



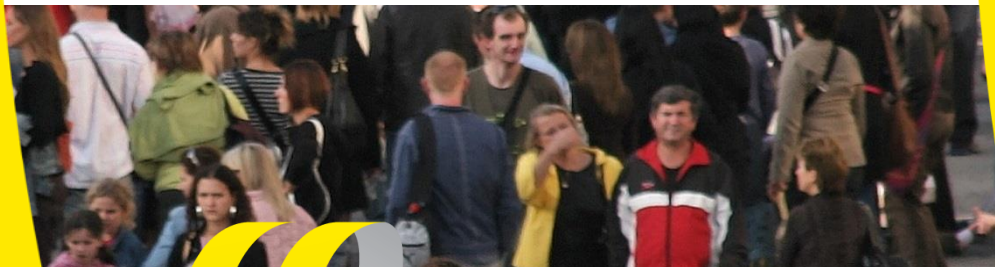
Potential of electrical trailer cooling during rest periods



Co-financed by the European Union

Trans-European Transport Network (TEN-T)

Analysis of emission and costs



CE Delft



Research goal

What are potential environmental benefits of power supply at parking places in long distance transport?

Facts and figures on long distance refrigerated transport

- Power supply at parking places offers the potential to switch to electric mode during resting periods
- TRUs in long distance transport operate 15-30% of their operational hours on parking places: on average 225-450 hours per year.
- In EU28: 234.000 truck-trailer with transport refrigeration unit (TRU) in long distance transport

Potential emission reduction EU28

- 130-260 million litres of Diesel
- 300-600 kilotonnes CO₂ -



2,700-5,400

- 2400-4700 tonnes NO_x -
- 280-560 tonnes PM₁₀ -



5,000-20,000



35,000-70,000

110,000-220,000

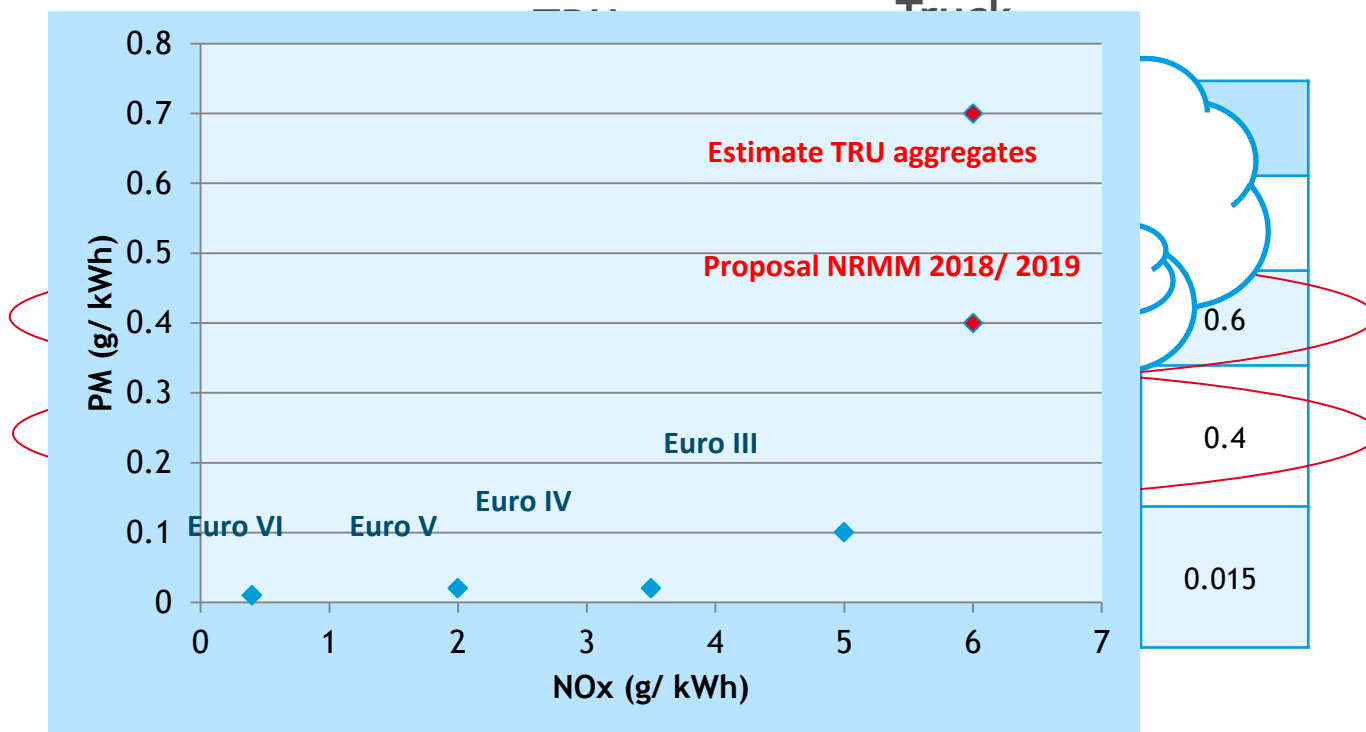
220,000-440,000

External cost reduction EU 28

	Emission reduction (ton/ tear)	Cost factors (euro ton)	External costs (Euro/ year)
CO ₂	290,000	78	22,620,000
NO _x	2,360	10,600	25,016,000
PM ₁₀	280	109,300	30,604,000
Total			78,240,000

Emissions of TRU diesel engines

- Problem: High air polluting emissions of Transport Refrigeration Units (TRU).
 - No EU emission Limits for Non road diesel engines <18kW



Conclusion

- Relatively high emission of Transport Refrigeration Units (TRU)
 - This will remain also after 2018/2019
- Alternatives for diesel are needed to reduce emissions.
- Electrical power supply at parking places offers large potential for environmental benefits .



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