Idling Action Research – Review of Emissions Data

Idling is defined as the continuous running of the engine, whilst the vehicle is stationary.

Our research quantifies the exhaust emissions produced when idling, applicable to the types of vehicle present in London today.

Existing data available from DfT (Department for Transport) was analysed. This included laboratory, track and RDE (Real Driving Emission) testing of petrol and diesel cars, vans and HGVs (Heavy Goods Vehicles).

The exhaust emissions considered in this study were:

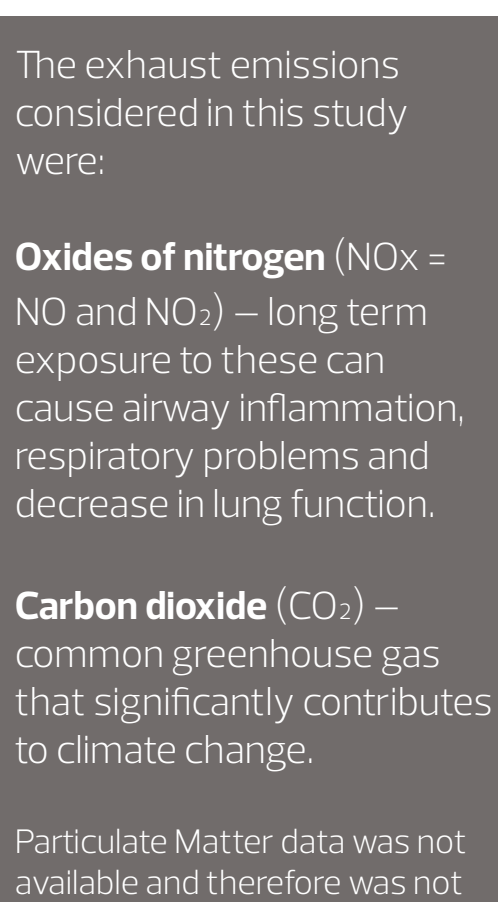
Oxides of nitrogen (NOx = NO and NO_2) – long term exposure to these can cause airway inflammation, respiratory problems and decrease in lung function.

Carbon dioxide (CO_2) – common greenhouse gas that significantly contributes to climate change.

Particulate Matter data was not available and therefore was not included within this study

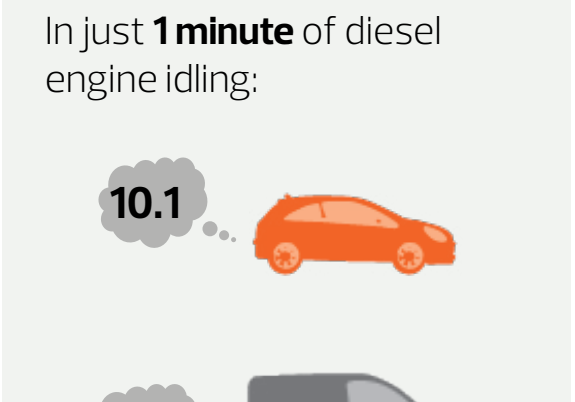
Sections of the trip were identified where the vehicle speed was less than **0.2 km per hour**, for **5 or more seconds**. During these stops, the average exhaust flow rate and composition were calculated.

In just **1 minute** of diesel engine idling:



...grams of **CO_2** are released.

Whilst idling, vehicles are also producing NOx emissions. Although the values are small, cumulatively this will negatively impact the local air quality. In one minute of idling, the average NOx emissions released in grams per minute are:



A large diesel family sized car may emit up to **0.07g** of NOx per minute whilst idling.

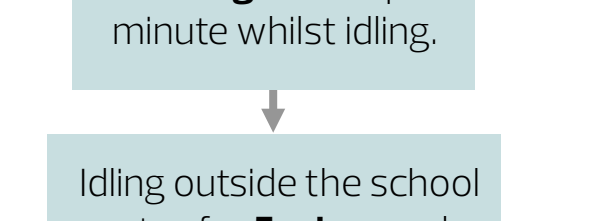
Idling outside the school gates for **5 mins,** each morning and afternoon emits **0.7g** a day.

That means, in one academic year **133g are released.**

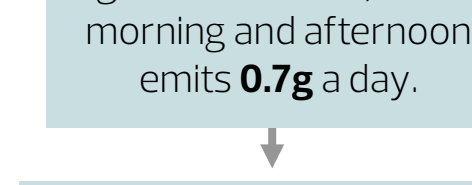
Particularly in built up areas, the air pollution level **may well exceed** the limit set by the UK Government.

Some vehicles within the DfT dataset had auto-stop start technology fitted. Using this information, we were able to investigate whether there is a greater output of pollutants when restarting an engine, rather than idling. For a given 30 second stop and an initial acceleration, our results suggest:

NOx milligrams emitted:



CO_2 grams emitted:



Switching your engine off reduces the emission of pollutants

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