



# Commuting by motorcycles: an impact analysis

Fédération belge  
de l'Industrie de  
l'Automobile et du Cycle

Belgische Federatie  
de Automobielen en  
Tweewielerindustrie

Conducted by Transport & Mobility Leuven,  
commissioned by FEBIAC

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e-study: Leuven-Brussel: modale shift passenger cars → motorcycles & scooters

Transmission Model developed by Transport & Mobility Leuven & University Leuven

measuring traffic: volume, speed, density, typical morning peak hour in May 2011



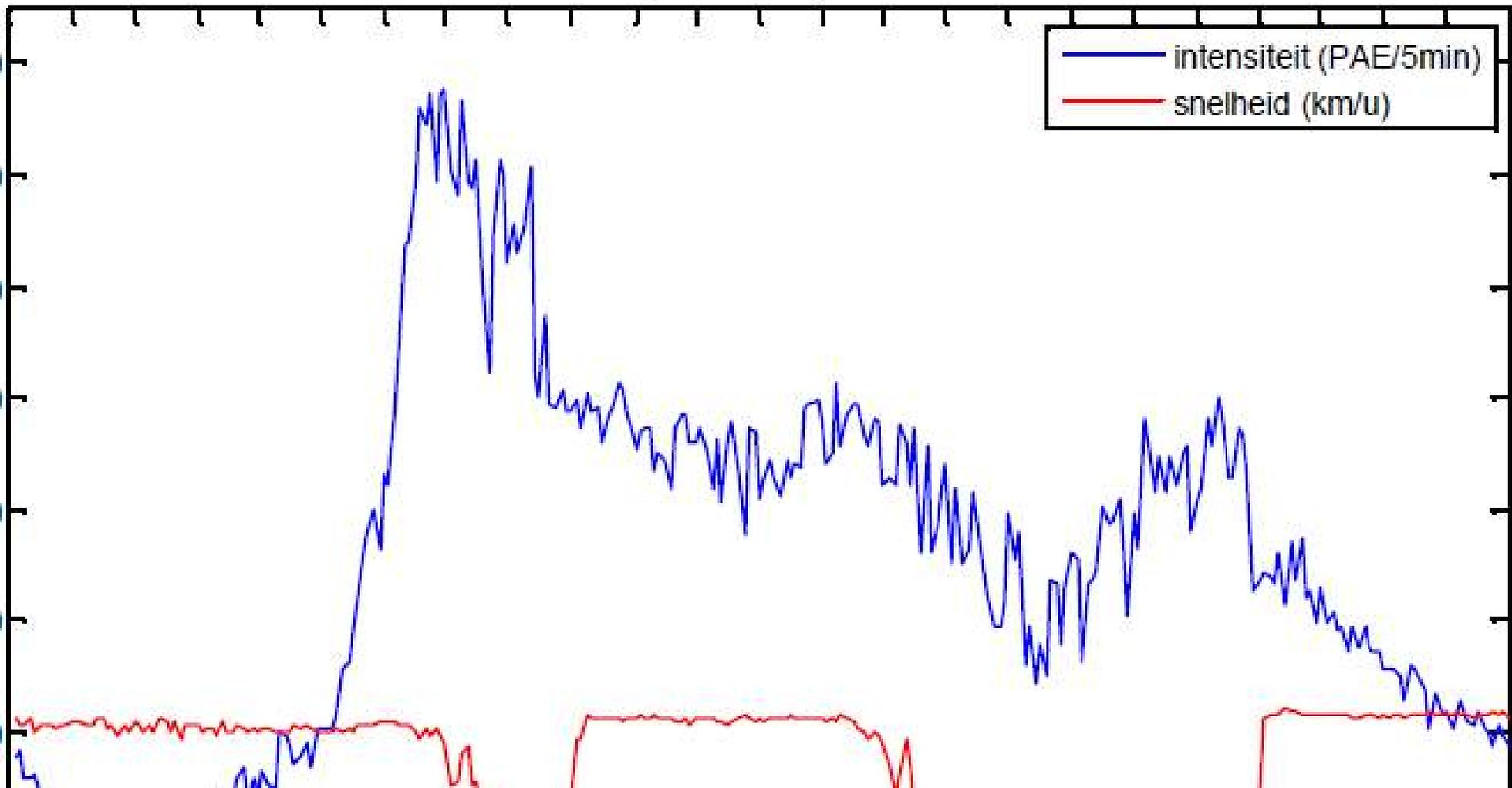
Fig. 2: Locaties in het studiegebied waarop telgegevens verzameld worden

<4,9m): passenger cars en motorcycles (0,9% PTW's (Federaal Planbureau))

(4,9 – 6,9m): delivery vans

(> 6,9m): trucks and busses

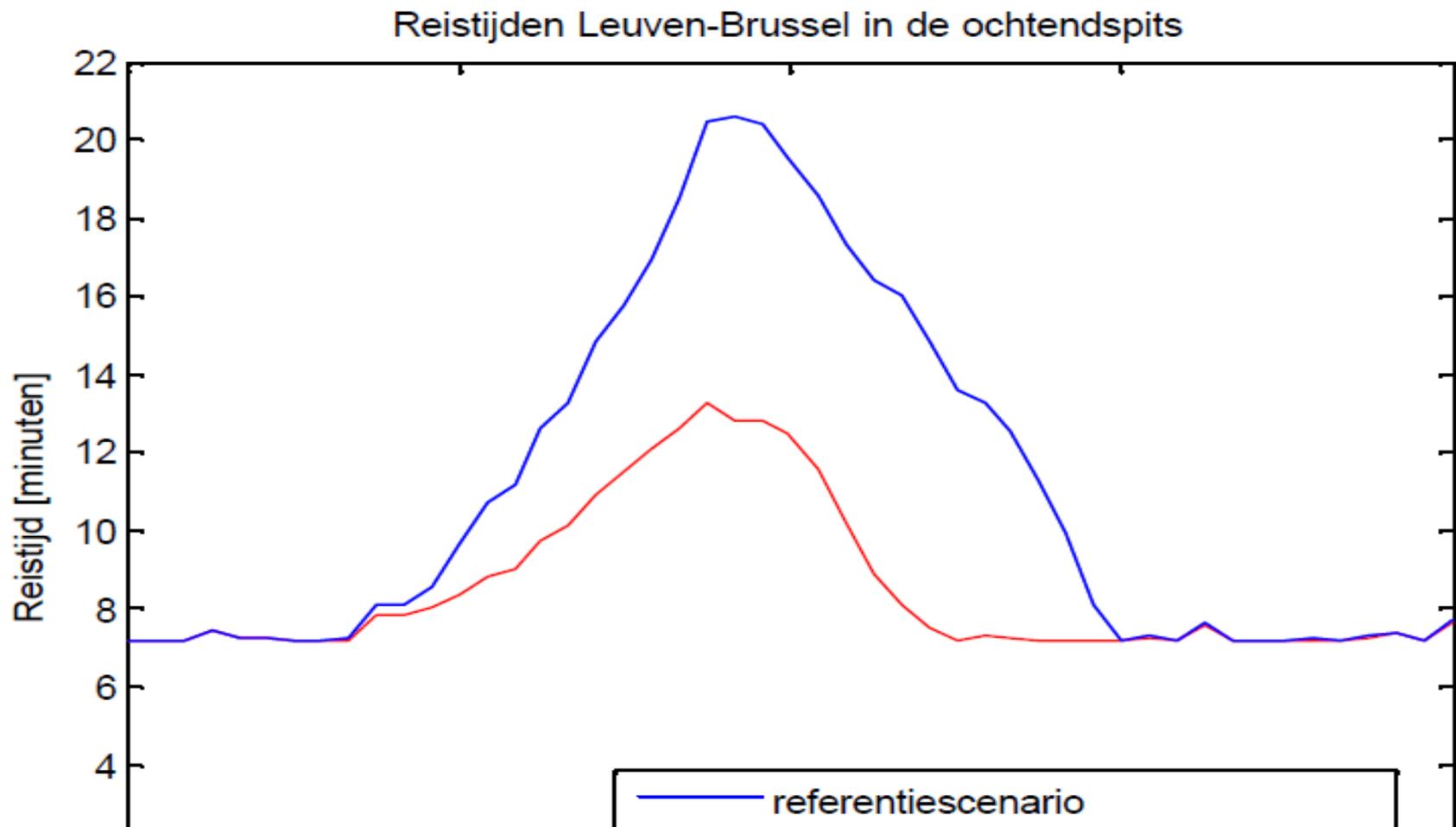
Sterrebeek hoofdrijbaan richting Brussel 18 mei 2010



Occupation passenger car = 1,1 person/car / Motorcycle = 0,5 passenger car equivalent

cars are replaced by 11 PTW's

= 14 min travelling time extra in comparison to 6:40, when modal shift to 10% PTW  
6 min. at the most



Presentation  
jam develop



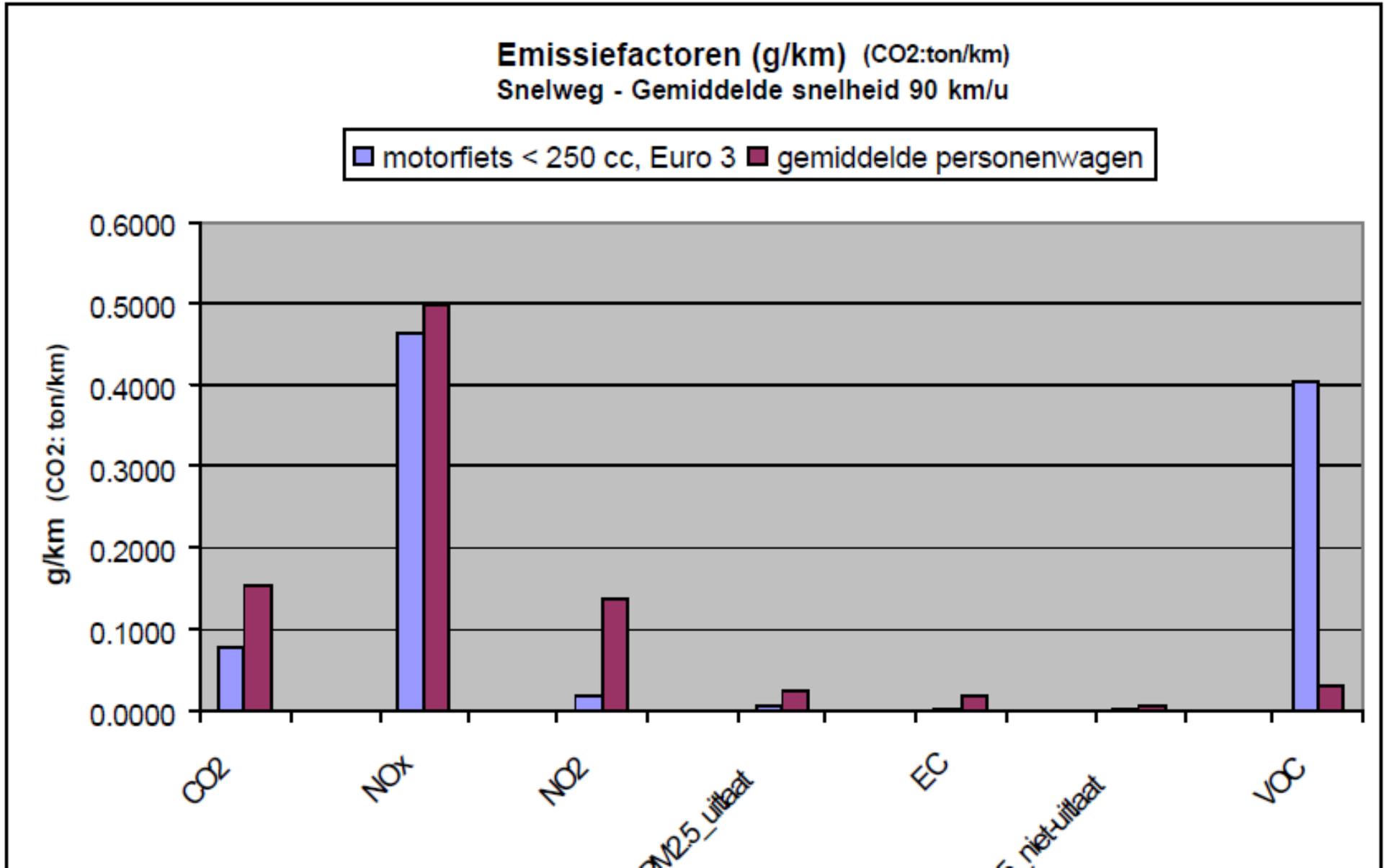
Number of lost hours for all vehicles: 1925 hours to 706 hours (- 63%) by modal shift

more traffic jams as from 25% modal shift

When traffic runs more fluently, more cars will shift from local routes to highways, leading to a 40% reduction in traffic problems,

When extrapolating to the total road network: gain of 15.000 lost hours and a daily benefit of € 350.000

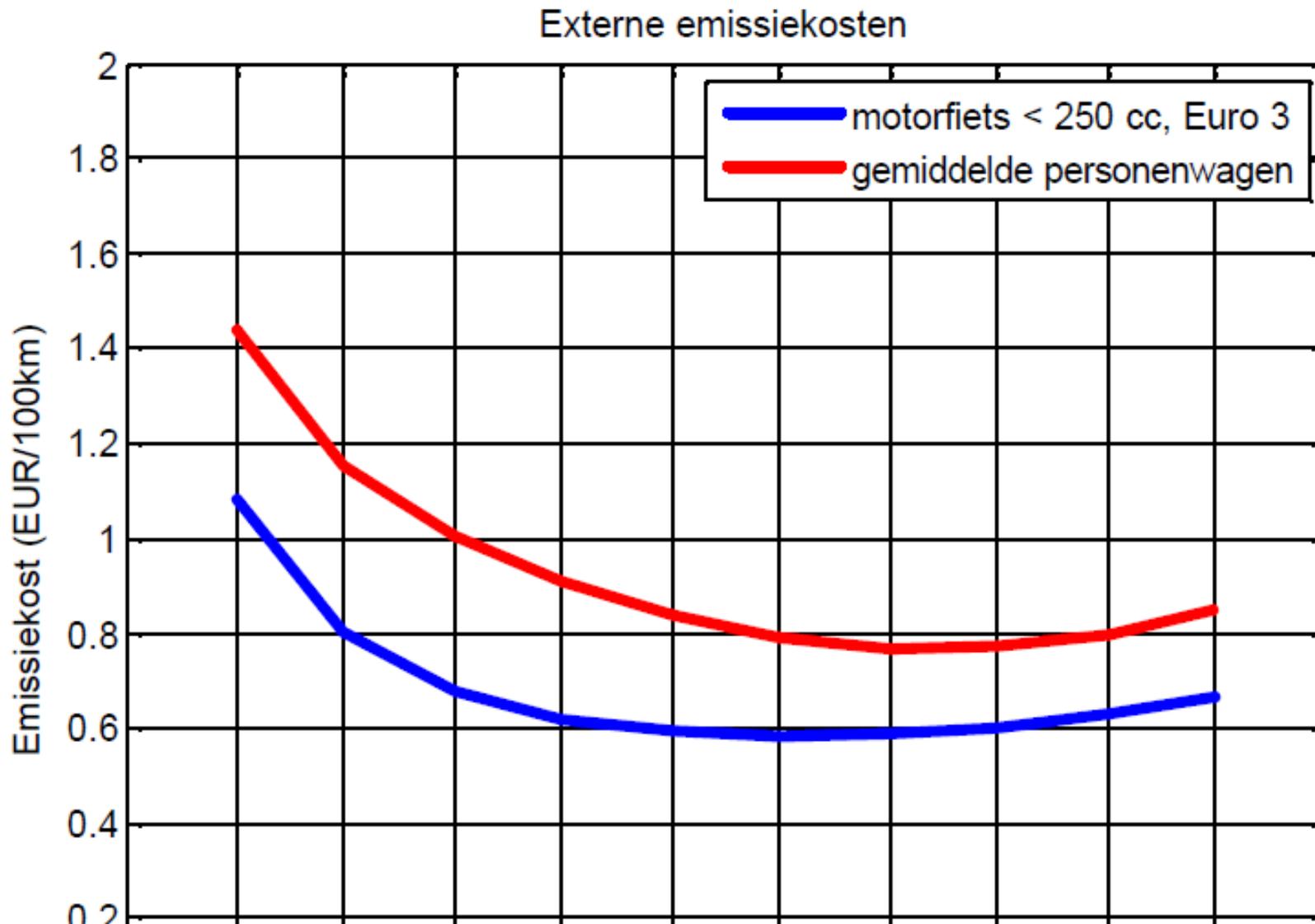
Comparison 7 pollutants, only VOC is higher for PTW's (no catalytic converter)



particular CO2, small particles and VOC are relevant.

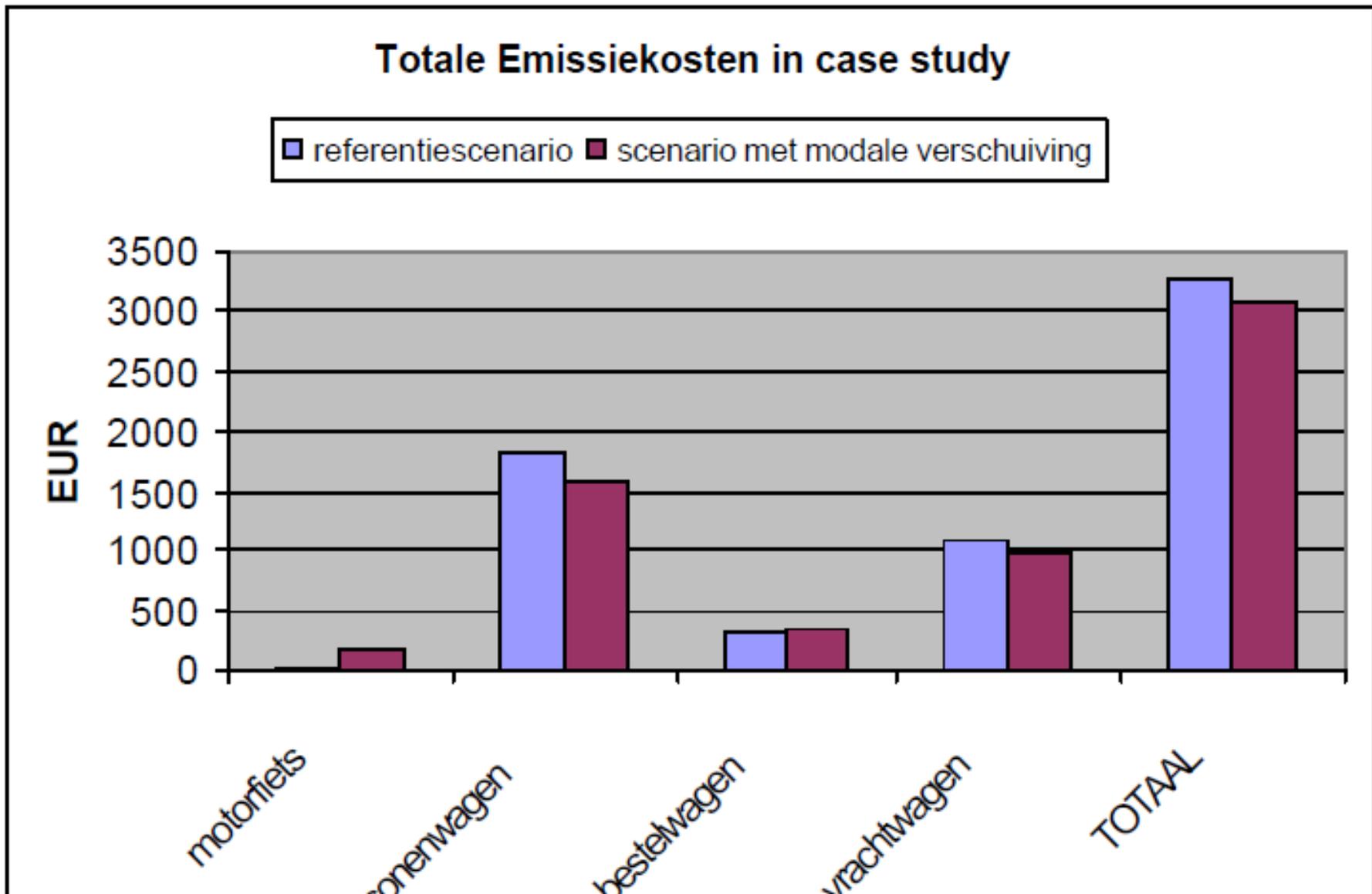
= higher costs due to CO2 and small particles, but less costs due to VOC.

al external emission costs for PTW's is 21% lower than for an average passeng



emission costs costs in case of modal shift = 6% lower (€ 180) in total, car emis  
40, PTW's = + € 150

1% due to a different split in vehicles + 5% because traffic runs more fluently



VOC: - 36%

CO2: - 7,5%

NOx: - 5,5%

Small particles exhaust: - 4%

Small particles, by wear out: - 16%

