

# 5,000 'Dieselgate' deaths in Europe per year: study

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Emissions from diesel cars rigged to appear eco-friendly may be responsible for 5,000 air pollution deaths per year in Europe alone, according to a study published on Monday.

The numbers are in line with previous assessments of deaths due to the

so-called "Dieselgate" scandal, which erupted when carmaker Volkswagen admitted in 2015 to cheating on vehicle emissions tests.

Many other carmakers have since fallen under suspicion.

In May this year, a study in the journal *Nature* said "excess" emissions from [diesel](#) vehicles exceeding certification limits were associated with about 38,000 "premature" deaths globally in 2015.

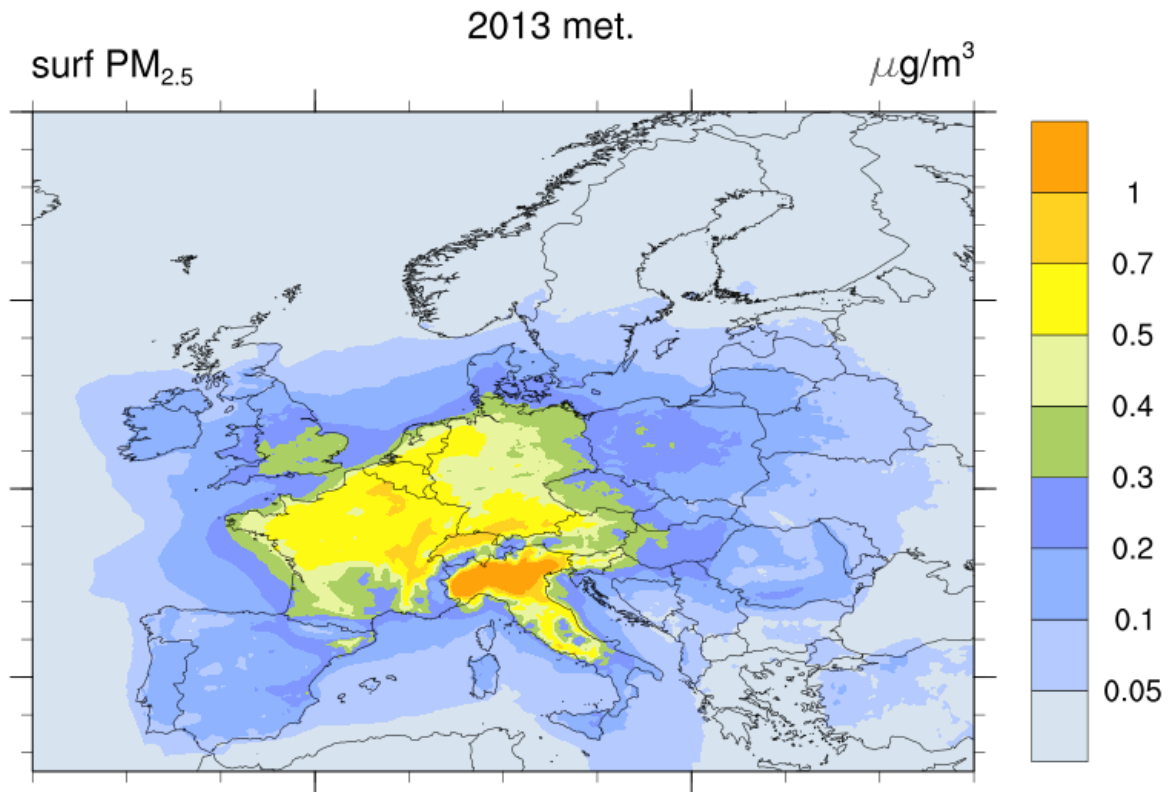
The new study, published in the journal *Environmental Research Letters*, focuses on the perils for Europe.

The researchers from Norway, Austria, Sweden and the Netherlands calculated that about 10,000 deaths in Europe per year can be attributed to small particle pollution from light duty diesel vehicles (LDDVs).

Almost half of these would have been avoided if emissions of nitrogen oxides (NO<sub>x</sub>) from diesel cars on the road had matched levels measured in the lab.

Volkswagen admitted installing illegal software devices in cars that reduced emissions only for the duration of tests.

If diesel cars emitted as little NO<sub>x</sub> as petrol ones, almost 4,000 of the 5,000 premature deaths would have been avoided, said the authors.



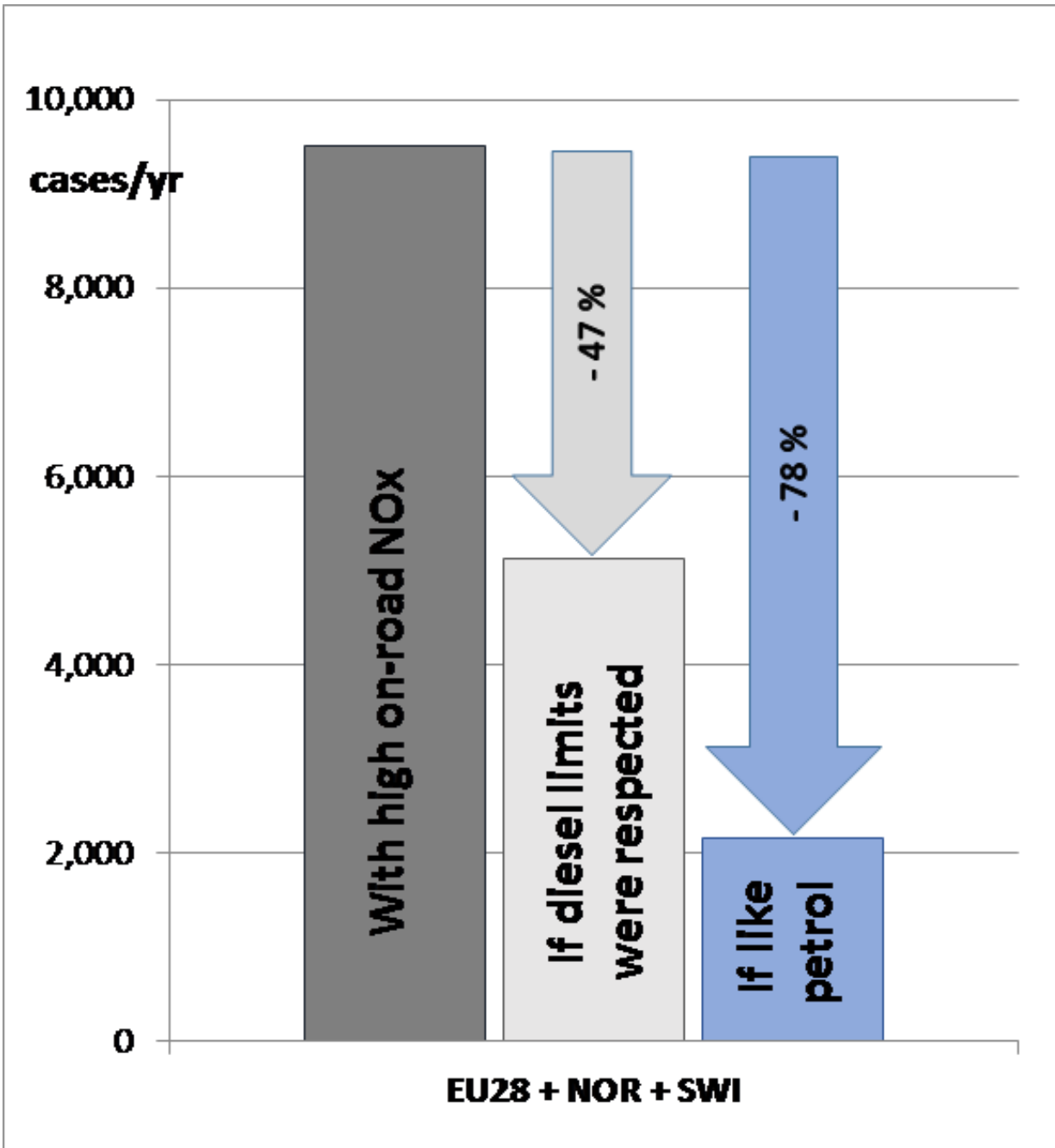
The concentration of fine particulate matter due to excess NO<sub>x</sub> emissions from diesel cars, vans and light commercial vehicles across Europe. Blue colors indicate low concentrations, orange and red indicates high extra pollution. Unit: microgram PM<sub>2.5</sub> per cubic metre, annual average 2013. Credit: Jonson et al 2017

The countries with the heaviest burden are Italy, Germany, and France, the team added, "resulting from their large populations and high share of diesel cars in their national fleets."

Touted as less polluting, the share of diesel cars in Europe rose fast compared to petrol since the 1990s, and now comprise about half the fleet.

There are more than 100 million diesel cars in Europe today, twice as many as in the rest of the world together, said the study authors.

Diesel engines emit less planet-warming carbon dioxide than petrol ones, but significantly more NO<sub>x</sub>.



Number of premature deaths due to excess NO<sub>x</sub> emissions from diesel cars, vans and light commercial vehicles in Europe (left column). Almost 50% could have been avoided if diesel emission limits had been respected on the road (center column). Almost 80% could have been avoided had diesel cars emitted no more NO<sub>x</sub> than petrol cars (right column). Credit: Jonson et al 2017

Road transport, said the study authors, contributed about 40 percent of NO<sub>x</sub> emissions in the countries of the European Union plus Norway and Switzerland.

Composed of nitric oxide and nitrogen dioxide, NO<sub>x</sub> gases contribute to acid rain and suffocating smog.

Through long-term exposure, they can cause breathing problems, eye irritation, loss of appetite, corroded teeth, headaches, and chronically reduced lung function.

| Country                 | Premature deaths 2013 with high on-road emissions | if diesel limits had been respected | if NOx emissions were as low as petrol cars | Premature deaths due to excess NOx emissions |
|-------------------------|---|-------------------------------------|---|--|
| Italy                   | 2810  | 1560                                | 890   | 1250   |
| Germany                 | 2070  | 1110                                | 380   | 960  |
| France                  | 1430  | 750                                 | 260   | 680  |
| United Kingdom          | 640   | 320                                 | 110   | 320  |
| Netherlands             | 360   | 180                                 | 60  | 180  |
| Poland                  | 360   | 190                                 | 80  | 170  |
| Spain                   | 370   | 200                                 | 70  | 170  |
| Belgium                 | 290   | 150                                 | 50  | 140  |
| Switzerland             | 250   | 130                                 | 50  | 120  |
| Hungary                 | 190   | 100                                 | 50  | 90   |
| remaining 20 EUR        | 1060  | 580                                 | 230   | 460  |
| <b>EU-28</b>            | <b>9575</b>                                       | <b>5135</b>                         | <b>2180</b>                                 | <b>4440</b>                                  |
| <b>EU28 + NOR + SWI</b> | <b>9830</b>                                       | <b>5270</b>                         | <b>2230</b>                                 | <b>4560</b>                                  |

The central value is 9,830 premature deaths annually in EU28+NOR+SWI, with an uncertainty range from 6,300 to 13,000 premature deaths. Direct health impacts from NO<sub>2</sub> have not been included to avoid double-counting. Remaining 20 EUR countries: Austria, Bulgaria, Croatia, Cyprus, Czech Rep., Denmark, Estonia, Finland, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden. They account for 23% of the population, but only for 10% of the premature deaths from dieselgate. For comparison the top four countries have 50% of the population and 70% of the dieselgate premature deaths. Credit: Jonson et al 2017

"Excessive premature deaths will continue into the future until LDDVs with high on-road NOx emissions have been replaced," said the study authors.

Earlier this month, tougher emissions tests came into force in Europe.

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