

Second Air Quality Asia - High Level Strategy

India, Indonesia, Pakistan, Philippines

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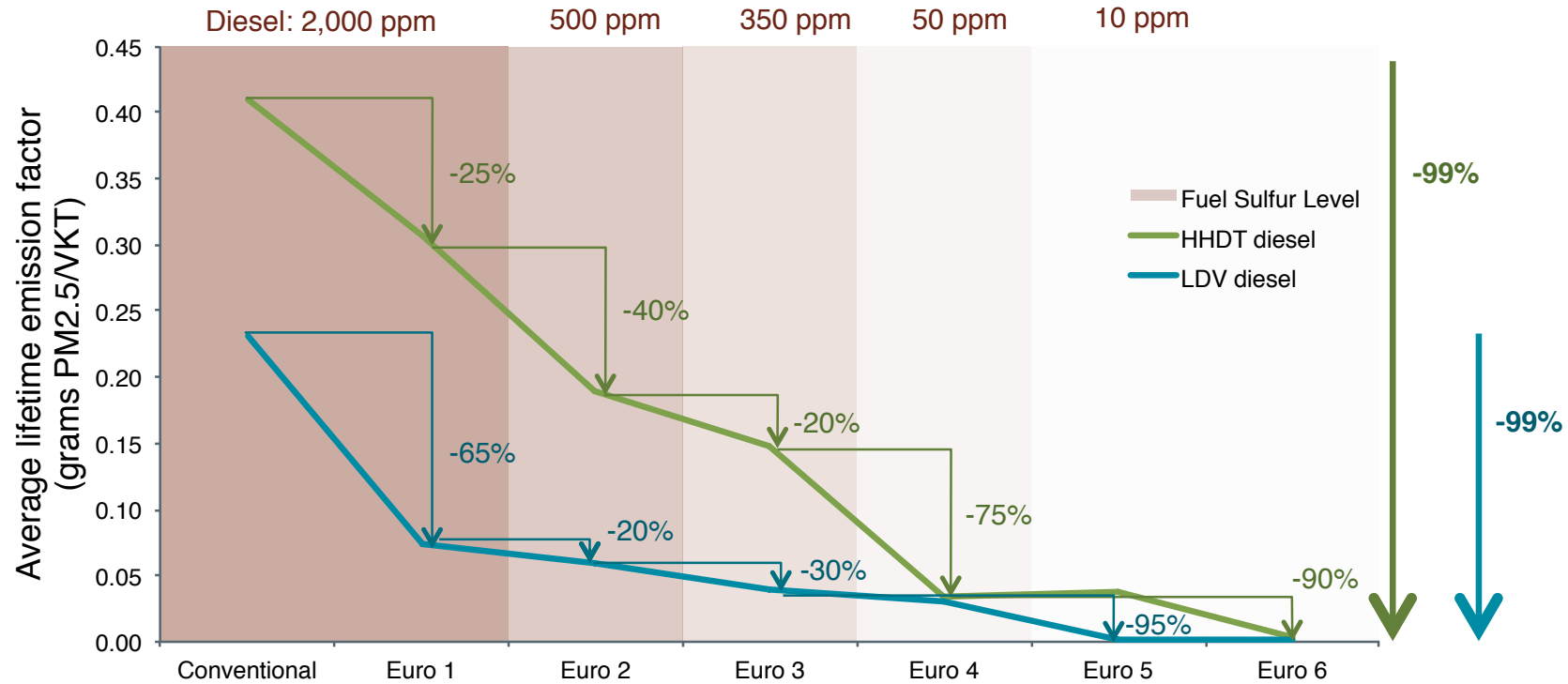
Background

**Motor vehicle emission
standards**

Clean Fuel Standards

US Case Study

Diesel emission standards are extremely effective and require low sulfur diesel fuel.



- Diesel particle filters required by Euro VI reduce diesel PM to near zero.
- Euro IV is a good intermediate goal.

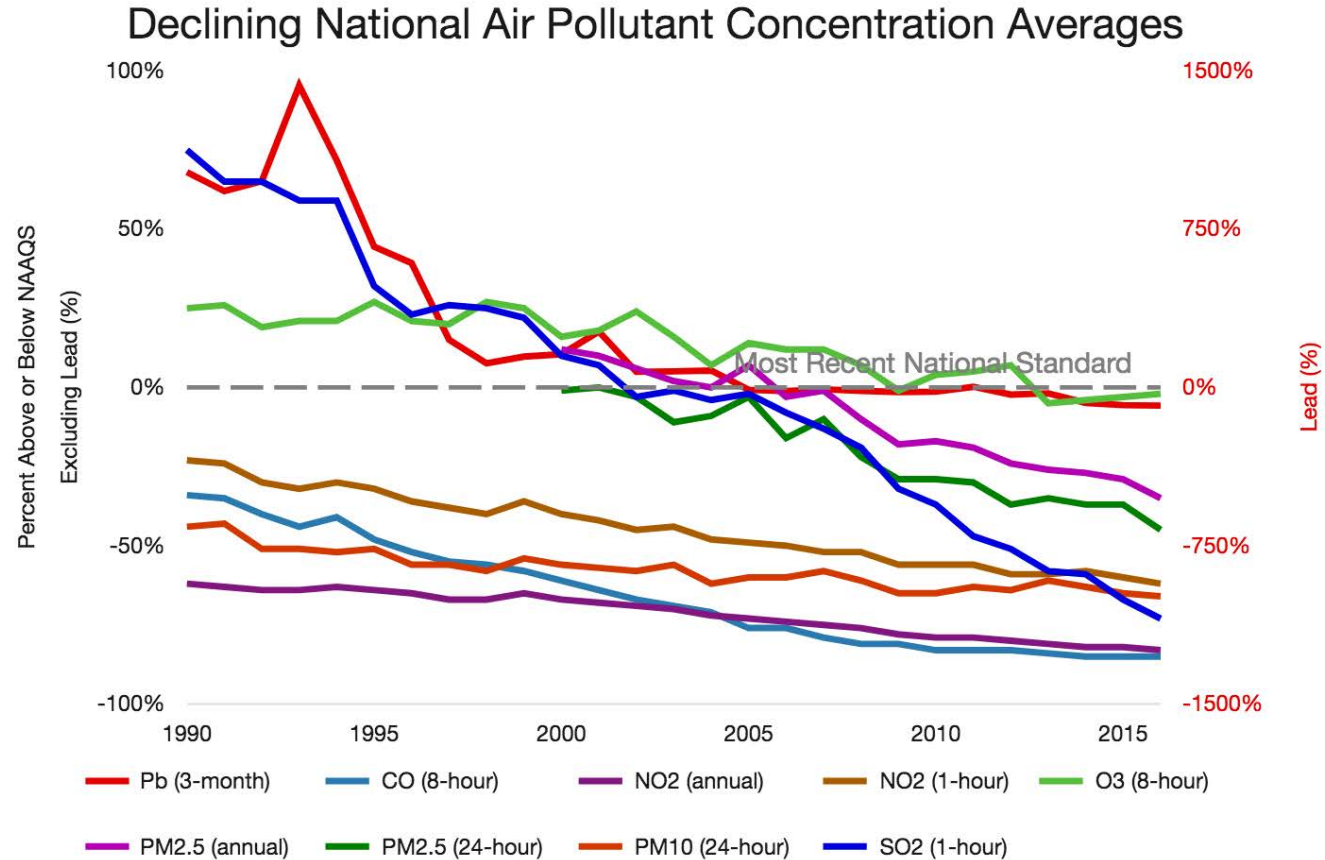
Bottles of Diesel Soot Collected in One Hour by Beijing Environmental Protection Bureau



- Four heavy-duty diesel trucks tested for one hour.
- Trucks compliant with different emission standards (Euro II, III, IV and V).
- Largest improvement from Euro III to IV (75%, see next slide).

Progress on air pollution in the U.S. since 1990

CO	-77%
Lead	-99%
NO ₂	-56%
Ozone	-22%
PM ₁₀	-39%
PM _{2.5}	-42%
SO _x	-85%



Source: <https://gispub.epa.gov/air/trendsreport/2017/#home>

Country focus

India, Indonesia, Pakistan,
Philippines

Ambient fine particulate matter (PM_{2.5}) concentrations are substantially higher than guidelines set by the World Health Organization in 2005.

The number of air pollution-related premature deaths has steadily increased since 1990.

Year

Status of adopted vehicle emissions and fuel quality standards and potential for further progress.

Country	Adopted policies	Potential policies
India	50 ppm sulfur diesel nationwide in 2017, 10 ppm in 2020; new diesel vehicles meet the equivalent of Euro 4/IV in 2017 and Euro 6/VI in 2020	Next-generation standards for trucks and buses in line with California ARB's low-NOx rule
Indonesia	Max. 2500 ppm S diesel in 2017, 500 ppm in 2021, 50 ppm in 2025; new diesel vehicles to meet Euro 4/IV in 2021*	Ensure success of Euro 4/IV; 10 ppm S diesel and Euro 6/VI
Pakistan	500 ppm sulfur diesel has been supplied to major cities since November 2016 (PS:344-2009); implies Euro 2/II	50 ppm S diesel and Euro 4/IV; 10 ppm S diesel and Euro 6/VI
Philippines	- 50 ppm sulfur diesel nationwide - Euro 4/IV applies to all new vehicles as of 1 Jan 2018; second-hand commercial vehicles do not meet Euro IV	- Euro 4/IV implementation for all new and second-hand vehicle imports; - 10 ppm S diesel and Euro 6/VI

World-class “Euro VI” standards reverse trend of increasing diesel emissions and yield substantial Fine particle /Black carbon and NOx reductions.



Global Pathways to Clean Fuels and Vehicles

- A global strategy to introduce low-sulfur fuels and cleaner diesel vehicles
- Funded by the Climate and Clean Air Coalition
- Authored by the ICCT and the United Nations Environment Programme – Transport division.
- Findings: A global transition to low sulfur on-road diesel and associated vehicle emissions standards by 2030 in the countries considered here would result in about 500,000 avoided deaths per year by 2050. The net present value of the health gains to 2050 is estimated at \$18 trillion.



Conclusions

- Clean fuel and vehicle standards are relatively low cost, invisible to the consumer, and extremely effective at improving air quality
- But . . . the standards have to be enforced.
- And . . . the standards only apply to new vehicles, so there is a significant lag time for the vehicle fleet to turn over.
- So . . . best to start as soon as possible, and ideally leapfrog over interim standards to adopt world class standards
- We are happy to help where we can.