E-TRAILER

2026-10-07 HCT- NORDIC

What is an eTrailer

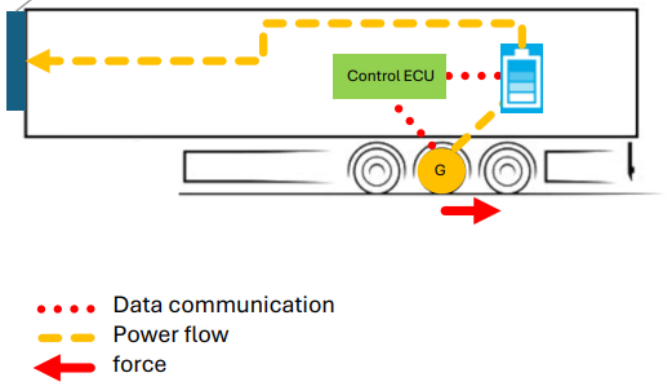
An eTrailer is a trailer with a complete electric propulsion system

- A full powertrain

R13 amendment and ISO 11992-2 will be valid for E-trailers.

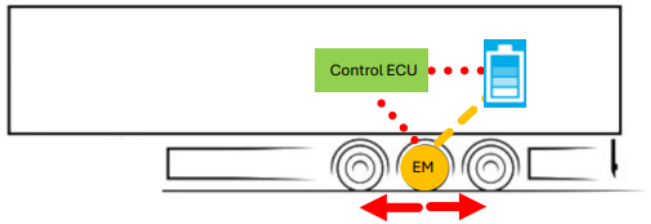
Dynamo trailer

The trailer recuperates energy for trailer users, e.g. a cooling unit (usually energy consumption < 20 kW)



E-trailer

The trailer recuperates energy and provides propulsion. Trailer users (cooling unit) may be installed as well.



Why does it matter?
eTrailer - Values

Value area	BEV + eTrailer	ICE + eTrailer
Main value	Extends range and operational capability	Hybridizes the vehicle combination reduced CO2
Energy efficiency	Improves energy use through regenerative braking	Reduces fuel demand and engine brake usage
Driveability	Better startability, acceleration and hill performance	Better startability, acceleration and hill performance + Lower peak load on engine and clutch in demanding operation
Stability and braking	Better downhill control and reduced trailer push	Better downhill control and reduced trailer push
Extra power use	Can supply energy to trailer equipment	Can supply energy to trailer equipment

Volvo Group
Lena Larsson Volvo Technology

eTrailer Volvo

2019 Traffic safety & Energy effectivenes
- Braking (stability and energy recuperaton)
- Driving forward and backwards

2020 Covid – eTrailer work started
- 1st etrailer Container chassi on top of a Volvo chassi

2022 internal test

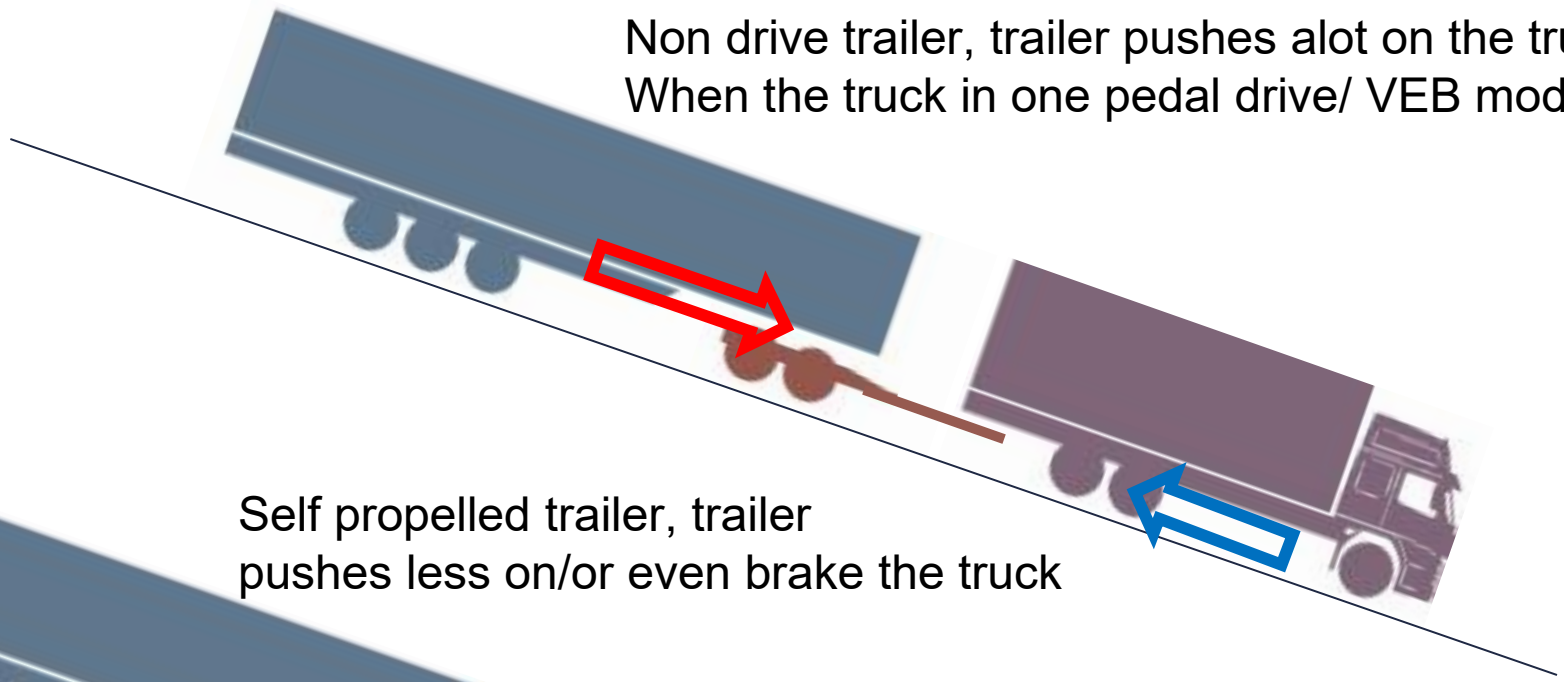
2022 Regulationwork started

2024 Penta cooperation started
Presentation Nordic Minister Meeting

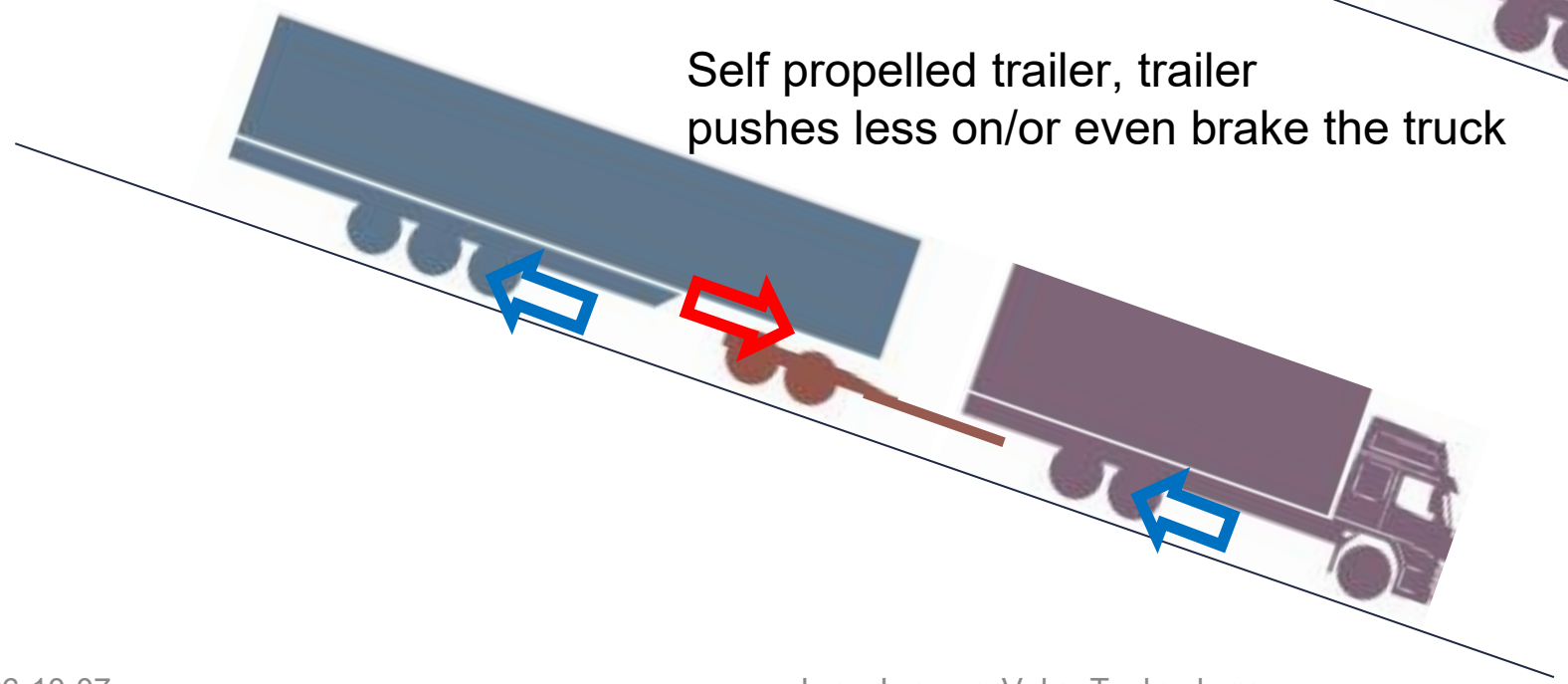
2025 start Fieldtest at customers,

- REEL (2025) ➔ ZEFES/E-Charge 2 (2026)
  - Erikssons (Refrigarated boxtrailer)
  - DFDS (Container trailer)
- DHEELS (2026)
  - Pohjanen & Ström (Timber trailer)
  - Mattssons (Container trailer)
  - DAGAB (Refrigarated boxtrailer)

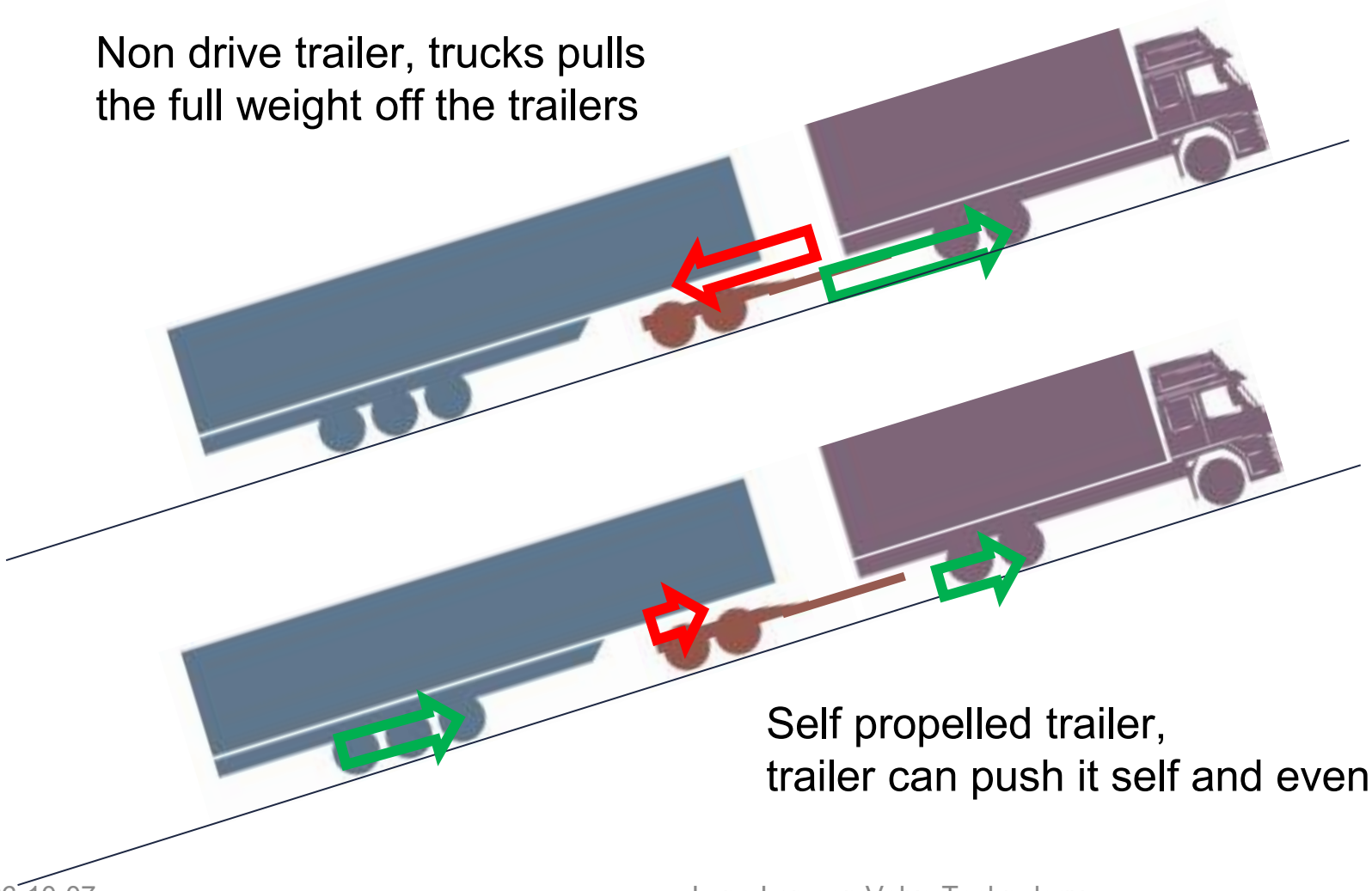
Non drive trailer, trailer pushes alot on the truck
When the truck in one pedal drive/ VEB mode



Self propelled trailer, trailer
pushes less on/or even brake the truck



Non drive trailer, trucks pulls
the full weight off the trailers



Self propelled trailer,
trailer can push it self and even help the truck

What are the obstacles

- Legislation & Registration
  - EU and National
- Standardisation
  - ISO & Regulation
- Knowledge of the business case
- How does eTrailer work practically in different application
  - What are the bounderys – advantages/disadvantages we need freedom to explore this
- Technical questions
  - Mass estimation for Brake sytem - ESP, EBS, AUTO-Brake
    - There are many reasosns that we need to take control of our product.
  - Exhange of Energy/Torque use between truck and trailer
  - ....

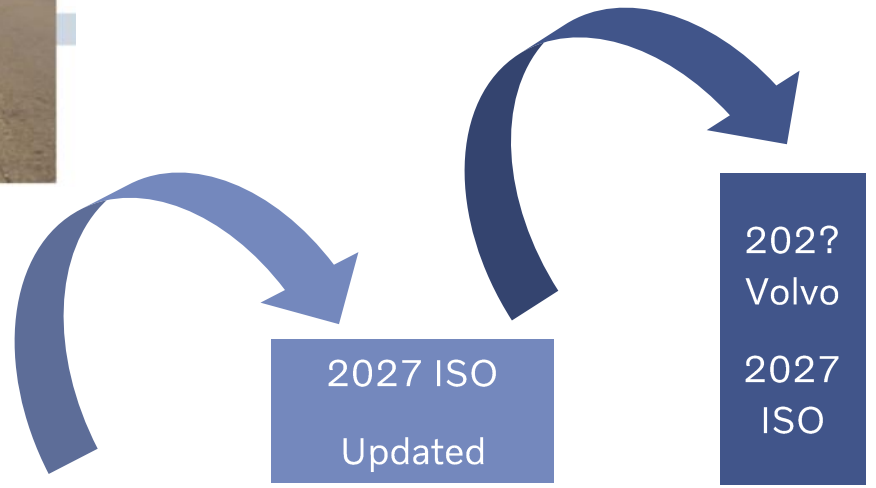
Submitted by the experts from CLCCR/CLEPA/OICA

Informal document **GRVA-21-41**
21st GRVA, 20-24 January 2025
Agenda item 8(c)

UN Reg 13 amendment for e-axles and self-propelled trailers

CLCCR / OICA / CLEPA
Industry Task Force

GRVA-21
20-24 January 2025



eTrailer Demonstrators Volvo

DAGAB (DHEELS)

- Nordisk kombination
- Skåppåbyggnad tempererad
- Upp till 71 ton
- BEV+eTrailer

Berndt Mattsons Åkeri (DHEELS)

- Long B-double
- Göteborg – Borås
- Upp till 80 ton
- 2x 40ft containrar
- 3 BEV dragbil b-dubbel
- BEV+eTailer

DFDS (REEL/eCharge2)

- Tractor semi
- Göteborg
- Upp till 50 ton
- BEV+eTailer

Erikssons åkeri (REEL/ZEFES)

- Nordisk kombination
- Skåppåbyggnad tempererad
- Upp till 70 ton
- BEV+eTrailer

Pohjanen & ström (DHEELS)

- AB-kombination
- Upp till 90 ton
- ETT - En Trave Till
- -10% bränsleförbrukning
- ICE+eTailer

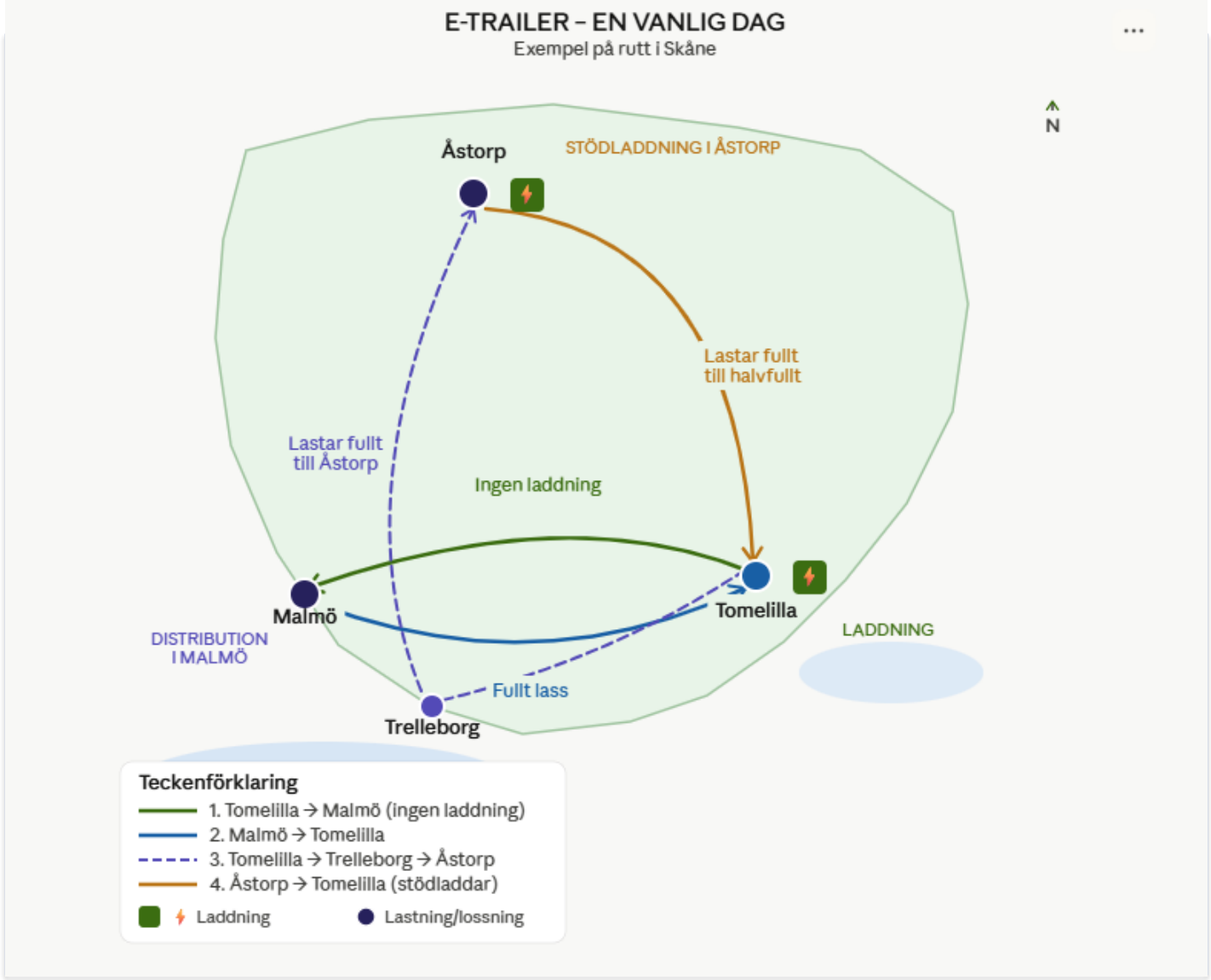
VOLVO

CUSTOMER FEEDBACK – FIELDTESTS

DRIVEN 2026

The Route: what does a typical day with an e-trailer look like?

Daily operations, route setup and traffic planning in practice.



Example of route setup in Skåne

2 shift + 70t + longer range thanks to E-trailer

Charging sessions in real operations

Home charging and public charging show how the e-trailer combination is already used operationally today.

Tomelilla shows home charging with self-produced renewable electricity. Helsingborg and Åstorp show public charging in real operations, and at the same time why future MCS stations need to be planned for full vehicle combinations with the right parking layout, accessibility and charging logic for both truck and trailer.

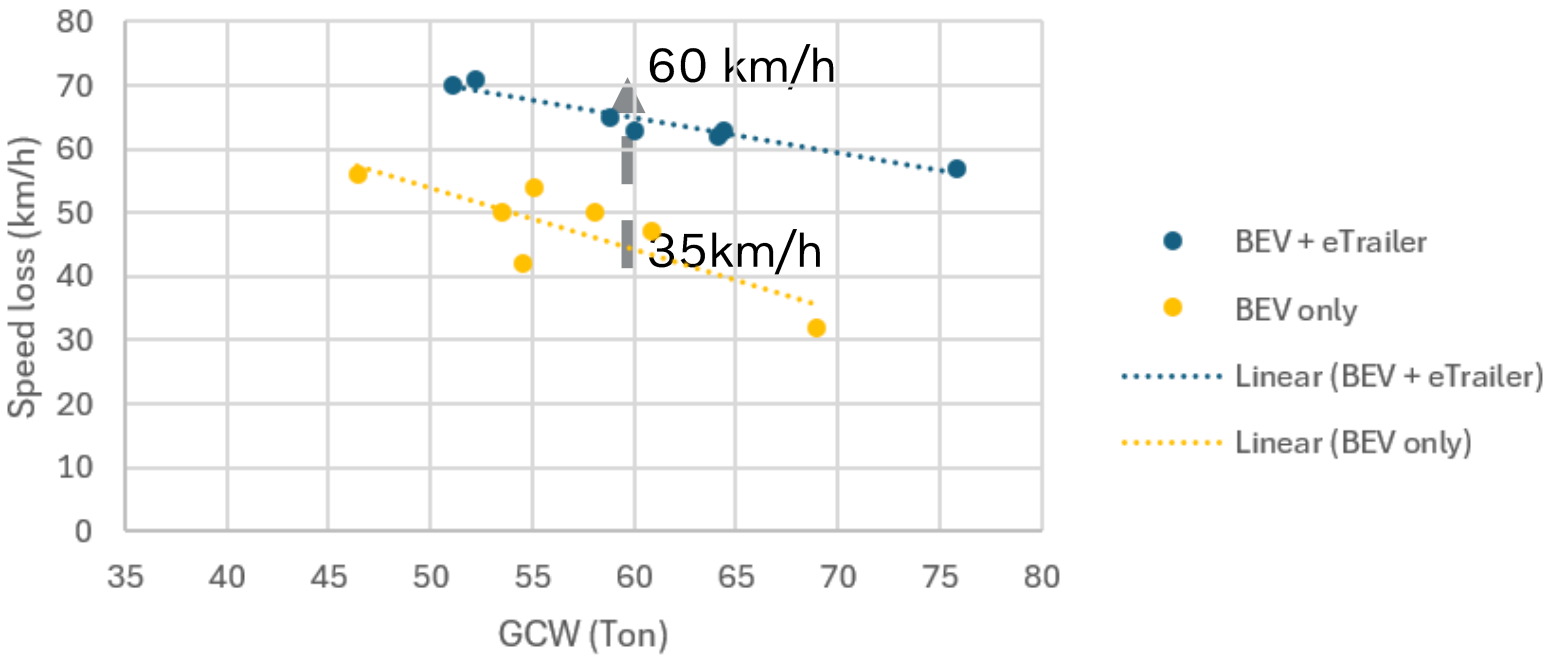
Home charging in Tomelilla

Public charging in Helsingborg

Public charging in Åstorp

Example on speed uphill ~4% (2,3 degree)

- Logg data from the field-test



Total continues power in combination: 500+160= 660KW

Example range with eTrailer vs BEV truck only

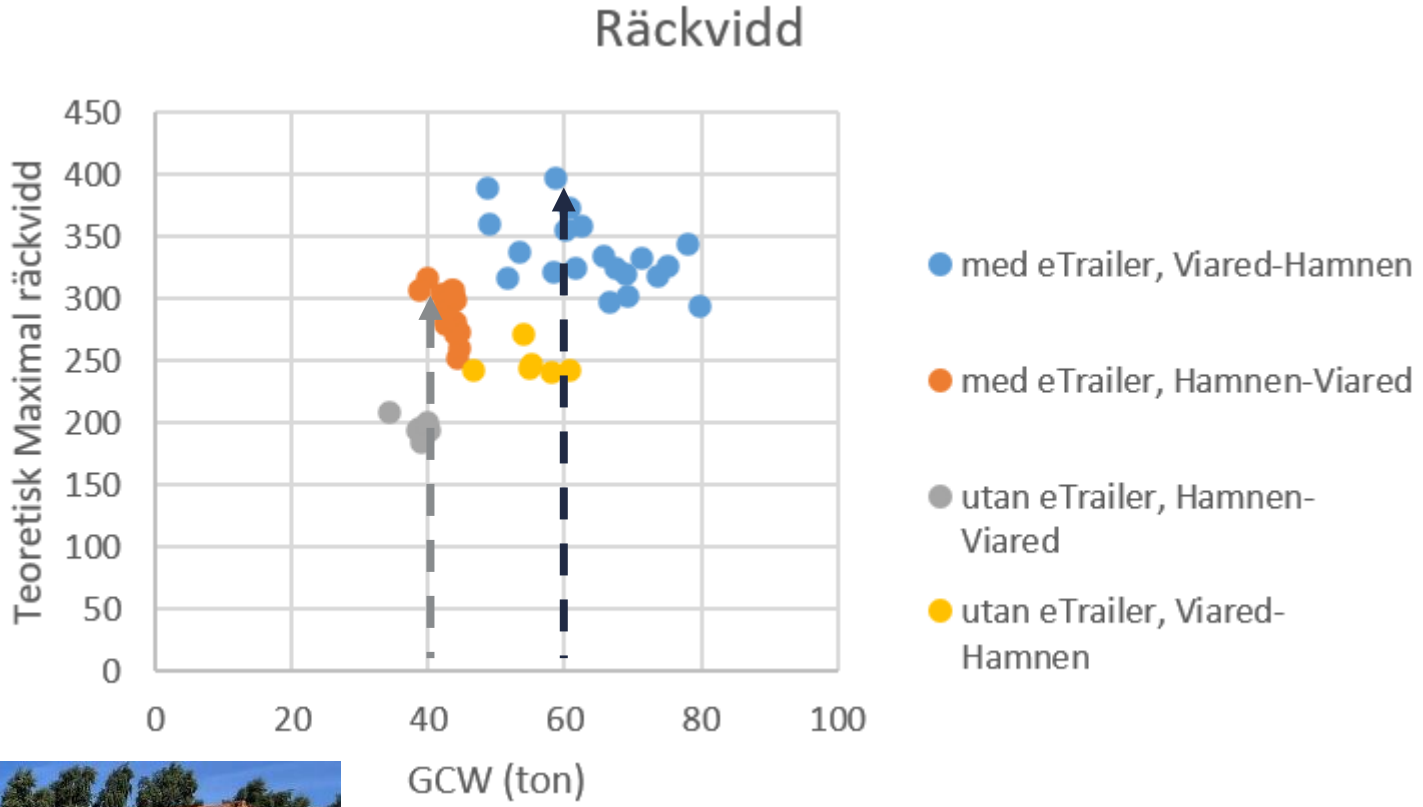
Truck –Dolly -Semitrailer 25,25m

- 66% more energy in the combination vs BEV only.
- 900 vs 540 kWh (Installed energy)

Average range + 40 %:

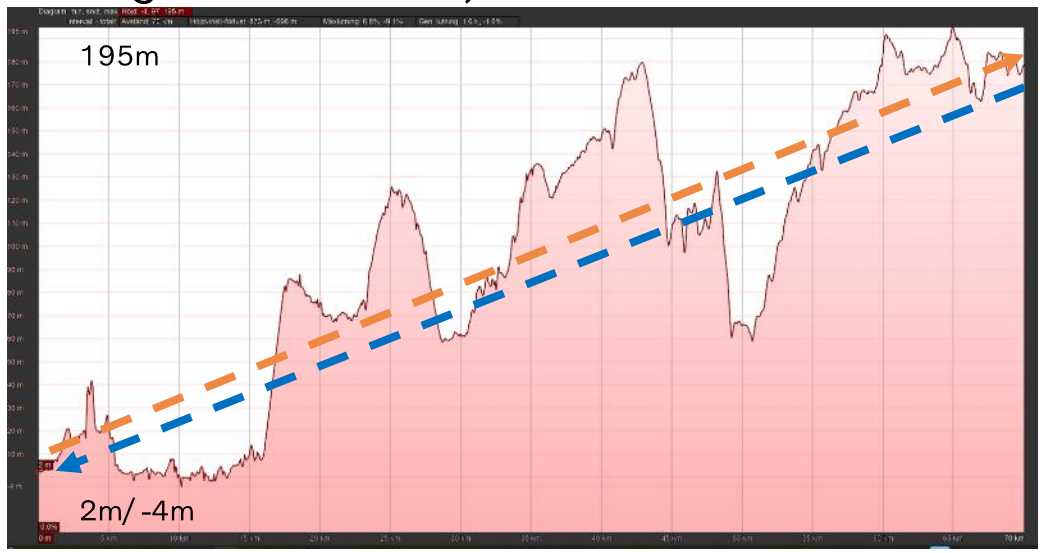
- 200 to 275 km at 40 ton GCW, to Borås
- 250 to 350 km at 60 ton GCW, from Borås
  - Best value 400km (60%)

Very limited data, only 3 days wo eTrailer.

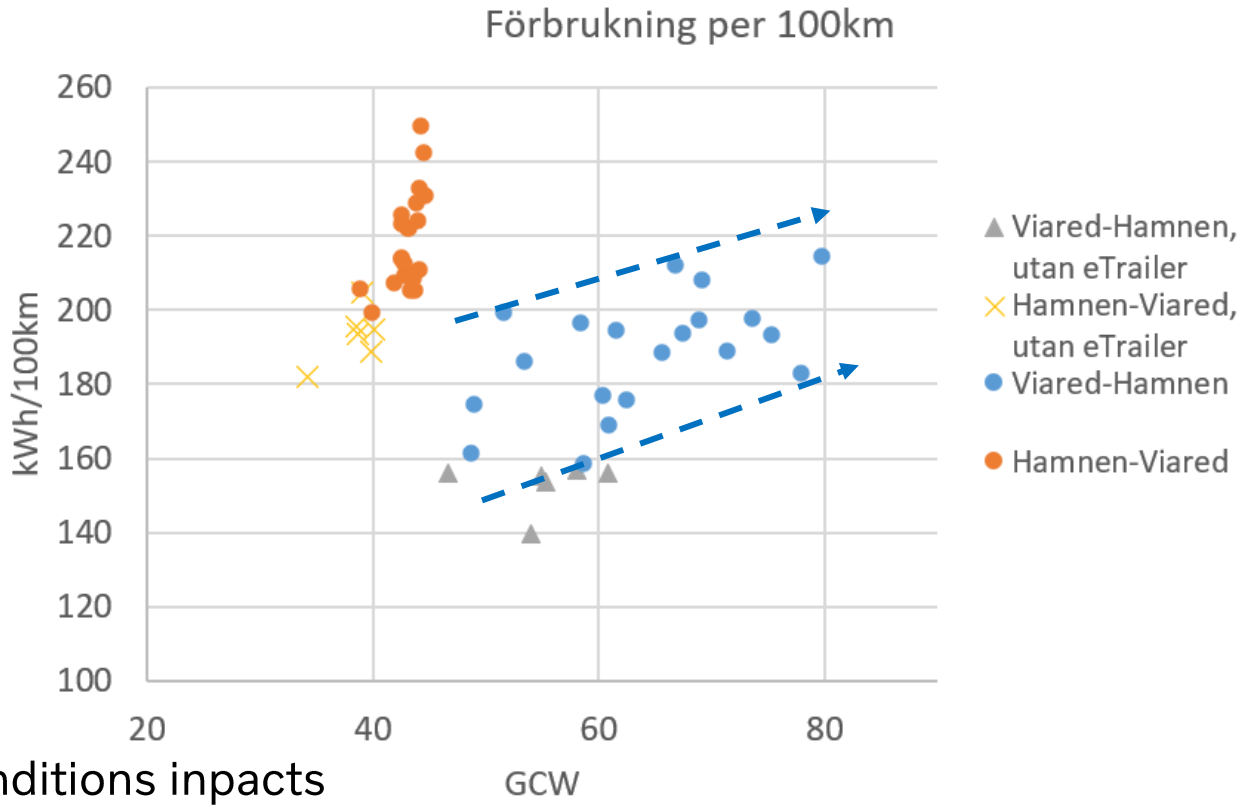


Why do we have longer range at higher weight?

Up 873m down 696m ➔ diff 177m
Harbour to Volvo Busses
Avarage inclination 1,6% max 7%



Hamnen Viared Buses



Different roads, traffic situation and weather conditions inpacts the result, but height difference is always important

Who are active, examples

Europe

- **HAN Uni** (CHANGE)
  - Nooteboom, Kraker, Burgers carrosserie
  - Fieldtest in Denmark & the Netherlands
- **Scania** (TREE)
  - OP Höglund
- **TrailerDynamics** (Krone & Jost)
  - Scania, MB, DAF, Volvo
- **VAK**
- **Volvo** (Penta & CPAC)

– Ekeri, Hammar, Kilafors, CMT (REEL & DHEELS)

- **ZF** (Wabco)
  - Kässbohrer, DAF Scania, Volvo (ZEFES)

America

- Randon
- Range Energy

VOLVO

eTrailer market overview

- **The market is developing quickly, but concepts differ significantly in energy size, application focus, infrastructure dependency, and maturity.**

Company / concept	Power	Battery	Stated benefit	Comments / positioning
Volvo eTrailer	145 kW continuous, 195 kW peak	126 to 252 kWh usable, depending on concept	CO2 reduction and BEV range extension	Two concepts shown in this presentation: high-capacity and protected-packaging
Trailer Dynamics	360 kW continuous, 580 kW peak	187, 360, 551 kWh	40 to 55% fuel reduction, up to ~100% range extension	Strong positioning on both diesel reduction and BEV support
Econogy (yDrive)	250 kW peak	30 kWh	Around 40% CO2 reduction	Positioned mainly for urban stop-and-go operation with regeneration focus
Range Energy	n/a	300 kWh	Around 50% CO2 reduction, ~67% range extension	Early commercial phase, deliveries planned from late 2026
Scania TREE	180 kW continuous, 250 kW peak	200 kWh	No published figures yet	Timber-focused concept, similar protected battery layout between frame rails
Revoy	n/a	525 kWh	Around 85% CO2 reduction	Link-based swap concept, depends on dedicated station model

The European trailer industry are fully occupied with trying to convince EU to rework the VECTO for trailers

https://www.linkedin.com/posts/krone-commercial-vehicle-group_vecto-activity-7501927108382932992-qQoB?utm_source=share&utm_medium=member_ios&rcm=ACoAAAOasN0BA3x17kQhWLbeNlqLJZwziSkBFtI

At Volvo we belive that eTrailers can contribute with

- Extends range for BEV as well as and operational capability
- Hybridization of ICE trucks

====== ICE & BEV======

- Improves energy use through regenerative braking
- Higher Gross combination weights
- Startability, acceleration and hill performance
- Downhill control and reduced trailer push
- Supply of energy to trailer equipment

More about Erikssons eTrailer

Scan QR-code or use link:
vimeo.com/1155014954