



How green is my Moggie? All things considered, it has a lower carbon footprint than a modern car.

How big is your carbon footprint?

Global warming and its associated issues of atmospheric pollution is a huge issue, and it won't go away. Will ditching our old cars in favour of newer, cleaner technology help the situation or make it worse? **JULIAN MARSHALL** of North Wiltshire branch takes a considered look at the pros and cons

CARBON IS AN ELEMENT and the total amount in the world stays the same regardless. Some is emitted into the atmosphere as carbon dioxide (CO₂) and the amount of CO₂ in the atmosphere is a significant influence on how much the earth gets warmer. Driving a Morris Minor, or any other powered vehicle come to that, puts CO₂ into the air and there is no getting away from it, this does not help our sustainability in the world. It can be confusing when people ask us if using a Morris Minor is sound from the carbon point of view.

When you burn fuel, a compound of hydrogen and carbon, the carbon in it combines with oxygen in the air to form carbon dioxide. For example: if a car does 10,000 miles and fuel consumption is about

50 miles per gallon, then 200 gallons of fuel is used: that would weigh about 0.67 tonne. From that 0.67 tonne of fuel about 0.57 tonne is carbon going into the atmosphere. If your car only did 35 miles per gallon over 5,000 miles, then it would use 142 gallons of fuel and that's 0.4 tonnes of carbon.

The production of the fuel itself will involve some carbon emission too; there is an additional carbon footprint coming from fuel refinement, distribution and the energy used in extraction which is difficult to quantify precisely.

Of course if there were just one car pumping out carbon, it would not contribute significantly to global warming. But as we are responsible people and part of the real world around us, we seek to be sensitive to

our causing the world to heat up through our decisions. Many people see the logic in treating the world and its atmosphere in the way that they would like others to treat it. If so, the first reaction of drivers would rightly be to reduce the mileage, the size/weight of their car and the speeds driven.

Buying a new car equivalent to a Morris Minor (such as a modern BMW Mini, built in the same factory) would mean sending up somewhere in the order of 10 tonnes of carbon. That is an approximate figure that covers energy for assembling and painting on the production line, logistics (fuel used by trucks etc delivering parts and materials and the finished product), making the tools and actually building the factories, and the parts supplies plus raw materials consumed. So

buying just four new cars over 40 years could mean 40 tonnes of carbon going up in the form of CO₂.

Using a new small car, and driving it for 15,000 miles a year at 50mpg would deliver another tonne per year into the atmosphere each year: another 40 tonnes of carbon over that 40-year period. Thus, over 40 years the new car approach emits about 80 tonnes of carbon, plus some for maintenance and for scrapping those four cars at the end of their lives.

Built in a less technological era, with less dependence on outside suppliers, the durable Morris Minor is estimated to have used around four tonnes of carbon in its manufacture. People with Morris Minors tend to drive their cars less, so let's assume we average perhaps 5,000 miles a year at 35mpg. So the driving carbon would be 0.4 tonnes per year. Over 40 years, buying just one durable car amounts to four tonnes for manufacture; fuel creating 0.4 tonnes of carbon emission for each of those years comes to 16 tonnes. That's a total for 40 years of 20 tonnes plus some for maintenance. The durable car emits around 25% of the carbon for the normal car used in this example.

These figures are, of course, very much-rounded estimates, which should be refined in the future. For example; it would be a great help if new cars had labels showing not only the tonnes of CO₂ that go out of the exhaust but also the carbon footprint of the purchase of the car plus its maintenance and the scrapping carbon footprint. Of course Morris Minors tend to be used for a different lifestyle and may have a higher fuel consumption and used over shorter journeys.

OTHER ASPECTS

Some other carbon estimates in this context. In the home, we might consume the equivalent of 1 kilowatt for 11 hours each day, 4mW/hr of electricity a year. To produce that energy, coal, gas and oil fuelled power stations emit around 2.1 tonnes of carbon per year, plus the energy consumed in getting the fuel, in the manufacture of the plant and

SUMMARY PER YEAR AVERAGED OUT:

Type of use	Amount used	Carbon tonnes per year
Ordinary small car	15,000 miles	1
Ordinary small car	Manufacture	1
		Total = 2 tonnes
Durable Morris Minor	5,000 miles	0.4
Durable Morris Minor	Manufacture	0.1
		Total = 0.5 tonnes
Home electricity	4,000 kWh	2.1
Home heating	1,000 litres of oil	3.1
Burning wood	1 tonne	0.5 tonnes
		Total = 5.7 tonnes
Trees (net)	1,000 mature trees	- 1 tonnes
Light bulbs	100 kWh saved	- 0.05 tonnes

transmission energy consumption.

In the home we might also use 1,000 litres of oil; an oil-fired boiler will emit about 3.1 tonnes of carbon.

We are told about the removal of carbon (in the form of CO₂) from the atmosphere by trees. To absorb a net amount of one tonne of carbon from the atmosphere every year would need between 1,200 and 1,800 trees to be growing in UK.

By growing trees and managing their woodlands on a long term basis, the Forestry Commission and many landowners in Britain make a contribution to storing some of the carbon that is sent up into the atmosphere in our everyday lives through driving our cars etc. Burning a tonne of wood (about one year's-worth for a wood burner) would release about 0.5 tonnes of carbon back into the atmosphere. But if the wood were left to decay that 0.5 tonnes of carbon would still be released – unless of course it were buried to become, after millions of years, coal, oil or gas. Even though carbon is emitted from burning wood, using wood as a fuel is still a good alternative to fossil fuels, as long as the trees from which the wood came are sustainably managed. Modern wood-burning stoves are

highly efficient and provide good heating without polluting the air badly.

So a Morris Minor owner may add up to 0.45 tonnes for the car, plus 5.7 tonnes for the home, giving a total of 6-7 tonnes of carbon sent into the atmosphere a year.

MITIGATION MEASURES:

It's hard to make much of an impact on the carbon footprint levels. For example we can save the equivalent of 100 watts by using low energy bulbs for three hours a day; over 365 days that amounts to about 100 kWh: about 0.05 tonnes of carbon per year. Perhaps a more significant measure would be to burn wood purchased from sustainable supplies for use in a modern wood burner.

Choosing a durable Morris Minor is a big decision, and it has a relatively large effect. We can be pleased to be a Morris Minor owner using the durable low mileage car instead of buying shorter-life replacement cars and driving all over the place. We can save more than a tonne of carbon per year, in the form of 3.67 tonnes of CO₂ into the atmosphere.

These are rough figures, but may help people make decisions that could have a significant effect on human sustainability.

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