

Greening The Greys

Climate Change and the Over 50s

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Key Messages

- The baby boomers, aged 50-64, have the highest carbon footprint in the UK compared to other age groups
- High car dependency, holidays abroad and eating out are key carbon intensive activities of the baby boomers
- The seniors, aged 65-74, have the second highest footprint compared to other age groups
- The elders, aged 75+, have the highest climate impact per £ spent
- The over 50s fear climate change and believe it is already happening
- Over 50s believe that their grandchildren will inherit a climate which is worse than today
- Over 50s understanding of the full range of climate change impacts is often limited
- The over 50s are motivated to take action but are frustrated
- Over 50s believe government and business should provide stronger leadership to combat climate change



The over 50s make up an increasing proportion of the UK population. This report divides the over 50s into three distinct groups: baby boomers (50-64), seniors (65-74) and elders (75+). An analysis of the carbon footprint of each group was undertaken based on the age of the head of the household.



Summary

The baby boomers, aged 50-64, have the highest carbon footprint in the UK compared to other age groups

The baby boomers were born in post war Britain and are the first generation of the consumer society. They form a major part of this age group and have a carbon footprint of 13.52 tonnes of carbon dioxide per capita per year compared to 11.81 tonnes for the average UK citizen.

High car dependency, holidays abroad and eating out are key carbon intensive activities of the baby boomers

The baby boomers emit 1.5 to 2.5 tonnes more carbon dioxide per year than any other age group in the UK.

The seniors, aged 65-74, have the second highest footprint compared to other age groups

The seniors, aged 65-74, have a carbon footprint of 12.10 tonnes of carbon dioxide per capita per year. They also enjoy holidays abroad and car use but spend more on home heating.

The elders, aged 75+, have the highest climate impact per £ spent

The elders, aged 75+, have the highest climate impact per £ spent compared to all other age groups. This is because home heating, which is carbon intensive, represents 40 per cent of their carbon footprint.

A survey of over 700 people and focus groups involving 50 people, all aged 50 and over was undertaken in North Yorkshire to gauge attitudes to climate change.

The over 50s fear climate change and believe it is already happening

Over 54 per cent of over 50s are fearful of the impacts of climate change. They are particularly concerned about the impact



on the UK climate, economy and weather. A high proportion (75%) of the over 50s believe we are already experiencing the effects of a changing climate.

They believe that their grandchildren will inherit a climate which is worse than today

The over 50s believe their grandchildren will inherit a climate much worse than we have today.

Their understanding of the full range of impacts of climate change is often limited

The over 50s understanding of the issue is limited to changes in weather patterns with less concern and understanding of the effects on human health.

The over 50s are motivated to take action but are frustrated

The majority of the over 50s are motivated about climate change. They feel that they should personally take action to combat climate change. However, many feel frustrated with the barriers that prevent them from totally engaging in a low carbon lifestyle.

Over 50s believe government and business should provide stronger leadership to combat climate change

The majority of the over 50s feel that the UK government should take action to combat climate change and provide stronger leadership.



Introduction

Older people are making up an increasing proportion of the UK population.

Individuals aged 50 and over represent approximately 20 million people (33%) (ONS, 2005a). They possess an estimated 80 per cent of the UK's private wealth, 60 per cent of its savings and 40 per cent of its disposable income (SAGA, 2005). By 2031 over 50s are expected to represent approximately 40 per cent of the UK population (27.2 million) (ONS, 2005b).

The over 50s are a diverse group. Many are fit and active and are enjoying the fruits of their labour. Others, however, are poor, frail and require care with issues of health, mobility, poor transport and lack of finance acting as barriers to a truly active lifestyle. Ageing and changing household structure can result in changing patterns of consumption, differing purchasing characteristics and expectations of customer service. When individuals have reduced their 50s, children have left home, mortgages have been paid off and financial planning for retirement has begun (Diamond, 2005). Collectively the over 50s have a disposable income of £175 billion (30 per cent more than under 50s). As people grow older they generally spend more time at home and participate in a range of leisure activities which have implications for energy use and carbon emissions.

Our lifestyle choices and consumption patterns have an impact on the planet. Home energy, personal travel, food and goods generate waste and polluting emissions and are a major cause of environmental degradation and global climate change.

Socio-economic background, values, age and personal history all influence an individual's lifestyle choices and pattern of consumption. If we are to reduce personal emissions of carbon dioxide we need to gain a better understanding of attitudes to climate change of different groups and how best to engage with them on this issue. This includes understanding their contribution to the total UK carbon footprint and what actions they can take personally, and as a collective, to limit the impact of climate change.

This study was undertaken as part of a DEFRA funded communication project "Climate Talk" aimed at raising awareness and understanding of climate change issues in the over 50s. The report examines the carbon footprint of the over 50s in the UK and their attitudes to climate change. A survey of over 700 people aged 50 years and older in the North Yorkshire area was undertaken to gain an understanding of their perceptions of climate change and their attitudes on:

- **causes of climate change;**
- **timings for current and potential climate change on the UK and the world;**
- **impact of climate change on aspects of their life (e.g. health, safety, holidays);**
- **influences on climate change;**
- **action they might personally take to limit climate change.**

In addition, focus groups were undertaken with approximately 50 people to examine climate change issues in more depth. This report outlines the key findings on attitudes to climate change in the over 50s, and their contribution to the UK carbon footprint.



The Carbon Footprint of the Greys

The carbon footprint is the total amount of carbon dioxide (CO₂) emissions which result directly and indirectly from the individual consumption of goods and services. The Resource and Energy Analysis Programme (REAP) developed at the Stockholm Environment Institute (SEI) was used to undertake an analysis of the UK carbon footprint by age (see Annex I). The carbon footprint covers both an individual's direct emissions (e.g. domestic heating and car use) as well as indirect emissions arising in the supply chain at home and abroad during the production of the final goods and services that they consume (e.g. food, clothing or consumables). Each UK citizen produces approximately 11.81 tonnes of CO₂ pa.

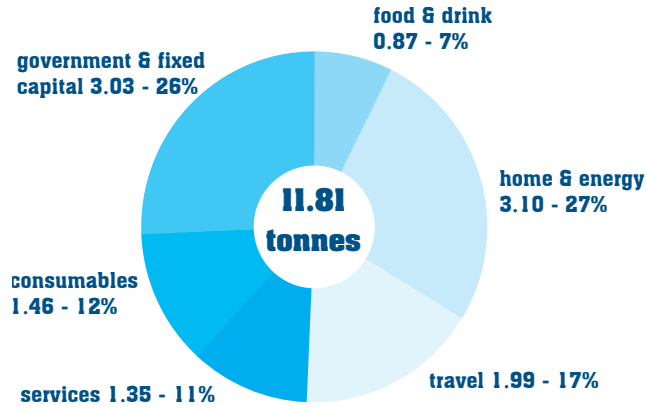
The carbon footprint is the total amount of carbon dioxide emissions which result directly and indirectly from the lifestyle choices of an individual. The average UK citizen is responsible for 11.81 tonnes of carbon each year. This is the equivalent to the weight of two African Elephants.

If we are to meet the UK target of a 20% reduction by 2010 we would need to reduce our carbon footprint to 9.4 tonnes and further reduce to 4.81 tonnes if we are to meet the 2050 target of a 60% reduction. A per capita analysis of the carbon footprint gives an indication of the amount of CO₂ an individual produced and allows comparisons to be made between different groups. However, it is based on an average and does not

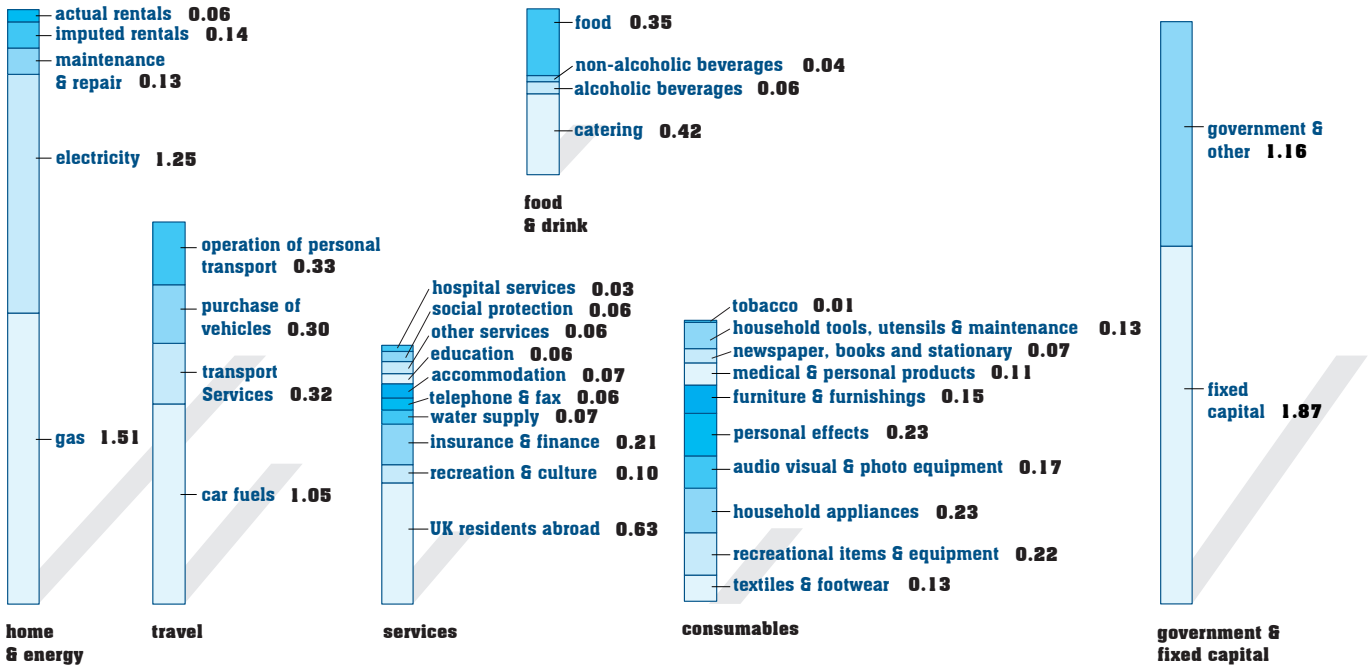
necessarily reflect the actions taken by many individuals to reduce their carbon emissions e.g. activities to reduce energy use in the home. An analysis of the contribution of different groups to total carbon emissions serves to highlight where action should be taken and not necessarily to allocate responsibility. We all have a responsibility to reduce the impact of our lifestyle and level of consumption.

The over 50s have been divided here into three distinct groups: baby boomers (50-64), seniors (65-74) and elders (75+). An analysis of the carbon footprint of each group was undertaken based on the age of the head of the household.





Carbon footprint of a UK citizen (tonnes/percentage)



Breakdown of the carbon footprint of a UK citizen (tonnes)



The Baby Boomers

The baby boomers (aged 50 to 64) include individuals born in the period 1946 to 1964. On average individuals in this age group emit 13.52 tonnes of CO₂ per capita each year. This is approximately 1.5 to 2.5 tonnes more CO₂ per year compared to other age groups and is mainly driven by high levels of spending. They are the first generation to grow up in the consumer society and many are in the highest earning years. They have different attitudes to ageing from their forefathers. Approximately 60 per cent of baby boomers want to work beyond state pension age and nearly 10 per cent do not expect to retire at all (Heyday, 2006).

The baby boomers emit 1.5 to 2.5 tonnes more CO₂ per capita than any other age group.

Baby boomers like to enjoy themselves and produce 1.03 tonnes of CO₂ per capita year on eating and drinking. This is 18 per cent higher than the average UK citizen. They also tend to be active and well-travelled. They have the highest emissions for travel at 2.51 tonnes of CO₂ per capita per year, which is 28 per cent higher than the average UK citizen. They are highly car dependent with car use representing 71 per cent of all trips made by the 50-59 year olds. This group emits 1.4 tonnes of CO₂ per capita each year on car use. They have the highest emissions for holidays abroad (0.84 tonnes) which reflects the

type of mode used to get to their holiday destination which is predominantly by plane.

They tend to be wealthier than ever before and emit 1.69 tonnes on consumables, which is 15 per cent higher than the national average. This includes recreational items and equipment (0.29 tonnes), personal effects (e.g. jewellery, clocks, watches and travel luggage) (0.27 tonnes) and household appliances (e.g. fridge-freezers, washing machines and cookers) (0.24 tonnes).

The baby boomers emit 1.64 tonnes of CO₂ per capita/year on services such as hospital services, education, insurance and finance, which is 22 per cent higher than the national average.

“But I’m not going to be in the situation of saying I’m not going to take holidays abroad or use air-travel. It’s just not practical.”

*Tony Blair, Prime Minister, aged 53
(January 2007)*

Enjoying plenty

“... our generation grew up in the postwar when things were tight but we have now got to a point where we are enjoying plenty.”

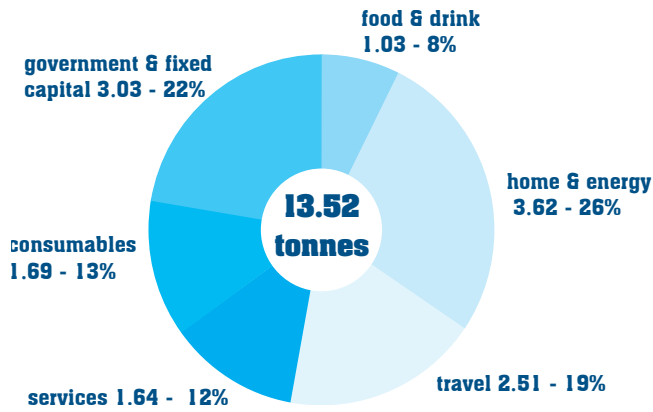
Sally, 57, focus group member

Escaping the winter and saving money

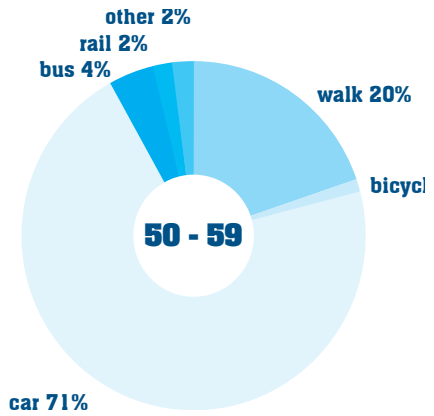
“... I have a property in Spain and go there in winter and don’t use fossil fuels. I spend less that way.”

Bob, 64, focus group member

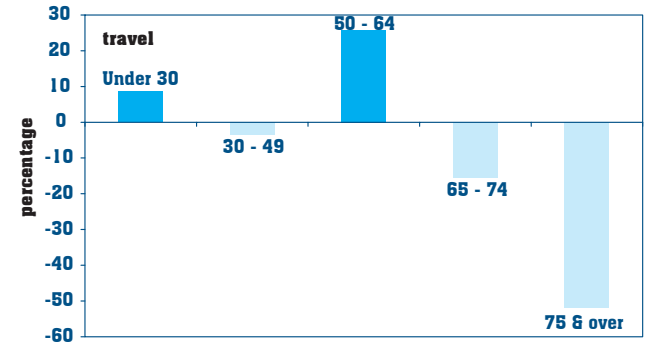
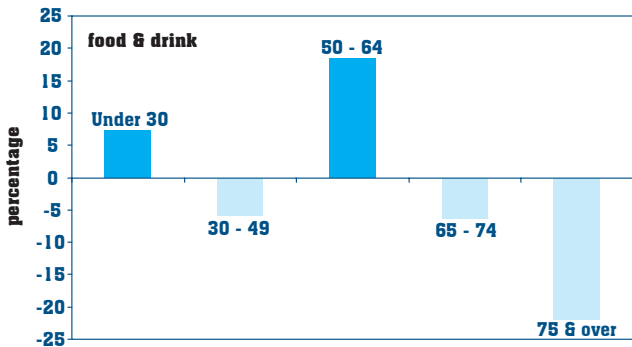
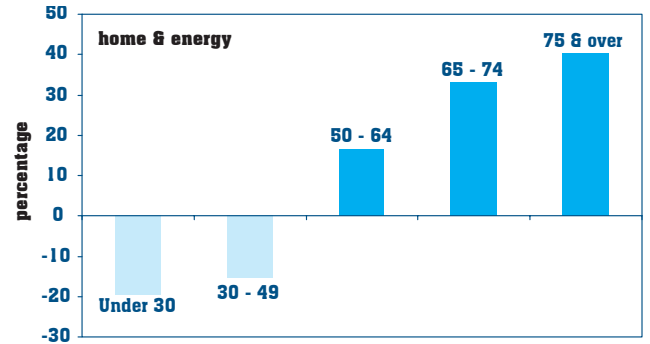
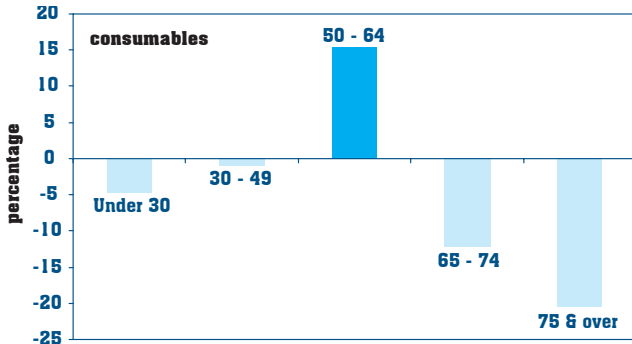




Carbon footprint of a baby boomer (tonnes/percentage)



Trips by mode for baby boomers aged 50-59 years old
Source: DfT (2005)



Percentage difference in carbon emissions by age and category compared to the average UK carbon footprint

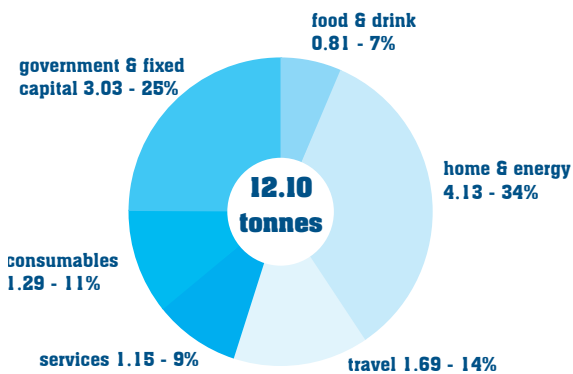


The Seniors

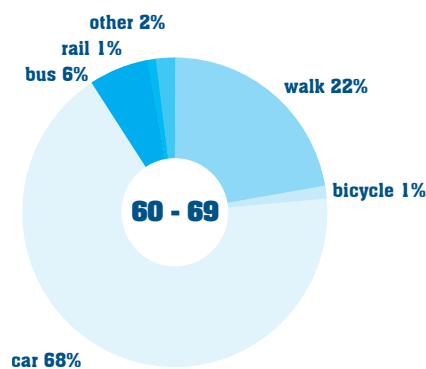
The seniors (aged 65-74) have lived through the Second World War and grew up in years of austerity. The majority have a low income and tend to be prompt bill payers, debt averse and dislike waste. The group has experienced major lifestyle and life stage changes such as retirement and bereavement.

Individuals aged 65-74 have the second highest carbon footprint (12.10 tonnes) compared to other age groups.

Their carbon emissions with regard to food and drink, travel, services and consumables are below the national average. However for home and energy, they emit 4.13 tonnes of CO₂ per capita/year which is 33 per cent higher than the national average. Of this amount they emit 2.09 tonnes on domestic gas use and 1.73 tonnes on domestic electricity. Car trips represent 68 per cent of all trips for those aged 60-69 years of age (DfT, 2005). They emit 0.96 tonnes of CO₂ on car travel. Like the baby boomers, they enjoy travelling and emit 0.39 tonnes of CO₂ on holidays abroad.



Carbon Footprint of a senior (tonnes/percentage)



Trips by mode for seniors aged 60-69 years old. Source: DfT (2005)



The Elders

The elders (aged 75+) share many of the characteristics of the seniors. They have lived through great hardships during the twentieth century. They are aware of their own mortality and the concept of death. They are coping with increasing care needs and declining health. The elders have a carbon footprint of 11.10 tonnes of CO₂ per capita/year.

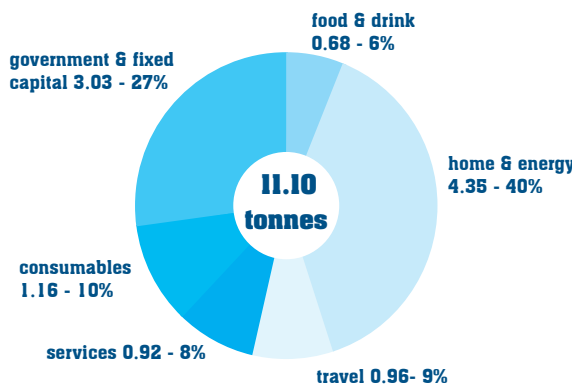
The CO₂ emissions from housing tend to increase as people get older. Carbon emissions from energy use in the home are 40 per cent higher than the national average. A total of 2.22 tonnes of CO₂ per capita/year is emitted on domestic gas use and 1.83 tonnes on electricity. This is partly due to smaller household occupancy and the fact that older people tend to remain at home with a high demand for warmth. As people get older they reduce their carbon emissions from transport. This reflects a reduction in their physical mobility and increasing dependence on public transport. Those aged 70 plus



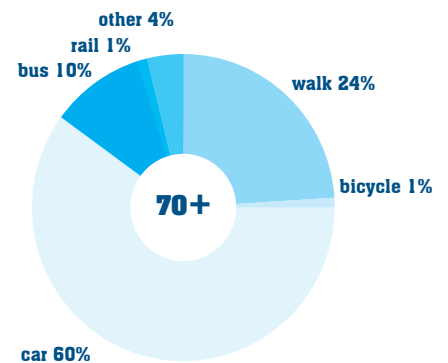
undertake 10 per cent of trips by bus and 60 per cent by car compared to 4 per cent and 71 per cent respectively for those aged 50-59 (DfT, 2005). The elders are less car dependent and emit 0.53 tonnes of CO₂ per capita/year on travel.

“Everybody should bother it doesn’t matter how old they are. It’s never too late to bother.”

Blanche, 85, climate camp demonstrator, Drax power station (August 2006)



Carbon footprint of an elder (tonnes/percentage).

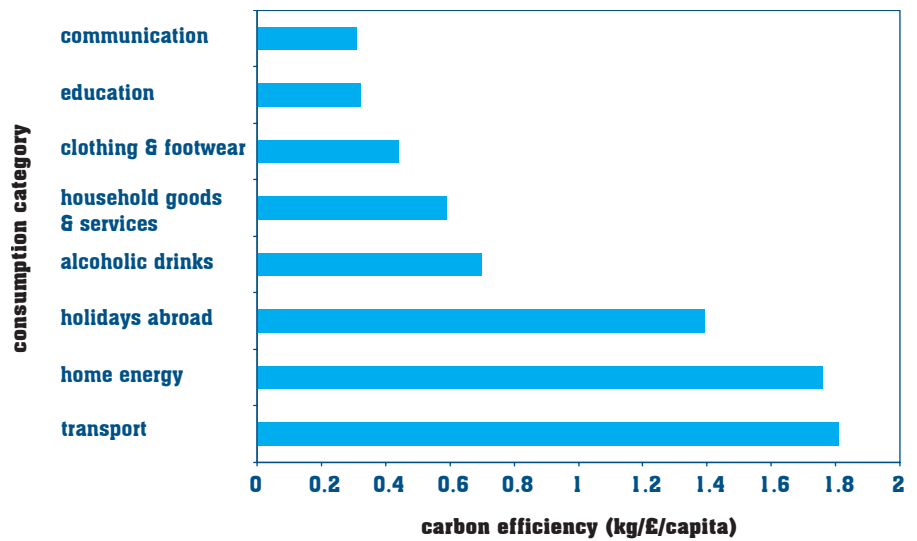


Trips by mode for elders aged 70+. Source: DfT (2005)

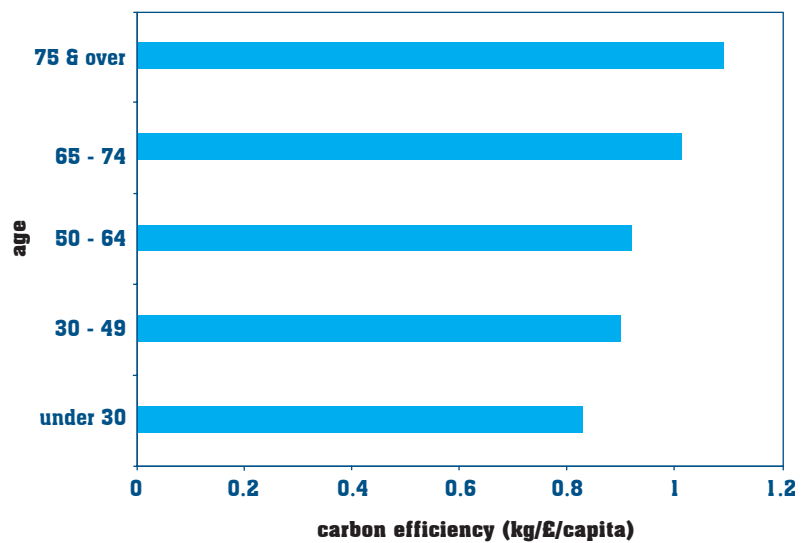


Climate Impact of Consumption

Each activity we undertake differs according to the amount of CO₂ produced. Based on each £ we spend and the CO₂ emitted from different activities, it is possible to determine which activities are more carbon intensive. Home energy, transport and holidays abroad all produce more carbon per £ spent compared to clothing and footwear, education and communication. Our climate impact therefore varies depending on the goods and services we choose to consume. When we examine which of the over 50s has the highest climate impact per £ spent, it is the elders who tend to spend more on carbon intensive activities (1.09) followed by the 65-75 year olds. Many of the 75+ tend to live a relatively thrifty lifestyle and spend much less than other age groups. However, they tend to spend on high climate impact activities in particularly domestic heating. As a result, their climate impact per pound spent is the highest of all age groups. This may be due to their home being energy inefficient and having to stay at home due to poor mobility and ill health.



Carbon efficiency of different consumption categories



Carbon efficiency by age



Attitudes to Climate Change

Fearful of climate change

Over half of the over 50s surveyed (53.7 per cent) used “fearful” to best describe how they felt about climate change. In particular, 75 per cent felt that the planet was already experiencing the consequences of a changing climate whilst 67 per cent felt that they were seeing the impact of climate change in their own region (Yorkshire).

“If we do care about our grandchildren then we have to do something, and we have to demand that our governments do something.”

*Sir David Attenborough, aged 80
(May 2006)*

A quarter of over 50s felt that they will personally experience the effects of climate change in the next five years while the same number felt it would be 6-20 years before climate change impacted upon them.

Those aged 50-59 are more likely to believe that climate change is already affecting the planet, the UK and them personally. In contrast, those aged 70 plus felt they would never be affected by climate change.

The majority of over 50s with grandchildren (82%) felt the problem faced by their grandchildren as a result of climate change will worsen. Over half (55%) felt their grandchildren would experience more severe problems as a consequence of climate change whilst 27 per cent felt the problems would only be a little worse than is currently being experienced.

A worse future for grandchildren

“...what about the irresponsible message from Tony Blair? I’ve got a young family ... and I want to look after my children and my future grandchildren.”

Gillian, 52, focus group member

“Grandchildren are our own little immortality.”

Colin, 60, focus group member

“The danger with our age group is that they tend to think in 20 years time it is not really going to affect [them]. I have grandchildren, I want a better world for them, I don’t want it to get worse.”

Jean, 62, focus group member



Attitudes to Climate Change

Limited understanding of the range of climate change impacts

The majority (90%) of over 50s believe climate change will result in changes in the global climate and local weather. Of those who identified these impacts, 40 per cent were “very concerned” about what climate change will do to climate and weather patterns. However, they were less convinced or unsure about how climate change may result in an increase in the frequency of storms or floods or increase the risk of skin cancer. Older women in particular tend to be more concerned about the likely impact of climate change compared to men.

The over 50s felt that they would be personally affected in the future due to the impact of climate change on the UK weather (88%) and economy (80%). They expressed an equal degree of concern about the economic impacts of climate change in the UK (59%) and the UK weather (59%). Approximately a quarter (24%) of over 50s were “very much concerned” about the impact on weather compared to 21 per cent who were “very much concerned” about the impact on the economy. During the survey period the Stern Report (HM Treasury, 2006) was published which estimated that the overall costs and risks of climate change will be equivalent to losing at least 5 -20 per cent of global

gross domestic product every year for the foreseeable future. The level of media coverage the report received may have influenced the respondents’ answers.

The over 50s have little concern about how climate change might affect their health (28%) with 22 per cent expressing that they are not at all concerned. Older people are particularly vulnerable to extremes of temperature. The August 2003 European heat wave clearly demonstrated the consequences of a rapid raise in temperatures, which reached 40°C and resulted in the death of an estimated 11,400 mainly elderly people in France and 900 in the UK (BBC, 2003). An assessment of the potential impacts of climate change on human health in the UK in 2050 estimates an increase of 2,800 cases of excess deaths per year but with a benefit of a reduction of up to 20,000 winter related deaths (POST, 2004).

“When it comes to our inaction on climate change, our generation is in danger of global irresponsibility on a massive and irreversible scale.”

*Margaret Beckett, Foreign Secretary, Aged 63
(October 2006)*

“We live in a culture that encourages people to only see what affects them personally and directly. For most of us in Europe and North America have so far been insulated from any severe repercussions. But when weather patterns change, and water begins running out, and people’s backyards are underwater, they’ll begin to realize that, as the women’s movement noted, the personal is political.”

Dame Anita Roddick, aged 64 (2006)



Attitudes to Climate Change

Motivated to take action

A total of 65% of over 50s believe human behaviour is at least partly responsible for climate change compared to 16 per cent who believe it to be due to mainly natural causes.

Despite being fearful of climate change the majority of over 50s also felt motivated (72%) and positive (60%). Nearly 80 per cent of over 50s felt that they should personally take action to limit climate change. More than a quarter over 50s (28%) strongly believed that their friends, family, colleagues or community expect them to do something to limit climate change whilst 45 per cent slightly believed they were expected to do something to limit climate change.

“... the moral responsibility lies with absolutely everybody, not only in terms of examining our own lifestyle and asking what, concretely, can be done, but also in sending a message to governments that this is recognised as a priority by the public.”

*Rowan Williams, Archbishop of Canterbury,
Aged 56 (March 2006)*



“...should be aimed at low impact activities not curtailing activities but doing them more efficiently.”

Roger, 59, focus group member

“I recycle, grow fruit and vegetables, taught children about responsibility, and I don't buy things from China. I have a moral duty. I don't know whether the government is doing enough.”

Maureen, 56, focus group member



Attitudes to Climate Change

Willing but sceptical

Nearly 40 per cent of over 50s felt it was fairly easy for them personally to do something to limit climate change. Forty-five per cent of respondents felt that it was very likely that they personally would take action in the next six months to limit climate change while 29 per cent felt it was fairly likely.

The ease with which the over 50s felt they could personally take action to limit climate change declined with age. A quarter (25%) felt it was fairly difficult for them personally to take action. In particular, those aged 70 to 79 years old felt it fairly difficult to take personal action.

Those respondents who felt that climate change was due to natural causes were more likely to believe it very difficult for them to personally do something about it. They were “fairly unlikely” to do anything about it in the next six months. In contrast, those who found it personally easy to do something about climate change were more likely to take action in the next six months and also believed climate change was due to mainly human action.

“Although I’m doing my bit, frankly I don’t really care because something else will evolve.”

Sue, aged 56, focus group member

“I don’t think the little we do has any impact on climate change. But I don’t like waste. I make economies where I can.”

John, 61, focus group member

“What worries me is Luddite-ism - we’re not allowed to do anything in case it damages the planet in the future. We assume we can’t find an alternative. For example, planes, we can all afford it, but we think that’s bad. Before it was organic vegetables, now its climate change. We can’t enjoy the fruit of our labour.”

Peter, 55, focus group member

“There are all sorts of issues that are important ... if we kill the planet with climate change then nothing else matters as we not going to be around to worry about it ... people think older people don’t care. May be they [older people] feel they shouldn’t or can’t get involved. What they have to remember ... it’s was ... [our] generation that started all this [demonstrating].”

Jackie, 59, climate camp demonstrator, Drax power station (August 2006)



Attitudes to Climate Change

Government should provide leadership

A high number of the over 50s (69%) felt frustrated when it comes to climate change. Ninety per cent of older people surveyed felt that the UK government should take action to reduce the impact of climate change while 86.5 per cent felt industry and business should take action. In contrast, nearly 80 per cent of older people felt that they personally should take action to limit climate change. Fifty-eight per cent of respondents felt that everyone should take action (i.e. national and local government, business, local community and individuals).

“We should be treating, I think, the whole issue of climate change and global warming with a far greater degree of priority than I think is happening now.”

*HRH Prince of Wales, aged 58
(October 2004)*





Conclusion

The analysis of the carbon footprint undertaken here provides an approximate account of the contribution of different demographic groups to the total UK carbon footprint. It shows that the current lifestyles of the over 50s result in higher than average CO₂ emissions per capita per annum compared to other age groups. In particular, the baby boomers, aged 50-64 years old, have the highest carbon footprint (13.52 tonnes per capita/year) followed by the seniors aged 65-74 years old (12.10 tonnes per capita/year).

An analysis of the attitudes of the over 50s to climate change shows that there is general concern about the issue and a willingness to take action. However, the gap between their concern for climate change and the impact of their current lifestyle needs to be closed if the UK CO₂ target is to be met.

The over 50s acknowledge that climate change is a serious problem that is human-induced. They fear the likely impacts on the UK weather and economy. In particular, they are concerned about the climate that their grandchildren will inherit. However, a minority are sceptical with regard to three issues:

- **the degree to which climate change is caused by human activities as opposed to natural cycles;**
- **the significance of small actions in the UK when set against the enormous impact of emissions from the China and the US;**
- **the possibility that green taxes are a ploy by government to raise the tax burden.**

The Government has invested in communicating the issue of climate change and promoting attitudinal change with its “Tomorrow’s Climate, Today’s Challenge” campaign. However, further effort is required to communicate the reasons for green taxation and the demonstrable effects which may result. The doubling of the passenger duty on flights from the UK is an example of a green tax that has been generally perceived with some scepticism.

The over 50’s understanding of the impacts of climate change tends to be limited to those commonly reported by the mass media. The reporting of climate change has been described as being alarmist and commonly characterized by images and words of catastrophe (Ereaut and Segnit, 2006). With more than 59 per cent of press stories being negative in tone compared to 15 per cent which are balanced and 25 per cent which are

positive (Futerra, 2006). The language used to report climate change has been described as being confusing, contradictory and chaotic. The over 50’s limited understanding of climate change impacts indicates a need to go beyond reporting of extreme weather changes to include the more subtle and less sensational impacts which might affect day-to-day living.

Many of the over 50s are taking some action to reduce their carbon emissions. Some are motivated to reduce heating costs, to save waste and to act as a good citizen (e.g. participating in recycling). There seems to be an enormous goodwill that could be harnessed with the over 50s to take further action to reduce the environmental impact of their lifestyle.

Difficulty in recycling certain waste (e.g. plastics) and inefficient design that encourages waste (e.g. digital appliances) are also perceived as barriers which prevent low carbon living.

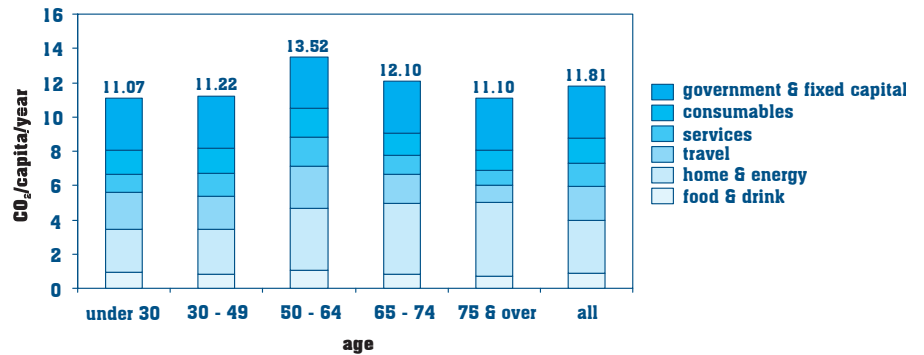
While the over 50s may be motivated and positive to take action they are frustrated with regard to the perceived barriers that prevent them from totally engaging in a low carbon lifestyle. This frustration is illustrated by the cost of public transport. Some over 50s are heavily car dependent whilst others depend on public transport. Whilst there is a willingness to use public



transport the cost, convenience and comfort are key barriers.

With regard to energy efficiency in the home, the return on investment is perceived as being too long especially with regard to solar panels and micro-wind turbines. According to the Energy Saving Trust, the payback of 270 mm of loft insulation can result in savings of £180-220 a year while cavity wall insulation can save up to £160 a year.

However, the payback period for insulating a home, for example, is considered to be two years with savings of up to £200 a year. While a number of central and local government funded initiatives (e.g. Warm Front) exist that provide grants for home conservation measures, there is a need to overcome the barriers that might prevent their take up. Barriers include being unaware of current grant schemes, perception of non-eligibility or requirement to do something in order to qualify and pride, especially if the scheme is perceived as being aimed at a poor section of the community.



UK carbon footprint by age



Recommendations

The results from the survey of over 50s and focus groups discussions suggest that there is a demonstrable willingness to make the necessary changes to combat climate change in this age group. Many over 50s are already taking action and would be willing to make further changes given the right conditions. The government is essentially pushing at an open door with regard to achieving a change in behaviour and move to a low carbon lifestyle in this demographic group.

Taking into account the view that government should take the lead and make personal actions easier to adopt, three areas for government intervention can be identified from the survey and focus group findings. All three areas need government intervention to complete the “citizen contract”. This is a step beyond “I will, if you will”. The over 50s seem to be saying “We will if you make it easier for us to do it!” The three key areas are:

Household energy issues

There is a significant amount of support for a whole range of energy conservation interventions (e.g. insulation, double glazing and micro-renewables). Domestic energy use contributes a high proportion to the carbon footprint of the over 50s and this increases with age. However, the capital costs and payback times are a deterrent. Government intervention

could reverse this and make personal actions and take up much more attractive to householders. A major investment in making the housing stock of the over 50s more energy efficient would make a significant contribution to reducing carbon emissions from home energy use for this demographic group.

Car use and alternatives to the car

There is a strong willingness to switch journeys away from the car. However, public transport, especially in rural areas, is not sufficiently attractive and is perceived as costly. Governmental intervention is needed to deliver high quality public transport and to reverse the historic trend for motoring costs to fall in real terms while public transport costs go up.

Packaging and packaging waste (including plastics)

Focus group participants expressed a wish to see less packaging. Government intervention is required to introduce German style packaging and packaging waste tax to reduce the amount of waste.

Recommendations

In order to reduce the carbon footprint of the over 50s and other demographic groups it is recommended that the government should:

- **invest in increasing the energy efficiency of the UK housing stock, especially for those people aged 70 plus**
- **invest in high quality public transport systems including reductions in the cost of public transport**
- **reverse the current trend which is for motoring costs to go down in real terms while public transport costs go up**
- **introduce German style packaging and packaging waste tax to encourage manufacturers to reduce the amount of packaging they use.**

“You must be the change you wish to see in the world.”

Mahatma Gandhi

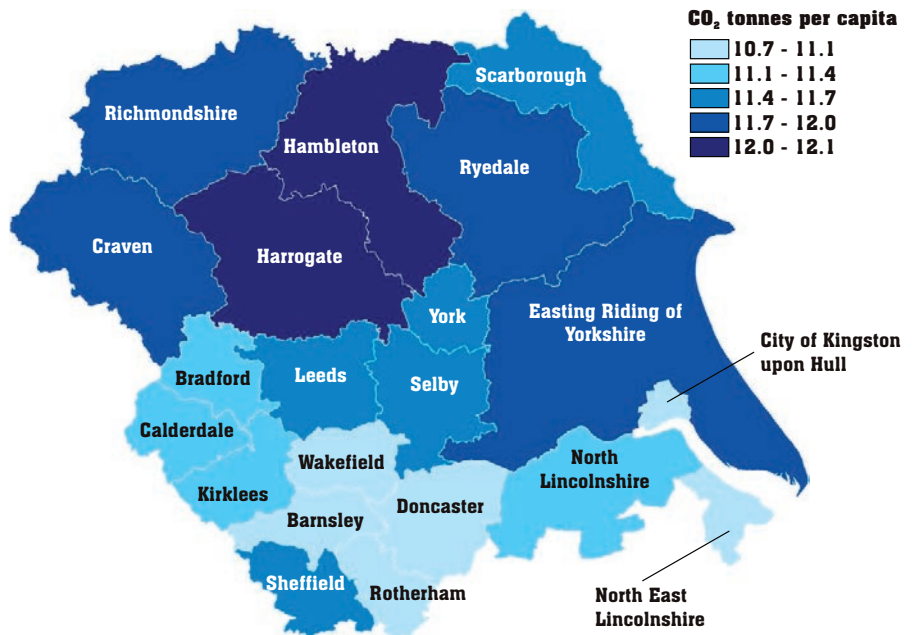


Focus on Yorkshire and Humber

The Yorkshire and Humber region is home to “megawatt valley” containing the largest concentration of coal-fired power station generating capacity in the UK. It is the third highest emitter of CO₂ from production of goods and services in the country- 13.37 tonnes of CO₂ per capita/year.

In contrast, it is a relatively low emitter of emissions from the consumption of goods and services. Each Yorkshire and Humber resident emits 11.07 tonnes per year which is 6 per cent lower than the national average of 11.81 tonnes.

A Yorkshire and Humber resident emits less on gas and electricity consumption - 3.01 tonnes/capita compared to the



national average (3.10 tonnes) and less from travel. However, they emit 2 per cent more CO₂ from the consumption of food and drink (0.89 tonnes) compared to the national average (0.87 tonnes). This reflects eating habits such as eating out and the consumption of carbon intensive food (e.g. meat, convenience food).

When we examine the carbon footprint by local authority area, Harrogate and Hambleton have a slightly higher carbon footprint than the national average. This is due to higher emissions from home energy use, car use, food and other consumables (e.g. clothing, domestic appliances).



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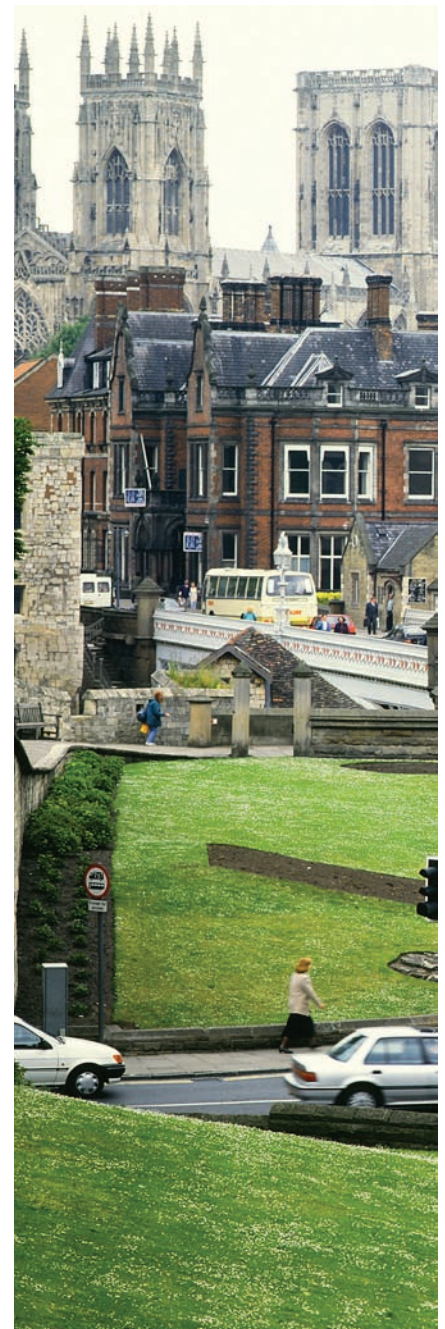
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Annex I

In this report the carbon footprint refers to an all inclusive consumer carbon dioxide (CO₂) emission account associated with a lifestyle of a well-defined population group in the UK (Barrett et al., 2006).

The carbon footprint estimate includes an individual's direct CO₂ emissions (e.g. from domestic heating and car use) as well as indirect CO₂ emissions arising in the supply chain at home and abroad during the production of the final goods and services they consume (e.g. food, clothing or consumables). Finally, a "fair share" of the CO₂ arising from the provision of government services (e.g. health, security and cultural services) and capital investment (e.g. road building and street lighting) is added to each carbon account. This is based on the assumption that all citizens would equally benefit from these services.

The carbon footprint was calculated using the Stockholm Environment Institute's Resources and Energy Analysis Programme (REAP) model (see www.sei.se/reap). REAP's input-output methodology allows the calculation of direct and indirect carbon dioxide emissions.

National statistics tend to provide detailed information at source arising from the production and goods and services e.g. primary manufacture and electricity generation. In order to calculate an individual carbon footprint the REAP model reallocates overall emissions to a point of final consumption (e.g. household

and government consumption and capital investment).

For the estimation of CO₂ emissions from the import of goods, the model assumes the same production structure abroad as at home. However, CO₂ efficiencies of the various production processes are distinguished for 10 different world regions. The data covers the year 2001. In this report, the REAP data (see <http://www.sei.se/reap/publications/technicalreapreports.php>) was augmented with age specific data from the Household Expenditure Survey. In this context, the "age" refers to the age of the head of the household. The carbon footprint was assigned to all household members. The data reveals an annual carbon footprint for 41 kinds of household expenditure categories plus government and capital investment. This is then divided by the size of the population to gain the UK average carbon footprint of 11.81 tonnes of carbon dioxide per capita per annum.

Acknowledgements

We would like to thank Dr John Barrett, Alistair Paul and Steve Cinderby at SEI for their helpful comments. Thank you to Erik Willis at SEI for preparing the figures.

We are grateful to Alex Burford at Fifty Nine Limited for the design of the report.

Thank you also to Dr Fiona Fylan of Brainbox Research for her psychological insights.

Notes:

Food and drink

When all greenhouse gases are included in the analysis the climate change impact of food increases due to methane emissions from agriculture.

UK holidays abroad

Holidays abroad represent a slight overestimate as it includes all private air travel. It is not possible to split data between emissions arriving from aviation used for holidays and general commuting. However, despite this the total carbon footprint estimate remains the same.

Carbon Footprint

Carbon Footprint results published here are consistent with 2001 figures provided in Ecological Budget UK.

Carbon Footprints for every local authority in the UK will be available from www.sei.se/reap in 2007. They will replace the figures provided in Ecological Budget UK and this report and will be updated annually.

Reference

Barrett, J., Minx, J., Wiedmann, T. and Welch, A. (2006) Counting Consumption: CO₂ emissions, material flows and Ecological footprint of the UK by region and devolved country, WWF-UK, Goldalming.



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