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Power in Motion: Assessing the Strategic Role of **Dynamic Charging** for Electric Trucks



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REKK Futures Seminar

Power in Motion:
Assessing The Strategic Role of
Dynamic Charging for Electric Trucks

Introduction

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About REKK

REKK is an independent research centre specialising in energy, water, transport and environmental economics.

Through research, consultancy, and knowledge sharing, we shape sectoral regulation and corporate decision-making at both national and international levels, promoting economically efficient and environmentally sustainable market operations.

What do we do?

We have been conducting analyses in the following areas for more than 20 years:

- **Electricity markets**
- **Natural gas markets**
- District heating sector
- Water economics
- **Renewable energies**
- **Decarbonisation**
- **Transport**

What are our strengths?

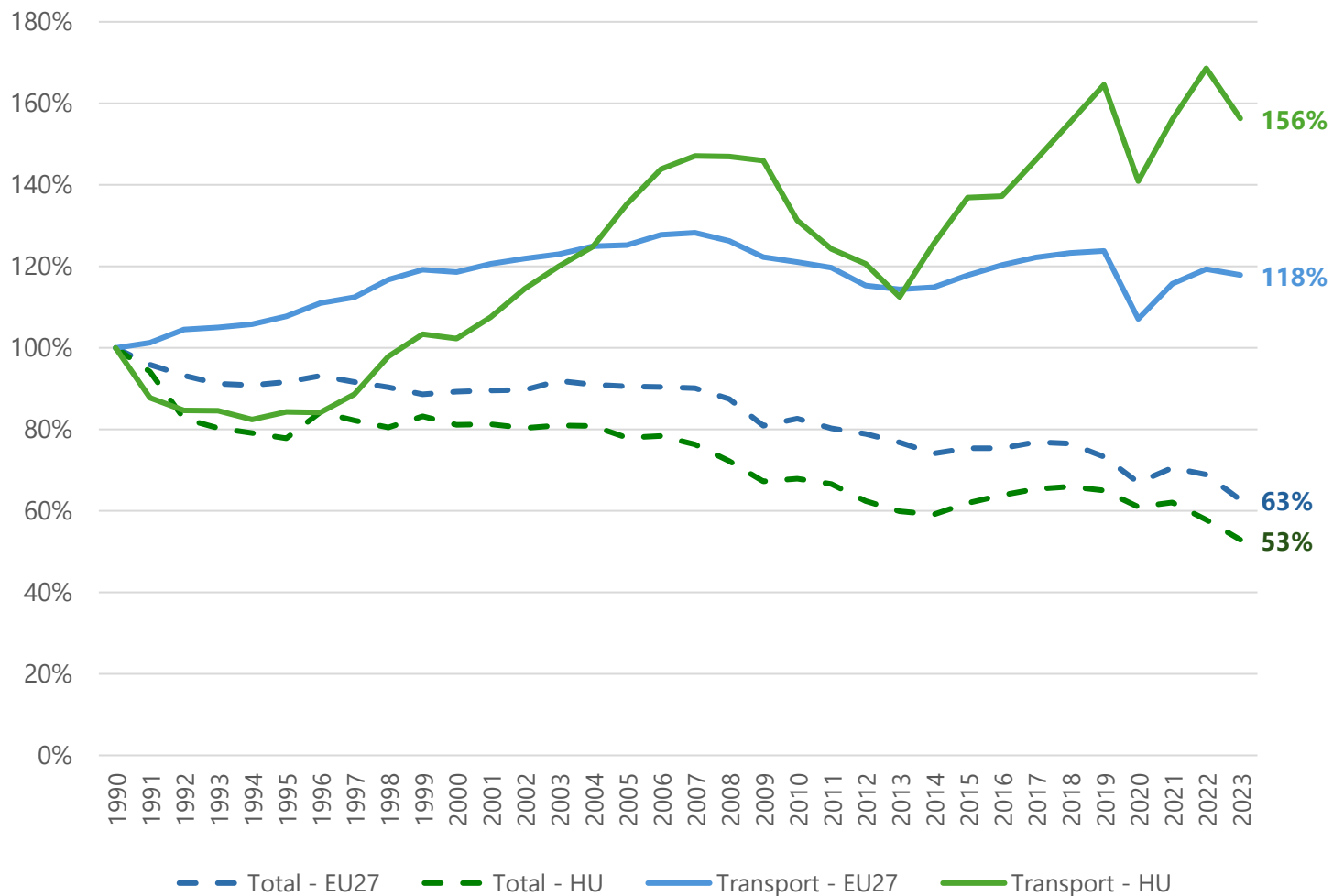
- Modelling and data-based analyses
- Independent research group
- Hungarian and international network
- **Knowledge sharing and *Think tank* activity**

REKK & transport

- **The HU-TIMES model:** a whole-economy energy system model for Hungary that covers major sectors including transport.
- **Electric Vehicle Flexibility Model:** analysing opportunities for reducing the load on the electricity system with charging flexibility and V2G solutions.
- **ETS2 and transport poverty:** analysis of social impacts and policy responses related to transport decarbonisation, including input to the Social Climate Plan.
- Comparative analysis of international policy frameworks and strategic documents related to the energy transition.

Transport as a barrier to climate goals

GHG emission in EU and HU, Total and transport (1990=100%)



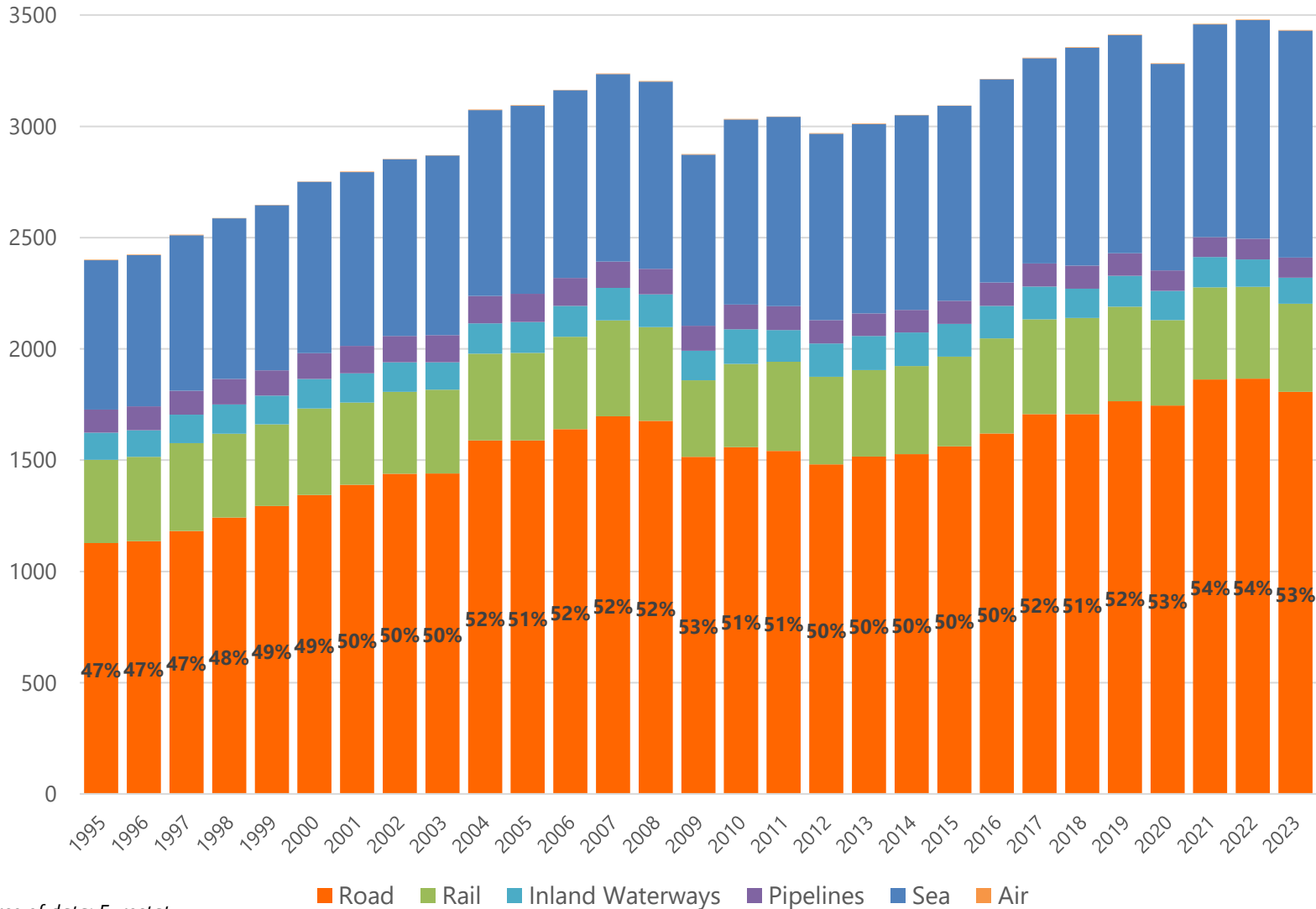
Role of heavy-duty vehicles (incl. buses)

	EU-27	HU
Share of HDV within transport emissions (1990 → 2023)	24.3% → 25.6%	23.5% → 27.0%
GHG emission change		
since 1990	+24.1%	+79.8%
since 2010	+/- 0.0%	+24.5%

- **The only growing major emitter**
- **Nr. 1 emitter** (15% → 26% share).
- **Regional disparity** (HU/CEE vs. EU)
- **HDVs' increasing weight** as its growth continues to outperform the sectoral trend

Avoid? Shift? Improve?

Freight transport performance in EU-27 (billion tkm)



How to decarbonize?

- 1. Avoid (Reduce demand):** The persistent growth in performance reflects the difficulty of decoupling freight demand from economic activity, limiting the effectiveness of "avoid" strategies.
- 2. Shift (Change mode):** Instead of moving towards lower-carbon modes, the road share has actually increased (47% → 53%), showing the practical limitations of modal shift.
- 3. Improve (Technical efficiency):** With other pillars stalled, decarbonization must be done mainly through **fuel switch** options (e.g. electrification, hydrogen, or renewable fuels).

Could dynamic charging (ERS) facilitate this fuel switch by addressing the core limitations of heavy-duty electrification?

Thank you for your attention!

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