RAC Foundation

Keeping the Nation Moving

Eco-driving

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There are few motorists who do not want to cut the cost of running a car, not least the money spent when filling up with fuel. According to the RAC Cost of Motoring Index, the average car in the UK guzzles about **£1,600**-worth of petrol or diesel per year.

Eco-driving can help lower this figure.

It offers real scope to reduce fuel consumption and the associated emissions of CO_2 and other pollutants. It also offers the potential for improvements in road safety, without increasing journey times.

Small changes to driving style and vehicle set-up can make car journeys markedly more fuel efficient, regardless of the type of vehicle or its performance. They can also significantly reduce wear and tear and improve the life expectancy of an engine. Applied together it is easy to see how these measures can add up to worthwhile savings.

Pre-trip

Vehicle maintenance: regular maintenance improves fuel efficiency by as much as **10%**.

Tyre pressure: underinflated tyres increase rolling resistance. Drivers should check tyres monthly to ensure they are at the optimum pressure. The Energy Saving Trust estimates that tyres underinflated by a quarter can cause a **2%** increase in fuel consumption.

Wind resistance: unused roof racks and roof boxes should be removed.

Trip planning: know where you are going and avoid congestion. Link or chain together several short trips to make a single longer one.

Unnecessary vehicle weight: don't overload the car. Every additional 45 kg reduces fuel economy by **2%**.

Short-distance alternatives: cold engines use more fuel than warm ones and catalytic converters may not be effective during the first five miles of a journey. Consider using another mode of transport or chaining those short trips.

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During the trip

Air conditioning: only use when needed. All 'ancillary loads' on the engine adversely affect fuel economy – air conditioning most of all. Aerodynamic effects mean that below 40 mph it is more fuel efficient to open a window than to use air conditioning; at higher speeds, the opposite is true.

Unnecessary engine idling: a modern engine is designed to be used 'from cold'. Engines should be turned off for waits of more than one minute, and can be turned on again without the accelerator, using almost no fuel in the process. Between **5%** to **8%** of fuel consumed occurs whilst idling. Stop–start systems help reduce this.

Smooth and reasonable speeds: sharp acceleration and heavy braking wastes fuel, and vehicles tend to be least fuel efficient at quite low or quite high speeds. Aggressive driving can raise fuel consumption by as much as **37%**.

Changing up as soon as possible: gear changes should be made as soon as possible, generally at or below 2,500 rpm.

Anticipation: having good awareness of road conditions and anticipating traffic behaviour ahead will lead to smoother travel and maintained momentum.

Engine braking: when slowing down, drivers should stay in gear but remove pressure on the accelerator early to reduce fuel flow to the engine to virtually zero. Modern vehicles, fitted with fuel cut-off switches, are able to recognise when momentum is moving the vehicle and temporarily stop the flow of fuel to the engine. This is different from coasting in neutral, where the engine still requires fuel, and which is both unsafe and illegal.

Post-trip

Review trip data: motorists can assess fuel economy and driving style data after a journey to learn how to improve their driving style, or to reinforce eco-driving lessons already learnt. Satnavs and an increasing number of apps can help with this.

Source: RAC Foundation Report Easy on the Gas

This factsheet was last updated September 2012.

The Royal Automobile Club Foundation for Motoring is a transport policy and research organisation which explores the economic, mobility, safety and environmental issues relating to roads and their users. The Foundation publishes independent and authoritative research with which it promotes informed debate and advocates policy in the interest of the responsible motorist.

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