



# High Capacity trucks in Europe

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**V O L V O**



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# Agenda

1. Road transport technology in 2026
2. How do we tackle the challenges?
3. Outlook for the near future

# Heavy transport in Northern Europe

Heavy loads & long distances

- Cold and dark in winter
- Light and warm in summer
- Wet in between



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# -30%

Expected CO<sub>2</sub> reduction by 2030 compared to 1999 by EU ?

Can this be achieved?

We estimate that goods transport on road will increase with 40 to 50% between 1999 and 2030



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# 30 years of truck development 1995 -2026

~ 30 % fuel consumption reduction achieved



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# eTrucks & eTrailers are coming



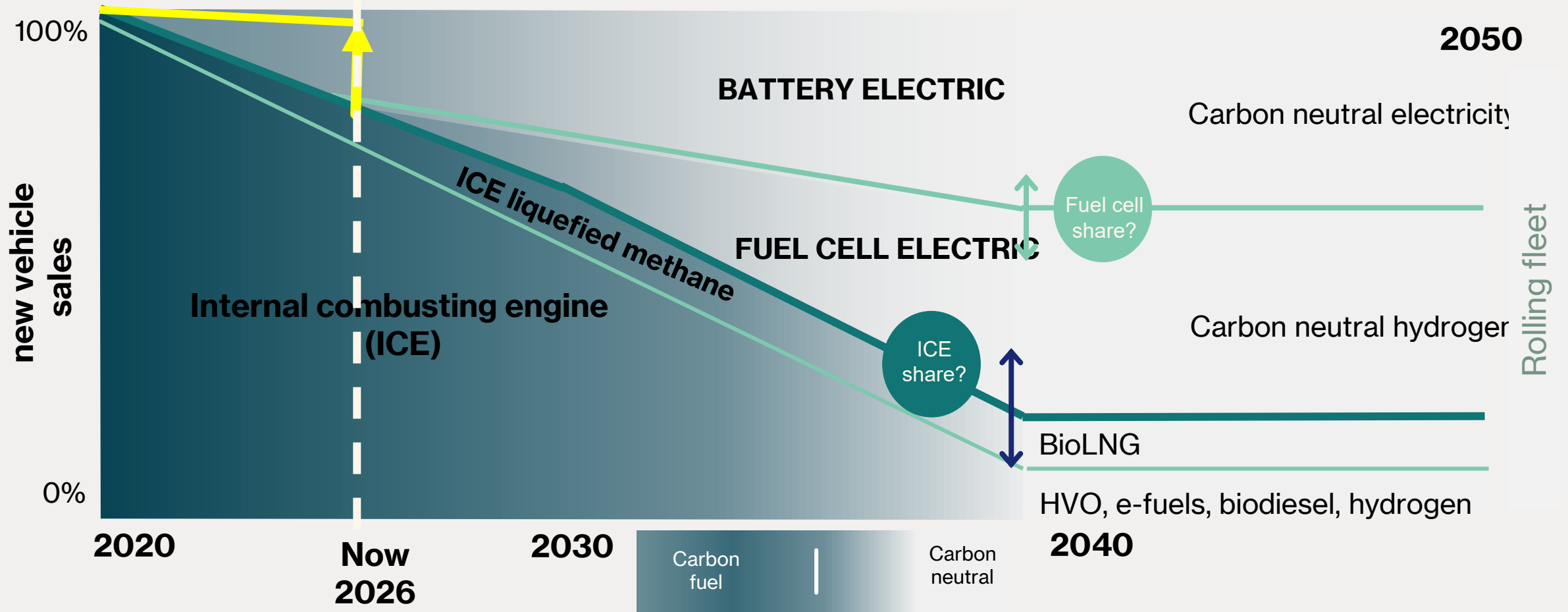
- Number of battery electric trucks are slowly increasing
- Test with eTrailers has started
  - This is a 25,25m / 70 ton combination driving in 2 shift operation.



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# AB Volvo Scenario 2020 for transition of rolling fleet to 2050

## Status 2026, Europe



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# So what can HCT (EMS1 & EMS2) combinations achieve?

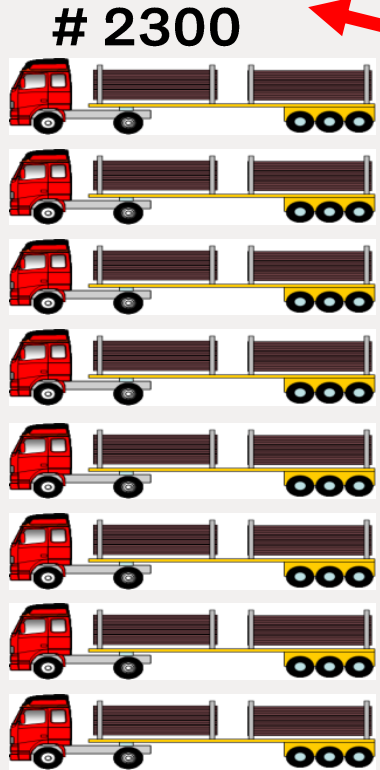
## Some examples:

- Heavy Goods, roundwood, industry, mining
  - 40 → 60 ton 17%,                      40 → 74/76 ton 25%
  - 60 → 74/76 ton 10%,                60 → 90 ton 20%
- General cargo
  - Singel to DUO-trailer 25% (around 60 ton in average)
- Containers, light goods
  - Singel to DUO-trailer 30% (around 50 ton in average)



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# Roundwood CO<sub>2</sub> emissions, Sweden 60 ton base



# 1500truck /3000drivers



# 1100t/2200d



# 900t/1800d



- 7 to 15%

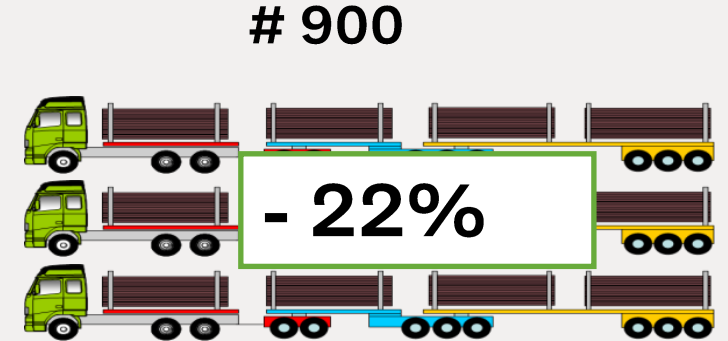
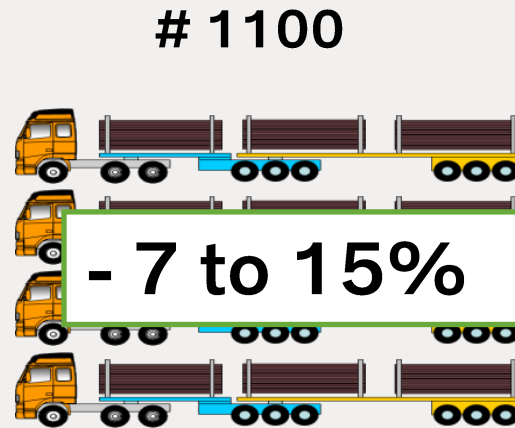
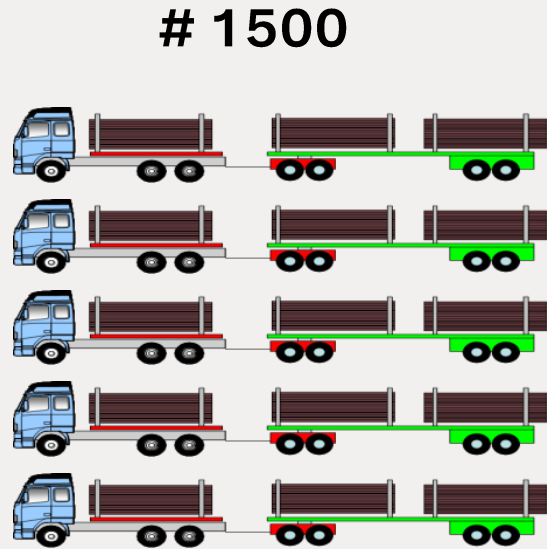
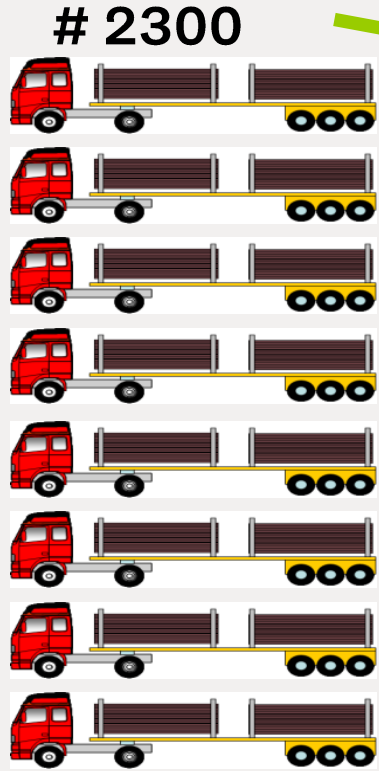
- 22%

40	60	Gross weight (Ton)	74	90
120%	100%	Fuel or CO <sub>2</sub> /tonkm	90%	80%
8,0 (40ton)	8,6 (60ton) 9,1 (64ton)	Ton/axel	8,2 (74ton)	8,2 (90ton)



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# Roundwood CO<sub>2</sub> emissions, Sweden if 40 ton where base



40

60

Gross weight (Ton) 74

90

100%

83%

Fuel or CO<sub>2</sub>/tonkm 75%

67%

8,0 (40ton)

8,6 (60ton)  
9,1 (64ton)

Ton/axel

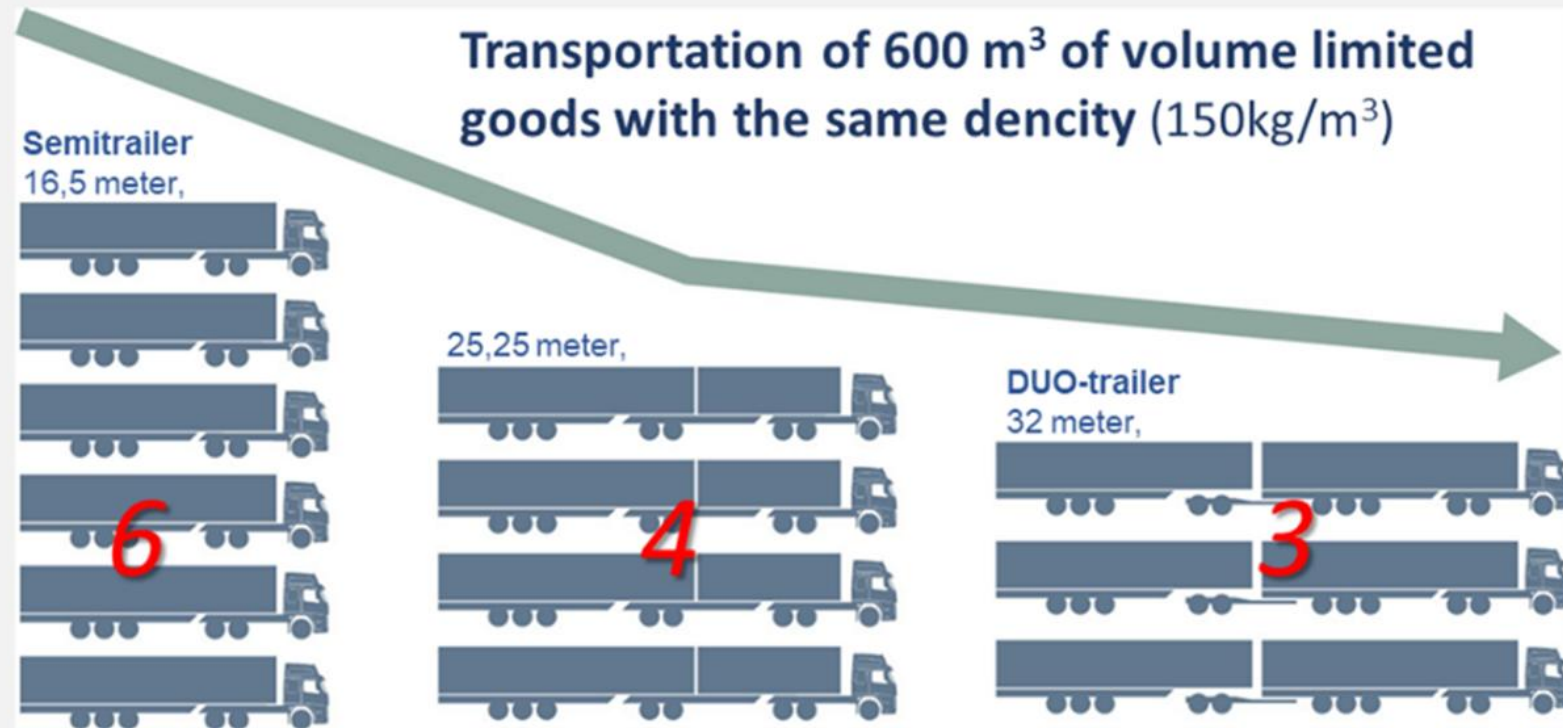
8,2 (74ton)

8,2 (90ton)



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# From Singel to DUO-trailers



<b>Load/vehicle:</b>	100%   100 m <sup>3</sup>	150%   150 m <sup>3</sup>	200%   200 m <sup>3</sup>
<b>CO<sub>2</sub>-fuel/m<sup>3</sup> km :</b>	100%   3,5ml/ m <sup>3</sup> km	85%   3 ml/ m <sup>3</sup> km	73%   2,5ml/ m <sup>3</sup> km
<b>Road use:</b>	100%   499 m	74%   368 m	60%   296 m
<b>Vehicle &amp; drivers:</b>	100%   6	67%   4	50%   3



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Duotrailer 30-35% lower fuel consumption than 2 singeltrailers



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# 1. Road transport in EU

- What if more longer combinations could be used?
  - Congestions, driver shortage, energy use
- What if “turning” rules like in Sweden & Finland could be spread.
  - 180 degree in Sweden and 120 degree in Finland
- For heavy goods use more axles per truck & trailer.
  - Finland, Denmark and some others already have
    - 5 axle trucks & 4 axle groups on trailers.



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# Development of longer combinations in Europe

Max length in Sweden 2026

## 25,25m 60 ton

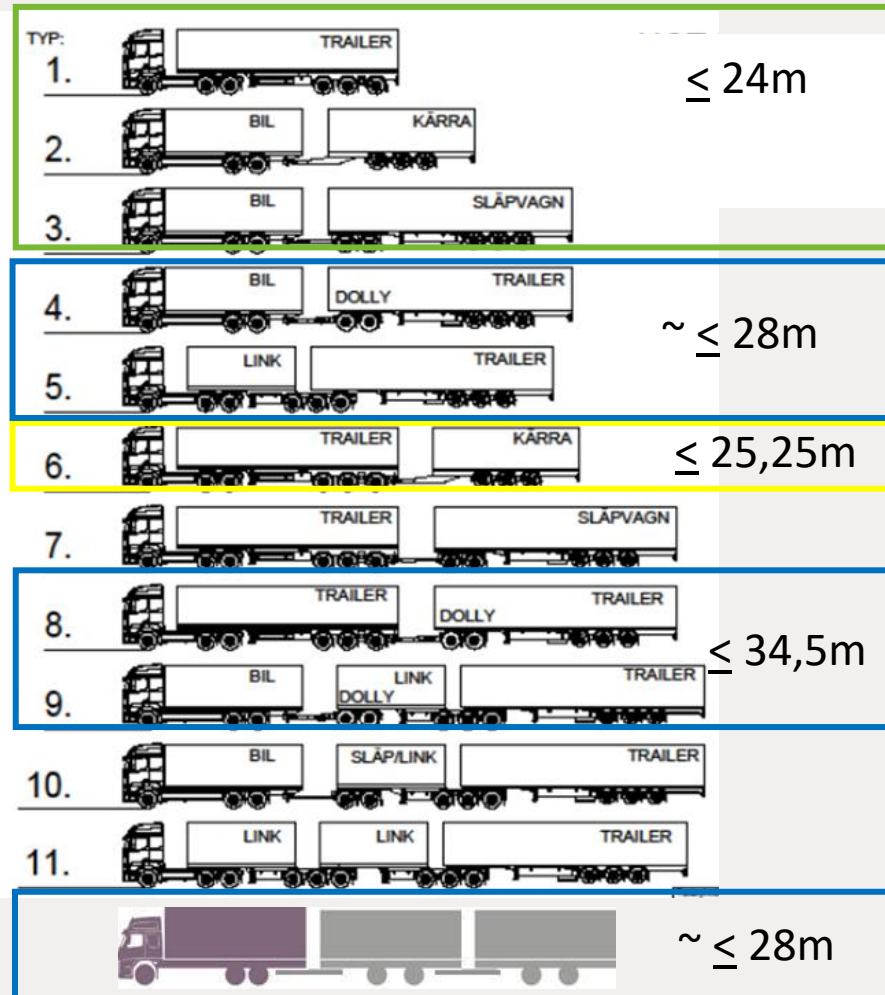
- 1997 25,25 Sweden & Finland
- 2005 Portugal wooden products
- 2007 Iceland (49T)
- 2008 Denmark / Czech rep (48T)
- 2013 Netherlands
- 2014 Norway
- 2016 Spain / Germany (40/44T)

- 
- 2013 Finland → 76
  - 2015 Sweden → 64 → 74 (2017)
  - 2026 Denmark → 64

## 34,5 / 32 / 28 m

- 2019 Finland 9 comb (3-11)
- 2022 Spain 1 comb (8)
- 2023 Sweden 2 comb + 3 comb 2025 → 5 comb
- 2024 Denmark 1 comb (8)
- 2027 Denmark 2 comb (8 & 9)

Denmark corrected 2026-05-06



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# From regulation to implementation, 34,5m

## Finland

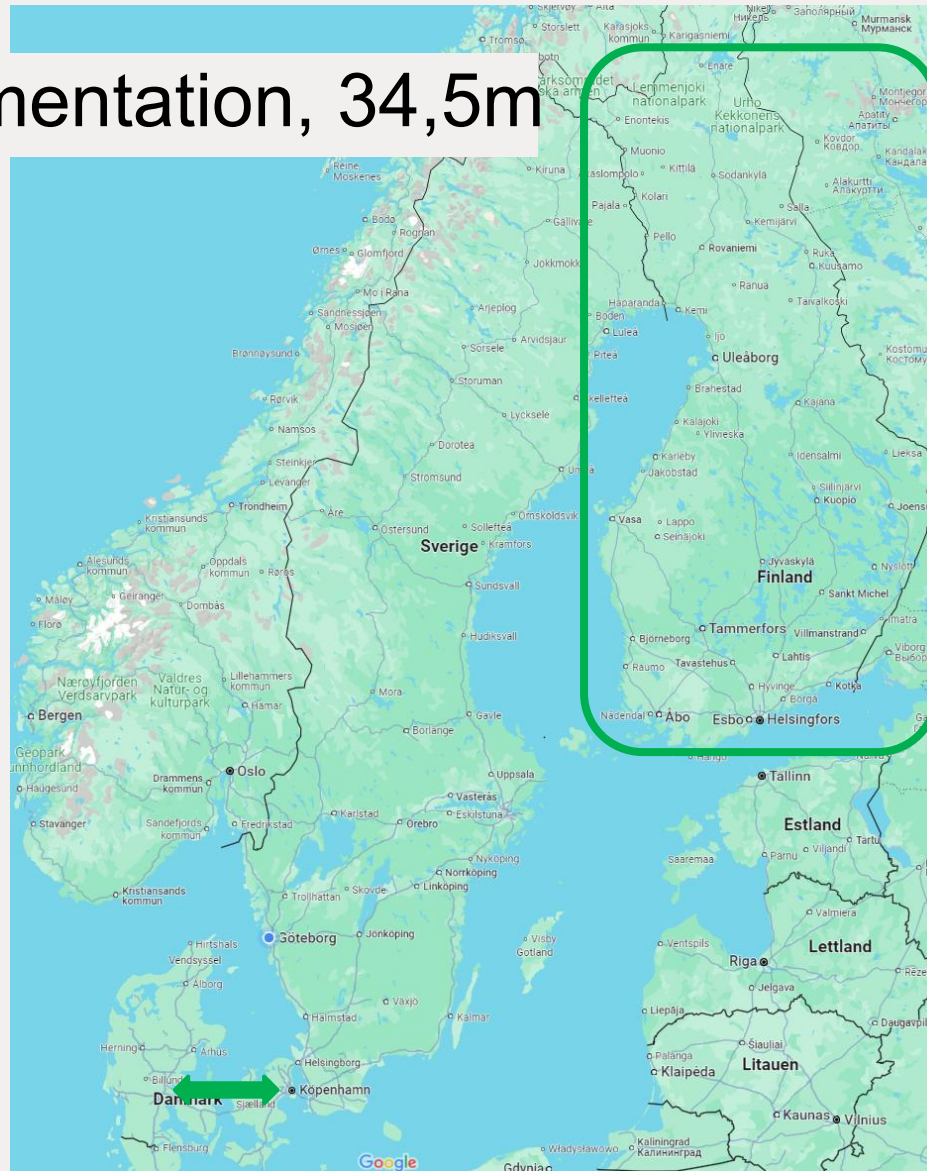
- The complete country, except for some 12m zones.

## Denmark

- Aarhus to Öresundsbridge.

## Sweden

- 5900km
- Max 10 km from main 34,5m network
  - **WILL BE CHANGED 2027**
- For breakthrough swedish manufacturing facilities, mining and forrest industry need to reach all their destinations.



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# Full implementation of 76 ton and 34,5m From 60 ton and 24m

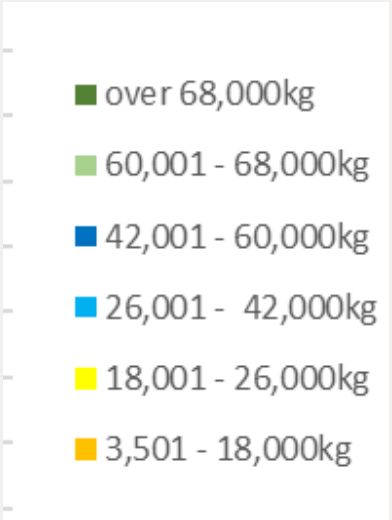
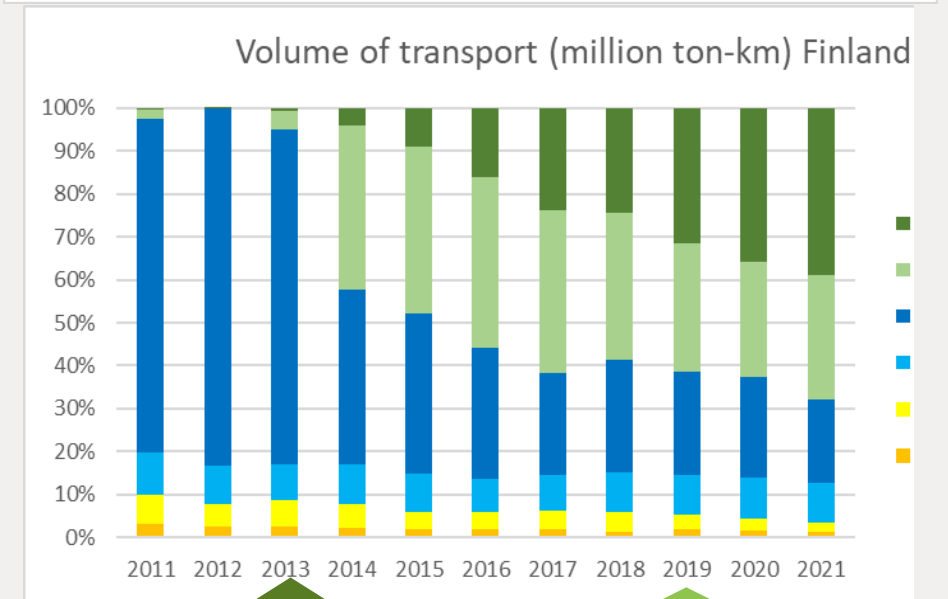
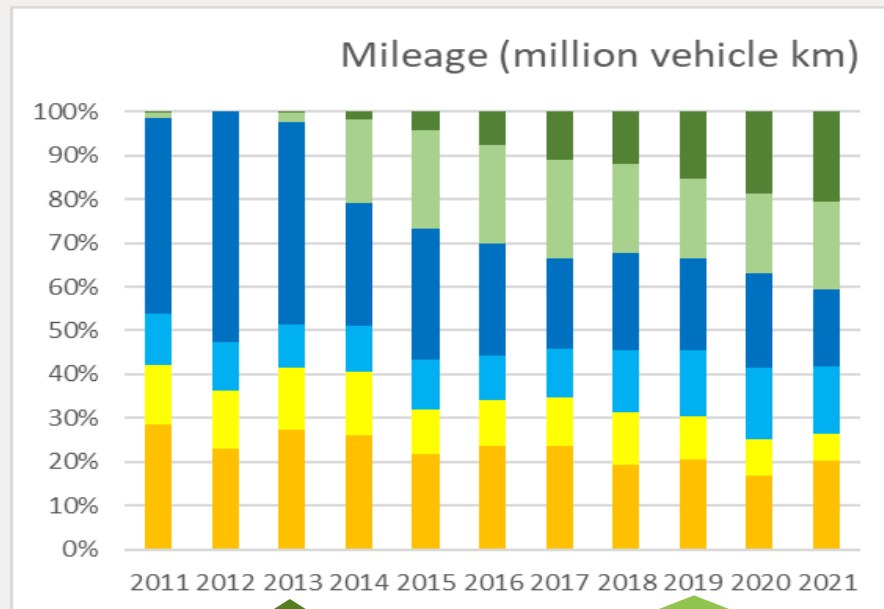
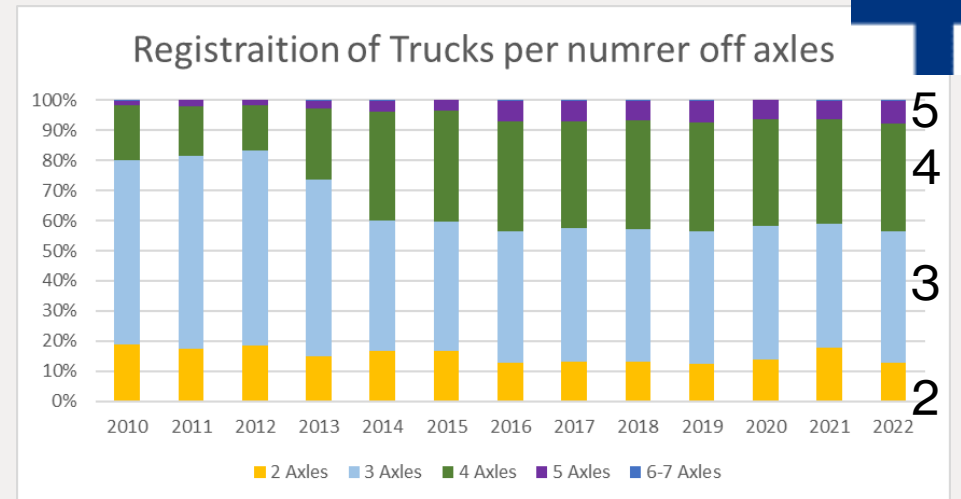
**Within 10 years: Productivity gain 43%**

## More

- Axles per combination
- goods transported / vehicle
  - 23 800M tonkm 2011 → 27600M tonkm 2021 (+16%)

## Less km driven:

- 2284 Mkm 2011 → 1853 Mkm 2021 (-19%)



76t  
4.4m

34,5m

76t  
4.4m

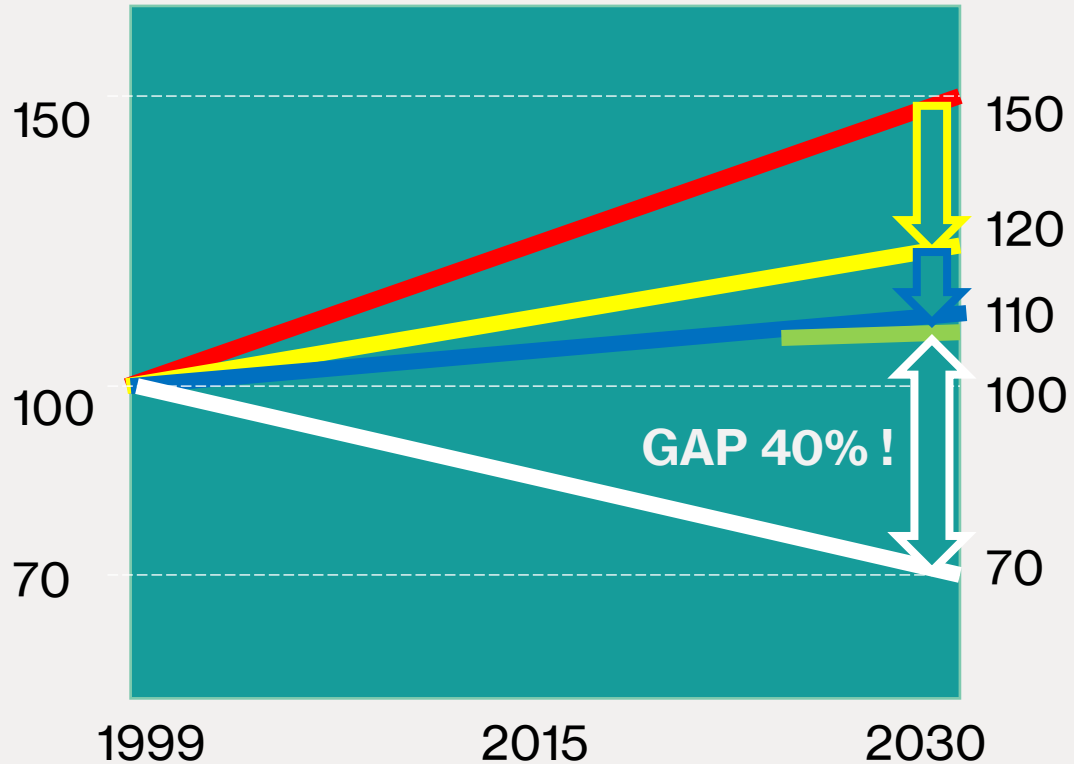
34,5m



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# 2. Tackling challenges



We are halfway !

## Goods on road in EU 1999-2030

- If Increased transports with 40% to 50%

## Using latest technology ICE trucks:

- 30% reduction in road transport CO<sub>2</sub> emission from 1999 to 2030 can be done with just updating the fleet to new ICE trucks and trailers.

- At Volvo: Newest driveline, AeroFront, Camera monitoring systems, I-see, steered and liftable axles on truck and trailers, inbuilt light ramps, etc

## Increasing capacity

- Using a single towing vehicle to haul multiple trailers significantly reduce the emissions/ton transported. Combined with new trucks achieving 10% reduction of CO<sub>2</sub> emission is possible.
- New way of thinking where Finland is leading the way (20 % reduction)

## Zero-emission vehicles

- Transition to using battery electric and fuel-cell trucks especially for short-haul and fixed routes offers great potential when combined with green energy and CO<sub>2</sub> neutral fuel in combustion engines.

## eTrailers & distributed propulsion: future



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# Conclusion 1999-2030

Target -30 % Result +10% CO<sub>2</sub> emissions from goods transport on road.

Collaboration is needed to meet:

- Lower the emissions, congestion and demand of drivers,
- The need for more transported ton-km and cubic-km



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# 64 TON



Thank you

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