

# Science for Environment Policy

## Greenhouse gas emissions associated with long-distance travel

**Long-distance travelling accounts for a significant number of miles** travelled per person, but estimates of its greenhouse gas emissions are lacking. Using data from Belgium and the Netherlands, this study estimates that long-distance journeys account for 40–50% of total mileage and 50% of greenhouse gas emissions of all people transport in Western Europe.

**Advances in transportation and the democratisation of travel** mean long-distance journeys have become increasingly popular in Europe. Long-distance travelling now accounts for a significant portion of miles travelled per person and studies suggest it is continuing to increase, while short-distance travelling is stagnating. However, the greenhouse gas (GHG) emissions associated with this increase in travel are largely unknown.

In this study, researchers aimed to develop an accurate estimate of the travel volume and GHG emissions created by long-distance travelling by residents of Western Europe. The study was based on [DATELINE](#)<sup>1</sup>, the only EU-wide survey on long-distance travelling which covered all modes of transport in 2001/2. The survey investigated long-distance travelling (defined as journeys to destinations at least 100 kilometres away, as the crow flies) between 2001 and 2002 by residents in the [EU-15](#) and Switzerland. To correct for underestimations in the original survey, the authors developed expansion factors that corrected for excluded journeys and underreporting.

Emission factors (GHG emissions per kilometre travelled) were calculated using reports published by the Dutch Centre of Energy Saving. The researchers calculated CO<sub>2</sub> equivalents to compare the emissions of different modes of transport (including car, bus/coach, train, airplane and ship/ferry).

The authors calculated the kilometres travelled and emissions of long-distance journeys for each country and each transport mode for 2001/2. The country with the highest kilometres travelled and GHG emissions per capita was the UK, while Italy had the lowest values for both. Car and airplane represented the dominant modes of transport, each accounting for 40–45% of all kilometres travelled. Their joint contribution to GHG emissions was even larger (almost 95%) due to the high levels of GHGs emitted by airplanes.

Since 2002, long-distance travelling has increased significantly in Europe. To evaluate the more recent situation, the authors estimated increases in long-distance travelling to 2013, using statistics on the growth of tourist travel and patronage of long distance modes of travel from Eurostat.

In 2013, the number of long-distance journeys per capita in Western European countries was estimated to be 7.5 journeys, of 8 600 km, and associated with 1300 kg of GHG. In total, long-distance travelling was estimated to generate 520 megatonnes of GHG emissions.

This represents an increase in the number of long-distance journeys of 8% and mileage by 27% from 2002. Total emissions increased by only 13% thanks to a strong reduction of the emission factors of aircrafts. Assuming unchanged emission factors between 2002 and 2013, total emissions would have increased by 34%. As the latter increase is above the mileage increase, the authors suggest that long-distance travelling increasingly uses energy-inefficient modes of transport.

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1. DATELINE (Design and Application of a Travel Survey for European Long-distance Trips Based on an International Network of Expertise) was supported by the European Commission under its 5th Framework Programme. See: [http://www.transport-research.info/web/projects/project\\_details.cfm?id=5814](http://www.transport-research.info/web/projects/project_details.cfm?id=5814)

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## Greenhouse gas emissions associated with long-distance travel (continued)

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The authors finally estimated what proportion of all travelling is comprised by long-distance travelling, as well as its emissions contributions. They used data from the Netherlands and Flanders in Belgium (the only regions where data was available on short-distance travelling). They found that long-distance travelling accounts for 45% of mileage, and almost half of GHG emissions of all people transport. The authors say these statistics can be considered to reflect the situation in the wider EU, as data on mileage and long-distance journeys in the two regions was close to the European average.

Long-distance travelling is on the up, especially by air, and greenhouse gas emissions are expected to grow with it. As short-distance travelling is simultaneously stagnating, the contribution of long-distance travelling to mileage and GHG emissions are likely to increase, providing important considerations for future transport policy.

