European Commission

Reducing HDV CO_2 emissions

Stakeholder meeting 3/7/2012

Climate Action

Reducing HDV CO_2 emissions

Afternoon session

Policy options to reduce HDV fuel consumption and CO_2 emissions

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Options:

1, "Status quo", baseline scenario including already approved / proposed policies

2, Implement Transport White Paper actions

3, Improve knowledge and transparency on HDV CO_2 emissions

4, Include HDV emissions in EU ETS

5, Set mandatory emission limits

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Option 1: Baseline scenario

- decoupling with GDP

- improved fuel efficiency of vehicles : +1% annually

- implementation of existing or proposed directives. e.g. implementation of Directives 2009/28/EC and 2009/30/EC on bio-fuels

Option 1 - Baseline scenario : A number of existing & proposed EU legislation and programmes already expected to contribute lowering HDV CO_2 emissions, e.g.:

- "Clean vehicles" Directive 2009/33 on procurement of public authorities' HDVs

- EU funded R&D programme « Green car initiative » covering HDVs

- Low Carbon Fuel Standard – Directive 2009/30 (setting 6% life cycle GHG reduction requirement by 2020).

- Improved logistics and fleet management: ITS directive (2010/40/EU)

- Proposed Revised Energy Taxation Directive COM(2011)168/3 with new minimum tax rates.

- Road user charging: recent Eurovignette Directive revision

- Tyre labelling and rolling resistance legislation

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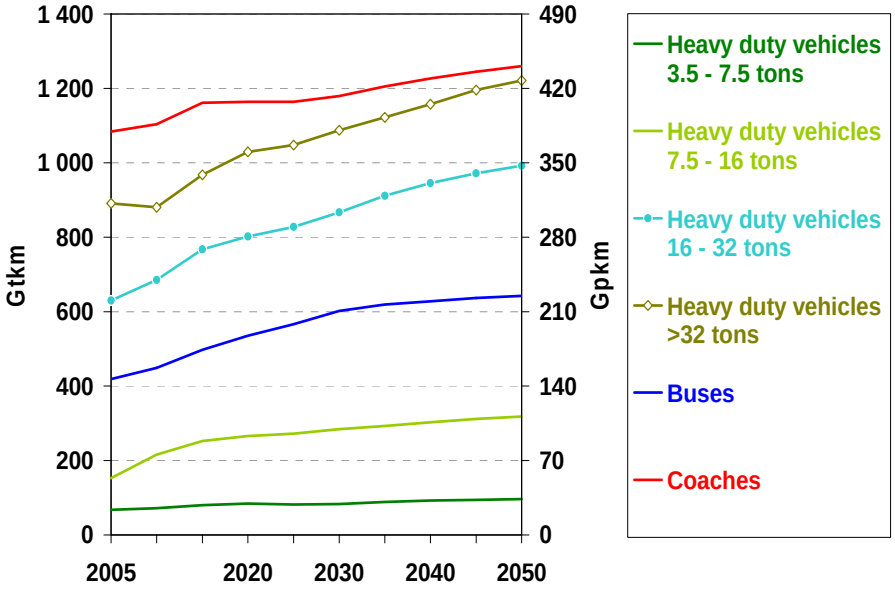
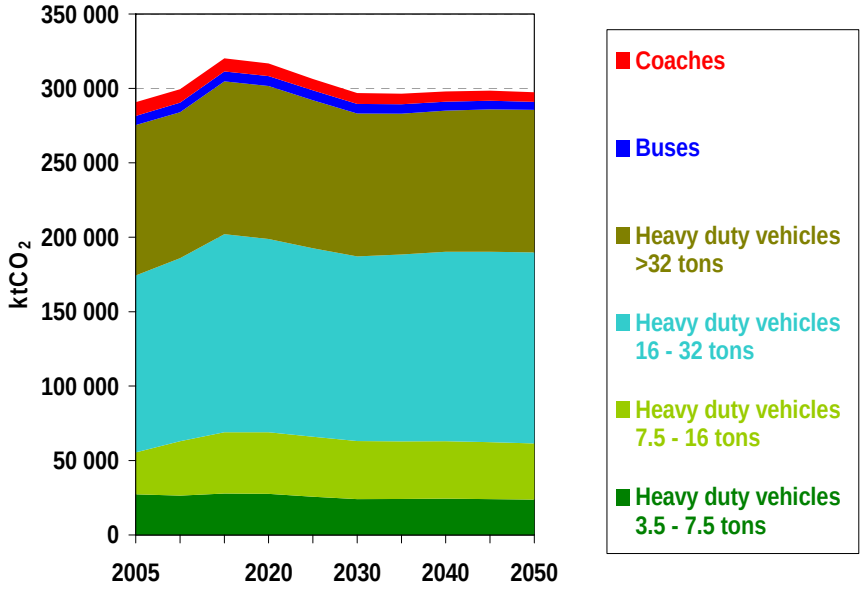
Latest PRIMES-TREMOVE modelling, baseline scenario

HDV Activity Gtkm / Gpkm



TTW emissions HDVs ktC02



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Baseline scenario (option 1) *assessment*

HDV transport would not significantly contribute to meeting EU GHG objectives and Transport White Paper specific objectives for transport (-60% by 2050 vs 1990)

Conclusion → Baseline "no policy change" scenario not sustainable

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Option 2: *Implement Transport White Paper announced actions*

- *Review cabotage legislation (Regulation 1072/2009/EC)*
- *Review road user charging (Directive 2011/76/EU)*
- *Review weights and dimensions legislation (Directive 96/53/EC, Regulation EC/661/2009 and Directive 2007/46/EC)*
- *e-freight initiative*
- *Transport carbon footprint : encourage certification, develop commun standards*
- *Zero emission urban logistics initiative*
- *Clean power for transport initiative*

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***Option 3**: improve knowledge & transparency of HDV CO2 emission*

- step one: finalise development of simulation tool 2014/2015

- step two: introduce a registration / reporting regulation

- possible step three: certification/labelling tool

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Option 3 *Assessment*

'Pros': -a necessary step for other measures such as setting limits or ETS inclusion

- costs limited to measurement & recording of emissions

Limitations: will not as such be sufficient for materially lowering emissions. An action to implement in tandem with others.

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Option 4: *include HDVs in EU Emissions Trading Scheme (ETS = carbon market)*

Preliminary step: recording emissions

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Option 4, *<u>including HDV transport in EU ETS</u>*

Assessment:

In view of marginal costs of lowering CO_2 emissions (CE Delft curves), HDV Operators would most likely prefer trading ETS allowances rather than investing in upgrades (carbon price only marginally influencing fuel price effect in cost curves)

(see attached cost curve)

→ limited effectiveness in curbing transport emissions, emission cuts would take place in other sectors

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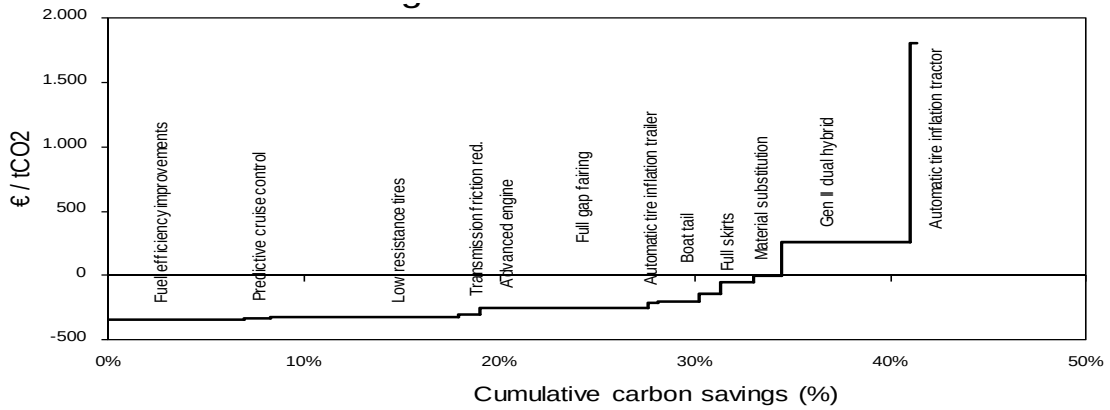
Example: Regional delivery truck cost curve



Project name	Capital cost (€)	Additional fuel saving percentage (%)	NPV (€)	Marginal abatement cost (€/tCO2)	Cumulative carbon savings (%)
Fuel efficiency improvements	-	6,9%	11.338	-343,41	6,9%
Predictive cruise control	81	1,4%	2.214	-331,29	8,3%
Low resistance tires	873	9,6%	14.949	-324,46	17,9%
Transmission friction red.	202	1,0%	1.484	-302,28	19,0%
Advanced engine	3.920	8,7%	10.329	-248,93	27,6%
Automatic tire inflation trailer	283	0,4%	431	-207,27	28,1%
Boat tail	1.414	2,2%	2.132	-206,45	30,2%
Full gap fairing	1.011	1,0%	709	-141,64	31,3%
Full skirts	2.425	1,7%	399	-48,48	33,0%
Material substitution	2.401	1,5%	22	-3,10	34,5%
Gen II dual hybrid	18.794	6,6%	-8.024	255,84	41,0%
Automatic tire inflation tractor	3.638	0,4%	-3.056	1.804,50	41,4%

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Option 4, *including HDV transport in EU ETS*

→ *limited effectiveness in curbing transport emissions*

→ *efficiency conundrum*

→ *predictability : high as regards emission amount, but low as regard cost (tCO2 price fluctuation)*

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Option 5: *set limits*

- *5,i* *either CO2 engine-only limits*
- *5,ii* *whole vehicle emissions limits*

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Option 5,i

Setting engine-only limits

Measurement foreseen under EuroVI regulation

Requirements:

step 1 reporting +

step 2 ad hoc legislation setting limits

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Option 5,i *Assessment*

Setting engine-only limits

Pros: "light" in terms of regulation and limited costs

Limitation: not comprehensive, will only contribute adressing part of the problem. Will not seize the full potential for HDV CO_2 emission abatement. Untapped potential reductions.

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Option 5,ii *Setting CO_2 emission limits on whole vehicle emissions*

Preliminary requirements:

- *a./ completion of simulation tool development*
- *b./ registration/reporting regulation needs to be adopted beforehand*
- *c./ precise reporting baseline required*

→ a rather long-term option

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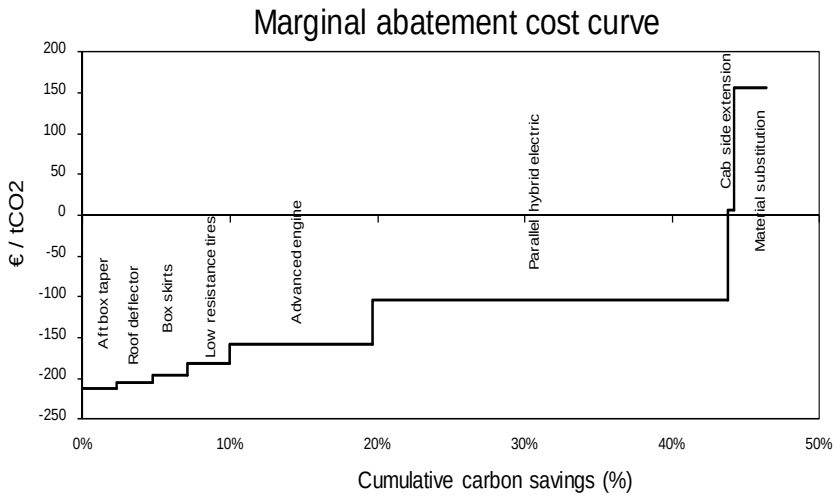
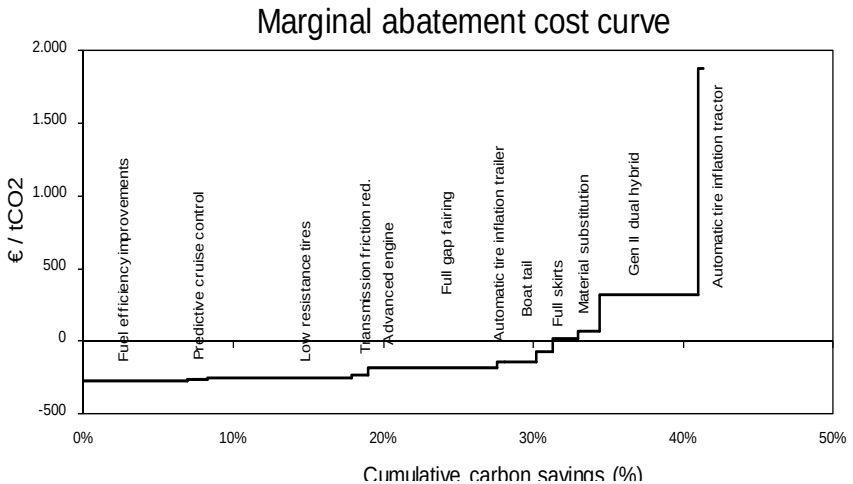
Option 5,ii *Effectiveness : high potential*

Urban delivery



Regional delivery



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Assessment summary, ***option 5,ii*** *whole registered vehicle emission mandatory limits:*

- *Effectiveness : potentially high - In view of rather long-term feature CO_2 abatement potential and costs would have to be fully re-assessed in due course.*
- *Important economic & employment benefits*
  - *a./ transfer of value from oil industry to HDV manufacturing*
  - *b./ reduced operating cost of transport*
- *Efficiency: limited costs vs high benefits*

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Timing considerations

Option	Short-term	Medium- term	Long-term
2, Improve knowledge and transparency	X	X	
3, White Paper Transport actions	X	X	X
4, Include HDV transport in EU ETS		X	X
5, Mandatory emission limits		X	X

Thank you for your attention