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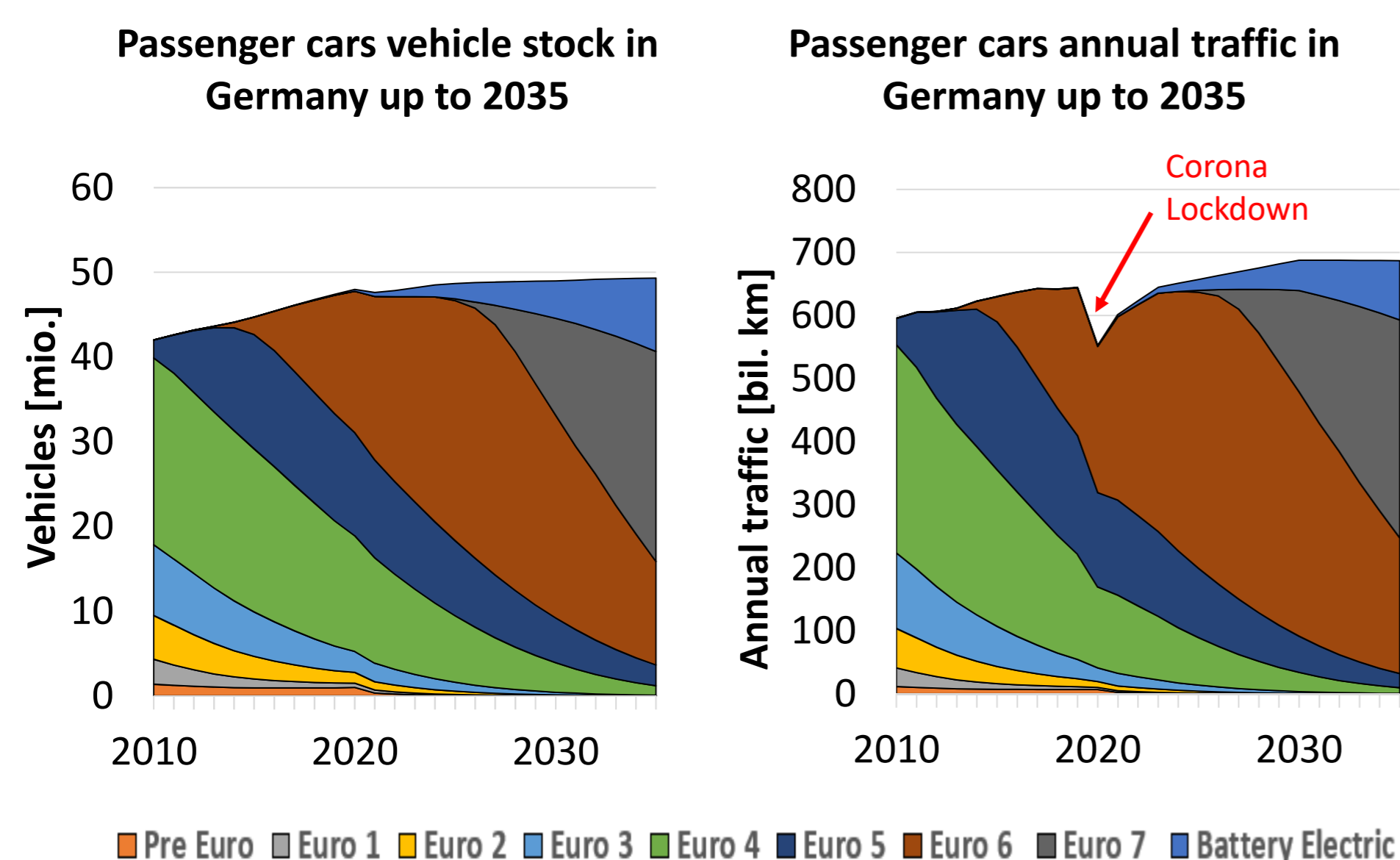
Modelling the Effects of Euro 7 on Passenger Car Emissions in Germany

INTRODUCTION

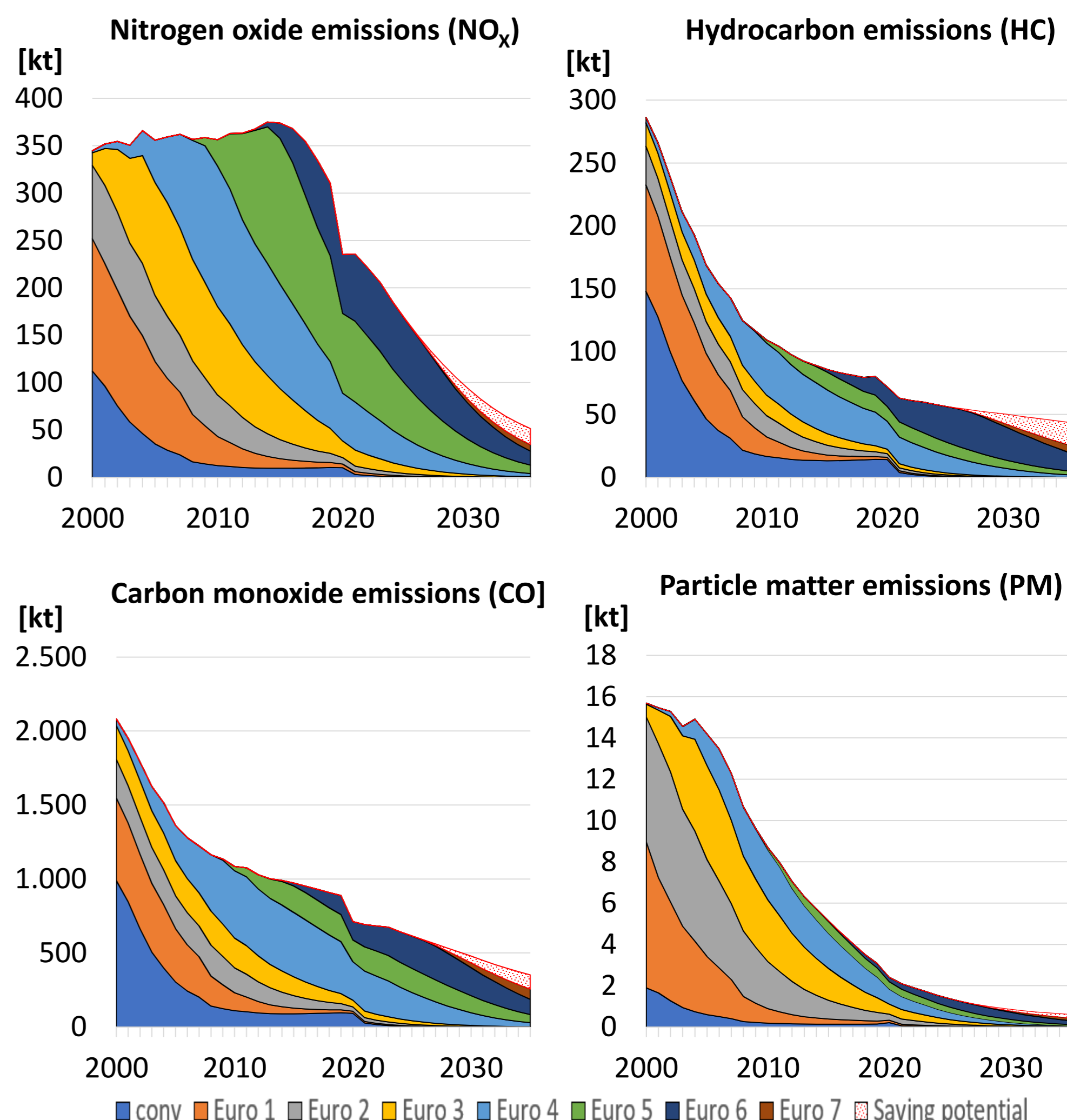
- Road traffic represents a significant source of air pollution, particularly in urban areas
- A new emission standard for passenger cars – Euro 7 - is currently elaborated at European level to further reduce traffic related emissions
- This study evaluates the effectiveness of Euro 7 with regard to passenger car emissions in Germany

METHODOLOGY AND RESULTS

- The assessments of Euro 7 is carried out with the **TREMOT model** (Knörr et al., 2012 and Bergk et al., 2014)
- TREMOD is a **macroscopic emission model** that calculates vehicle fleet emissions in a high degree of differentiation, according to e. g.:
 - vehicle categories, emission components, road types and local area etc.
- The prediction of trend scenarios is based on the **vehicle fleet and annual traffic development** after the introduction of Euro 7 in 2025 and **proposed tailpipe emission limits for Euro 7**, see fig. 1



- By 2035, Euro 7 approved vehicles will reach a market share of approximately 50 %
- A shift towards alternative propulsion technologies becomes apparent – battery electric vehicles (BEV) will make up to about 18 % by 2035
- However, conventionally powered vehicles still represent the absolute majority then
- Accordingly, the following trend scenarios for NO_x, CO, HC, PM, can be drawn, see next fig. 2



Conclusion

- Strong decrease in all emission components up to 2035
 - NO_x: -84 %, CO: -62%, HC: -57%, PM: -77%
- This effect is primary based on the renewal of the vehicle fleet
- Strong reduction in urban HC and CO emissions expected due to stricter cold start requirements
- Euro 6 already achieves significant reduction in emissions due to revised test procedure
 - (RDE - real driving testing on the road)

References

Knörr, W., Heidt, C., Schacht, A.: Aktualisierung "Daten- und Rechenmodell: Energieverbrauch und Schadstoffemissionen des motorisierten Verkehrs in Deutschland 1960-2030" (TREMOT, Version 5.3) für die Emissionsberichtserstattung 2013 (Berichtsperiode 1990-2011). Heidelberg, 30.09.2012.

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