

‘Shared Mobility for Climate Mitigation and Big Data’

The Real Urban Emissions Initiative (TRUE)

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Foundation**

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The Context

- There is a big issue with real-world NOx emissions from diesel vehicles.
- There is also an increasing gap between real-world CO2 emissions and
- laboratory testing

The Data

- Remote sensing is innovative and generates a lot of data
- 1 million data points in Europe

The CO2 challenge

- NOx and CO2 emissions gaps not directly linked
- Real-world control of NOx in diesel vehicles is possible
- CO2 emissions from the new car fleet can be reduced even if the market share of diesel cars would continue to fall

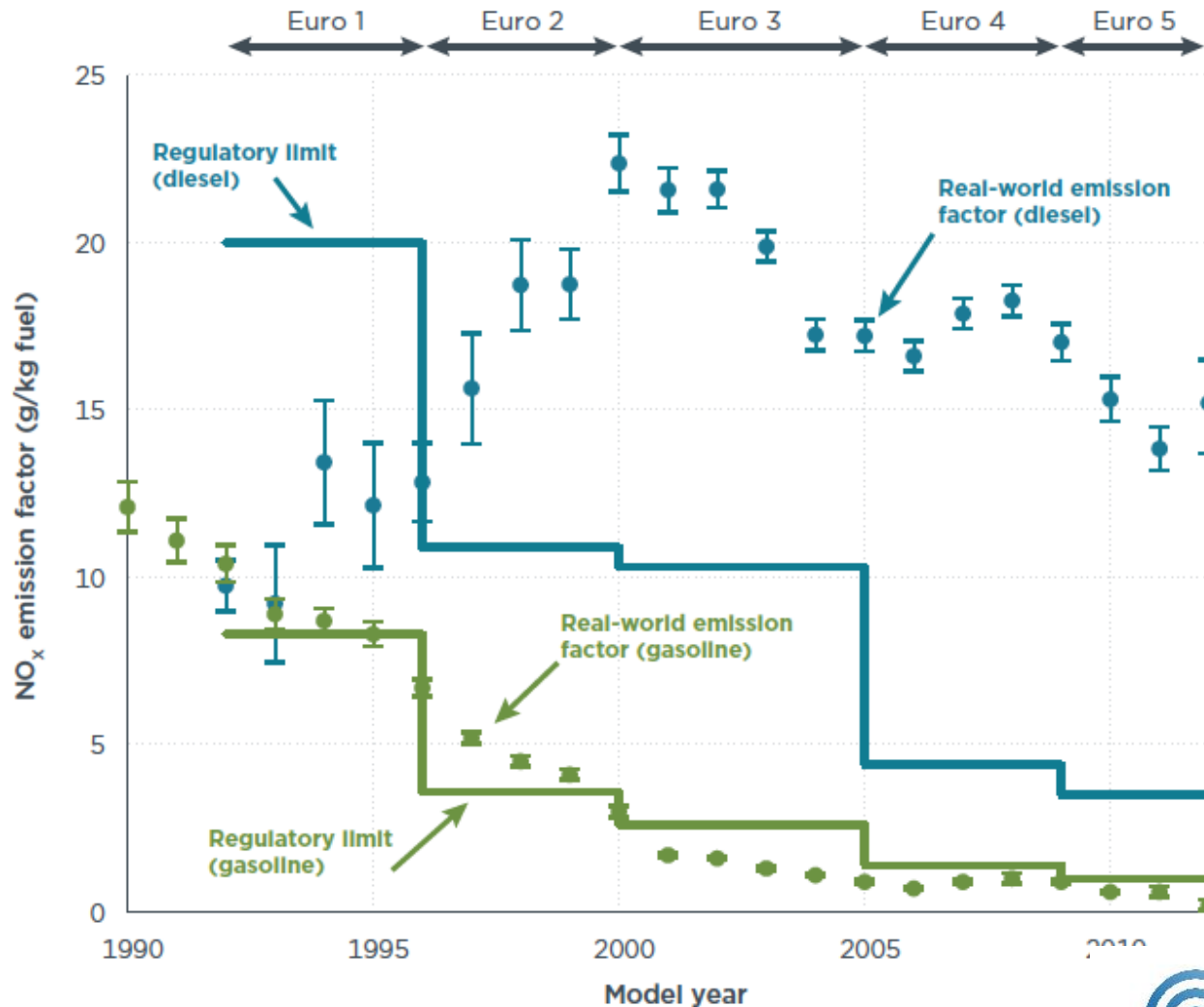
Dieselgate

In May 2014, the ICCT released a report finding that two U.S. diesel cars tested under real world operating conditions exceeded NO_x emission standards by 5x to 35x.

In September 2015, the U.S. government announced that Volkswagen had cheated on its motor vehicle emissions tests, culminating in civil and criminal penalties of more than \$20 billion.

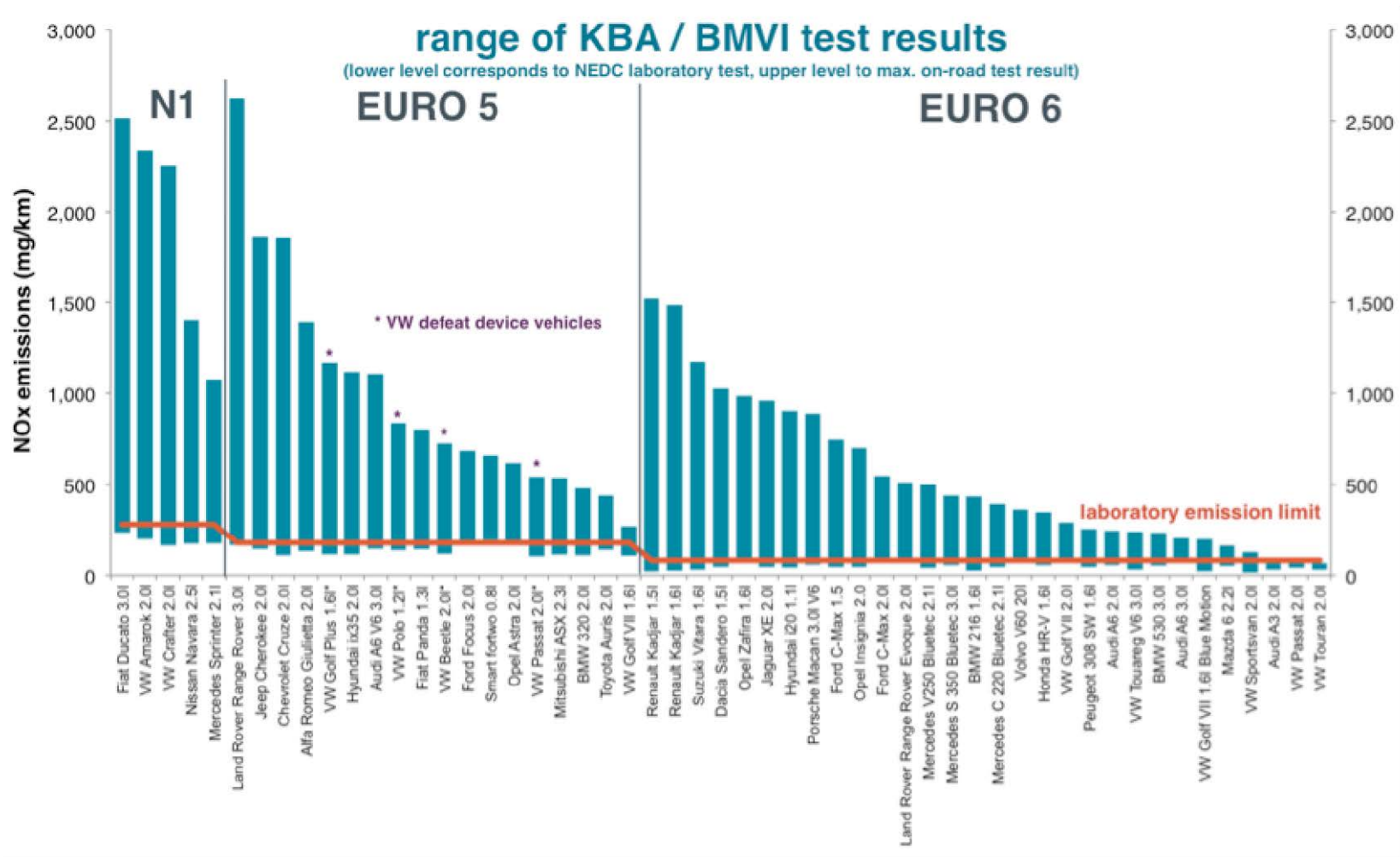


Long-running issues with on-road emissions

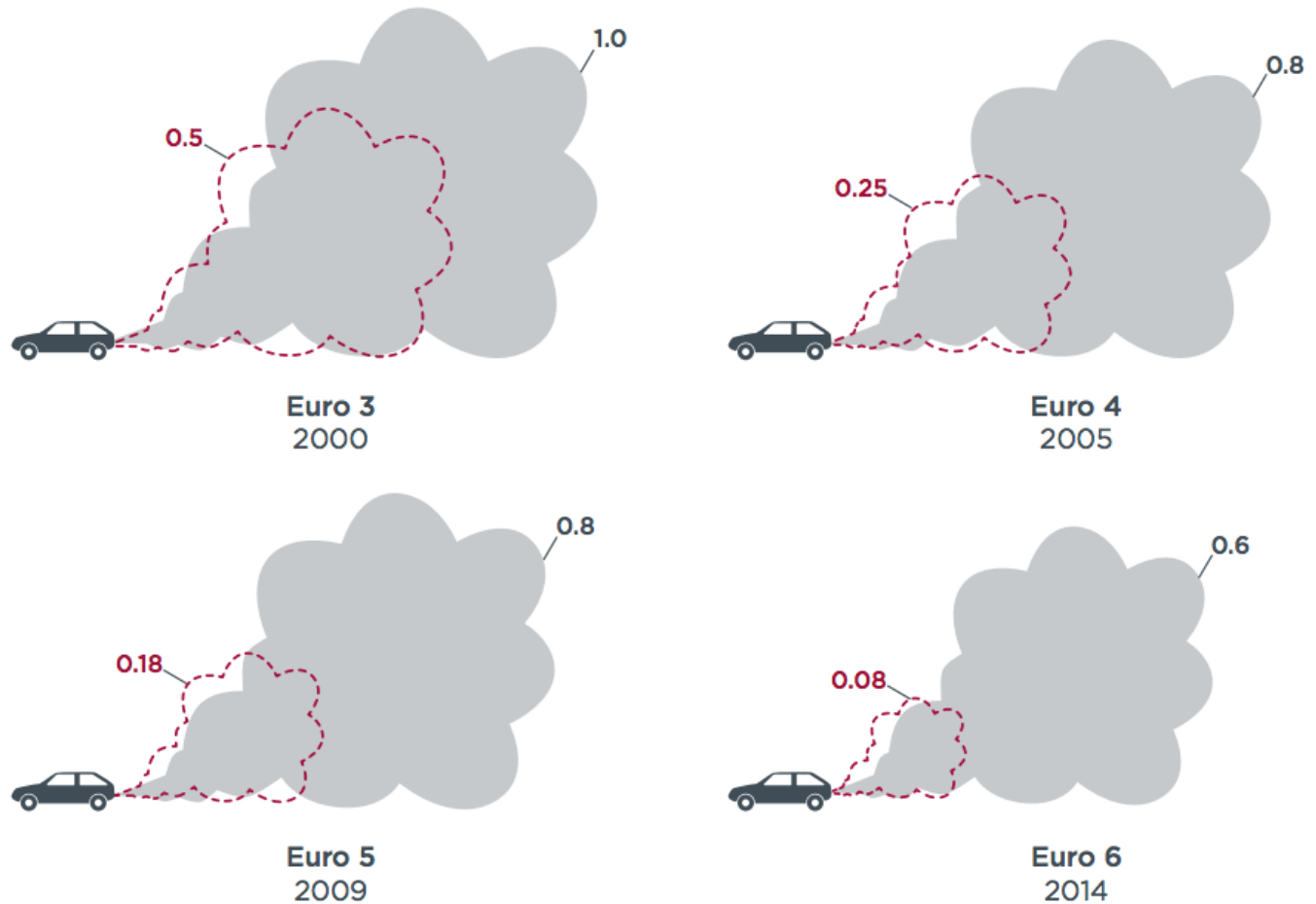


Source: <http://www.theicct.org/environmental-risks-diesel-passenger-vehicles-brazil-2016>, based on Chen and Borken-Kleefeld (2014)

Problems throughout the diesel fleet



Diesel emission reductions never delivered



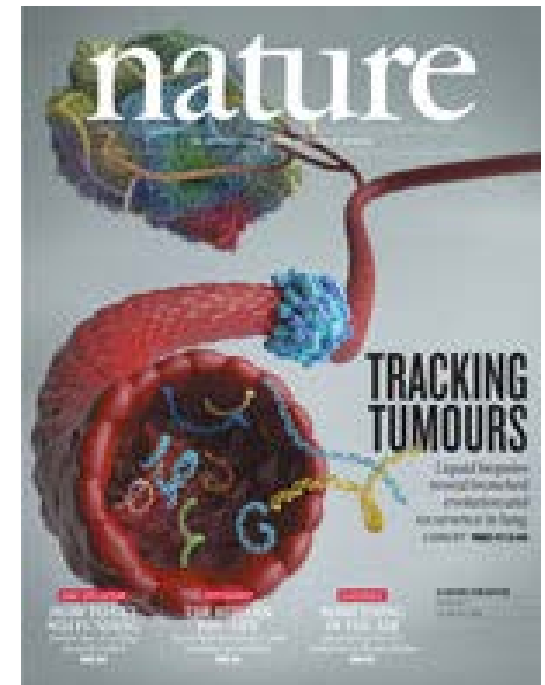
■ On-road measured value (Carslaw, 2011) / (ICCT, 2014)

--- Euro emission limit

Source: <http://eupocketbook.theicct.org>

First GLOBAL estimate of health impacts of real-world diesel NOx emissions (ICCT)

- The global diesel fleet is producing 50% more NOx emissions in the real-world
- 38,000 annual deaths are from these “excess” NOx emissions –1/3 of the 108,000 premature deaths from real-world diesel NOx
- More than 80% of the health impacts are in China, India, and EU-28
- More than 90% of future impacts can be avoided with HD Euro VI, strong RDE, and effective compliance/enforcement



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**Bloomberg
Philanthropies**



**C4O
CITIES**

MAYOR OF LONDON

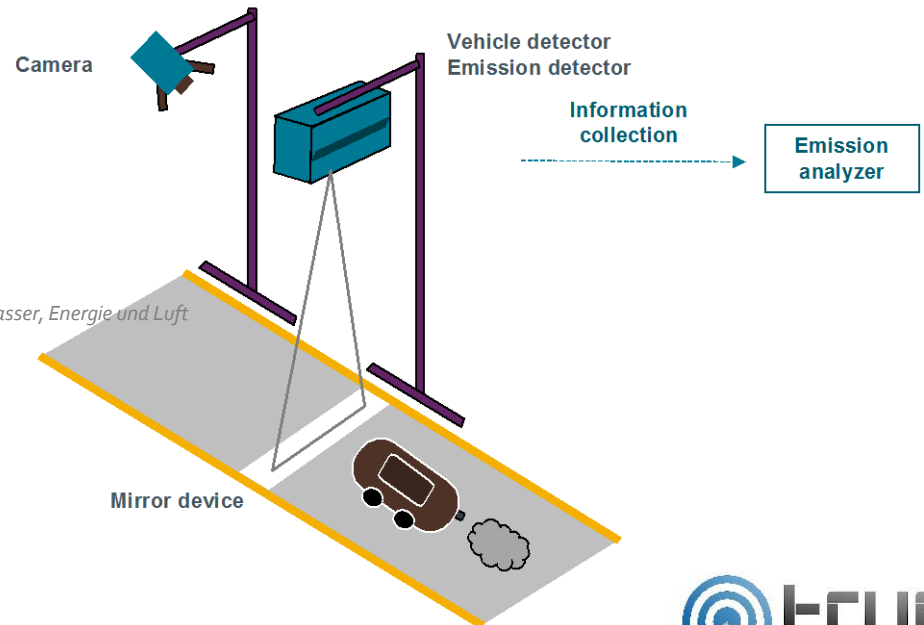
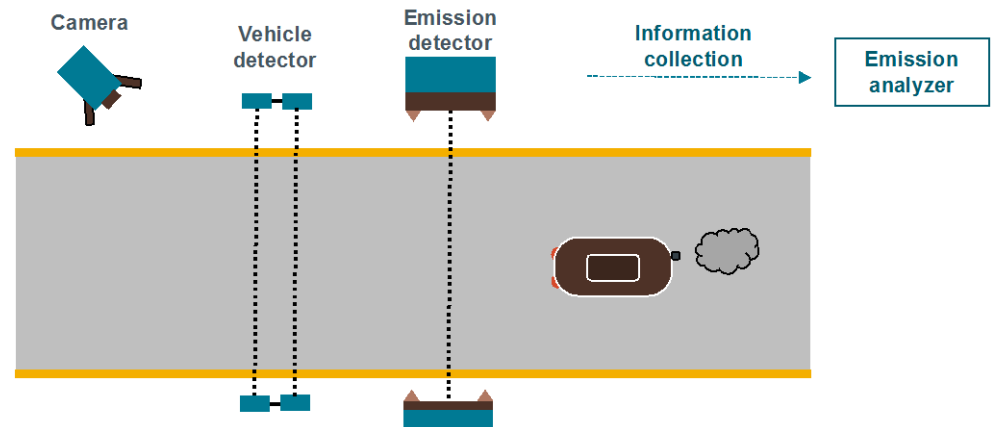
MAIRIE DE PARIS

Remote sensing allows measuring the real-world emissions of thousands of vehicles – remotely!

Horizontal stationary sensor



Vertical stationary sensor



The Real Urban Emissions Initiative - TRUE

- Transparency, innovation, data
- Representative of average **real-world** emissions
- Family grouping allows for a **large market coverage**
- End of this phase c. **1. million data points**
- On-board and remote measurement data
- Ability to **integrate data** from any credible testing organization
- Allows for scores that incorporate **aging and deterioration**
- Coverage of the **secondhand market**
- Can be adopted by **any city** – **more cities = more data**

MARCH 2017 – Paris & London launch partnership with TRUE



ENVIRONMENT | Wed Mar 29, 2017 | 10:44am EDT

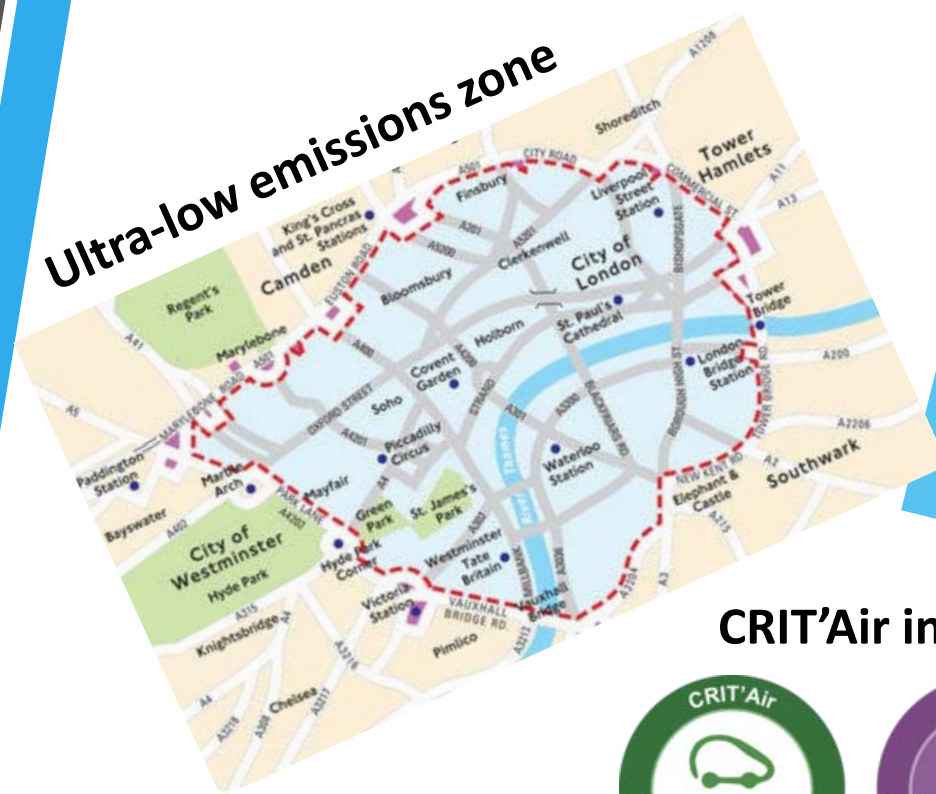
Paris and London mayors announce scheme to gauge car emissions



London Mayor Sadiq Khan (L) and Paris Mayor Anne Hidalgo attend a meeting on air pollution in Paris, France, March 29, 2017. REUTERS/Gonzalo Fuentes

1/2

Policy, consumers, manufacturers



CRIT'Air in Paris



Increasing gap between real-world CO₂ & lab testing also

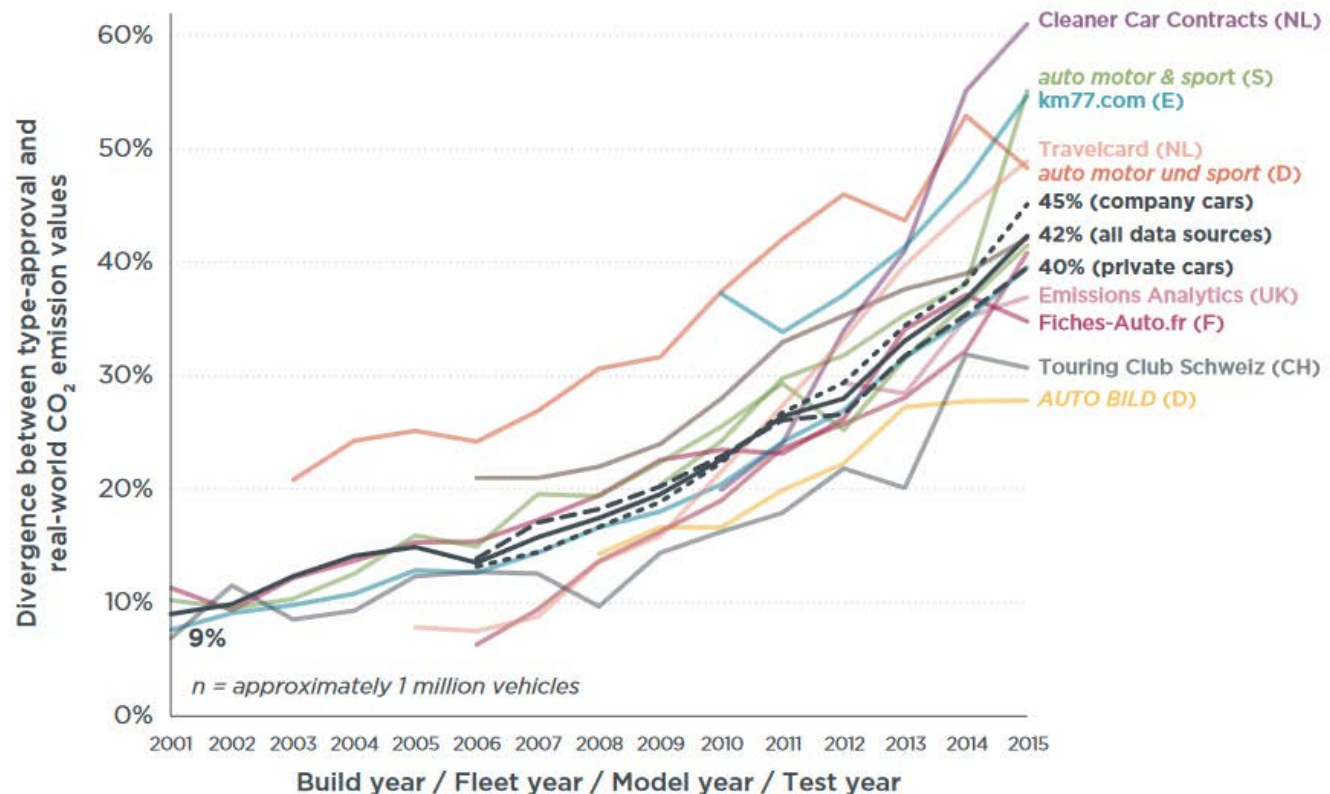


Figure ES- 1. Divergence between real-world and manufacturers' type-approval CO₂ emission values for various on-road data sources, including average estimates for private cars, company cars, and all data sources.

Do we need diesels to control CO2?

Europe can meet its CO2 standards with mostly advanced petrol and some electric vehicles, and it will even be cheaper for manufacturers. (ICCT)

Diesels can be clean. Emission control technology is available now to make diesel cars compliant with the legal limit under real-world conditions.

Within the lower medium segment analyzed, CO2 emissions can be reduced by switching from gasoline to gasoline hybrid vehicles at a much lower price increase, expressed in price premium per g/km of CO2 reduced, than switching from gasoline to diesel cars”

Europe’s new Real-Driving Emissions (RDE) test, could close the gap between type approval and real-world emissions from 5.7 times to 4 times



THANK – YOU

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