

A look into the likely consequences of adapting weights and dimensions of heavy commercial vehicles

VLW 2009

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Weights and Dimensions of Heavy Commercial Vehicles

- For DG TREN
- With TNO, Sétra, LCPC, RWTH
- Directive 96/53/EC:

40/44t → 50/60t

- Effects in 6 areas:
 - Meeting increased demand
 - Co-modality
 - Safety
 - Infrastructure
 - Energy
 - Noxious emissions

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Methodology:

- Scenario definition
 - Reference
 - Corridor
 - Full option LHV
 - Compromise
- Stakeholder consultation
- Research into 6 effects
- CBA

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Results:

- Meeting demand: lower transport cost results in more tkm (+1%) with fewer vkm (-13%), highly dependent on ε
- Co-modality: losses in volume for rail (-3.8%) and IWW (-2.9%) relative to reference
BUT: reference contains 30-60% growth
- Safety: individual LHV (slightly) less safe, but positive overall effect due to fewer vkm

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Results:

4. Infrastructure: important negative effect

Code	Shape	Pavement	Slopes		Code	Shape	Pavement	Bridges	
			Extreme loads	Fatigue				Extreme loads	Fatigue
G00		1.00	Green	Green	G00		1.46	Yellow	Red
F70		1.00	Green	Green	C48		1.85	Yellow	Red
E50		1.00	Green	Green	B44		1.62	Yellow	Red
C40		1.00	Green	Green	E00		2.05	Yellow	Red
D46		1.00	Green	Green	F00		2.07	Yellow	Red
B40		1.00	Green	Green	A44		2.31	Yellow	Red
O44		1.42	Yellow	Yellow				Yellow	Yellow

5. Energy: FC/tkm:

25.7/1000tkm → 22.75/1000tkm (-12%)
overall effect CO₂: -3.6%

6. Noxious emissions: NOx -3.8%, PM -5.0%

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Results:

- CBA: all scenarios have positive effects, with full option the largest: 24-29 billion €/year for 2020
→ mainly due to lower transport costs
- Investment in safety features, bridge reinforcement, other transport modes recommended
- Introduction in steps (40t → 50t → 60t)
- Road pricing

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