
VOLVO
NATIONAL BULK TANKER ASSOCIATION
Electric Trucks | 2022-2030
Paul Illmer – VP Emerging Technology

VOLVO

I will talk about

- Why Electric
- How Electric
- Roadmap 2030
- Best practices
- Charging
- Recap

VOLVO

Ambitious targets guiding our transition

50%

CO_2 reduction* by

2030

100%

CO_2 reduction* by

2040

NET ZERO

CO_2 emissions

BY 2050

Volvo Trucks

*compared to 2019

VOLVO

Volvo Group — extensive experience of commercial electrical vehicles

1995-2005
Environmental Concept Trucks and Buses

2010
Production start Hybrid Truck Hybrid Bus

2016
Production start Plug-in Electric Bus

2017
Production start Electric Bus

2019
Production start Electric trucks distribution

2021
Production start Electric trucks distribution conventional

2022
Production start Electric trucks regional haul and urban construction

VOLVO

Electric Trucks are here.

Volvo FE Electric Compact but capacious NOW AVAILABLE	**Volvo FM Electric** Flexible regional assignments AVAILABLE SOON	**Volvo FH Electric** From city to city in comfort AVAILABLE SOON	**Volvo FMX Electric** Fit for building and construction AVAILABLE SOON	**Volvo FL Electric** Door-to-door deliveries NOW AVAILABLE

VOLVO

Volvo FL Electric | Zero emissions deliveries made easy

16t

300kms

Power
135kW
Continuous

Trans
EPT402
425Nm

Range
Up to 300km

GVM
16t

WB
4400,5300

Axles
4x2

VOLVO

Volvo FE Electric | Compact and capable

23-26t

250kms

Power
225kW
Continuous

Trans
EPT802
850Nm

Range
Up to 250km

GVM
23-26t

WB
3900,6100

Axles
4x2,6x2

VOLVO

Volvo HD Electric Tractors | Flexible for heavier applications

>44t

300kms

Power
490kW
Continuous

Trans
12 speed
2400Nm

Range
Up to 300km

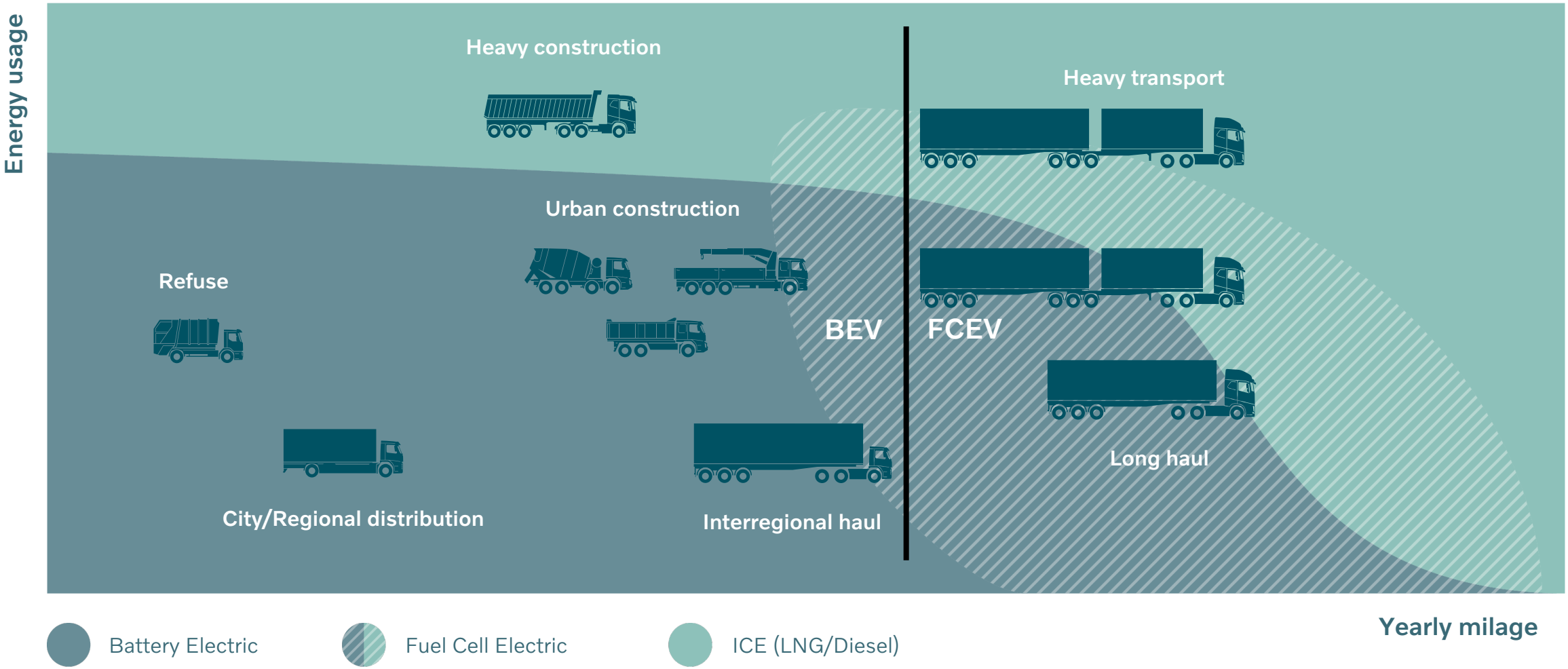
GCM
>44t

WB
3800,6700

Axles
6x2, 6x4, 8x4
tridem

VOLVO

Roadmap - a mix of energy types will be required to meet net zero




VOLVO
GLOBETROTTER
LTGU 112258 2
22G1

VOLVO

BEV & FCEV applications 2026>

16-26t

300kms

0.8 kWh per km

FL/FE Battery Electric

NOW

>44t

300kms

1.5 kWh per km

FM/FH Battery Electric

2023

>76t

800kms

TBA kg/kWh per km

FM/FH Hydrogen Fuel Cell

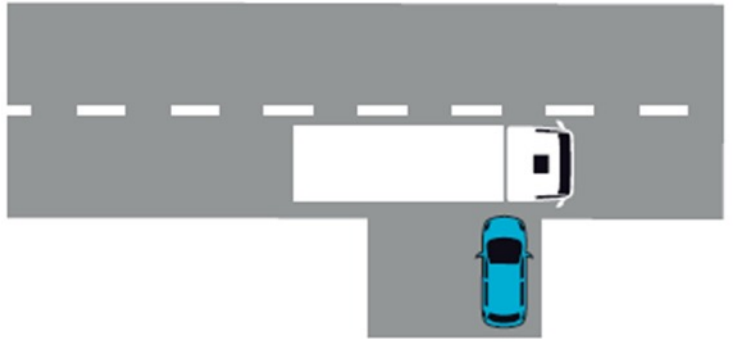
2026

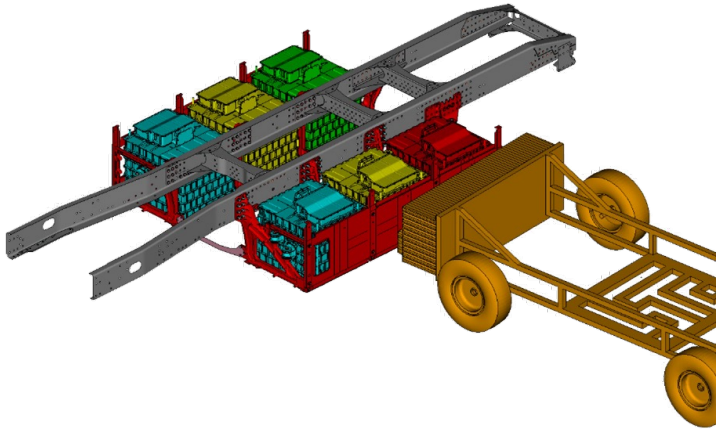
Safety – never compromised

VOLVO

Our batteries exceed ECE R100 with specific Volvo testing (Not all batteries are created equal)

- Humidity test
- Immersion test
- Over current protection
- Over charge
- External short circuit
- Thermal runaway
- Temperature cycle





Connected Eco Systems (minimal range anxiety)

1

Vehicle specification

- Curb weight
- Max payload
- Specify PTO

2

Route

- Way points
- Setup charging stations

3

Travel plan (operation)

- Load and unload
- Service time
- PTO consumption

4

Result

- Energy consumption
- Analysis (5 yr batt age)
- Iterate 1-4

Volvo ERS

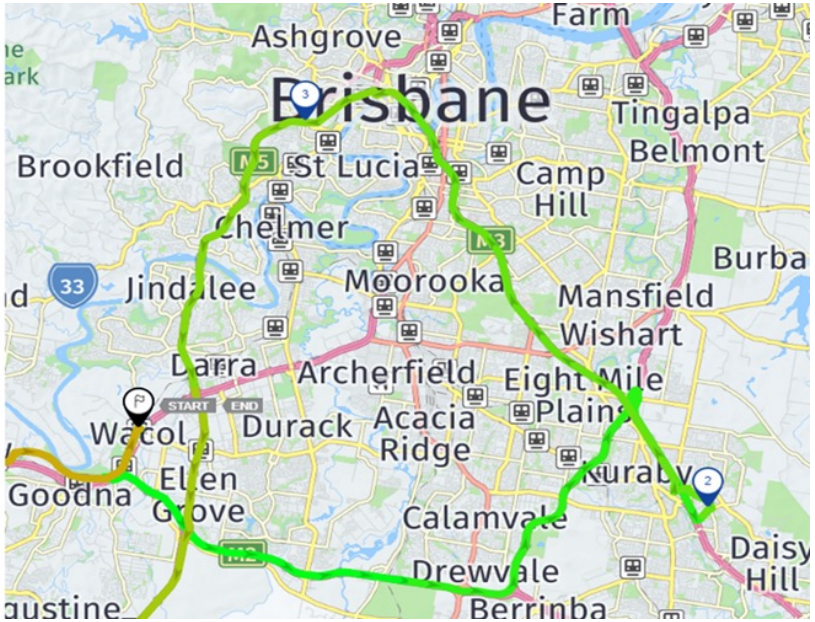
← Test

Brisbane Metro Loop
Brisbane, 5 Waypoints

FL
FL - 4x2, 265 kWh

	30 °C
Energy consumption	**Typical**
Total consumption, kWh	104.25
Average consumption, kWh/km	0.82
Remaining energy, kWh	63.39
Distance to empty, km	77.03
Charging	
Charging time	0h
Charged energy, kWh	0.00
Regenerated energy, kWh	17.73
Route	
Route distance, km	126.67
Total route duration	5h 14m
Driving time	2h 29m
Service and rest time	2h 45m
Max. carried payload, kg	5000.00
Average speed, km/h	51
Top speed, km/h	88

On the map the route is colored to show the batteries energy at the chosen reference temperature



Charging requires strategic planning (start early!!!)

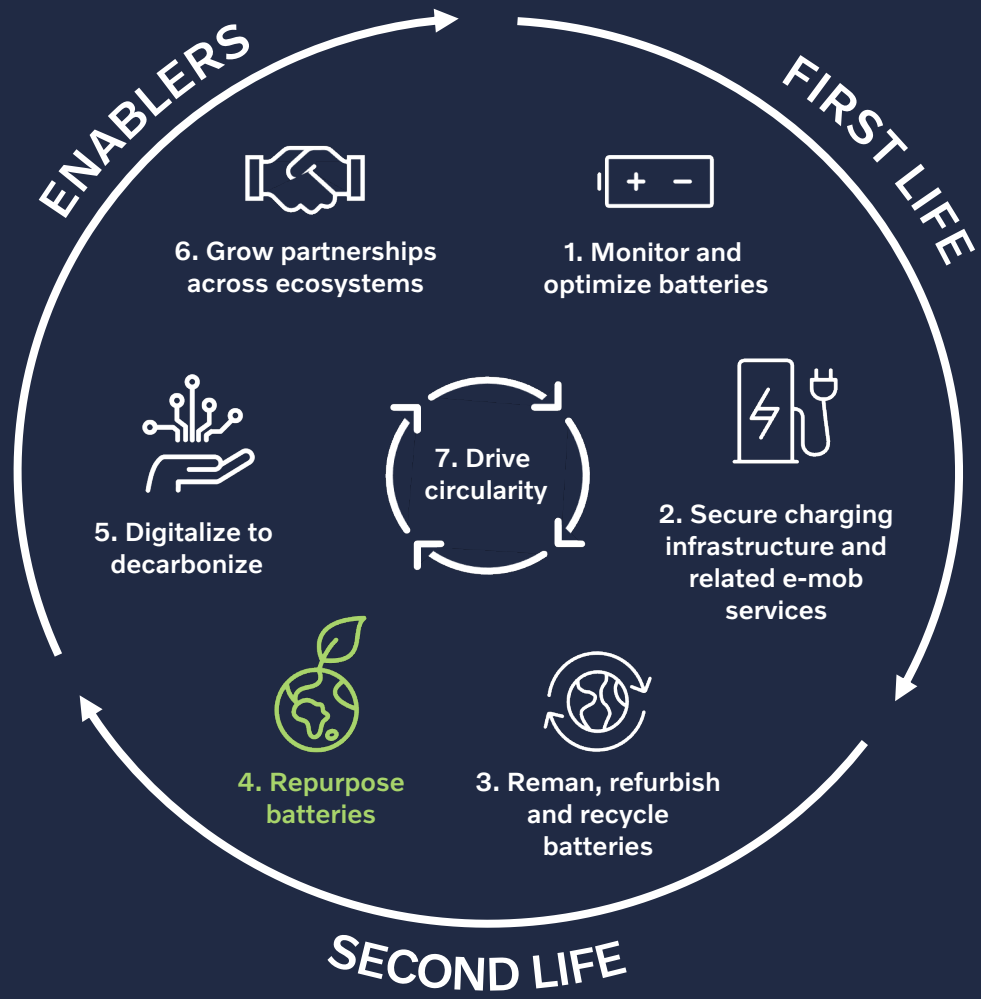
22kWh
8hrs

150kWh
1.5hrs

350kWh
45mins

1000kWh
16mins

Grid and utility connection demand



Consider the battery lifecycle

- **First life:** support Volvo Group brands with sales and service of electrified vehicles and machines.
- **Second life: c**reate an attractive and circular business model for second-life batteries.
- **Enabling and accelerating** Volvo Group's overall sustainability ambitions.

Recap

- How Electric
- Roadmap 2030
- Best practices
- Charging
- Circular Economy


VOLVO
Why?
FUTURE
GENERATIONS