

## Wrong to Discourage Purchase of Diesel Cars

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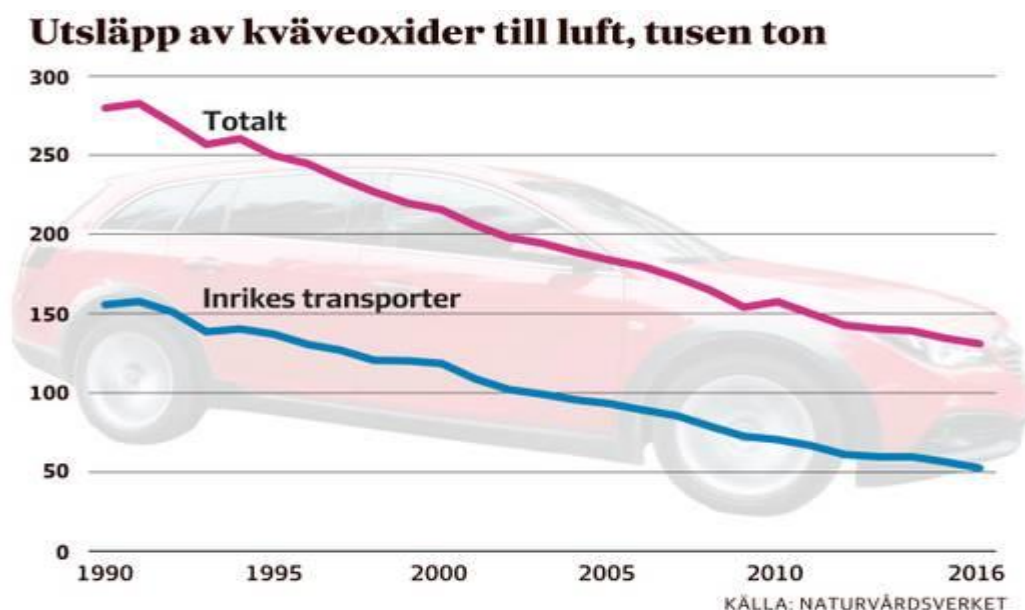
The superior efficiency of the diesel engine compared with the petrol engine has been completely forgotten. Without the diesel engine, it's hard to see how we can even get close to the climate target for more than ten years, four members of the Swedish Royal Academy of Sciences write.

Swedish passenger car sales continue to increase to record levels, and cars with traditional internal combustion engines completely dominate the new vehicle sales. These vehicles will remain in service for at least 15-20 years. Sales of vehicles with alternative propulsion such as electricity, gas, etc., are increasing, but these sales represent a marginal minority. In the foreseeable future, petrol and diesel cars will continue to dominate, and in the pursuit of increased fossil independence it is wise to choose diesel.

The debate about diesel cars has been dominated by emotion rather than fact. At a time when climate change should be the overall focus, the superior efficiency of the diesel engine over the gasoline engine seems to have been completely forgotten. The Swedish Environmental Protection Agency's statistics on road traffic emissions of carbon dioxide show that CO<sub>2</sub> levels have been steadily decreasing over the past decade, largely due to the increased proportion of diesel cars.

Diesel cars are not only fuel-efficient, they also have a significantly higher proportion of biofuel in the tank. Many diesel engines can already be run on virtually pure biofuel.

Obviously, the problem of high emissions of nitrogen oxides and particulates and the car manufacturers' fraud with off-gas tests must be taken seriously, but it still feels that the debate needs to be nuanced and that several questions remain to be answered. How harmful are the oxides of nitrogen and what scientific studies are the basis for the death declaration of diesel? As regards Swedish emissions of nitrogen oxides, statistics from the Swedish Environmental Protection Agency show a sharp and steady decline from about 150,000 tonnes per year in the 1990's to about 50,000 tonnes today; a decrease of one-third (see Graphic).



(On the other hand, emissions from diesel passenger cars have increased slightly in recent years, but on the whole, this increase is hardly visible in the statistics.)

Small particulate matter emissions (PM 2.5) have also fallen sharply since 1990, whereas coarse particles (PM 10) are approximately the same as 1990.

Swedish studies of the health effects of nitrogen oxides do not seem to exist. Long-term exposure to air pollutants from road traffic causes major health problems, but there are many pollutants beyond nitrogen oxides, including substances such as exhaust particles, road wear particles, etc. It is thus difficult to distinguish the effects of individual components.

Today, technologies exist to greatly eliminate nitrous oxide emissions from diesel cars. Most heavy trucks and buses already have such technology and more and more passenger cars are equipped with so-called adblue technology, which involves catalytic reduction of nitrogen oxides to pure nitrogen and water.

We consider it completely wrong to discourage sales of diesel cars. This is particularly important with regard to Sweden's climate targets, which require emissions from domestic transport to decrease by at least 70% from 2010 to 2030. A medium-sized petrol tank consumes approximately 7.5 litres of fossil-based fuel per 100 km while the diesel car with 50% biofuels in the pump consumes about 5.0 litres of fuel per 100 km, and consequently 2.5 litres of fossil fuel consumed every 100 km - thus in round numbers, the fossil fuel consumption in diesel cars is one-third compared to the gasoline car. In our quest for greater fossil independence, it is hard to see how without the diesel engine we can even get close to Sweden's climate target in just over ten years.

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All signatories are members of the Swedish Royal Academy of Science's Energy Committee.

[unofficial translation: SinterCast]