

Fuel data collection and use, including carbon footprinting.

This information sheet is designed to help you understand why you need to collect data on fuel use and mileage and how you can use that data to manage your costs and reduce your companies carbon footprint.

Why do you need to collect fleet fuel use data?

Unless we consistently and accurately collect data about how much fuel we use, it is very difficult to come up with comprehensive and targeted strategies for reduction – what we don't measure, we can't manage.

What data do you need to collect?

All vehicles should have a log book which should be completed every time it is refueled. The log book should contain the following fields:

- Date
- Driver
- Current mileage
- Amount of fuel added
- Cost of the fuel/litre
- Where fuel was purchased
- Any maintenance carried out e.g. oil added, tyres checked etc.

Ideally you could ask drivers to completed the log book at the end of each journey, with respect to mileage, traffic conditions etc. However, data is only as good as the people collecting it – the data collection needs to be easy and quick and all staff need to be trained how to collect it to ensure consistency. If drivers are making lots of short journeys with restricted time, be careful not to make data collection unnecessarily time consuming. Log book data should be entered on monthly basis into a data management tool. In addition to this, you should keep good service and repair records for all vehicles.

What level of data management do you need?

Options for data management tools

- The bare minimum:
 - Excel spreadsheet with fuel and mileage data
 - Basic details about each vehicle – age, cost, engine size etc.
- The next level up:
 - A simple fleet management database
 - Off-the-shelf system costing £200 - £500
- At the top end:
 - Advanced fleet management database
 - Integrated with other data systems, e.g. fuel cards
 - Can be linked to in-vehicle telemetry systems

Managers need to decide what is appropriate to their needs but it is often a good idea to start simple and cheap and make sure they know what data it is that they need before buying and installing expensive systems.

How can you use the data you collect?

There are a number of questions you might want to ask of the data:

- 1) How much are you paying every month for fuel?
- 2) If you have a fleet of similar vehicles, do they manage the same average miles per gallon (mpg)
- 3) Do drivers in similar vehicles manage the same average miles per gallon?

If you collect the data accurately, you will be able to spot trends in the data which should allow you to do the following:

- Identify drivers who might benefit from an eco-driving course (remember that the average mpg also depends on the type of driving – if one driver does local deliveries and another does national one, they will produce different mpg)
- Spot vehicles that require servicing or maintenance – a reduction in mpg over time can be an indication that there is something wrong
- Encourage drivers to improve their driving performance and mpg

How to calculate carbon footprint of your fleet?

If you have data on how much fuel you have purchased over a year, it is very easy to calculate the carbon footprint of your fleet vehicles. Fuel use data is the most reliable method of calculating your carbon footprint as the amount of CO₂ released is directly related to the proportion of fuel used.

Standard road transport fuel conversion factors

Fuel type	Units	Total amount used		kg CO ₂ per unit	Total kg CO ₂
Petrol	litres*		x	2.3154	
Diesel	litres*		x	2.6304	
Compressed natural gas	kg		x	2.7278	
Liquid petroleum gas	litres		x	1.4975	

Guidelines to Defra's GHG conversion factors for company reporting. June 2007

*If you need to convert from gallons to litres, multiply gallons by 4.546

If you do not have fuel use data, but you do know how many miles or kilometers your fleet has traveled over the year, you can still calculate your carbon footprint but is it not as accurate – if your vehicles are used for town driving and deliveries, it will underestimate your footprint slightly. Therefore it is always better to base your footprint on actual fuel consumption – another good reason to collect the data. The following table shows the conversion factors for petrol cars. There are similar tables for diesel and petrol hybrid cars and freight road mileage available in the Defra Guidelines (see Transport useful links).

Passenger road transport conversion factors: petrol cars

Size of car	Units*	Total distance traveled		kg CO ₂ per unit	Total kg CO ₂
Small petrol car, up to 1.4 litre engine	miles		x	0.2947	
Medium petrol car, from 1.4 to 2.0 litres	miles		x	0.3479	
Large petrol cars, above 2.0 litres	miles		x	0.4770	
Average petrol car	miles		x	0.3372	

Guidelines to Defra's GHG conversion factors for company reporting. June 2007

* To convert from kilometres to miles, multiply km by 0.621