

Interreg
Baltic Sea Region



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ENERGY TRANSITION

Climate-4-CAST

Climate neutrality scenarios for the Transport sector.

Östersund | 2026.09.29

Rasmus Vermum

[Rasmus Vermum | LinkedIn](#)

interreg-baltic.eu/project/climate-4-cast/



Net Emissions (Territorial)

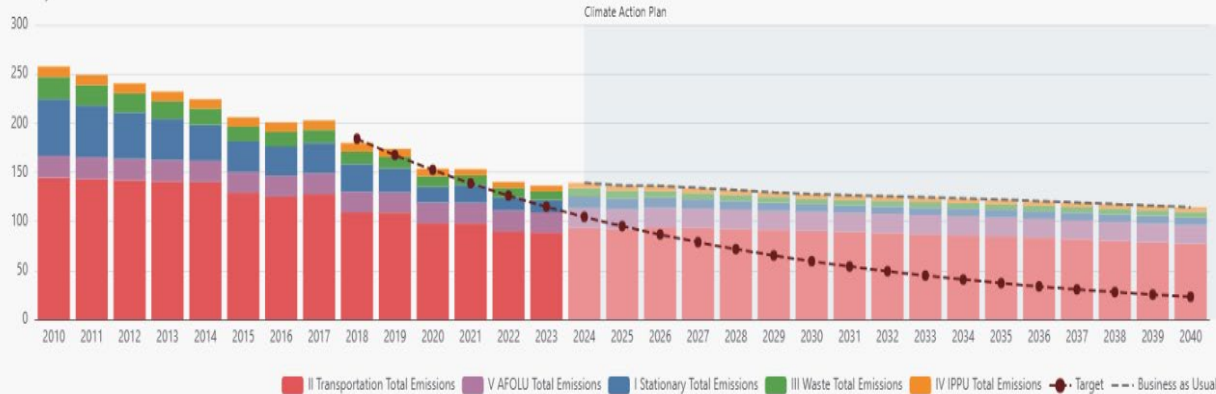
Scenario forecast 2040

114 kt/yr

-56% (2010 - 2040)

Net Emissions (Territorial)

kt/yr



II.1 On-Road Transport Mileage Emissions

Scenario forecast 2040

40 kt/yr

-44% (2010 - 2040)

II.1 On-Road Transport Emissions

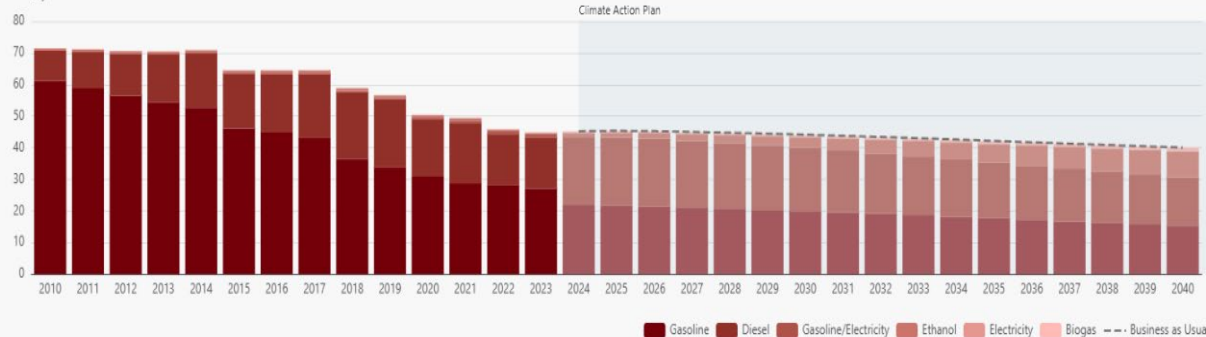
Scenario forecast 2040

21 kt/yr

-56% (2010 - 2040)

II.1 On-Road Transport Mileage Emissions

kt/yr



II.1 On-Road Transport Total Emissions

Scenario forecast 2040

61 kt/yr

-49% (2010 - 2040)

II.5 Off-Road Transport Total Emissions

Scenario forecast 2040

11 kt/yr

-48% (2010 - 2040)

II.4 Aviation Emissions

Scenario forecast 2040

3 kt/yr

+18% (2010 - 2040)

II.3 Waterborne Emissions

Scenario forecast 2040

2 kt/yr

+9% (2010 - 2040)

II.2 Railway Emissions

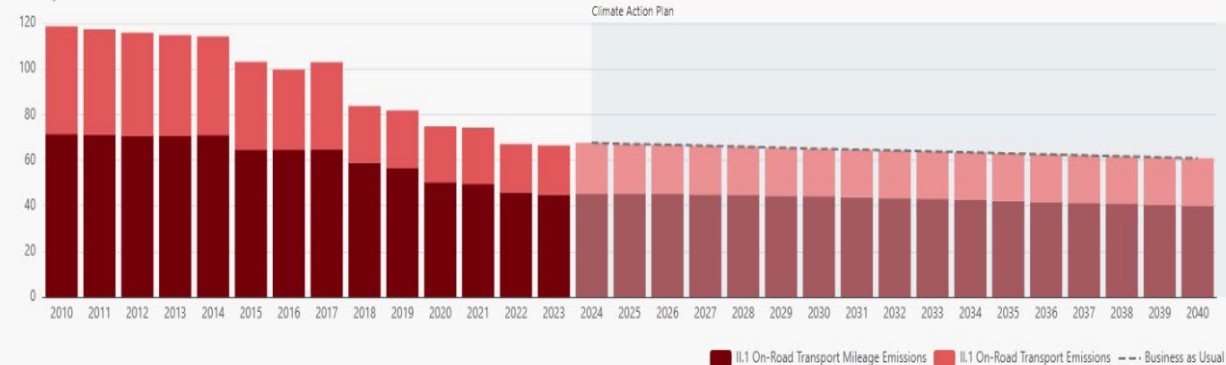
Scenario forecast 2040

0 kt/yr

-88% (2010 - 2040)

II.1 On-Road Transport Total Emissions

kt/yr



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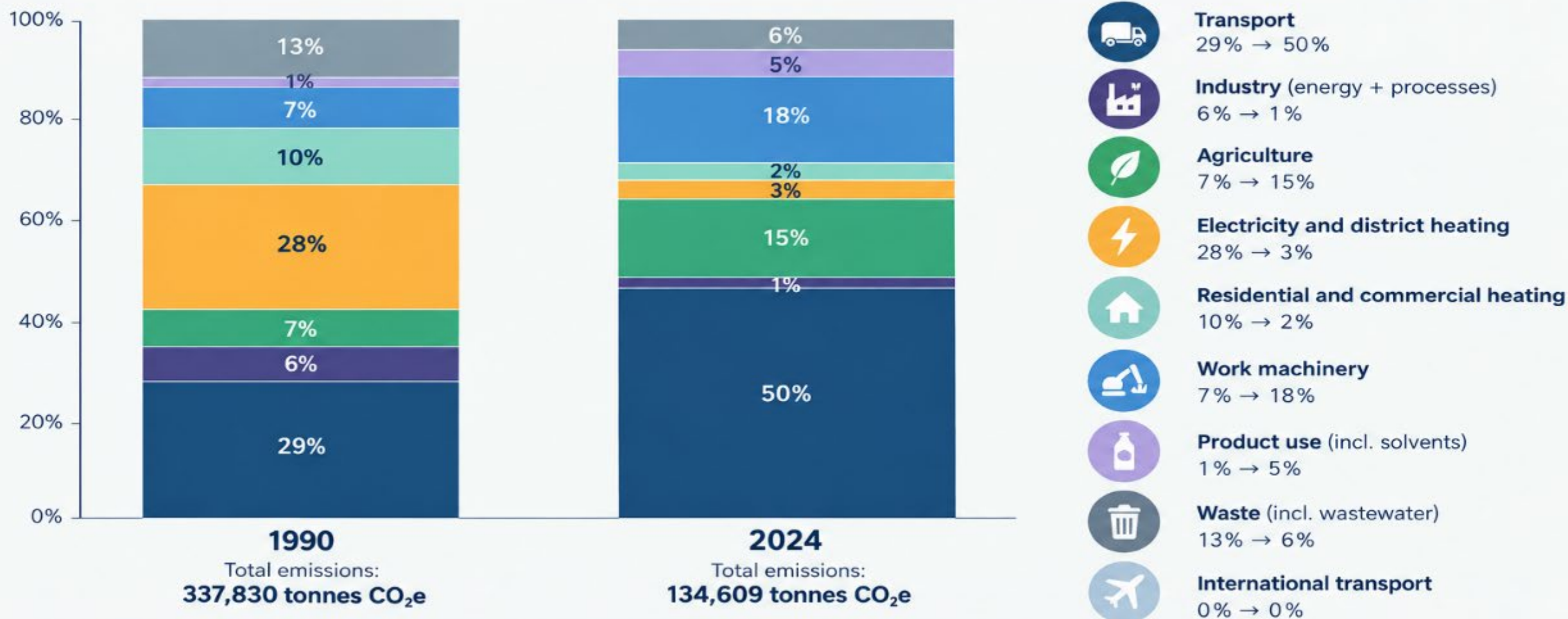
INTRODUCTION TO ÖSTERSUND

- In the middle of Sweden
- The only city in the region of Jämtland
- 65 000 inhabitants



Emissions have decreased – but transport now accounts for a larger share

Share of territorial greenhouse gas emissions by sector, 1990 vs 2024



Total emissions
– 60%
since 1990



Transport sector
29% → 50%
of remaining emissions

$$\textit{Emissions} = \textit{Activity} \times \textit{Emission factor}$$



Emissions = Activity x Emission factor

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*Emissions = **Activity** x Emission factor*

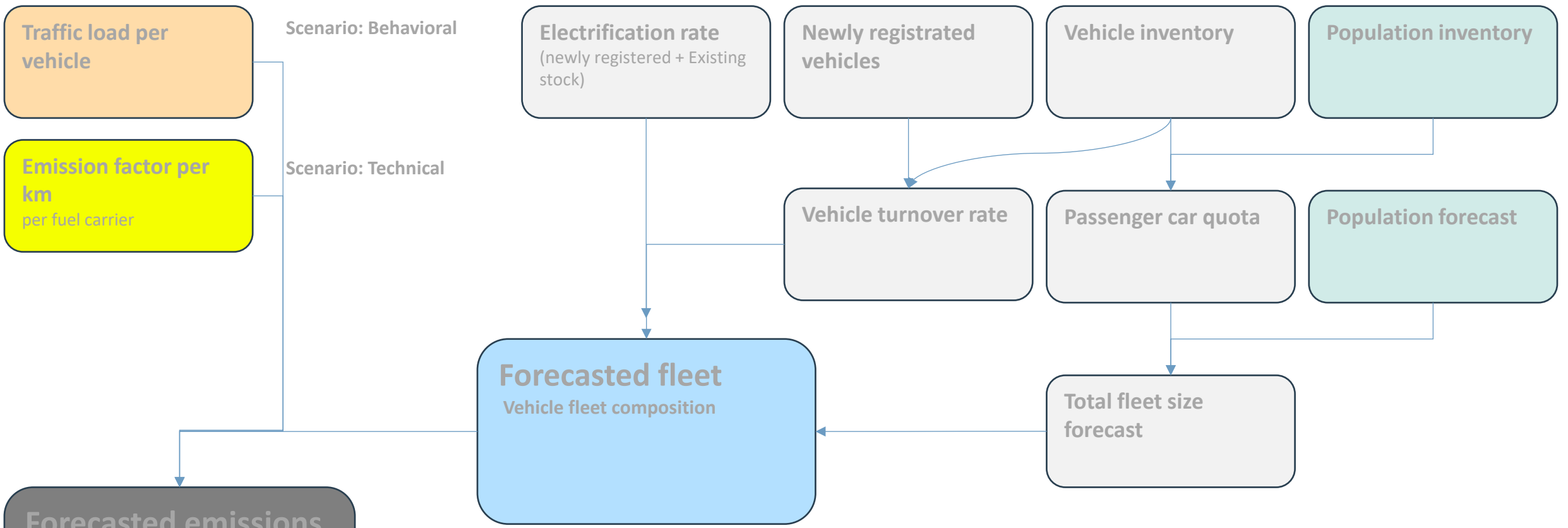
Emissions = Activity x Emission factor

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*Emissions = **Activity** x Emission factor*

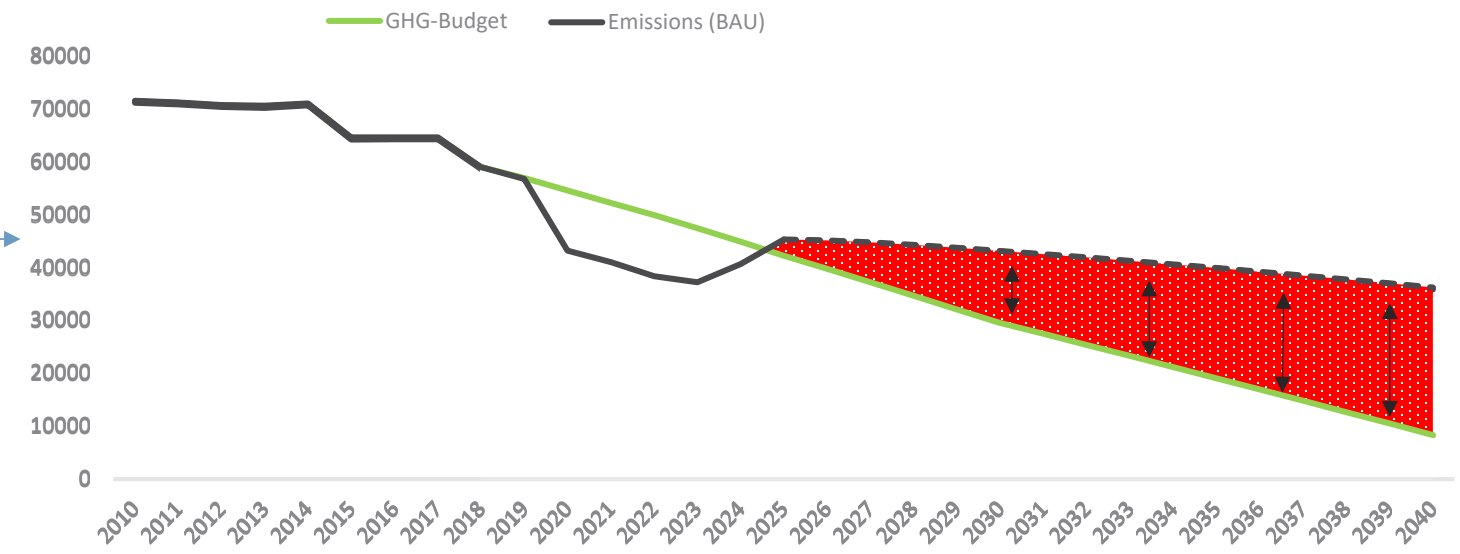
Behavioural scenario = Behavioural change in transport patterns

Technical scenario = Higher electrification pace

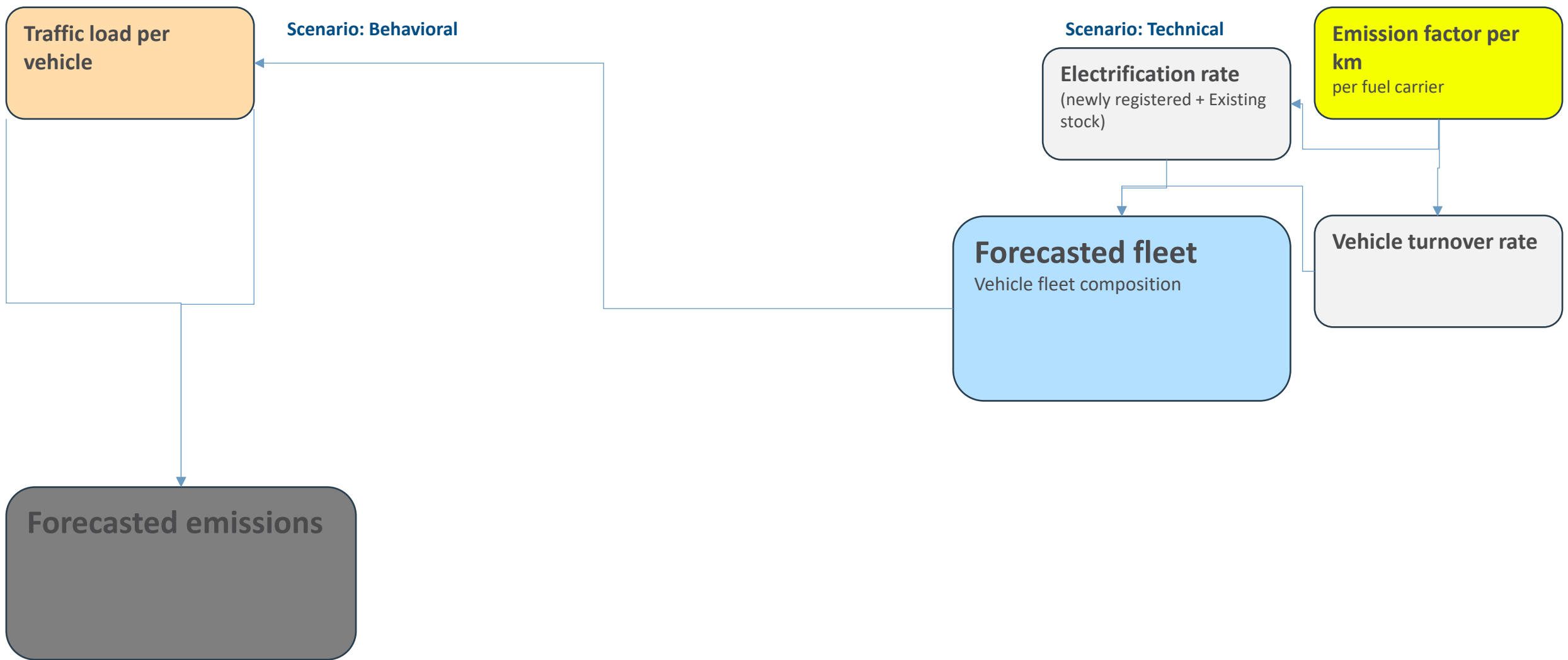


Forecasted emissions

Greenhouse gas budget



Δh

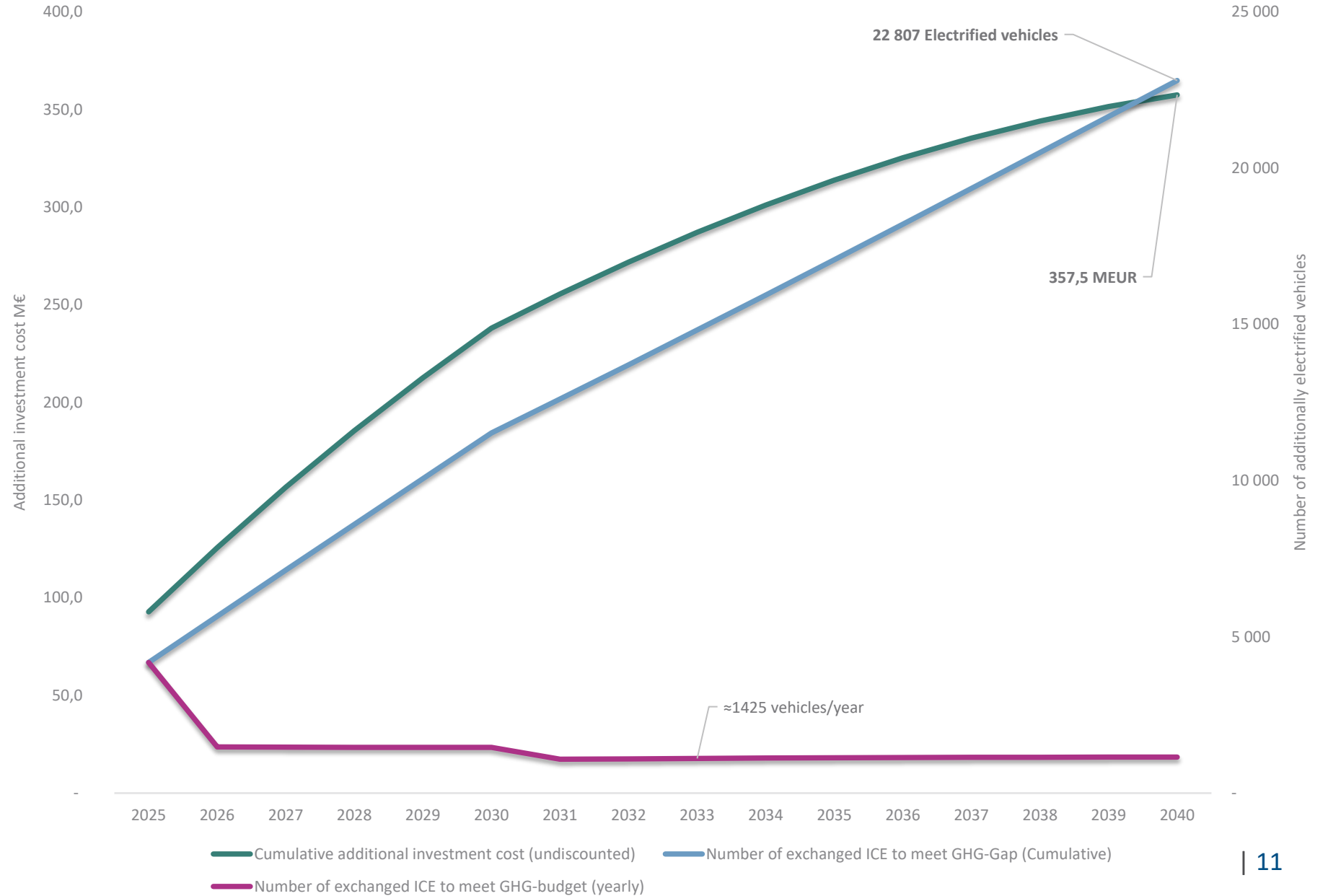


Traffic load per vehicle

Scenario: Behavioral

Scenario: Technical

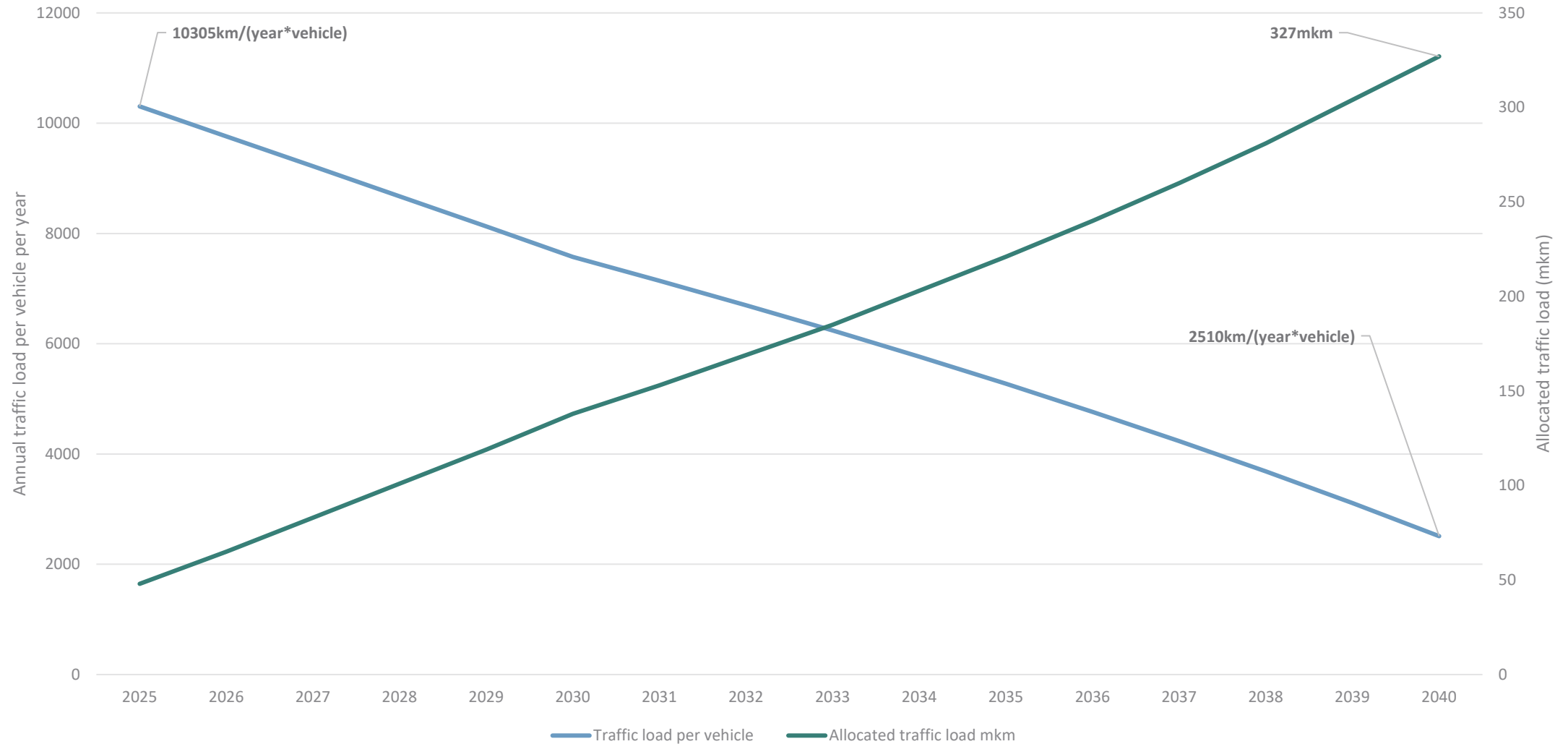
Forecasted emissions



Traffic load per vehicle

Scenario: Behavioral

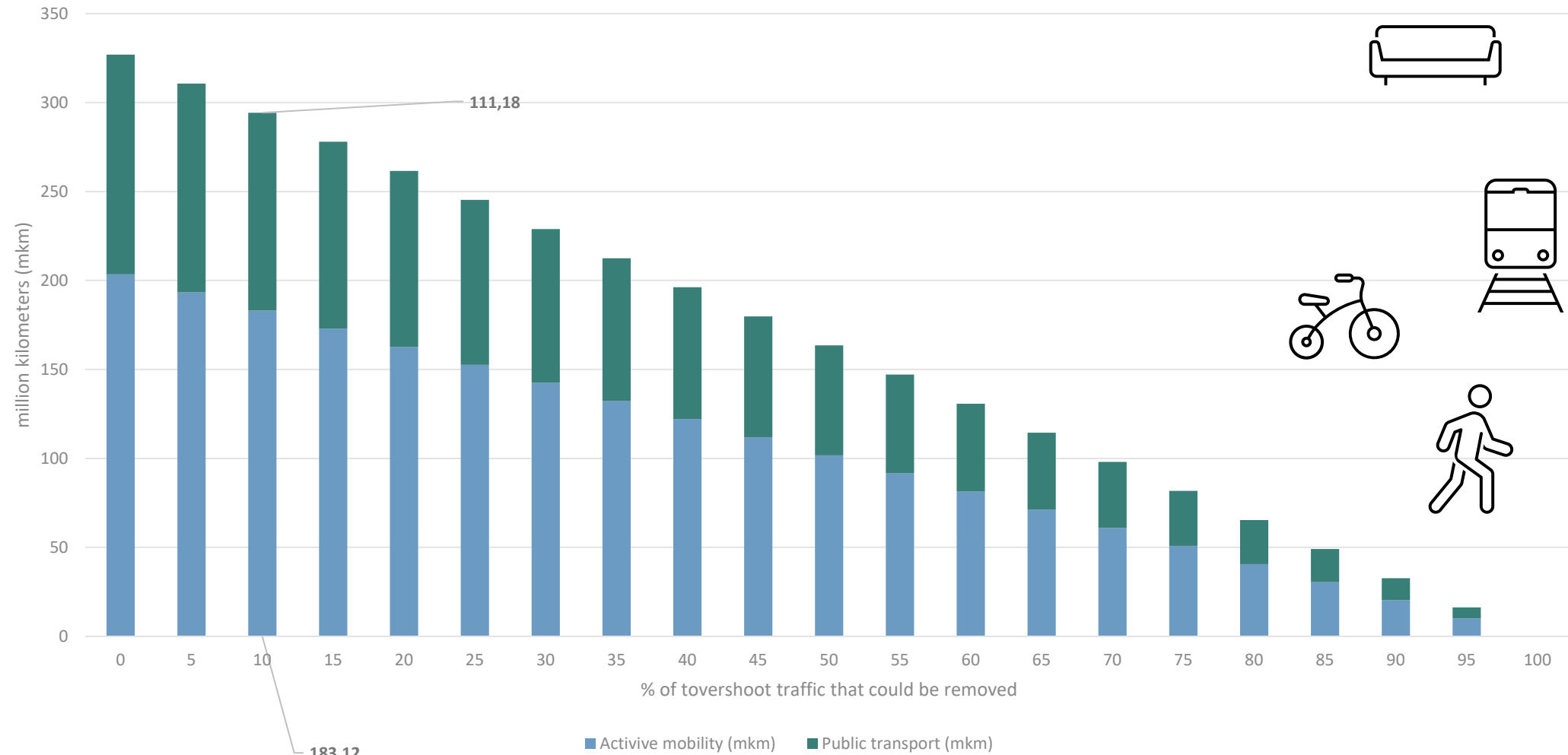
Scenario: Technical



Traffic load per vehicle

Scenario: Behavioral

Scenario: Technical



From climate targets to actionable pathways

The same GHG budget – different ways forward.

Data-driven insights
for a more sustainable
Östersund



Our starting point

The GHG budget and the projected emissions gap

Technical transition

Lower emissions per kilometre



22 807

additional electric vehicles
by 2040

357,5 M€

in additional investment costs
(undiscounted)

A combined transition pathway

Explore different
combinations to meet
the same GHG budget.

Behavioural transition

Reduced vehicle travel



327 million

vehicle kilometres to be avoided
per year by 2040

Changes in travel patterns
Potential health benefits
More liveable cities



Turning model results into decisions for a
climate-neutral and thriving Östersund.

CLEANER TRANSPORT
STRONGER COMMUNITIES
BRIGHTER TOMORROW

ÖSTERSUND
2026.09.29

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Thanks for listening. Any questions?

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