A comparison of vehicle emissions testing systems in the EU and US

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While emission standards were tightened, real-world NO$_x$ from diesel cars remained high.
On the road, on average, NO$_x$ emission levels of new diesel cars are 7 times the regulatory limit.

Even a slight variation in testing conditions can result in drastically high NOₓ emission levels.

Source: http://www.theicct.org/nox-control-technologies-euro-6-diesel-passenger-cars
A comparison of laboratory vs. on-road test results for 3 diesel cars in the US triggered “Dieselgate”

Source: http://www.theicct.org/use-emissions-testing-light-duty-diesel-vehicles-us
Government testing has confirmed earlier findings and points to numerous other defeat devices.
A popular type of defeat device is recognizing cold start conditions as type approval testing.

Nearly all manufacturers in the EU make use of the “thermo-window” defeat device.

Introduction of new RDE test procedure is an improvement but still masks part of the emissions.

**NO\textsubscript{x} emission level (mg/km)**

- 2,000
- 1,000
- 180
- 80

**VW Jetta with defeat device (on-road)**

**VW Passat with defeat device (on-road)**

**Euro 6 diesel average car (on-road)**

**Euro VI average truck (on-road)**

**2017: Conformity Factor 2.1 (RDE, on-road)**

**2020: Conformity Factor 1.5 (RDE, on-road)**

**Euro 6 limit (NEDC, lab)**

**Euro 6 gasoline average car (on-road)**
Vehicle emissions testing in the EU vs. US

REGULATOR
- Coast-down testing
  - no confirmatory testing

MANUFACTURER
- Coast-down testing
  - results not public

VEHICLE DESIGN AND BUILD

MANUFACTURER
- Coast-down testing
  - results public

REGULATOR
- Coast-down testing
  - periodic confirmatory testing of in-use vehicles

Source: http://www.theicct.org/future-of-vehicle-testing
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For more detail, please visit the ICCT website

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