



Roadmap to zero-carbon Combined Transport

Validation of the UIRR & d-fine study "Roadmap to zero-carbon CT" with FERRMEDs bottom-up analysis of the network

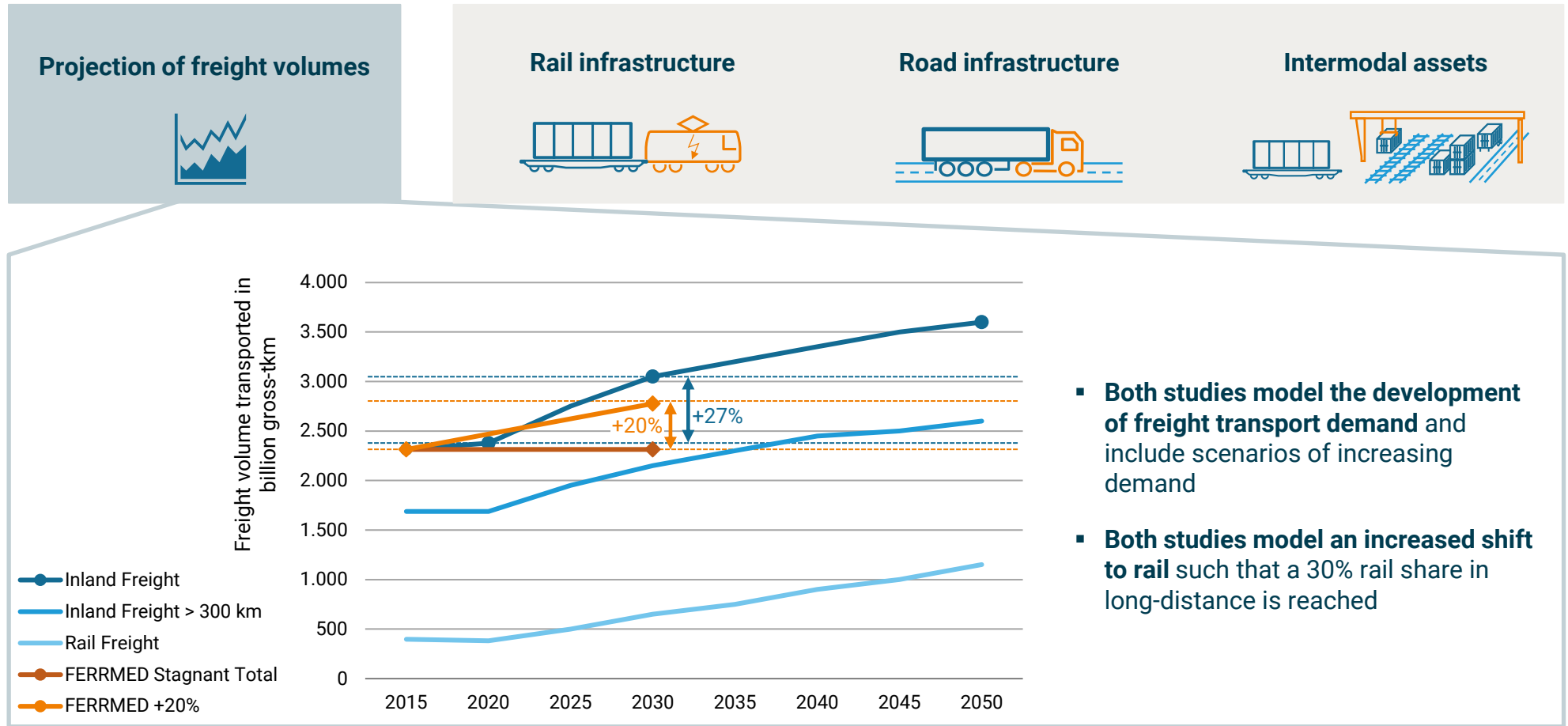
29.11.2023

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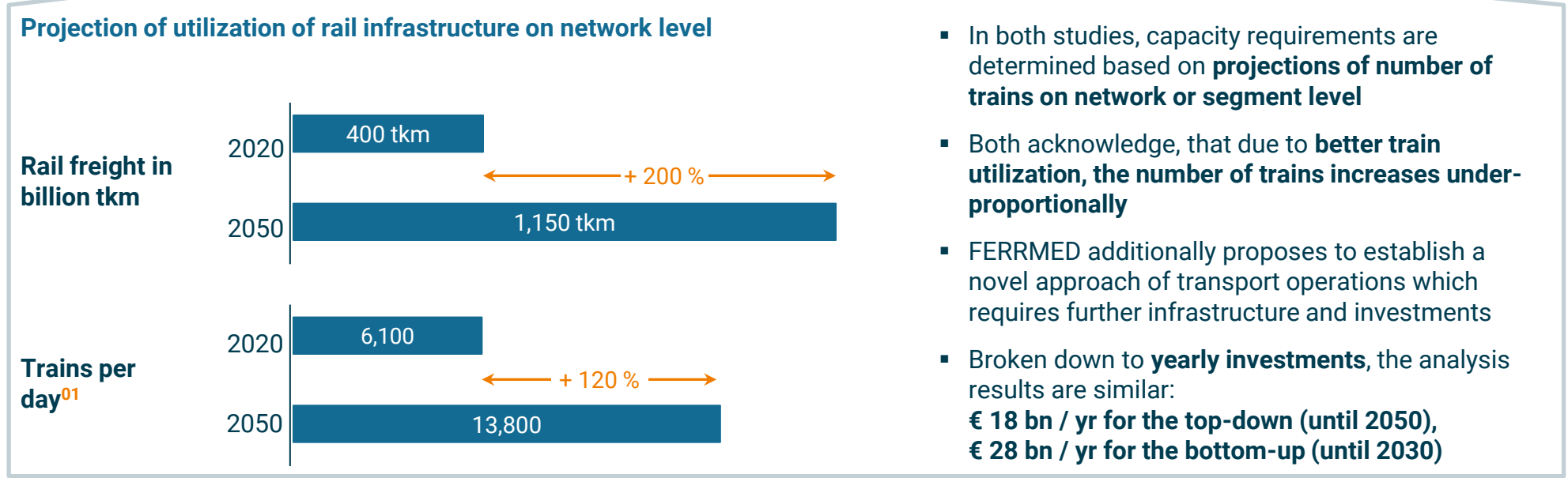
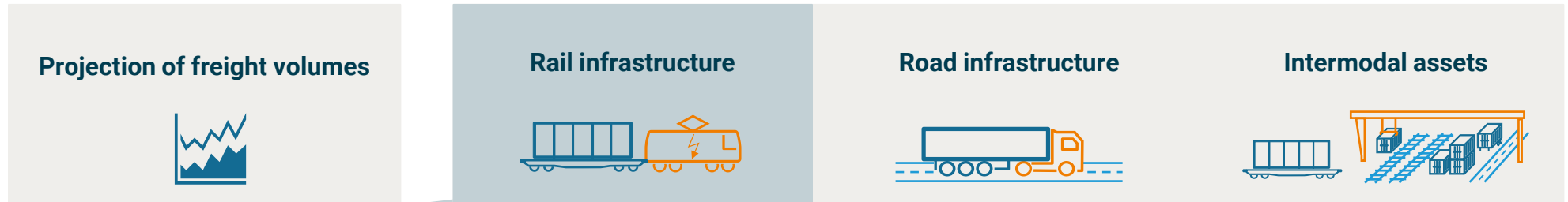
We examined projections for transport demand in Europe to determine investment demand to achieve zero-carbon CT and climate goals

Based on projected transport volumes, both studies determine the investment needs to achieve CT and rail shares to meet climate targets



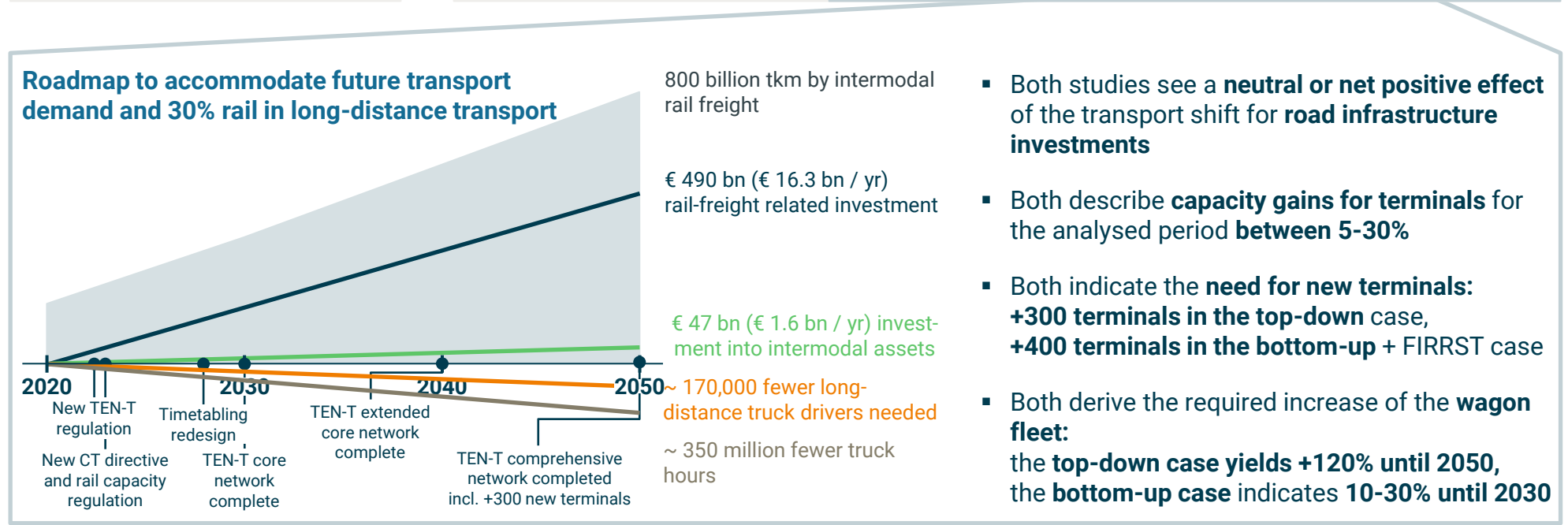
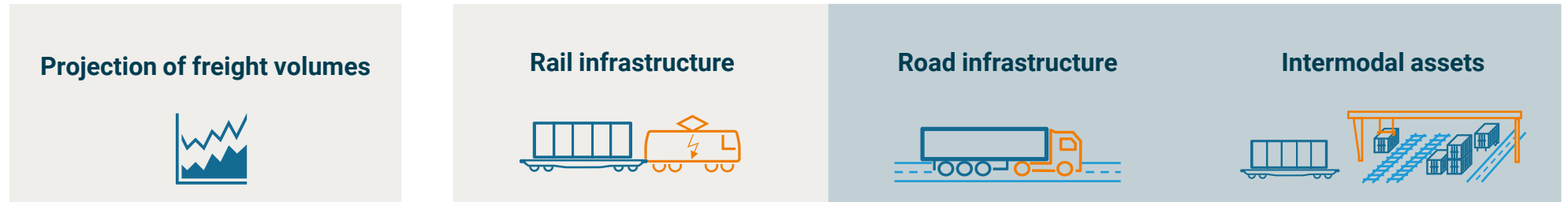
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Both studies show investment needs to establish a resilient network for effective and efficient CT

Main findings for the validation of our **top-down Roadmap Study** with the **bottom-up analysis of FERRMED**.



Modelling of transport demand

- Both studies model an **increase in total transport demand**
- Use of **EU ref. scenario** which gives **+27% in 2030 compared to 2020**.
- Modelling of a **stagnant** case, and a **+20% scenario for 2030 based on 2015** numbers.



Measures for track capacity

- **Measures** and their **costs** and **capacity potential** on **network level**.
- **Measures based on local bottlenecks** and attribution of all costs based on freight share.



Intermodal Assets

- Both studies see demand of **+300** or **+400 new terminals**
- Demand analysis yields that the **wagon fleet needs to double until 2015 (€ 0.4 bn / yr)**.
- **Increase of the wagon fleet of 10-30% until 2030** and demand for **new locomotives (€ 1 bn / yr)**.



Investments

- Both studies used **similar unit costs for infrastructure**.
- Investment need of **€ 537 bn until 2050 (€ 18 bn / yr) for rail infrastructure and intermodal assets**.
- Investment in infrastructure and a novel operation model of **€ 197 bn for freight until 2030 (€ 28 bn / yr)**.

The bottom-up analysis can validate the top-down assessment. The microscopic analysis of flows reveals local bottlenecks and investment needs.

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