

Note on Oil Saving Calculation Methodology for T&E

Objective

This exercise was to calculate future fuel savings resulting from improved car fuel efficiency standards, by comparing fuel consumption from cars under a business as usual case to what would be achieved if the proposed 95g per kilometre target for 2020 is fully implemented. Savings were calculated at the level of the typical individual; for a range of cities and EU member states (London, Paris, Berlin and Brussels and their respective countries); and for the EU as a whole. As the impacts in terms of average fleet economy will extend way beyond 2020, figures were calculated for each year from 2015 through to 2030.

Method

An earlier study had already calculated the fuel savings which typical motorists and new car drivers will enjoy in each member state of the EU 15 under a range of assumptions as to the stringency of future standards, including the two cases noted above. A subsequent study extended the analysis to the major countries of central and eastern Europe, giving realistic projections for the whole of the EU 27.

To do this, a stock turnover model was developed that was capable of calculating the fuel economy of vehicle stock in each Member State and covering data from 2001 (when differentiated CO₂ data for each Member State were first reported) through to the end modelling year (2030). In this model, the contribution of each model year to the total mileage driven in each calendar year subsequently is determined by two profiles which can in effect be multiplied together to give the total contribution to the total distance driven: a mileage profile and a scrappage profile. Combining these two profiles then gives a realistic picture of what contribution vehicles from a given model year will make to the total distance driven in each year thereafter. Combining the results for each model year is then used to calculate a projection of the weighted average fuel economy of the whole vehicle fleet in each future year for the country in question.

The appropriate percentage improvement can then be applied to the fuel consumption in the base year in order to calculate fuel savings in future years relative to the base case.

Calculating the Results

For state and EU levels, oil consumption totals were calculated as a percentage improvement based on known fuel delivery data for the most recent available year (2012) from official Eurostat statistics. All the petrol consumed was allocated to cars in each case, along with a proportion of the diesel consumed calculated on the basis of the total stocks of diesel cars, vans and trucks respectively. For cities, accurate fuel delivery data are not available, so a total was approximated simply on the basis of a proportion of the national fuel deliveries based on population.

For the individual level, calculations are based on calculated new car fuel economy in each year (corrected to reflect 'real world' driving conditions) multiplied through by typical annual distances driven in each country.

For geographical aggregations from the city upwards, calculations of oil savings were based on the improvement in fleet average fuel economy in each year multiplied by total fuel deliveries. For the individual motorists, however, the improvement in the calculated new car average was applied in order to highlight the full benefits available to new car users from the tighter standards.

Savings were expressed as total fuel saved, which was then translated through simple calculations into the equivalent money saved at average fuel prices, and the quantity of CO₂ emissions avoided as a result. The units are litres or millions of litres; retail price of fuel in the currency of the country in question; and CO₂ in tonnes or millions of tonnes respectively.