

Best available technologies for emission control techniques on mobile sources

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Technical description of BAT candidates

- **Pollutants** addressed, type of application, short description
- Environmental **benefit** (% reduction)
- **Extra costs** (installation, operation, ...)
- **Synergies & trade-offs**
(fuel consumption, non-regulated pollutants, ...)
- **Limitations** in applicability, implementation issues, maintenance requirements, ...
- Successful **examples & references**

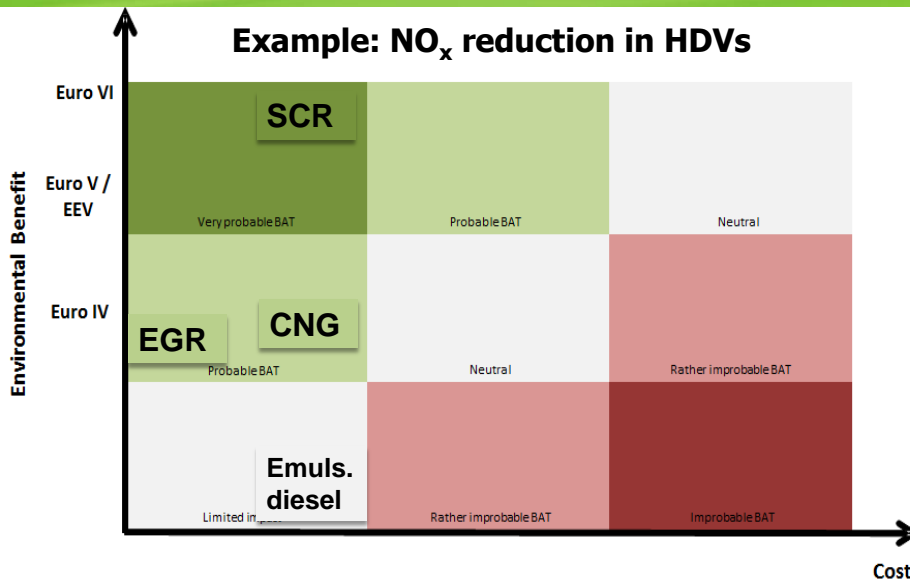
Overview of technologies

Description		Example
Main pollutants per mobile source are targeted		NO_x reduction in heavy duty diesel road vehicles
Technologies from different categories	Engine measures	Exhaust Gas Recirculation (EGR)
	Aftertreatment	Selective Catalytic Reduction (SCR)
	Fuels	Natural gas (CNG)
	
	Powertrain	Hybridization
Non-technical	Enhanced Inspection and Maintenance	

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1st step: Emission reduction vs. costs class



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2nd step: Limitations, trade-offs, synergies

- Discuss **bottlenecks, synergies, trade-offs**

Example: NO_x reduction from heavy-duty vehicles

SCR	<ul style="list-style-type: none"> •... •Urea additive must be refilled ⇔ infrastructure needs to be available; risk of 'ammonia slip'. •OEM application offers fuel economy benefit •SCR is a BAT having some limitations e.g. urea infrastructural needs, lower efficiency in low-load city driving.
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2nd step: Limitations, trade-offs, synergies

CNG	<ul style="list-style-type: none"> •Conversion to NG can lead to some NO_x reduction, but the technical complications, fuel availability, and high initial costs are limiting factors; NG for trucks is still at experimental scale. CH₄ emissions and PN may increase in some applications. •Hence, NG is considered as BAT especially for OEM applications in captive fleets (e.g. buses).
DME	<ul style="list-style-type: none"> •It is a NG liquid derivative, offering similar emission reduction profile. Easier handling for refueling and storage. Experience in DME-fuelled vehicles is limited. More appropriate for dedicated fleets (e.g. buses) or for use in fuel cells. •It can be considered for diesel replacement in future, but the issues of production and distribution must be addressed first.

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Next steps

- Written comments until **24 October 2014**
- Finalization until **December 2014** of
 - Technical Review (~170 pages)
 - draft Guidance Document (~25 pages)
 - further suggestions
- At discretion of EGTEI / TFTEI.....
- Any follow-up work & stakeholder meetings...?