

Is the U.S. Making Diesels Hard To Start?



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Outline

- ◆ Health effects of Diesel exhaust
- ◆ Emission standards - Light duty vehicles
- ◆ Emission performance
- ◆ Economics vs competition
- ◆ Policy considerations - CA view



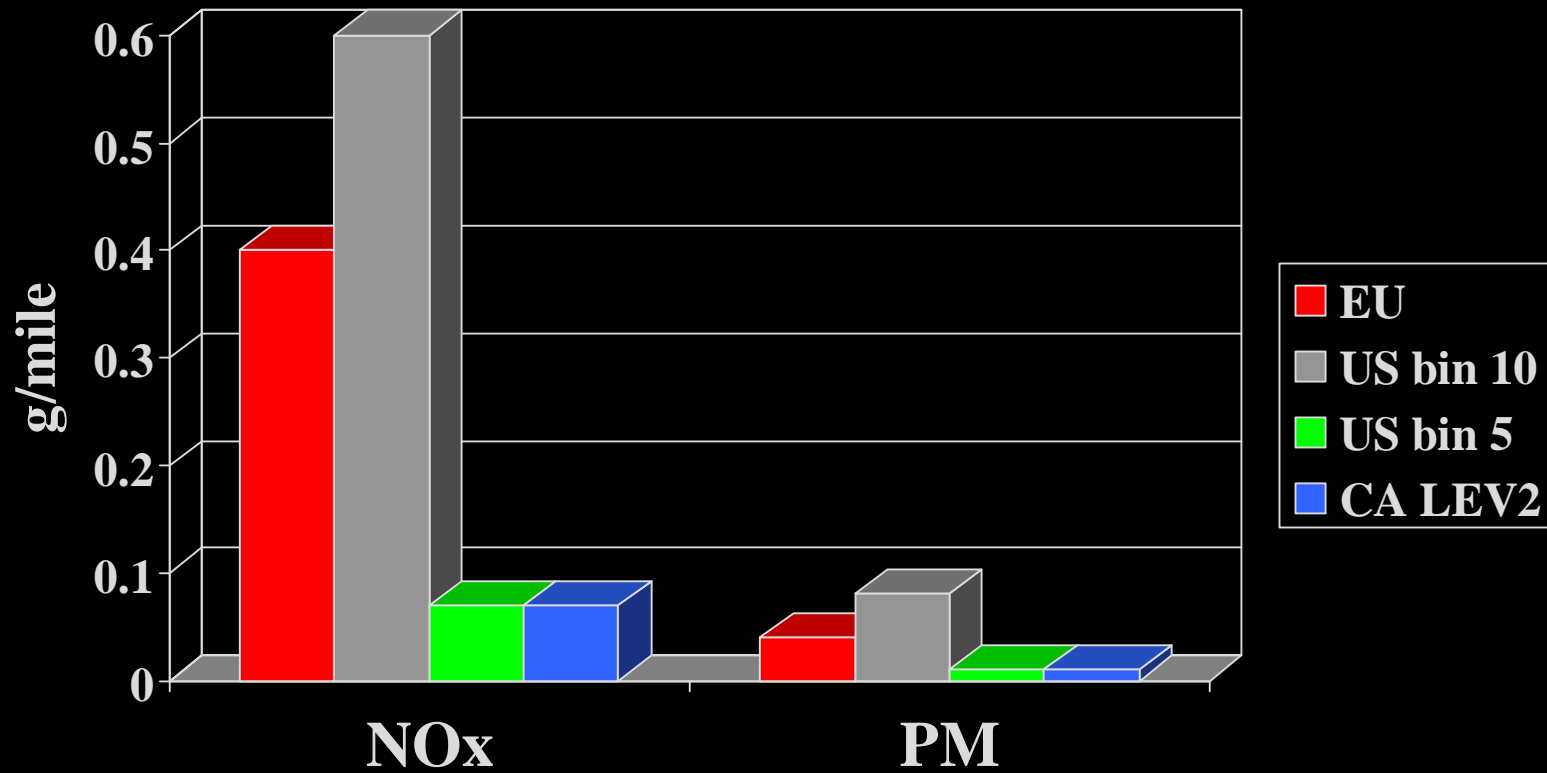
Health Impacts of Diesel in California

Impacts Of Diesel PM_{2.5}	
Deaths	2,900
Chronic Bronchitis	2,590
Hospital Admissions	2,790
Lower Lung Symptoms	95,400
Loss of Days Work	621,000

Annual



Emission Standards 2005 MY





Emission Performance Light-duty Diesels

Model	NO _x	PM
	g/mile	
CA VW 1.9 l Jetta	0.7	0.053
US Mercedes 3.0 l E300	0.8	0.08
EU Peugeot 607 ¹	0.6	0.0005
Toyota Avensis ¹ Prototype	0.05	0.006

¹ Low mileage



Economic Challenges: LDD vs Gasoline HEV

◆ Fuel economy improvement

- Strong gasoline HEV: 40-50%
- Diesel: 35-40%

◆ Cost¹ (incremental) Short Term Long Term

- | | | |
|-------------------------|--------|--------|
| ● Strong HEV: | \$2500 | \$1500 |
| ● Diesel ² : | \$2350 | \$1900 |

¹ Compact car ² Includes after-treatment



Policy Considerations: Light-duty Diesels

- ◆ If light-duty diesels met LEV2 emissions, consider them clean (for now)
 - Compliance by 2007 likely
 - **NO** need for standards relaxation
- ◆ Can play a role in reducing climate change emissions
 - Mix of technologies likely
 - G-ICE, G-HEV, Diesel