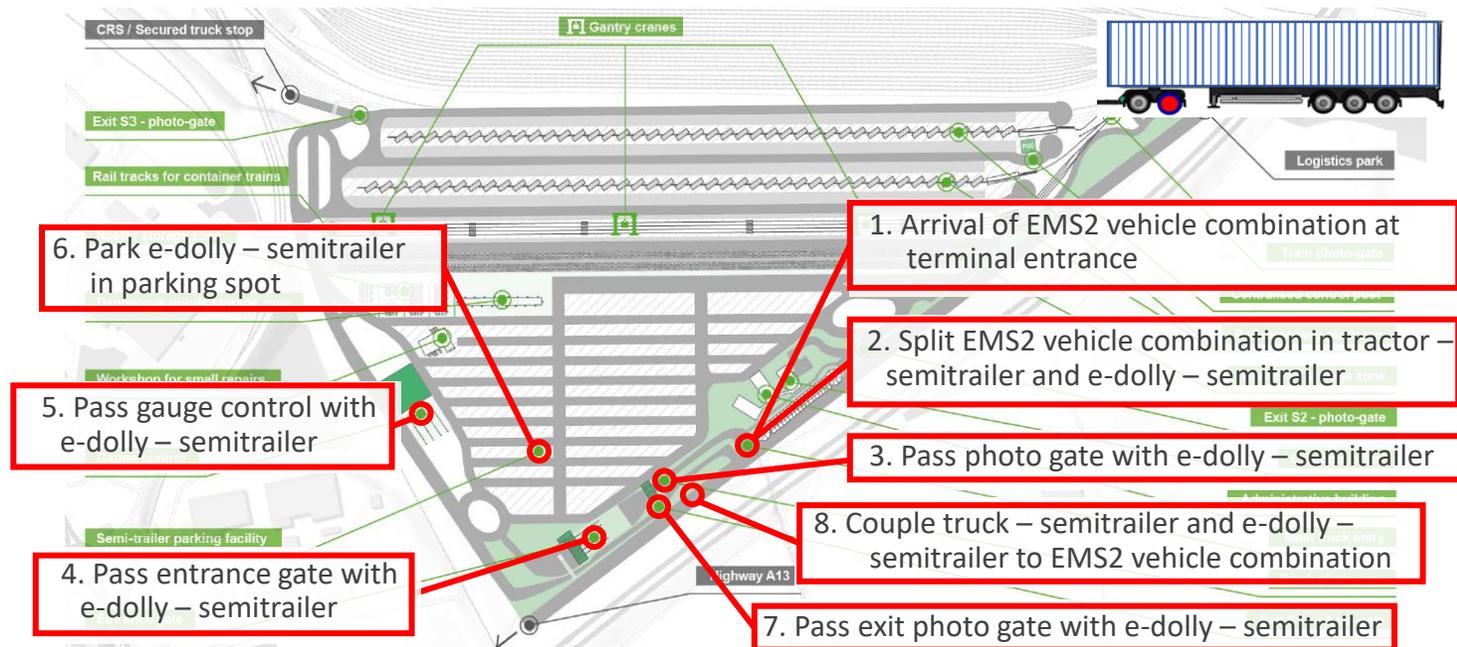


ABB E-Mobility

Miguel Rodriguez Escude

ABB E-mobility | Heavy duty products



Scalable and Flexible Ultra-High-Power

Most effective system solution

MCS1200

1200 kW



HVC360 + ChargeDock

360+ kW Split

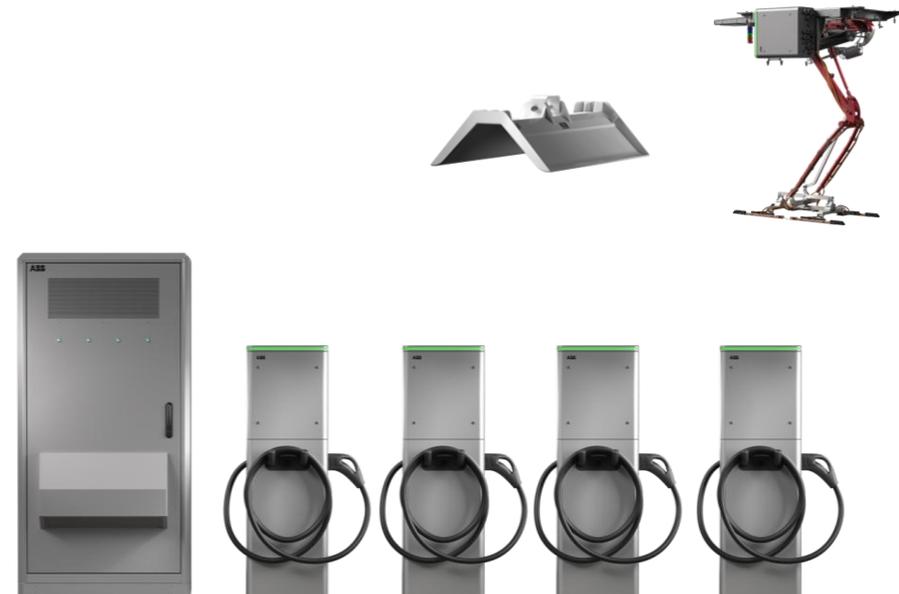


ABB E-mobility | Overview of the MCS1200



Designated Connector

The charge post is **purpose-built for MCS charging** sessions, maximizing profits with a high truck throughput frequency.

Cooled Cable & Connector

The **liquid-cooled cable** and connector is optimized for high continuous output.

Real-time Remote Monitoring

A unified toolchain with integrated connected **services maximizes charging success rates**.



In-house Power Electronics

1.2 MW power output is delivered through **SiC power modules** engineered in-house.

Durable Double-wall

Thermal circulation inside the charge post protects and prolongs the life of electronics.

Configurable UI

The **21.5" touch screen** with a single-outlet display adapts to operational needs.

1500 A
Continuous

OCPP 2.0.1
Ready

ISO 15118-20
Ready

2.4 m / 7.9 ft
Cable Length

1.5 m / 4.9 ft
Cable reach

MCS
Connector

Main objectives during the use case

- 🚛 Get feedback from real truck drivers about user experience of the MCS charger
- 🚛 Improve the software and identify corner cases
- 🚛 Test the robustness of the communication protocols in different use cases (fast charging vs over-night long sessions)
- 🚛 Validate interoperability with multiple truck OEMs

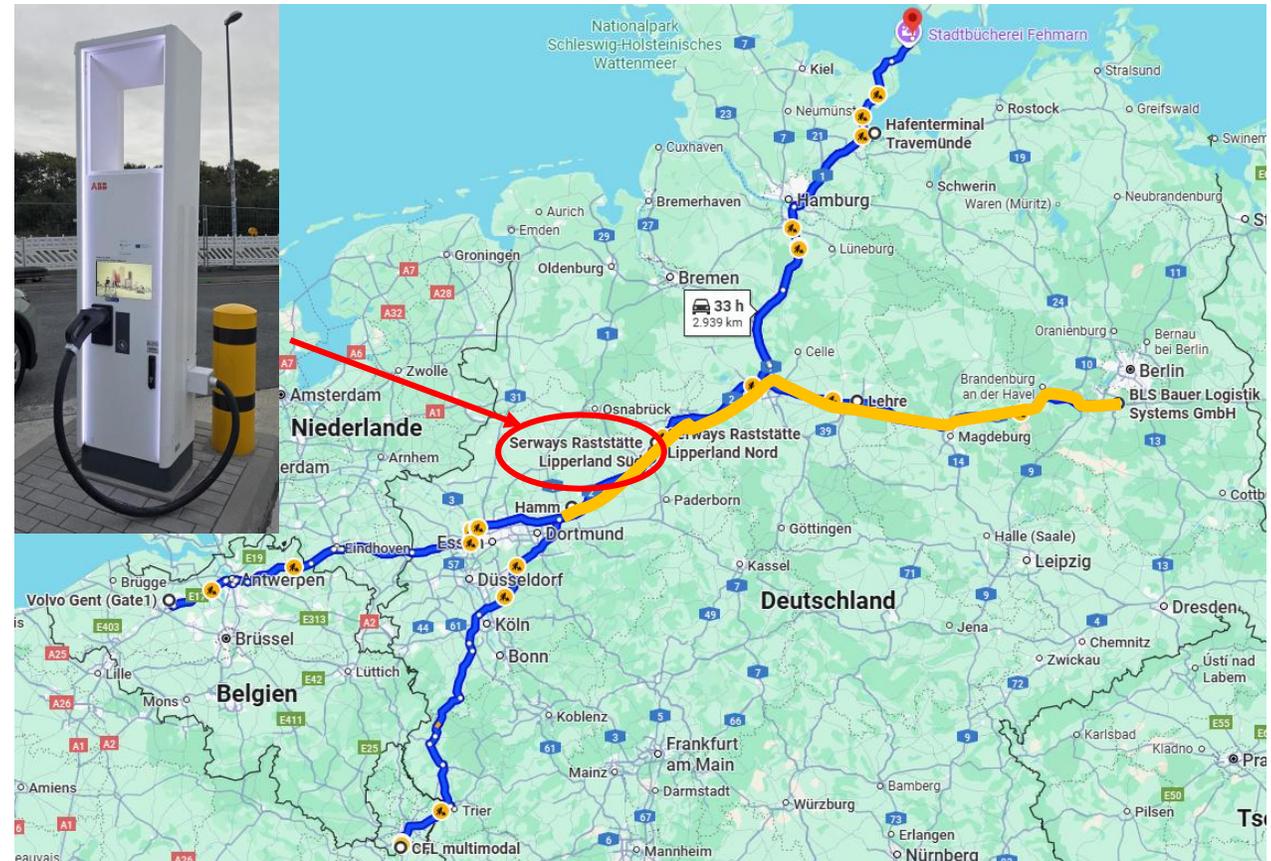
MCS charger on site



ZEFES and HoLa synergies, outcome collaboration



- HoLa is monitoring the sites -> infrastructure scenarios
- ZEFES is monitoring the vehicles -> implementation in fleets
- Optimisation of conditions to build infrastructure scenario on a European level based on 2 corridors with cross point Lipperland Süd
- MCS PoC charger, operated by EnBW
- To be used by trucks manufactured by Scania, Volvo, MAN and Daimler Truck



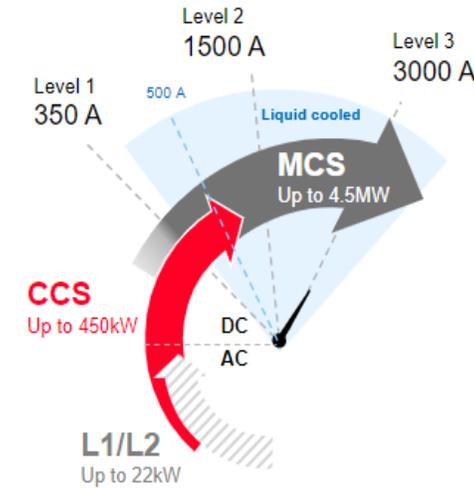
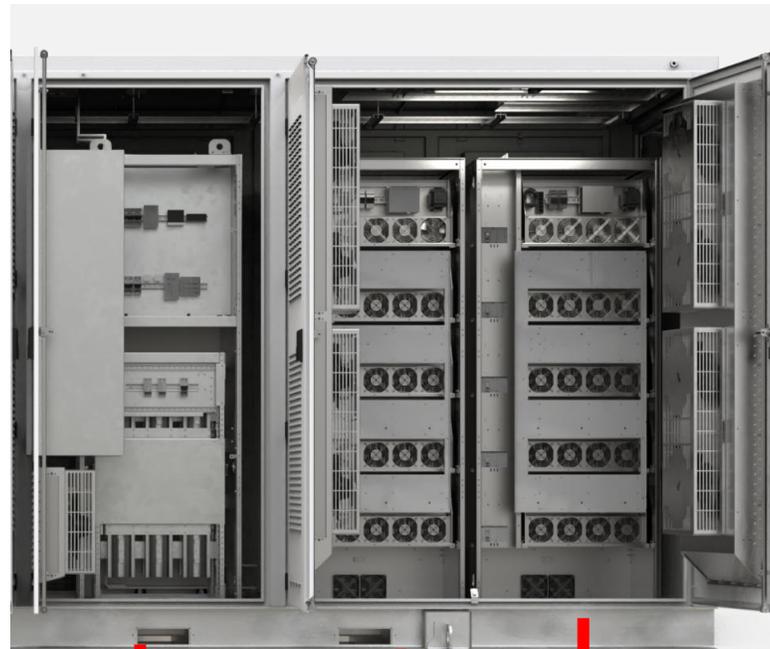
Hitachi Energy

HIT | Overview MCS hardware and technologies



System integration

Design of interfaces for integration



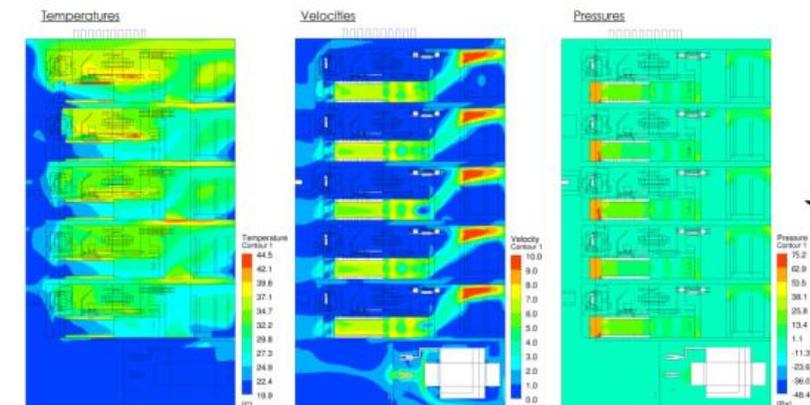
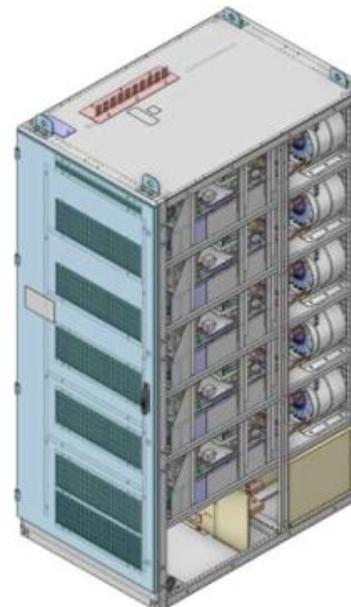
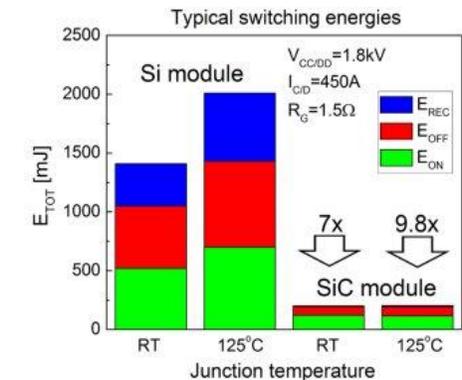
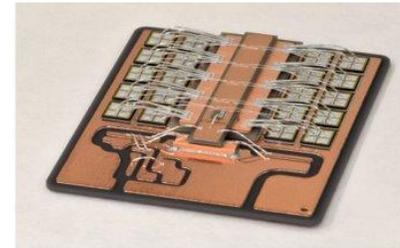
- Performance Specs:
- Current: up to 1000A
- Voltage: 200V to 975V



High-Efficiency SiC DC-DC Converter and DC cabinet

Transition to SiC

- Hitachi Energy integrate own SiC based modules like LinPaks
- Hitachi Energy integrate own power converters
- Enabling:
 - Improvement of the efficiency of frequency converters
 - Massive reduction of switching losses
 - Increase in current density
 - Higher maximum junction temperature.
 - Smaller footprint
 - Increased switching frequency
 - Reduce filtering requirements.
- Design and simulation of the converter
- Laboratory testing for performance verification
- Optimization for efficiency and reliability
- Technical Requirement Specification (R&D)
- Design of the DC cabinet
- Construction and testing for integration





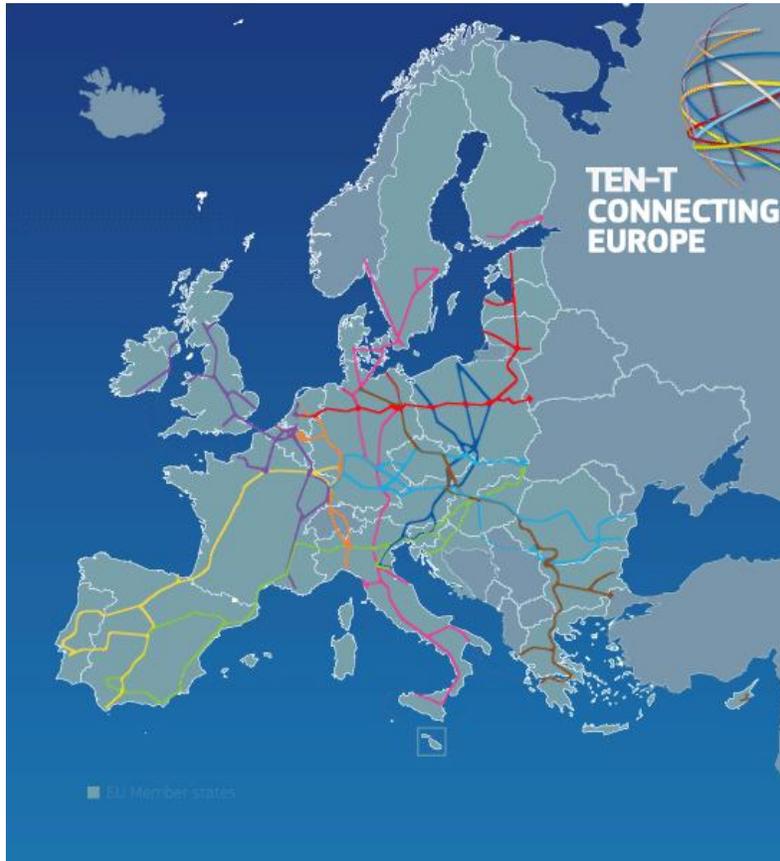
Coffee Break until 11:00



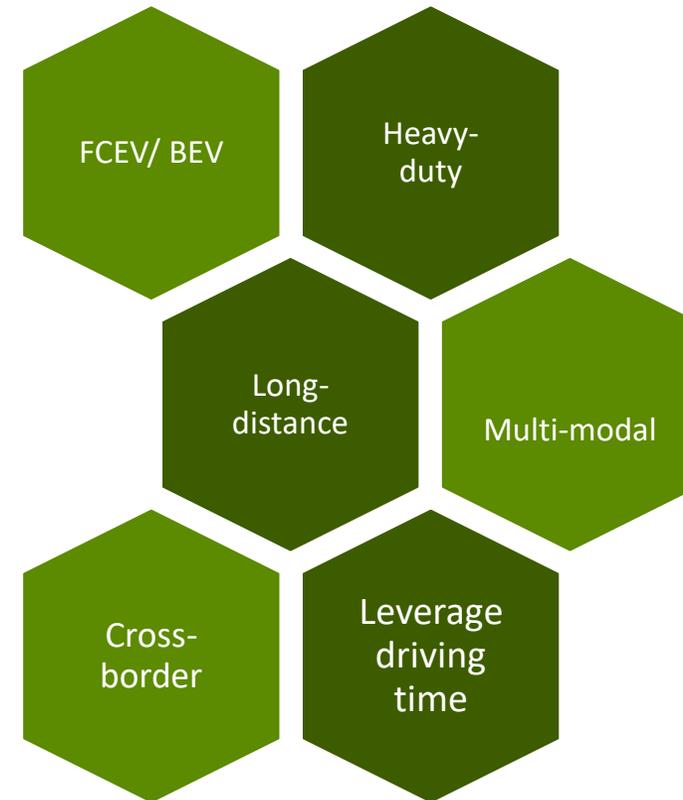
P&G – ECS – Volvo Use Case

Maren Von Anshelm

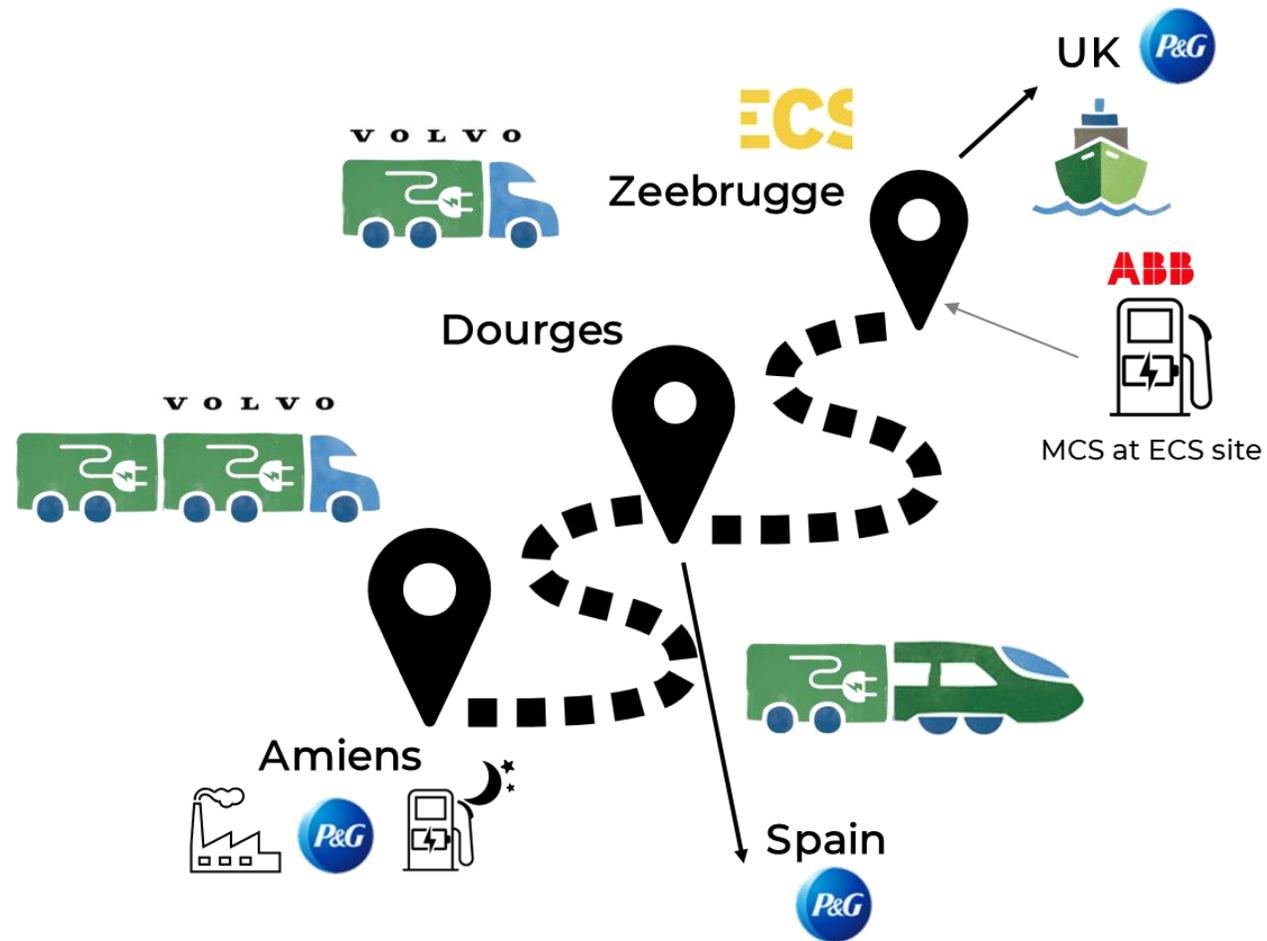
P&G | BEV use case: requirements



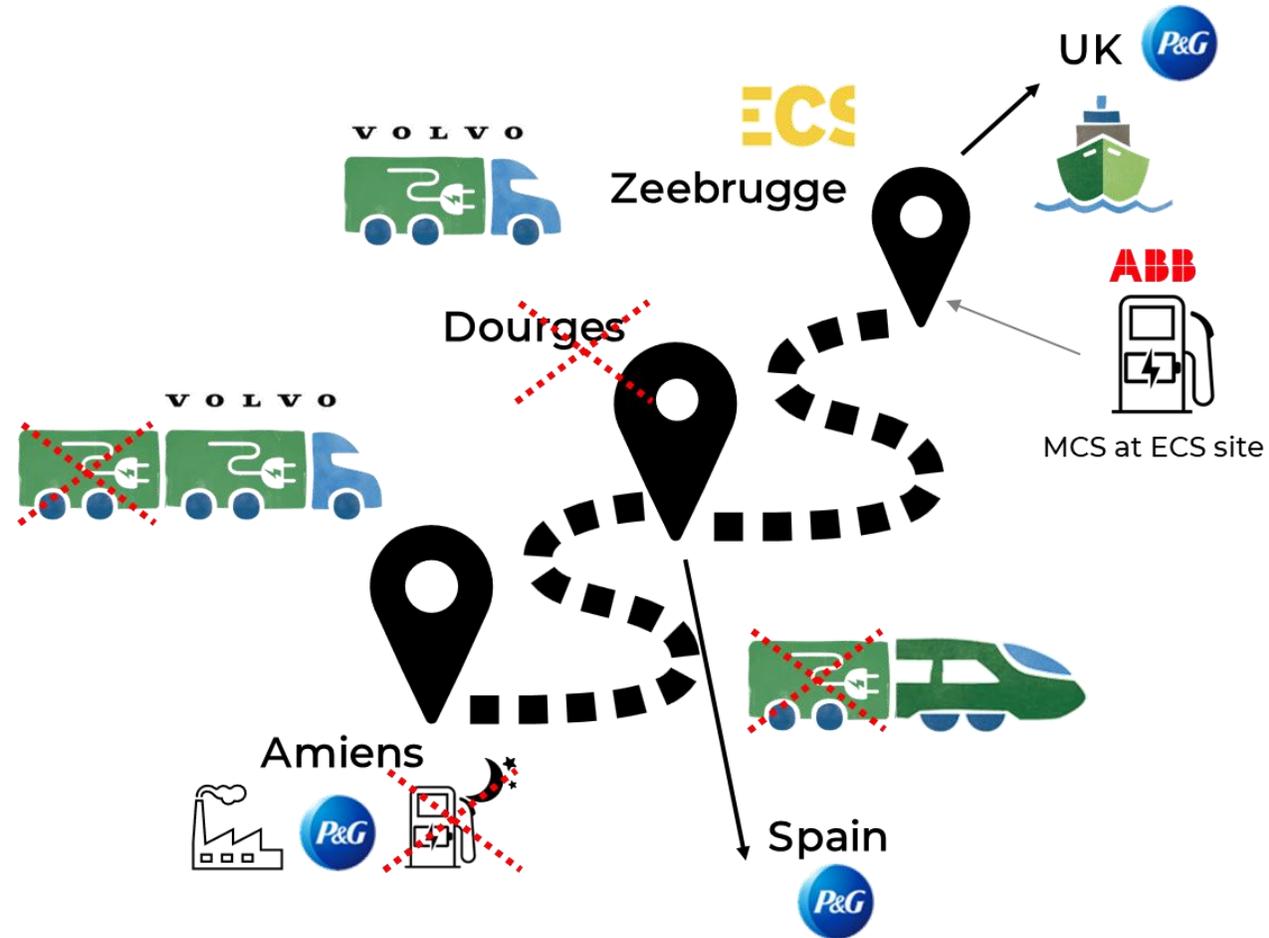
Source: Website European Commission



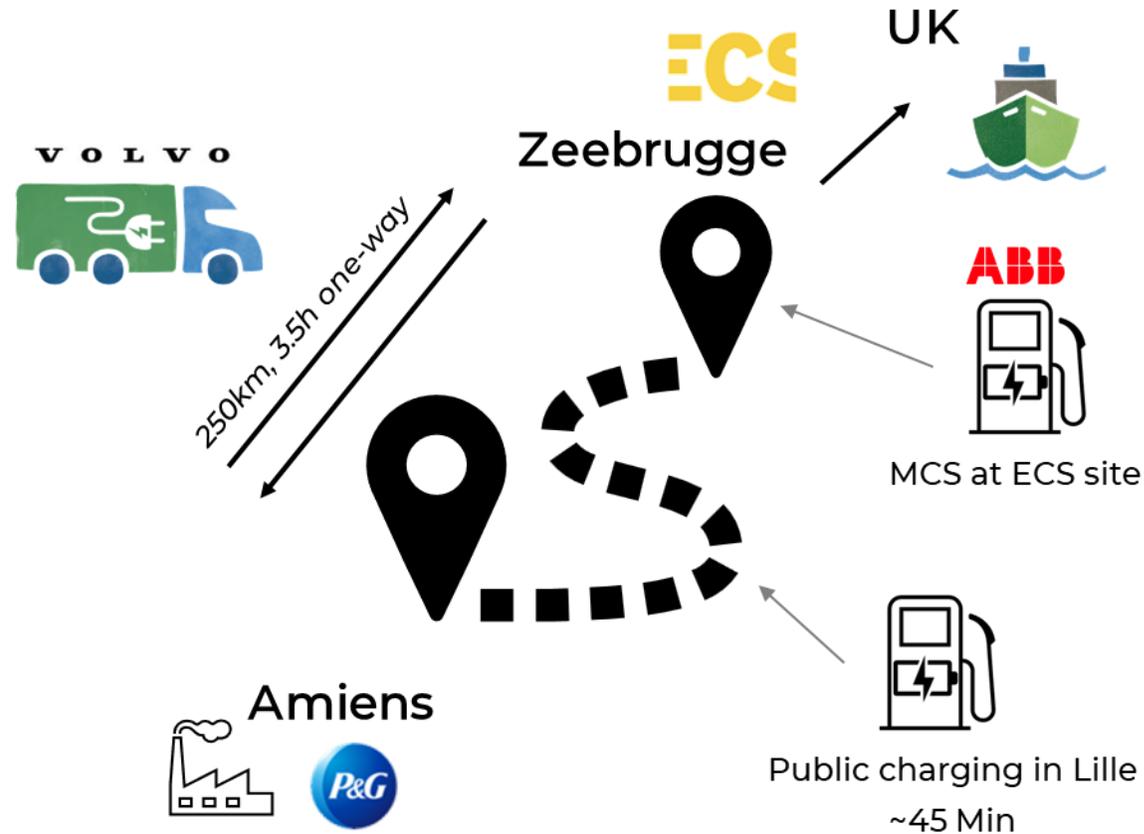
P&G | BEV use case: ideal case



P&G | BEV use case: ideal case – facing reality



P&G | BEV use case: simplified use case





Change vehicle

Routes / Brugge - 59*** Lille - Brugge

1 8380 Brugge Zeebrugge

100% 20,000 kg 8°C
400 kW 00:00 29 km/h

2 59*** Lille

80% 20,000 kg 8°C
400 kW 00:00 23 km/h

63 kWh 0h 15m 80% → 90%

3 800** Amiens

55% 20,000 kg 8°C
400 kW 00:00 28 km/h

4 59*** Lille

24% 20,000 kg 6°C
400 kW 00:00 24 km/h

125 kWh 0h 30m 24% → 44%

8380 Brugge Zeebrugge

22% 20,000 kg 7°C
400 kW 00:00 35 km/h

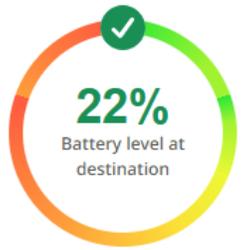
+ Add stop

5 stops Clear all

Route settings

Calculate route

Route completed successfully

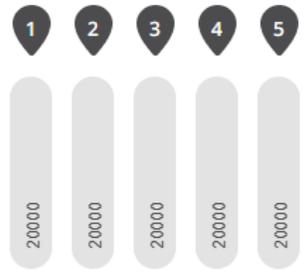


100% Battery level at start
20% Desired min. battery

Route information

5 stops, 463 km, 07:56 h, 1066 m ↑ -1066 m ↓ elevation

Payload status (kg)



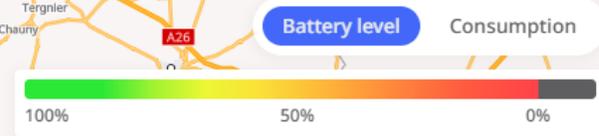
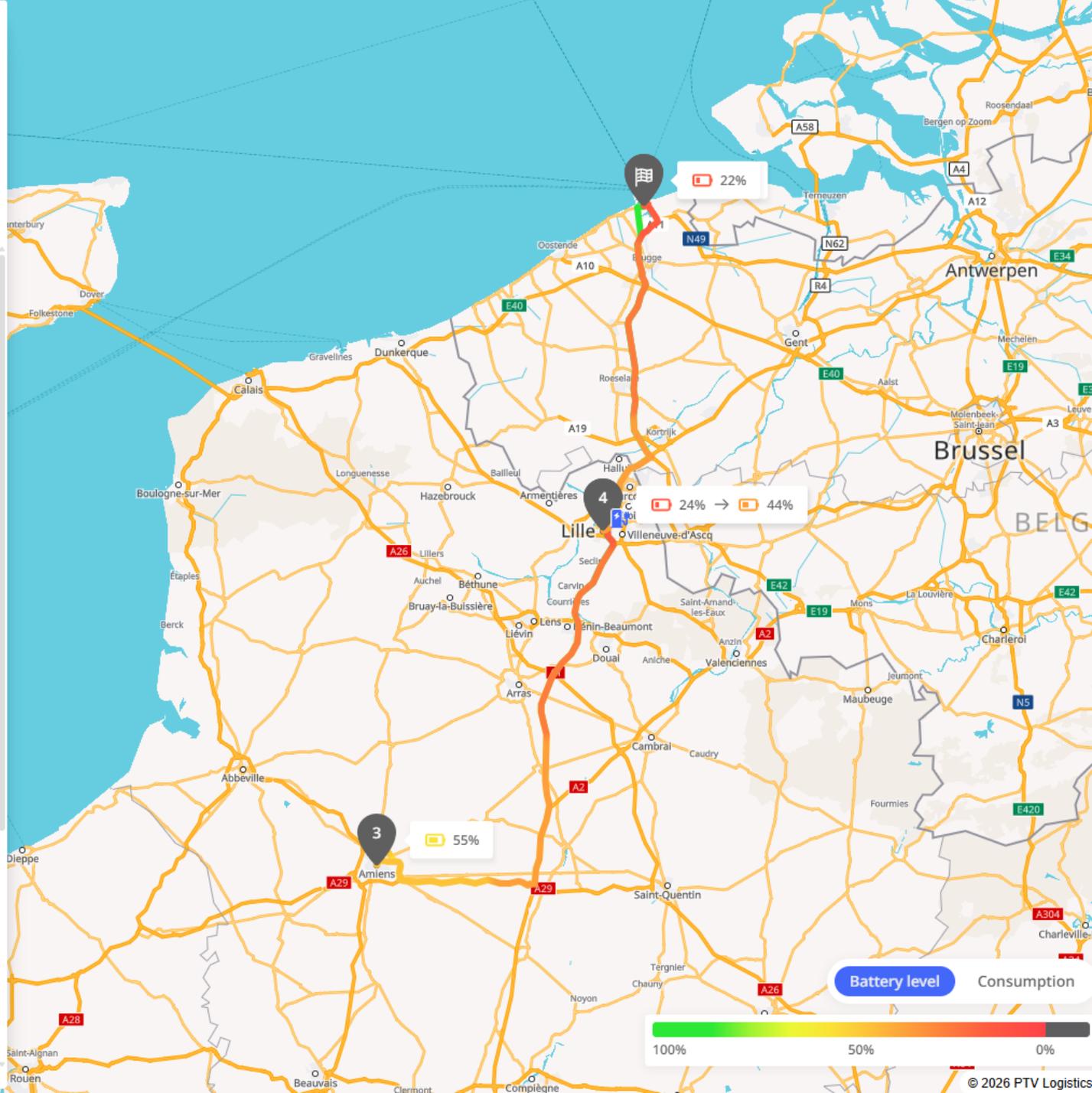
Costs (€)

321 toll km, 55.73 toll, 1.36 per km, 631 total

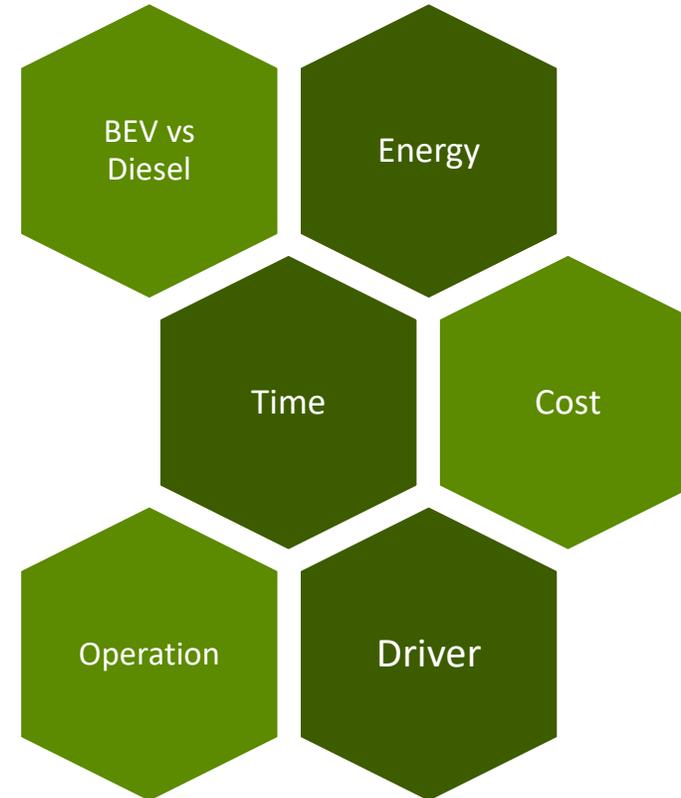
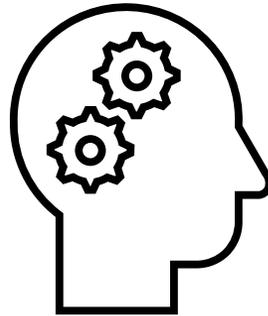
Consumption

150 kWh/100 km, 695 total kWh, 739 gross kWh

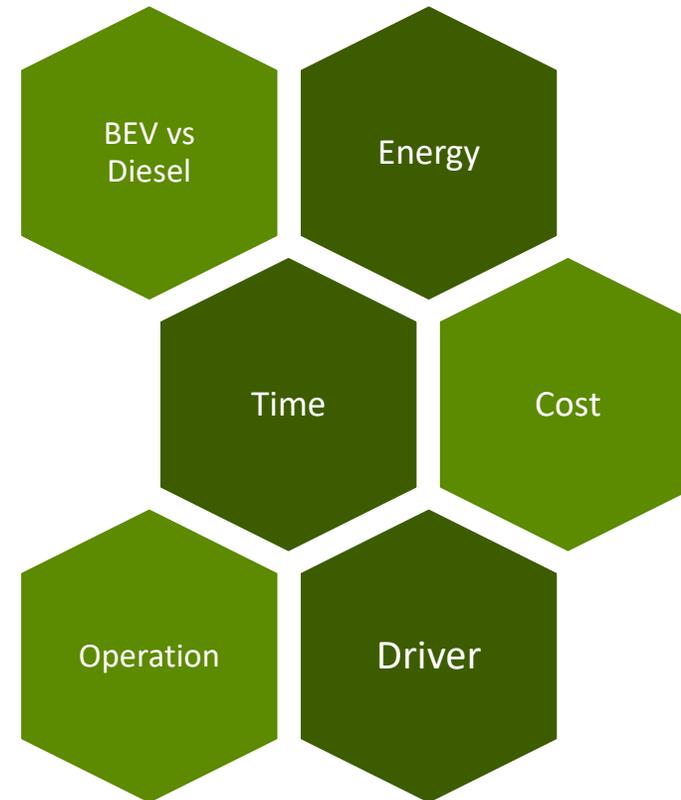
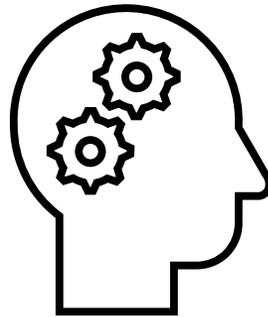
Battery log



P&G | BEV use case: learnings



P&G | BEV use case: learnings



Future Pilot:



ECS Presentation

Cédric Lanckriet



CREATING SUSTAINABLE AND RELIABLE LOGISTICS.



100% FAMILY OWNED.

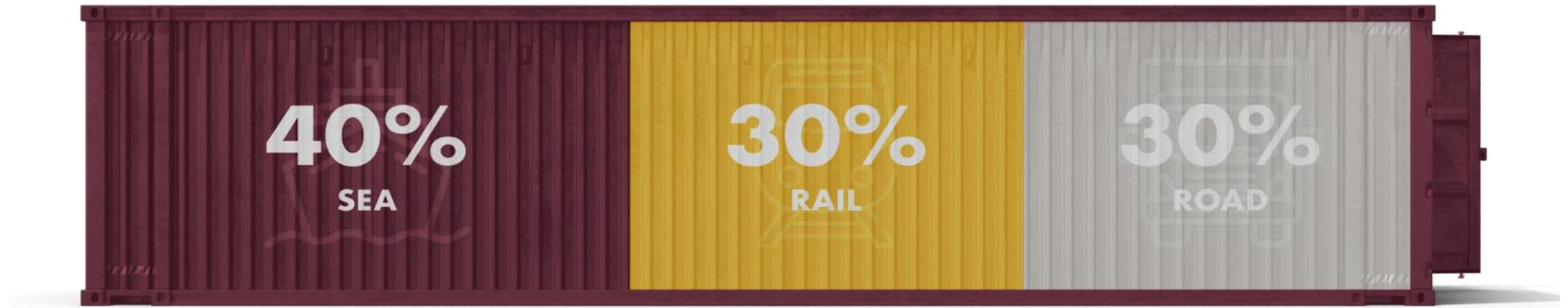
ECS was founded in 1985.

Our company has grown to become one of Europe's leading providers of integrated supply chain logistics and intermodal transport solutions.

Ever since, we remain true to our family-oriented values such as sincerity, authenticity and liability.



DRIVING THE MODAL SHIFT.



SHORT SEA SOLUTIONS

Driving the modal shift from road to rail and short sea shipping.

RAIL TRANSPORT

Increasing train mileage and investing in rail-connected warehousing.

70 million km rail transport in 2025
(91 times to the moon and back)

ROAD

Optimising empty mileage and use of alternative fuels for first and last mile delivery.



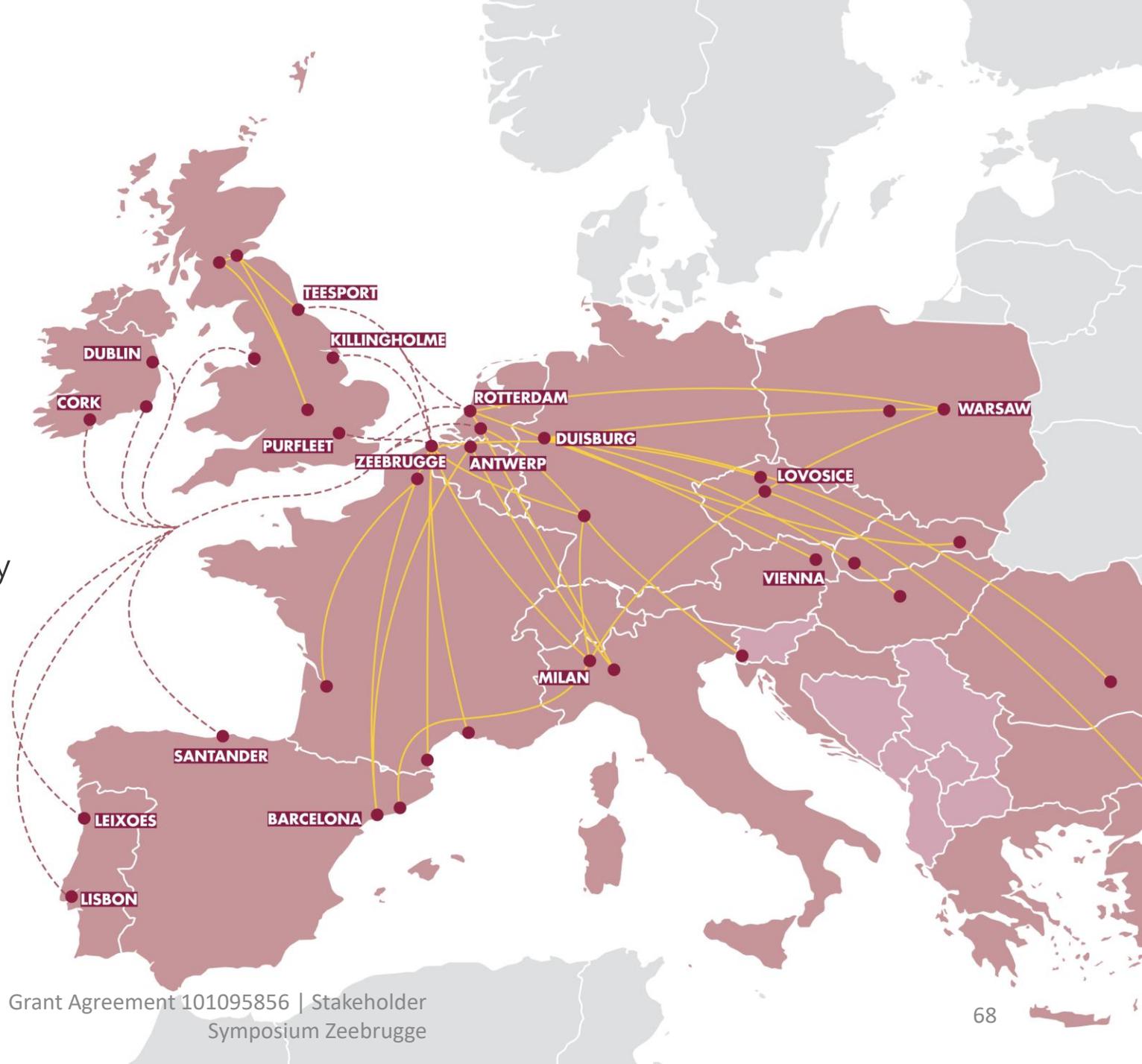
Ambition 65% via rail in 2030



INTERMODAL NETWORK.

SEAMLESS INTERMODAL CONNECTIVITY ACROSS EUROPE AND THE UK

-1000 full intermodal loads per day
-12 000 45-foot containers, reefers and trailers



SUPERMARKET OF THE UK SUPERMARKETS.



+ 10 DEPARTURES / DAY





Afternoon program



13:15 – 13:30	Transfer to the busses	-
13:30 – 13:45	Departure by bus to ECS Warehouse	-
14:00 – 14:10	Welcome to ECS site	Cédric Lanckriet – ECS
14:10 – 14:35	Demonstration MCS + BEVs	Group 1 ABB – SCANIA - VOLVO
	Demonstration E-Dolly	Group 2 Fraunhofer
	Demonstration Warehouse	Group 3 ECS
	Break + Q&A	Group 4 -
14:35 – 15:00	Demonstration MCS + BEVs	Group 4 ABB – SCANIA - VOLVO
	Demonstration E-Dolly	Group 1 Fraunhofer
	Demonstration Warehouse	Group 2 ECS
	Break + Q&A	Group 3 -
15:00 – 15:25	Demonstration MCS + BEVs	Group 3 ABB – SCANIA - VOLVO
	Demonstration E-Dolly	Group 4 Fraunhofer
	Demonstration Warehouse	Group 1 ECS
	Break + Q&A	Group 2 -
15:25 – 15:50	Demonstration MCS + BEVs	Group 2 ABB – SCANIA - VOLVO
	Demonstration E-Dolly	Group 3 Fraunhofer
	Demonstration Warehouse	Group 4 ECS
	Break + Q&A	Group 1 -
15:50 – 16:00	Wrap-up and official hand-over of the key from VOLVO to ECS	VUB – VOLVO – PG – ECS

Explanation group 1 – 2 – 3 – 4



 On your name badge, you can see if you are in group 1, 2, 3, or 4

 Group 1: Frank Kressmann (PG)

 Group 2: Maren von Anshelm (PG)

 Group 3: Cor van der Zweep (UNR)

 Group 4: Anje Middelbos (UNR)

 Each group stays at one demo-location for 25 minutes

 After 25 minutes, we will rotate to the next demo

 Please stay within your group and keep attention to the safety details!

 We are at an operational terminal, so safety first!

Safety briefing warehouse visit ECS



-  When entering the ECS site you will receive:
-  Safety fluo vest
-  Safety shoe tip for the warehouse tour

-  Stay within the designated demo-areas!

Thank you for your attention!



Disclaimer



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the European Union**

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