It's not easy being green

There are approximately 900 million vehicles powered by oil. These vehicles produce around 2.8 billion tons of carbon dioxide (CO_2) per year, or around 20% of the world's CO_2 emissions. Most credible scientists believe that CO_2 emissions are a major contributor to global warming. Global warming is said to be heading the planet towards disastrous climate change.

Which is the greenest car? Depends on who's telling the story. On paper, electric and hydrogen cars are best because they put out no pollution at all while you're driving.

However, both electric and hydrogen cars require massive amounts of electricity, and the generating plants that produce this electricity are frequently highly polluting.

Also, a 'green' car may be produced in a very non-green factory.

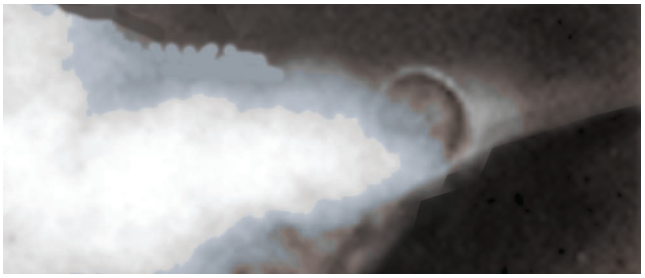
As if this wasn't confusing enough, pollution is measured in different ways in different countries.

Petrol-powered cars emit vast amounts of CO_2 as they are driven.

Diesel-powered vehicles put out far less CO_2 than petrol engines, but they also emit other nasties, including *particulates* – tiny particles that are absorbed when you breathe them in. Inside your body they float around, causing serious health problems including cancer.

If we measured every aspect of a vehicle's emissions, it would produce such a confusing mass of information that most readers would be unable to make useful decisions.

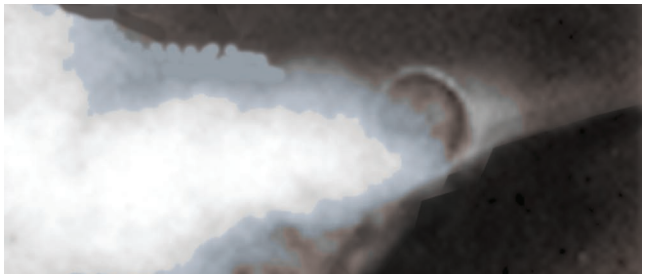
Therefore we have adopted two arbitrary standards: one for petrol engines and one for diesel engines.



Biofuel-powered engines:

There may be a time when biofuels offer a useful alternative to fossil fuels. At the moment, the cure is worse than the disease: production of biofuels has been convincingly shown to cause more greenhouse gases than conventional petrol or diesel.

Therefore, in our humble opinion, biofuels are basically a scam. Therefore, any biofuel-powered engine automatically gets a negative rating.



Petrol-powered engines:

We've partially followed the since-abandoned London guidelines for petrol engines: as far as the Greater London Council was concerned, a 'green' petrol engine was one that puts out 120 grams or less of CO_2 for each kilometre it travels. A more polluting car put out 225 grams or more. London didn't have a 'medium green' rating, so we invented one: 170 grams of CO_2 per kilometre, which is very roughly half way between 120 and 225.

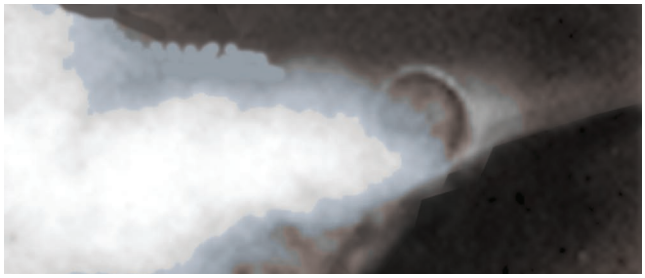
Some cars have a long way to go before they can become green. The Hummer H3 emits 348 grams of carbon dioxide per kilometre – nearly three times as much as the London green standard. The London regulations would have been tough on vehicles like the Hummer: any vehicle that emits more than 225 grams of CO_2 was supposed to get a hefty congestion charge. A change of mayor and a high profile court case ended the proposed charge.

In our reviews, we rate a 'green' car as one that emits 120–170 grams or less of CO_2 for each kilometre it travels. Thus it gets a smiley face: ☺ in our tech specs at the end of the review. If it's a medium car (170–225 grams), it gets a neutral face: 😐. If it's more than 225 it gets an unhappy face: ☹.

You should be aware, however, that the tests for both fuel economy and pollution are carried out for or by the car companies themselves. The results of these tests are then blindly quoted by both governments and the news media as if they were real-world facts. When these facts are checked, however, a different story often emerges. For example, road tests by Britain's *Auto Express* newspaper showed that some cars emit 56% more carbon dioxide than the manufacturers claim.

The Honda Civic hybrid, claimed to be one of the 'greenest' cars, actually performed the worst in the Auto Express tests. Honda claimed that the Civic Hybrid put out 109 grammes of CO_2 per kilometre. In fact, the Honda put out 171. A further five 'green' vehicles failed to match the claims made by their makers.

Another hybrid, the Lexus GS450h, achieved fuel consumption of 10.5 litres per 100 kilometres (26.7 miles per gallon). Toyota claimed a fuel consumption of 7.9 litres per 100 kilometres (35.8 mpg) for this vehicle. Because the Lexus uses more fuel than claimed, it produces more emissions than claimed, as well. However, while, you should treat manufacturers' claims with a healthy scepticism, they are nonetheless a good starting point.



Diesel-powered engines:

Diesels put out less CO_2 but emit other greenhouse gases, including nitrous oxide, (N_2O) & particulates (ultra-fine particles). The European Union has strict standards controlling how much pollution each diesel engine is allowed to emit. These standards have grown tougher and tougher.

The three most recent sets of rules are called *Euro III* (introduced in 2000) *Euro IV* (introduced in 2005) and *Euro V* (introduced in 2010). In our reviews, diesels that already meet the 2010 standards get a smiley face ☺. Those that meet the 2005 standards get a neutral face 😐. All others get an unhappy face ☹. This is a very simplistic rating system, but it gives you some clue as to how 'green' a diesel engine really is •

Useful articles:

- **The emperor's new car**
- **The emperor's new world**

(just click on the name of the article when you have this PDF opened in your computer).