

New Transport Technology – how does it benefit the transport industry?

By

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Drivers of technological development

- 1. The ever-increasing oil price
- 2. The looming spectre of diminishing fossil fuel reserves
- 3. The need to protect our environment
- 4. The need to drive down costs generally to become globally competitive
- 5. Stricter law enforcement
- 6. The need to achieve better vehicle utilization

Areas to be discussed

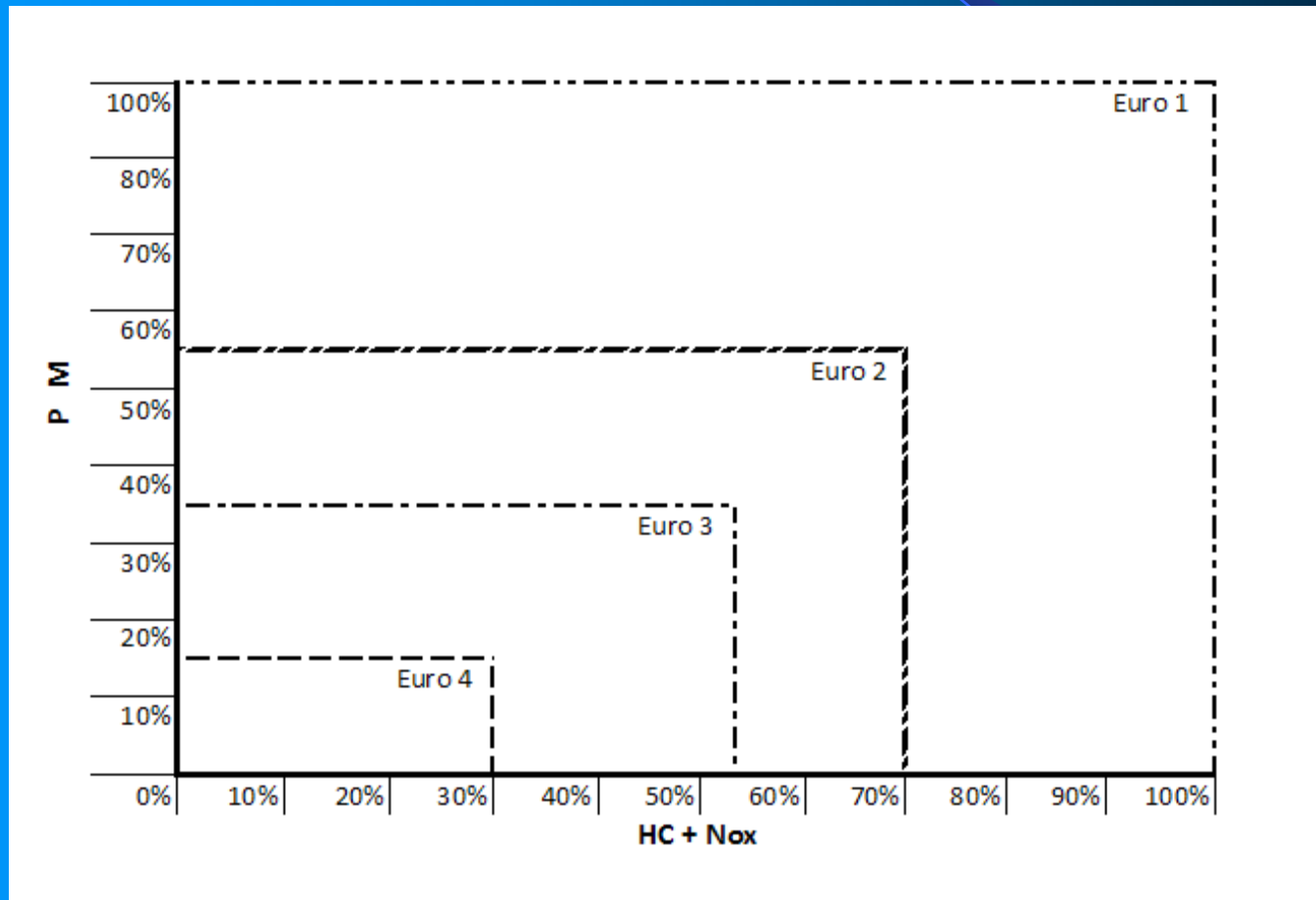
- Engines and drivelines
- Fuel and lubrication
- Electronics
- Braking systems and retarders
- Suspensions
- Tyres
- Chassis and body materials
- Vehicle tracking and performance prediction

	Then (1968)	Now (2009)	Diff %
Engine configuration/capacity	V8/14.2 litre	V8/15.6 litre	10
Power	257 kW(350hp)	456 kW (620 hp)	77
@ engine revs	2300	1900	-17
Torque	1250 Nm	3000 Nm	180
@ engine revs	1000-1400	1000-1400	0
Engine mass	1155	1478	28
Injection pressure	203 bar	1500 bar	639
Fuel consumption	49 l/100km	36.6 l/100km	-25
Average speed	54.9 km/h	75.9 km/h	38
Noise	76.5 db	62.1 db	-19
Payload Productivity	23.5	47.7	103

Sulphur content specifications

Specification	Sulphur ppm (max)	
	Standard	Low
South Africa	500	50
Euro 2	2000	
Euro 3	350	
Euro 4	50	10
New Zealand	50	
Australia	50	

European emission legislation




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Potential difference

Configuration	Productivity	Diff%	from Base
Standard vehicle	27.6		
– low RR tyres	30.0	8.7	8.7
– retarder	32.5	8.3	17.8
– better driveline	33.2	2.2	20.3
– lower tare mass	35.0	5.4	26.8
– low wind resistance	35.3	0.9	27.9

Productivity = Payload X Ave speed / Ave fuel consumption

The background is a gradient of blue, transitioning from a lighter blue on the left to a darker blue on the right. A thin, curved line starts from the top left and arcs towards the right. A large, light blue triangular shape is positioned on the right side, pointing towards the center.

**The diesel engine still has
tremendous potential**