

Commuting Travel

Introduction

This record of evidence forms part of the work undertaken by UKERC's Technology and Policy Assessment team relating to its project on policy strategy for carbon emissions reduction in the passenger transport sector. The material was produced alongside the project's main report and since it supports that report, it was judged appropriate to make this material available to a wider audience. The main report itself '*What Policies are Effective at Reducing Carbon Emissions from Surface Passenger Transport?*', and the supporting evidence can be found at:

<http://www.ukerc.ac.uk/ResearchProgrammes/TechnologyandPolicyAssessment/TPAProjects.aspx>

Explanation of Content

Evidence on this policy measure has been collected by the TPA team on the basis that it has, or may have, the potential to result in carbon dioxide emissions reductions in the passenger transport sector. This evidence document begins with a summarised description of the policy measure. The evidence itself follows the summary and is presented in table form.

Each piece of evidence has been assigned a separate row and tabulated using four columns:

- Year of publication, arranged chronologically, beginning with the most recent year
- Name of author, including where applicable additional cited authors (and year); and a Reference ID number.
- Type of evidence:
 - Evidence containing quantitative information is denoted by the letter 'Q'
 - Qualitative evidence is denoted by the letter 'C' for 'comment'
- The evidence itself

The evidence was originally gathered and assessed using several sub-headings. The purpose of this was primarily internal i.e. to facilitate the handling of evidence and the production of the main report. These sub-headings have been retained here as follows:

- Policy Measures and Carbon Savings
- Other potential CO₂ Impacts i.e. outside of the immediate policy influence
- Other Benefits e.g. air quality improvement or traffic congestion reduction
- Policy Costs and/or Revenues i.e. to local or national government
- Business and Consumer Costs
- Unintended Consequences e.g. rebound effect
- Reasons/Arguments for Carbon Savings Achievement or Failure
- Policy Suitability for the UK

A list of references follows the evidence tables. Note that the Reference ID numbers are allocated by Reference Manager, the referencing software used by the TPA team.

Any charts, figures and tables referenced in the evidence are not reproduced here but can be found in the original publication or evidence material.

Where no relevant evidence was found for a particular sub-heading, this has been noted.

Policy Description

The evidence recorded here covers measures and policies aimed specifically at commuting travel and commuter incentive programs including parking cash out (providing a cash alternative in lieu of a workplace parking space), but excluding travel plan initiatives.

Evidence Tables

Carbon Savings and Policy Measures

Year	Author	Type	Evidence
2007	Shaheen (ref 11192)	Q	Estimates of CO2 reduction from commuter parking cash out programs range from 123 to 200 tons annually in two Californian towns. It has been estimated that offering all US employees the option to cash out their parking subsidies could lead to a 40 million tonnes per year CO2 reduction.
2005	Dierkers et al (ref 11455)	Q	A study done by the US City of Boulder suggested that if half of all U.S. employees reduced their SOV (single occupancy) commuter trips by participating in alternative commuter programs, the congestion and air pollution benefits would be equivalent to taking 15 million cars off the road at a savings of \$12 billion in fuel costs.
2005	Dierkers et al (ref 11455)	Q	Commuter incentive programs can result in estimated VMT reductions of 5-25% . See sample calculation which estimates potential daily VMT savings of 19%.

Other CO2 Impacts

Year	Author	Type	Evidence
			No specific evidence found.

Other Benefits

Year	Author	Type	Evidence
2005	Dierkers et al (ref 11455)	C	The co-benefits of commuter incentive programs include: <ul style="list-style-type: none">• lowered commute costs for employees• reduced stress and commute times with declining roadway congestion• improved transportation options and transportation equity• reduced demand for new road and parking infrastructure• improved employee retention and recruitment• employer tax savings

Policy Costs and/or Revenues

Year	Author	Type	Evidence
			No specific evidence found.

Business and Consumer Costs

Year	Author	Type	Evidence
			No specific evidence found.

Unintended Consequences

Year	Author	Type	Evidence
			No specific evidence found.

Reasons/Arguments for Carbon Reduction Achievement and/or Failure

Year	Author	Type	Evidence
2004	O'Fallon (ref 11262)	Q	Table 3 of O'Fallon (2004) of shows how five examined policy tools could be considered to discourage car use directly, five could be seen as promoting or encouraging public transport use, and the remaining one as encouraging cycle use.
2004	O'Fallon (ref 11262) citing Mackett, 2001	Q	Reducing public transport fares and increasing the frequency of services in the off-peak period was not found to be significant in any city. A UK study of car drivers and possible policies to attract them out of their cars for short trips found that only 1% of car drivers wanted public transport to be made less expensive in order to get them to use it. The main actions required to increase use of public transport were to improve the routing of services and the frequency.
2004	O'Fallon (ref 11262)	C	Car drivers have constraints influencing their mode choice for the morning peak period trip (e.g. needing to transport children, needing a car for work during the day).
2004	O'Fallon (ref 11262)	Q	Nearly one-half (48%) of the respondents in a survey always chose to continue to drive their car in response to the scenarios presented them.
2000	Marshall (ref 417)	C	Marshall (2000) considers travel reduction strategies, in terms of the mechanisms of switching or substitution by which travel would be modified or reduced, and evaluates their potential impacts by means of four case studies. The strategies have had only qualified success. The scale of the reduction is relatively small and may be offset by new traffic generation. The paper concludes that the way forward would appear to lie in setting clear policy objectives and in assembling travel reduction measures into strategy packages.

Policy suitability for UK

Year	Author	Type	Evidence
			No specific evidence found.

References

Dierkers, G., Silsbe, E., Stott, S., Winkelman, S., & Wubben, M. 2005 – 11455 - CCAP Transportation Emissions Guidebook - Part One: Land Use, Transit & Travel Demand Management, Center for Clean Air Policy, Washington, DC.

Marshall, S. & Banister, D. 2000 – 417 - Travel reduction strategies: intentions and outcomes, Transportation Research Part A: Policy and Practice, vol. 34, no. 5, pp. 321-338.

O'Fallon, C., Sullivan, C., & Hensher, D. 2004 – 11262 - Constraints affecting mode choices by morning car commuters, Transport Policy, vol. 11, no. 1, pp. 17-29.

Shaheen, S. A. & Lipman, T. E. 2007 – 11192 - Reducing Greenhouse Emissions and Fuel Consumption, IATSS RESEARCH, vol. 31, no. 1, pp. 6-20.