

Diesel vehicles and pollution in Ireland

January 19 2016

Researchers from the Schools of Engineering and Natural Sciences at Trinity College Dublin are teaming up to assess the extent of damaging particulate emissions coming from diesel vehicles in Ireland. These emissions are harmful to human health as well as the environment.

Manufacturing giant Volkswagen was recently found guilty of tampering with [emissions](#) tests with [diesel vehicles](#) in the US. An investigation by the Environmental Protection Agency (EPA) showed that engines were emitting nitrogen oxides (NO_x) at up to 40 times the permitted levels.

The purchase of new vehicles in Ireland has been dominated by [diesel engines](#) in recent years, such that the diesel private passenger car now contributes the highest amount of carbon dioxide (CO₂) emissions in Ireland of any category of vehicle in road transport in Ireland.

Assistant Professor in Civil Structural and Environmental Engineering at Trinity, Dr Aonghus McNabola, said: "With the significant rise in the share of diesel vehicles in the vehicle fleet in Ireland of late, there is a pressing need to assess the impact of this on [human health](#). This increase is driven by a need to reduce CO₂ emissions and climate change but may come at the cost for public health."

Across Europe, there has also been a rapid growth in the number of private diesel passenger vehicles due to lower fuel prices and government incentives connected with reducing CO₂ emissions and climate change.

While modern diesel vehicles emit slightly less CO₂ than their petrol counterparts, they also emit considerably larger amounts of pollutants such as [particulate matter](#) and NO_x, which are damaging to human health.

Exposure to particulate air pollution has been shown to increase the rates of premature death in people with heart or lung disease, non-fatal heart attacks, aggravated asthma, and respiratory ailments. Older adults, children, and people with existing heart or lung disease, are most at risk.

Professor of Geology and Mineralogy at Trinity, Balz Kamber, added: "There is a pressing need to assess the magnitude of the environmental challenge posed by [diesel emissions](#) of particulate matter, and an equally pressing need to develop solutions to protect the population against these. Our research should deliver on both of these counts."

"This project will explore novel ways of tracing the origin of particulate air pollutants, and, because Ireland's geographic position situates us away from major neighbouring emission sources, we have an ideal testbed for such studies."

Trinity's collaborating Schools have received funding of €250,000 from the EPA's STRIVE Programme to examine the impact of diesel vehicles on the exposure of Ireland's population to particulate air pollution in Ireland.

In this novel study, the team will use geochemical techniques to quantify the environmental impact of diesel vehicle particle emissions, and develop emission and exposure models.

Provided by Trinity College Dublin

Citation: Diesel vehicles and pollution in Ireland (2016, January 19) retrieved 24 April 2024 from <https://phys.org/news/2016-01-diesel-vehicles-pollution-ireland.html>

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