“Future Focused Transport Outlook”

E-Mobility Summit Sept 2023 Auckland New Zealand

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SCANIA

Modelling the future transport scenario’s by 2040

Scenario

Biosphere highway

Global temperature increase: <2˚C
A world where sustainability leaders set the global framework for a biosphere-focused-economy. Global governance and technocrats create a high common playing field where solutions compete to solve problems. Electric transport systems have shifted to sustainable global and regional flows.

Scenario

Hyperlocal paths

Global temperature increase: 2–2.75˚C
A world of local re-use economies and virtual communities, that have marginalised governments. Technologies are open-source and small-scale, with decentral digital financing across geographies. Transition of transport system struggles; transport demand declines sharply.

Scenario

Diverging roads

Global temperature increase: >3˚C
A polarised world where strong nations focused on power lead their blocs, with very different ways of prioritising and solving problems, and impose regional standards on smaller neighbours. Transport systems, fuels, standards and resources are regional and bloc specific.

Our approach to sustainable transport

Energy efficiency

Renewable fuels
and electrification

Smart and safe transport

Scania's science based target

50%

CO_2 reduction from our operations by 2025 (2015)

Tonnes CO_2e

SCOPE 1 & 2

20%

CO_2 reduction from our products by 2025 (2015)

CO_2e/km WTW

SCOPE 3

- Electrified
- Connected
- Autonomous

Scania Safety In our DNA

Safety Systems

Active

- Advanced Emergency Braking
- ESP – Electronic Roll Stability
- Camera Detection Systems + 360 degree Area View
- Vulnerable Road User Collision Warning (Front & Side)
- Lane departure warning
- Side Curtain Airbags

Passive

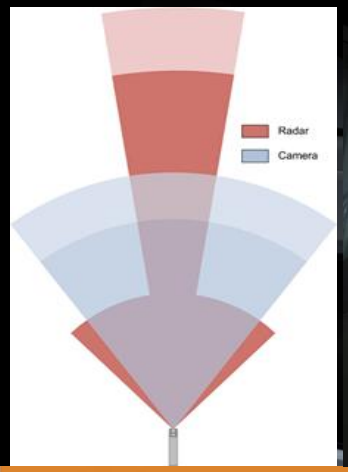
- Cab Structure (Impact) R 29 & Swedish
- Battery Side Impact protection
- Battery Cage
- Heated windscreen
- Front under run protection

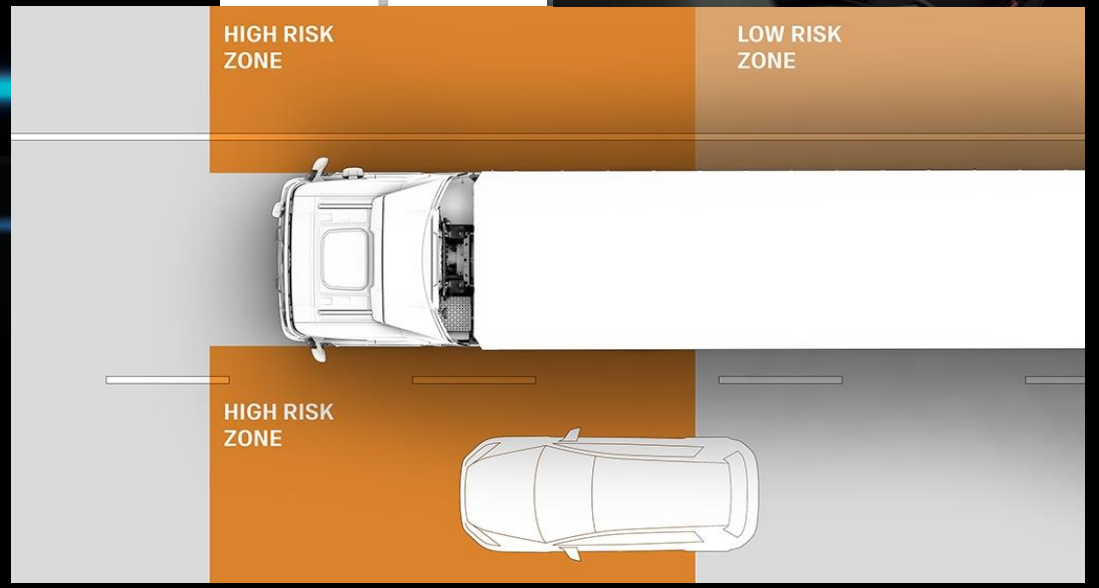
Infrastructure Protection

- Road friendly Air suspension (Front & Rear)
- Scales – Axle Weights build in
- Tire Pressure Management

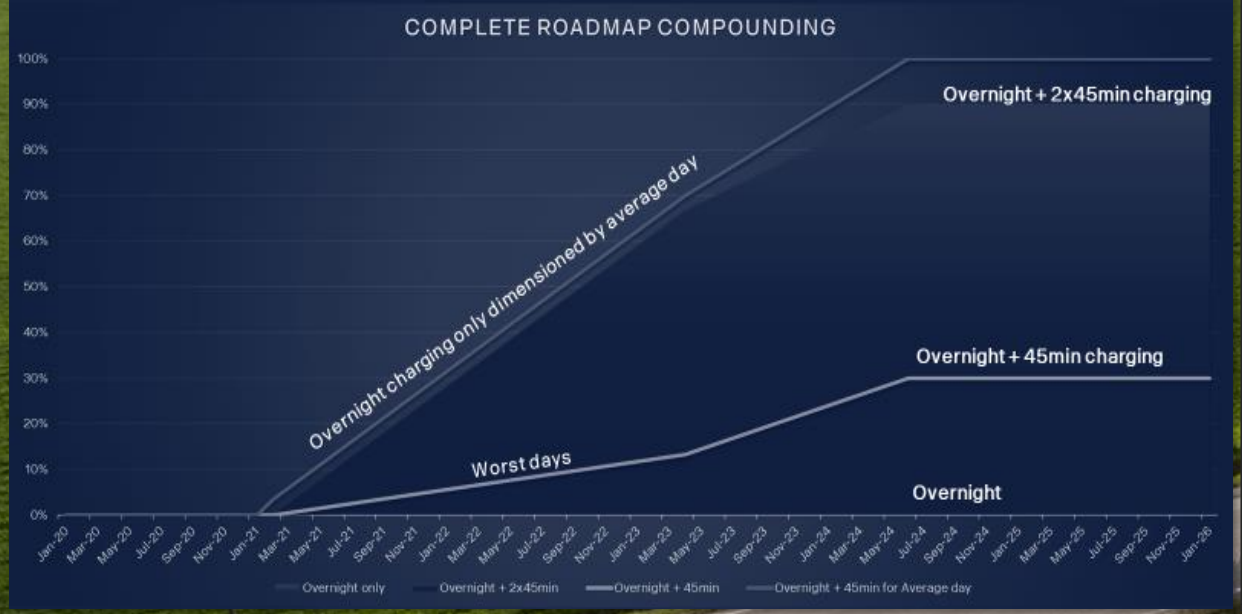
Scania Safety Support

- My Scania (Fleet Management Portal)
- Scania Driver App
- Driver Training
- Specification

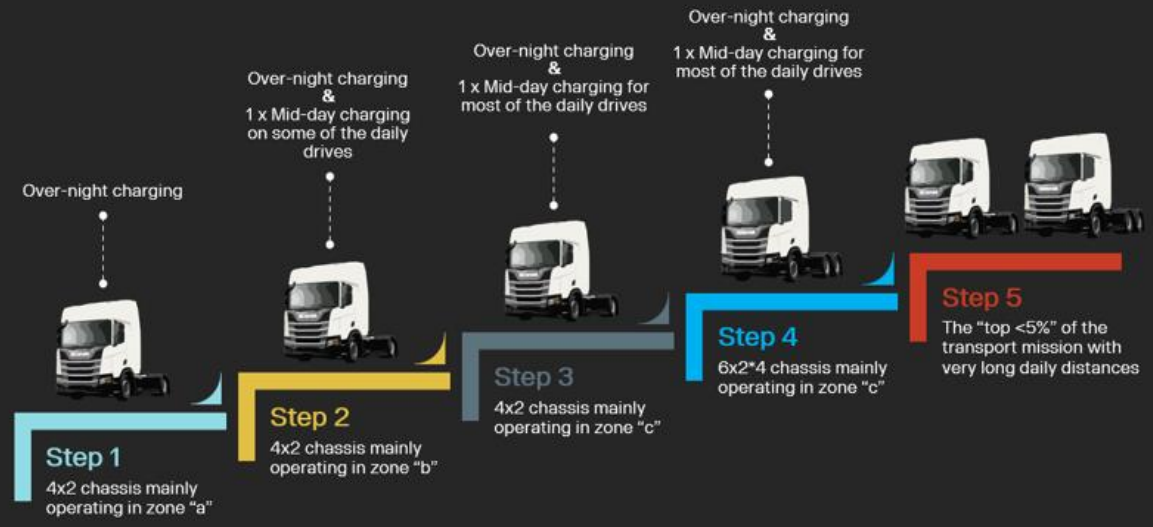




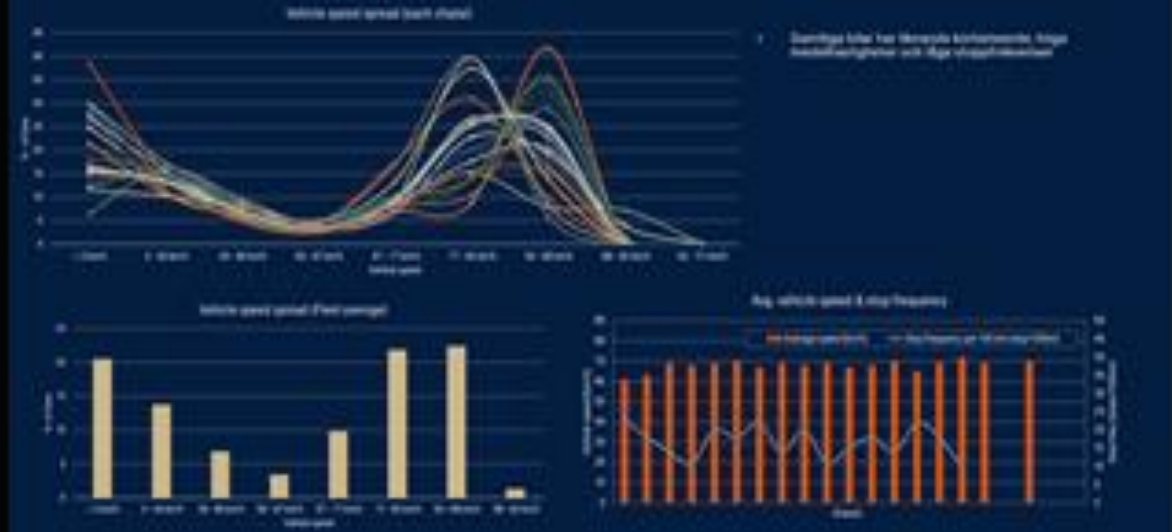
BEV ADOPTION IN FLEET



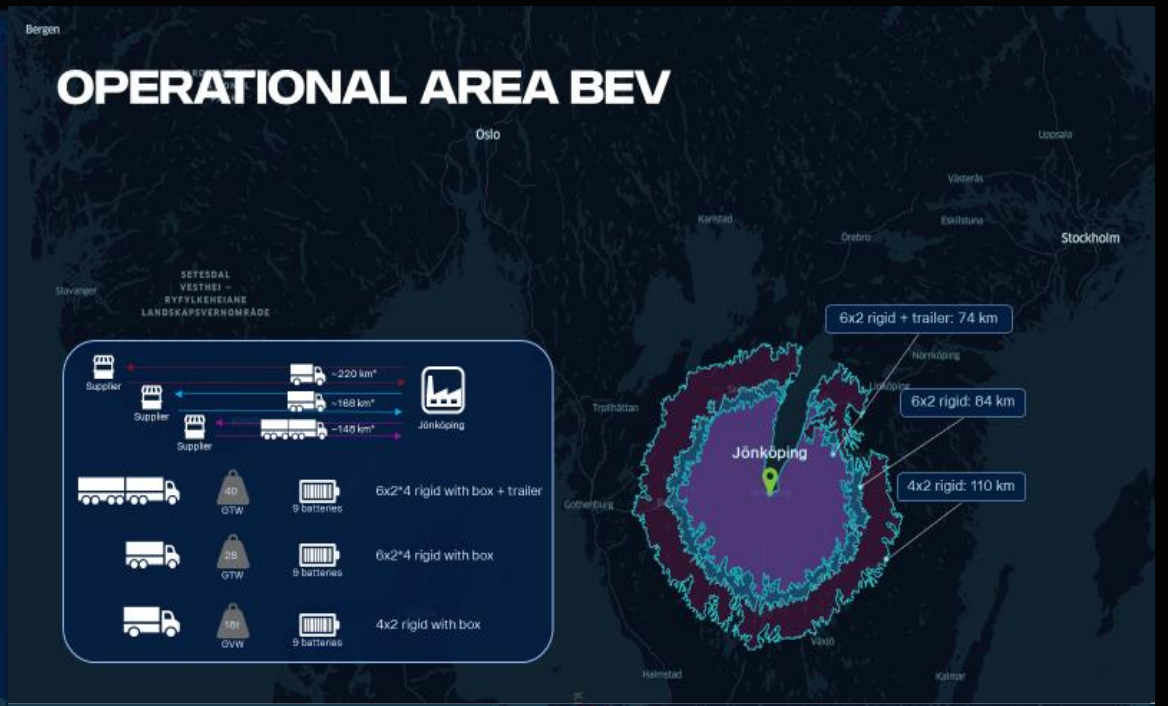
SCALE-UP PLAN



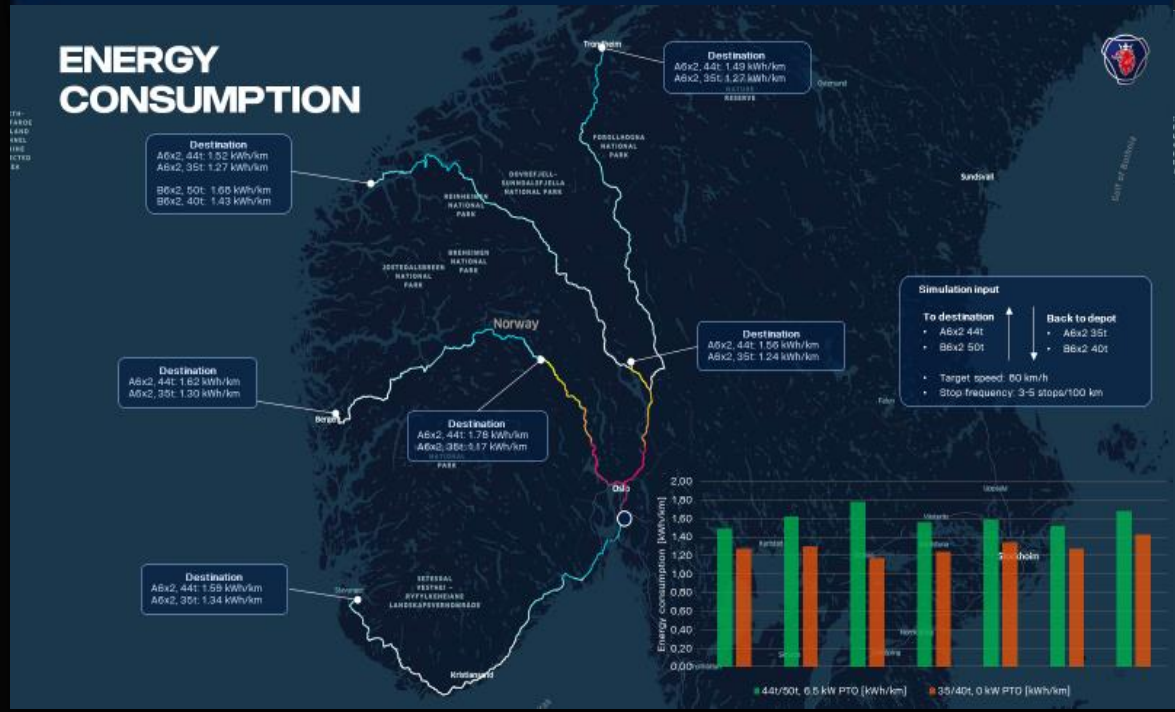
OPERATIONAL DATA



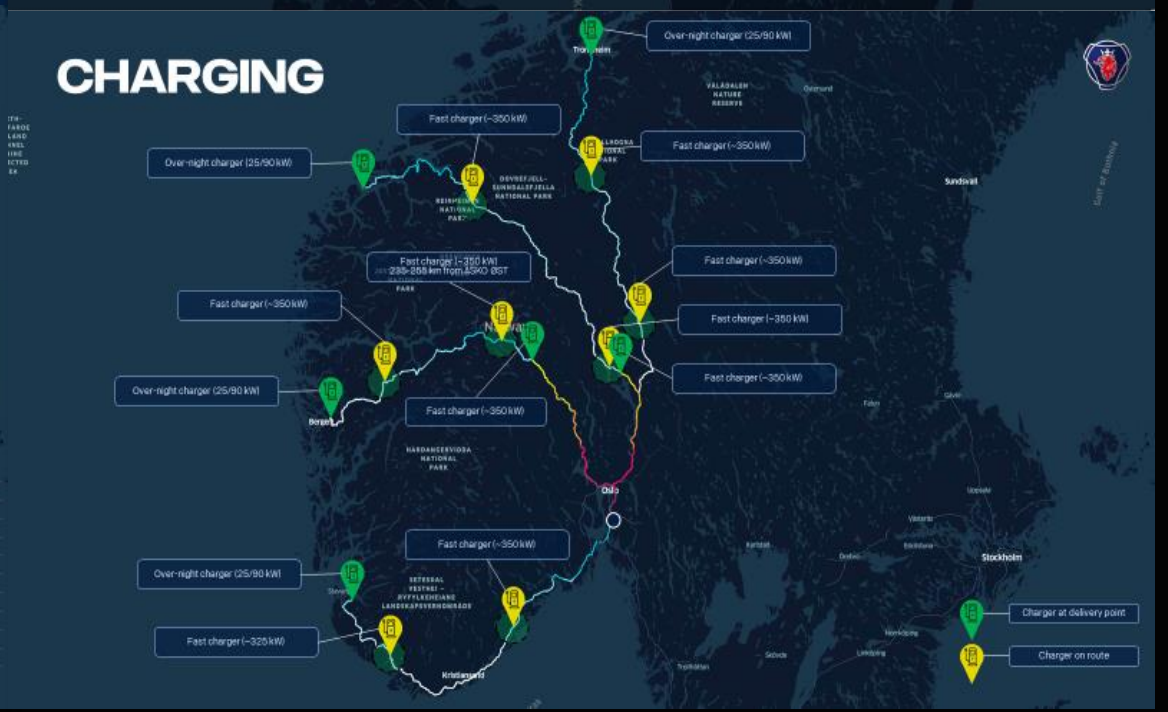
OPERATIONAL AREA BEV



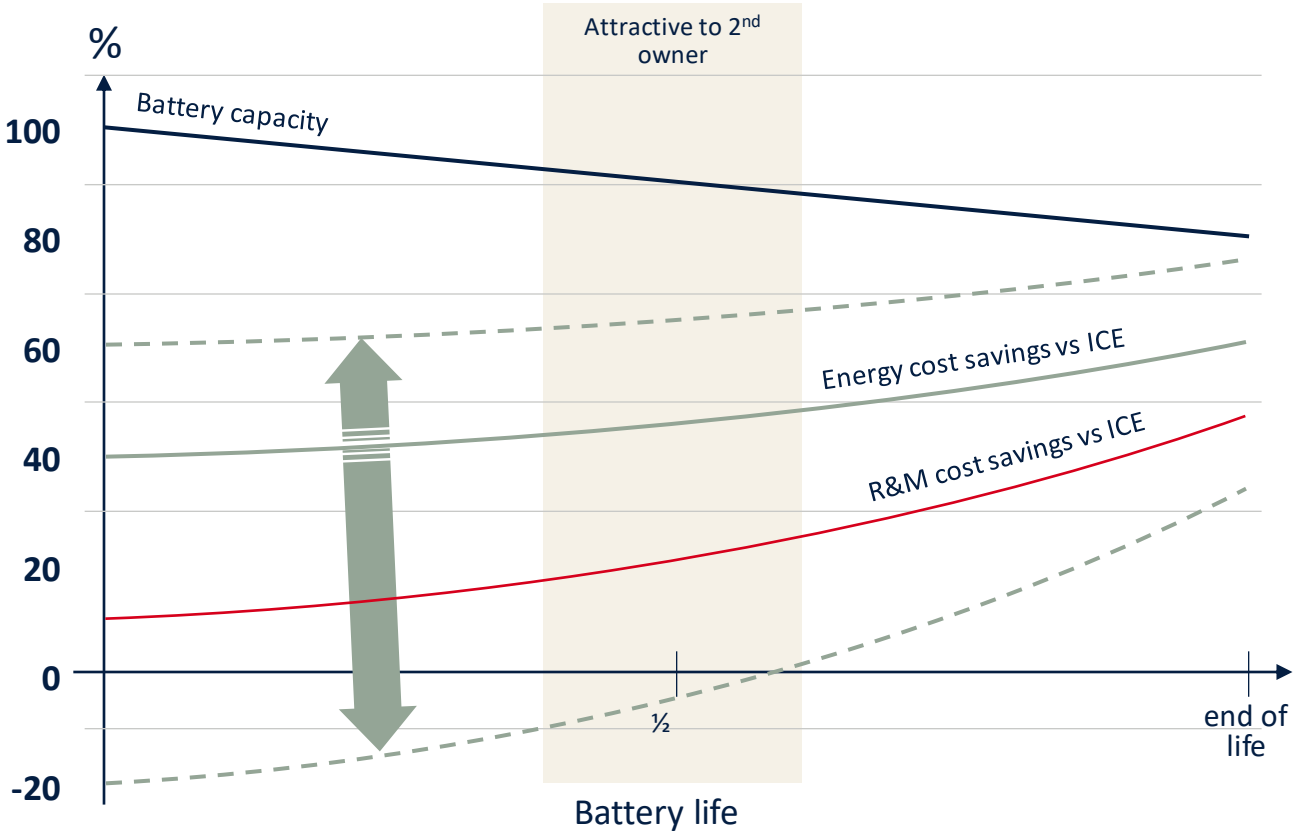
ENERGY CONSUMPTION

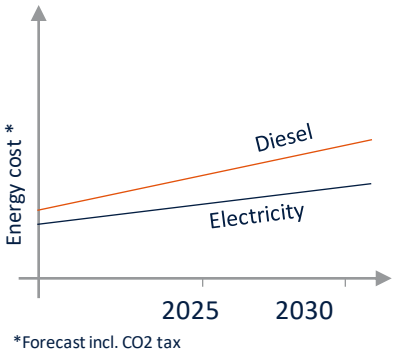


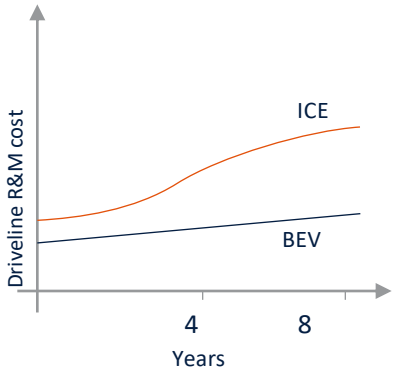
CHARGING



Next gen BEV – operation and TCO elements = attractive 2nd life





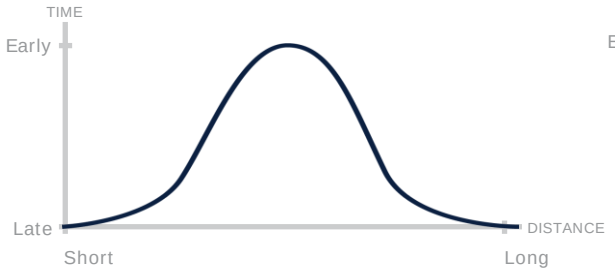


Key elements driving or delaying electrification

Must consider variance between segments (market place, customer type, application, industry)

Earlier	vs	Later
Shorter repetitive routes	⟷	Longer ad-hoc routes
High diesel to electricity price ratio (>~10)	⟷	Low diesel to electricity price ratio (<~5)
Natural time for extra charge	⟷	Less natural stop times
Mainly home depot and destination charging	⟷	Mainly en-route charging
Adaptability to electrification and balance risk	⟷	Rigid transport setup and high risk in CapEx
Not using full payload and space on frame	⟷	Pushing legal/physical dimensions and weight
Sustainability demands and incentives	⟷	No incentives, low sustainability demand

Distance



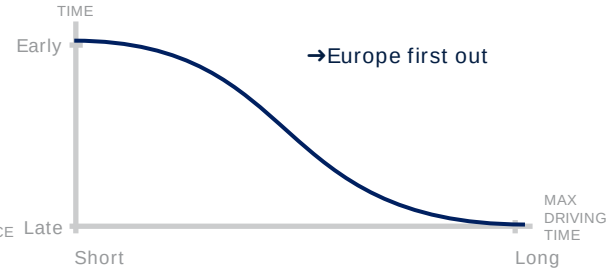
Technically feasible

Early → Late

Energy savings

Early → Late

driving hour legislation



→Europe first out

Technically feasible

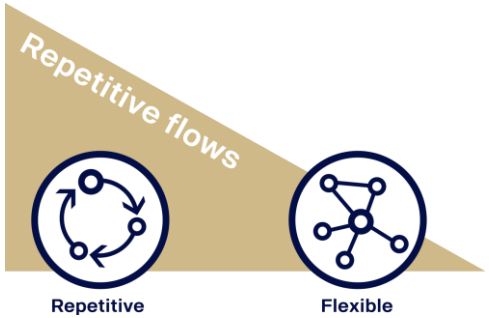
Early → Late

Energy savings

Early → Late

Repetitive operation

- Repetitive routes speeds up electrification from less need of flexibility of vehicle and setup
- High variation delays electrification as it requires bigger energy margins, a more flexible chassis layout and built out charging infrastructure.

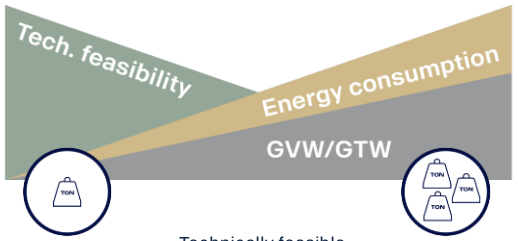


Early → Late

GVW

Higher vehicle or train weight:

- \+ Larger energy savings
- − More installed batteries
- − More powerful powertrain



Technically feasible

Early → Late

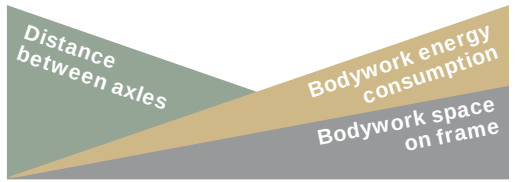
Energy savings

Early → Late

Specification and bodywork

High impact on max battery capacity:

- − More axles
- − Short axle distance
- − Bodywork on frame side
- − Vehicle powered bodywork

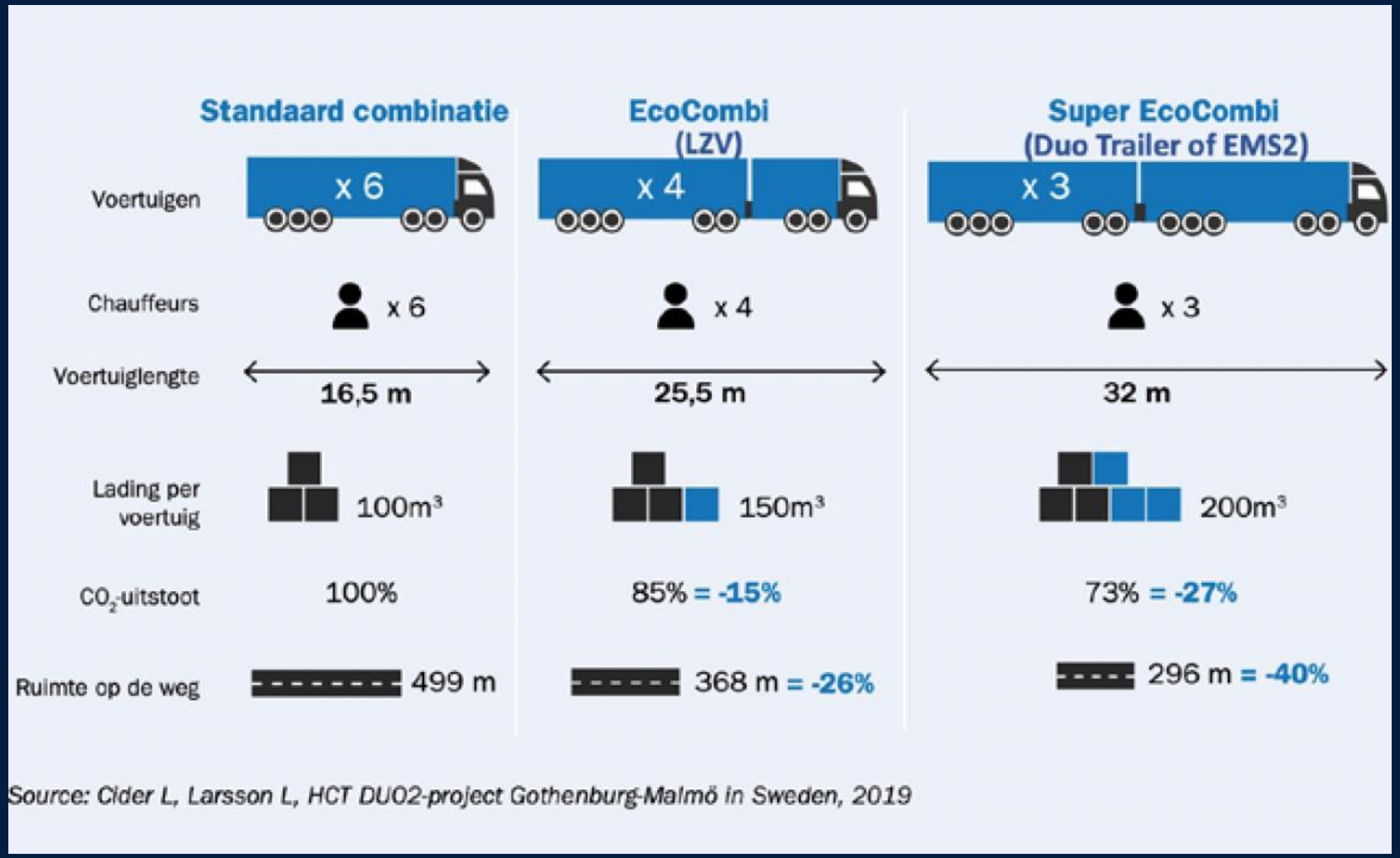


Technically feasible

Early → Late

Co2 reduction

Retaining Freight Efficiency
Reducing Truck- Trailer Intensity on Road
Modular freight systems
HPMV adaptation



Source: Cider L, Larsson L, HCT DUO2-project Gothenburg-Malmö in Sweden, 2019

Political Ambition ahead of Current Legislation

VDAM future for Heavy BEV

Prescriptive or Adaptable ?

Increased Dimensions
Mass & Length?

Improving or Retaining Freight Efficiency?

Fit for purpose ?

Axle Mass increase
Front Axle
Rear Axle
Wheel base increase
Overall Length

New Pro-forma Developments for BEV ?

Acceptance of EU Dimensions icw / UN/ECE REG

Industry Working group ?

VIRM update ?

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Thank You