

Environmental Issues

Research Report

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Management Summary

- The environment now leads the political agenda as an issue which increasingly impacts on public perceptions. Research was commissioned to gauge rail passenger opinion and views on the role of the environment in rail travel.
- **6 shortened workshops** (6-8 respondents each for 60 mins) were undertaken amongst rail passengers – commuters, leisure and business users. Research took place in late February and early March 2007.
- Whilst most rail passengers are making some efforts to be green in their daily lives (recycling, low energy bulbs etc.), there is a perception that there needs to be a reciprocal relationship and some level of shared responsibility. However, it was felt that this effort is being made without sufficient incentive and in the absence of positive examples from the government and industry, who it was felt should lead the way in this instance.
- When deciding which mode of transport to use, issues taken into consideration include speed/time, comfort, cost, quality of life etc., but generally not the environmental impact of the journey. The issue of how green modes of public transport are is not seen as an issue for the passenger but for TOCs, other transport operating companies and the government.
- In the context of all modes of transport, trains are at best viewed as the least polluting mode. However, at worst some see trains as being potentially as polluting as any other modes if for example they run with a low load factor.
- Very few passengers claim to be actively seeking information on the environment or environmental impact of different modes of transport, so they are reliant upon what the media/government tell them. However, there is some desire to find out more of this type of information if objective agencies (universities etc.) make it more accessible. For some however, this makes for uncomfortable reading and they would rather not know.
- Whilst the concept of greener railway travel is welcomed, it is not seen a priority area by passengers, particularly amongst commuters who have a range of other issues of more pressing concern, for example, cheaper fares and over crowding. However, there may be some potential here for leveraging the green argument to help condone passengers' modal choice.
- In terms of what action passengers feel should be taken on the railway to make it greener, smaller measures (recycling bins, low energy bulbs, more space for bicycles etc.) are often seen as more realistic than larger measures since they are more in keeping with

what consumers are currently doing themselves in their home environment.

- Whilst bald statistics on the relative environmental impact of various modes of transport are not felt to be very exciting, these could potentially be re-packaged to create a more exciting story, e.g. a carbon calculator to aid choice of mode.
- In conclusion, modal choice is often influenced by a number of factors of which the environment is fairly low in consideration. In any case, rail users already perceive the train as a fairly environmentally friendly mode of transport. However, there may be potential leverage in the green argument to encourage non-users to consider rail as an alternative to domestic air travel and, in particular, car travel.
- **Quick wins for the rail industry are small measures on board trains such as recycling bins, low energy bulbs, appropriate temperature, cycle facilities etc. The industry also needs to decide on a positive message to communicate to the wider public about rail travel. Our feeling is that there is a potential opportunity for incremental journeys for existing users if the rail industry communicates the environmental advantages in conjunction with key rail improvements.**

1. Research Context & Objectives

With the environment now at the heart of the political agenda and an issue that has increasing impact on public perceptions and the potential to sway opinion, it is vital that the rail industry understands what role the environment plays on passenger attitudes towards rail and travel behaviour.

Thus, research was commissioned to gauge passenger opinion and views on the role of the environment in rail travel.

We have outlined below in full the objectives of this research:

- To understand which mode(s) of transport passengers perceive to be the most environmentally friendly, and to establish where the railway fits in this hierarchy.
- To establish key sources of information for passengers on environmental impacts and the extent to which they trust these sources.
- To gauge the extent to which better information about relative environmental impacts would aid passenger decisions in which modes to use and whether to travel at all.
- To determine whether, given a level playing field of environmental impacts for different modes of transport, passengers would choose to travel by rail.
- To establish the tipping point and tipping factors for choosing mode of transport for environmental reasons.
- To determine what environmental factors would encourage passengers to change their travel behaviour.
- To identify the main perceived environmental issues to address on the railway.

2. Sample & Methodology

This project used a qualitative research methodology of 6 shortened workshops amongst rail passengers (6-8 respondents each for 60 minutes). Details of the sample breakdown are given in the tables below:

6 workshops amongst rail passengers focusing on environmental concerns (6-8 respondents each for 60 minutes), as follows:

Passenger Type	Commuters		Leisure
Length of journey	Long	Short	Short/Long
Age	40-55	20-40	50-65
SEG	ABC1	ABC1	C1C2 (D)
Location	Chippenham (to London)	London Viewed	E. Croydon
Workshop No.	1	2	3

Passenger Type	Business		Low Volume Route
Length of journey	Long	Long	Short/Long
Age	25-49	25-49	Mix
SEG	ABC1	ABC1	C1C2
Location	London	Glasgow Viewed	Manchester Oxford Road (to Buxton)
Workshop No.	4	5	6

- Workshop 1 – long commute of 1 hour 15 mins.
- Workshop 2 – all perceived they had no choice but to use rail to commute.
- Workshops 3 & 4 – at least some in group had choice of mode.
- Workshop 6 – using ‘half empty’ trains, at least some in group had choice of mode.
- Environmental activists screened out from all groups.

Research was conducted during late February and early March 2007.

3. Main Findings

3.1 Attitudes Towards the Environment

Most of our sample claimed to be making some effort to be environmentally friendly, mainly within the home. Measures taken were typically recycling, installing low energy light bulbs, not leaving electrical items on standby etc. Whilst we did have a couple of respondents who had purchased hybrid vehicles, the driving factor here seemed to be as much financial as environmental.

“I do as much as I can within limits like for example I’ve got some of those low energy bulbs and I make sure I switch everything electrical off before I go to bed”.

[Long Commute, Chippenham]

“I try to do my bit so that I can feel that I have a clear conscience”

[Leisure Users, Croydon]

“If I’m honest, I probably don’t do as much as I should for the environment.”

[Short Commute, Glasgow]

However, the subject of the environment evoked some fairly emotive debate with much of the discussion involving the issue of where responsibility lies. There seems to be a general perception that consumers are expected to undertake more than their fair share of responsibility for becoming greener. Many are of the opinion that employers, the government and other countries such as China, India and the USA should all be doing far more and that their lack of a green agenda renders any of the measures that UK consumers take as ‘pointless drops in the ocean’.

“To be honest, there doesn’t seem to be a whole lot of point to it if countries like China are going to continue to ignore the problem”.

[Long Commute, Chippenham]

“The Americans are not making any effort on this and by comparison to them we are only really small”.

[Long Commute, Chippenham]

*“There’s no point in us all doing our bit because UK emissions are nothing compared to other countries such as the USA and China”
[Leisure Users, Croydon]*

There is also a general feeling that there are limitations as to what can currently be achieved with regards to becoming greener. One example that was cited in Chippenham was that the local Council has had to put all recycling on hold as it is unable to deal with the volume of material it is receiving. Another example given was how many employers are not yet open to the idea of home working, which is seen as a means of reducing one’s carbon footprint.

*“If I was able to work from home then that would certainly be more environmentally friendly, but where I work we have fairly old-school type management who would no way allow it”.
[Long Commute, Chippenham]*

The reality is that when it comes to responsibility, most consumers are unaware of where the truth really lies. Whilst they would like to think that they are doing their part and the responsibility lies with other bodies, many are prepared to acknowledge they could be doing more themselves. On the other hand, it is clear that all feel that government and industry need to be setting a good example on these matters in order to create sufficient enthusiasm and motivation for consumers to follow suit. Thus, responsibility is seen as a reciprocal relationship between consumers, the government and industry.

3.2 Factors Impacting Upon Modal Choice

When making the decision of what mode of transport to use, most consumers are fairly precise about what key factors play a role in their thinking. First and foremost it is usually about **speed of journey** and **how long it will take**. This can often rule out road as an option at a fairly early stage, particularly for longer journeys or journeys in built up areas where traffic can be heavy.

Cost also plays an important role in decision-making and certainly some lower SEG consumers often find themselves making speed/time sacrifices for the purpose of making considerable financial savings. In this instance, travelling by bus/coach can sometimes enter the equation.

"It is always driven by time and cost, it's as simple as that".

[Long Commute, Chippenham]

"The environment doesn't come into it. If I could drive to work I would do"

[Short Commuters, London]

"I never consider the environmental impact of any journey that I make"

[Short Commuters, London]

"When I'm travelling, I choose the method that will be cheapest and quickest"

[Short Commuters, London]

"I can fly EasyJet to Edinburgh for £30. I don't know how much a train is but it's a lot more and that's a major issue and anyone would say the same thing"

[Short Commuters, London]

"My travel choices are determined by my budget not the environment. That might sound selfish but I have to live within a budget"

[Short Commuters, London]

"Even though I work in an energy advice centre I would fly to Edinburgh rather than go on the train because it's cheaper and quicker"

[Short Commuters, London]

"I have to admit that the environment isn't an issue for me when I travel but I do try to do my bit in other ways"

[Leisure Users, Croydon]

"I just take the quickest and most convenient mode for me. I do care about the environment, but I'm just too lazy."

[Short Commuters, Glasgow]

However, there is another layer of factors that consumers take into consideration when deciding on modes of transport and these relate to **comfort**. The train often fares quite well on comfort by comparison with other modes, particularly with commuters but also leisure passengers, as it allows passengers to get on with whatever they want to be doing in a mobile environment - some like to work, others to read, play games, watch movies, listen to music etc. This comfort factor

should not be underestimated as passengers frequently talk about their journeys as being 'not wasted time'.

"If you're going on a long journey to London or something it's a right stress....if you get on a train you can forget about it and relax".

[Low volume route, Manchester Oxford Road]

Quality of life also enters the modal choice equation for commuters, particularly those who have made the decision to commute longer distances and have usually had to reconcile themselves to this in order to benefit from living away from the cities.

"Do you want to spend an extra hour using a different mode of transport because it helps the environment? You have got to think about your quality of life".

[Low volume route, Manchester Oxford Road]

"Occasionally I have to pay the £105 return fare to London, which I could drive for £30, but I'd have to get up earlier".

[Long Commute, Chippenham]

The **environment** very rarely seems to enter the modal choice equation, and if it does, it is usually after all of the factors listed above. Changing one's travel habits is seen as fairly major upheaval and is felt to be more of a lifestyle change, thus most are averse to such an idea. Their preference is to continue with the smaller changes they have made in their home lives that will help the environment, e.g. recycling.

"There is a big divide between what our conscience is telling us and what we are prepared to pay".

[Long Commute, Chippenham]

"I think of journeys in terms of the time it takes rather than the green cost of it"

[Short Commuters, London]

Furthermore, whether or not a mode of public transport is particularly environmentally friendly or not is not felt to be an issue that should be a concern for passengers. Rather, passengers feel that it is the responsibility of operating companies and the government to ensure that all modes of public transport are as green as they possibly can be. Consequently, the passenger does not feel that how green one mode of public transport is compared to another should ever be a decision

that he/she has to make. This of course differs for private modes of transport (car, cycling, walking etc.), for here it is felt that the individual does have to take on personal responsibility for at least some of the harm they might potentially be doing to the environment.

3.3 Rail Passenger Perceptions of Green Modes

Many rail passengers seem to have their own personal perceptions as to which modes of transport are greener than others. Whilst some claim they do not really know where they have acquired these perceptions from, many think it is probably from what they read in the press or see on the television.

One layer of thinking is that planes are the most polluting of all modes of transport, particularly in light of the bad press they are currently receiving.

“Everyone has been on about the carbon taxes on planes recently trying to make you feel guilty about flying”.

[Long Commuter, Chippenham]

“A plane uses so much fuel but there is not much you can do about it is there?”

[Low volume route, Manchester Oxford Road]

“I expect travelling by plane must be worse because there is always something about air travel in the news nowadays”

[Leisure Users, Croydon]

Opinions on the environmental impact of cars are mixed. Some regard smaller vehicles as fairly harmless in terms of emissions by comparison to 4x4 vehicles. Others point out that small cars in particular cannot carry many passengers thus they will always be fairly polluting.

Trains and trams are generally seen as more efficient than planes and road vehicles.

“A train is always going to be more environmentally friendly than a car because you can hold lots of people on a train so there are less emissions per person”.

[Low volume route, Manchester Oxford Road]

However, some point out that diesel trains must have fairly high emissions as they have noticed the plumes of black smoke that emanate from them, particularly in enclosed stations such as London Paddington.

Cycling and walking are clearly seen as the most environmentally friendly modes of transport although there are many instances when they are not appropriate or relevant modes.

There is however, another slightly more considered layer of thought on the relative greenness of various modes of transport. This comes from those who do not feel that one can make a straightforward comparison between different modes of transport in this way without there being some kind of measure of efficiency. A suggested measure of this type could be for example fuel consumption per passenger mile. This allows for other key factors such as load to be taken into account as these can exert a significant influence over how environmentally friendly any mode of transport is. For example, a train that runs half empty is going to be far less green than a train that is fully loaded as the fuel consumption per passenger will be much higher.

“I would imagine that the train is probably best but I don’t know how to evaluate it”

[Leisure User, Croydon]

“I wouldn’t know how to compare because I don’t know any details or where to find them”

[Leisure User, Croydon]

“You have to consider things like how full the train is and whether it uses fossil fuel or not. You also have to think about de-forestation of embankments and the age of the rolling stock”

[Short Commuters, London]

“The train must be the best for the environment. Much better than driving or flying.”

[Short Commuters, Glasgow]

In addition, some passengers point out that there are many different types of pollution, as the following comment illustrates:

"It is not just about burning fossil fuels. There is also noise pollution and light pollution to consider".
[Long Commute, Chippenham]

Thus, trains are at best viewed as the least polluting mode. However, at worst some see trains as being potentially as polluting as any other modes of transport if, for example, they run with a low load factor or cause significant amounts of noise pollution.

3.4 Existing Information Sources

Currently, very few passengers claim to be actively seeking information on the environment or the environmental impact of different modes of transport, claiming that they are reliant upon what they are told. There does not seem to be a huge appetite for this type of information.

"If it's there I'll read it but I'm not going to look for it".
[Low volume route, Manchester Oxford Road]

"It may be that I would look at some of this stuff out of curiosity but I can't honestly say I ever have actively looked for it".
[Long Commute, Chippenham]

"We are completely at the mercy of what we are being told by the media on this".
[Low volume route, Manchester Oxford Road]

"If travelling by train is good for the environment, why doesn't the rail industry promote it? Maybe it's because it's not good news"
[Leisure User, Croydon]

"I get most of it from my children. They're always getting on to me about saving energy here and saving energy there."
[Short Commuters, Glasgow]

The key information sources from which they gain this knowledge are government statistics and the media/press. However, they often feel that this can mean that the information is over-simplified and biased, and in the most extreme cases it can even drive wrong behaviour.

Some feel that more objective sources of information for finding out about environmental impact are universities and other agencies such as the National Geographic. The perception is that such sources are more likely to be objective in their viewpoint and accurate in the information they provide. However, the key issue is that currently information from these sources is not felt to be sufficiently accessible to the public at large. Given that there is little desire for most to seek out this information, the only so-called facts and figures that the public are hearing are those that are fed to them through the media and the government.

“There must be loads of agencies out there spending a huge amount of time and effort on environmental research into these issues, but I haven’t a clue where to find out about them and the work they are doing”.

[Long Commute, Chippenham]

Thus, for some there is a desire to find out more of this type of information if objective agencies such as universities make it more accessible. For others however, this makes for uncomfortable and depressing reading - it is information that they would rather not know.

3.5 Rail & the Environment

Since rail is generally not regarded as a major polluter and since making the railway greener is not seen as the responsibility of passengers, it is unsurprising that passengers do not regard improving the environmental impact of rail as a priority.

“To be honest, the train is pretty environmentally friendly already as a mode of transport”.

[Low volume route, Manchester Oxford Road]

“Over the years, we have accepted that the train poses no harm. There has been no outcry about rail travel so I haven’t really thought about it in this context”.

[Low volume route, Manchester Oxford Road]

“The environmental impact of trains hasn’t been part of the equation really”.

[Low volume route, Manchester Oxford Road]

In fact, many feel that this should be primarily the responsibility of TOCs in so far as they should be implementing more green procedures and policies as well as undertaking measures such as ensuring that the engines used are as efficient as possible. Some passengers had noted that First Great Western is changing the engines in the HST fleet to a new greener alternative. This was seen as a positive move that showed the TOC taking a degree of responsibility.

"I don't know how we can influence how environmentally friendly trains are. I don't really see what is has to do with the passengers".
[Long Commute, Chippenham]

However, many are more cynical than this and believe that the only reason TOCs will ever take such measures is if they are being leaned upon to do so (or incentivised) by the government. Consequently, there is also a school of thought amongst rail passengers that there needs to be some government targets on types of train, roll-out of electrification of the network etc. if this is not already the case.

However, rail passengers were universally opposed to any kind of green tax on trains as has recently occurred for travel by plane.

"I suppose there will be a green tax on trains next! [heavy sarcasm].
It's just another way of getting money out of the tax payer".
[Long Commute, Chippenham]

In terms of specific measures that passengers feel should be undertaken on the railway to make it greener, respondents were able to identify several as follows. These have been categorised into the 'larger' measures and 'smaller' measures:

Larger Measures

- Encourage more passengers onto trains to ensure per seat efficiency
- Trains to run with less empty (first class) carriages
- Double decker trains to maximise capacity
- Number of carriages to reflect number of passengers
- Solar panels/wind turbines to help power trains
- Bio-diesel/fuel for trains and government regulations to ensure this occurs
- More electrification of main lines

- Less stops to minimise environmental impact of braking and accelerating
- More integrated transport links to discourage driving to station and encourage more rail travel

Smaller Measures

- Less packaging in foodstuffs sold on board trains
- More visible recycling e.g. bins, collectors with different colour bags
- Low energy light bulbs in carriages
- Switching off lights in carriages when not in use
- Appropriate temperature in carriages
- Allowing bicycles on peak trains (felt to be a contradiction currently)

“If train companies were really bothered about the environment, they would recycle properly when they clean the trains, not just dump everything in the same bag”
[Short Commuters, London]

“Recycling rubbish from trains is such an easy thing to do, it’s a quick win”
[Short Commuters, London]

“All lighting at train stations should come from renewable sources”
[Short Commuters, London]

“There should be a trolley that goes around with different coloured rubbish bags for recycling.”
[Short Commuters, Glasgow]

“The problem is that the environment seems to be low on rail companies’ lists of priorities because you can’t take a normal bike on commuter trains. If they want people to think about the environment, they should accommodate people who already think like that”
[Short Commuters, London]

Whilst passengers were able to think of a number of both larger and smaller measures as can be seen from the lists above, the consensus of opinion was that the TOCs should focus on implementing the smaller measures at least in the first instance as they are simple and

easy to achieve and are more in keeping with what consumers are doing in their home.

3.6 Impact of Information

During the research, respondents were provided with various Department for Transport statistics (see Appendix) to indicate the environmental impact of rail travel. Reactions to these statistics are detailed in the sections below:

Load Factor

As outlined earlier in this report, for some passengers the load factor is key to the environmental argument, as they understand that it alone can render any fuel-consuming mode of transport more or less environmentally friendly. However, this is not seen as an essential concern for the passenger, it is felt that it is the responsibility of the TOCs to ensure that loads are evenly spread and trains are not running empty, rather than the passenger, as the following (somewhat sarcastic) comment illustrates:

“You wouldn’t get on a train and think, ‘no-one on it, I’d better get off as it’s not very green’”.

[Low volume route, Manchester Oxford Road]

There was nevertheless, some surprise that a very high-speed train (350) with a low load factor could be more damaging to the environment than a plane with a similar low load factor.

Emissions

The statistics on emissions were felt to be broadly in line with passenger expectations, namely that rail travel is less polluting than motor or air travel. There was however, a certain degree of cynicism and scepticism surrounding the source and validity of these figures. The perception is that this is the kind of data that could be manipulated to tell many different stories and that possibly this is the case here with the government wanting to encourage more use of rail.

“I find this quite hard to believe. Planes are obviously the latest target for the government, so that’s probably why they have manipulated the figures in this way”.

[Long Commute, Chippenham]

“That’s the sort of information that would help you to make a decision if all other things were equal or fairly similar”

[Short Commuters, London]

High Speed Lines

Of all the statistics shown to respondents, the statistics on the potential environmental impact of running high-speed trains had by far the most impact (a very high speed train running between London and Edinburgh would cut journey time by 15% but would consume 90% more energy than for the equivalent current journey by rail).

These statistics produced a visible reaction on the faces of respondents, with some clearly feeling guilty that they had earlier requested faster journey times! Most claimed that if these figures are true then they would not be inclined to use such a service.

“90% is very high. It would certainly make me feel guilty about using these trains”.

[Low volume route, Manchester Oxford Road]

“I’m very disappointed and would boycott this service as I want to leave some kind of planet for my grandkids”.

[Long Commute, Chippenham]

“15% is not a lot faster in real terms so it’s hardly worth it. Using 90% more fuel would be a major disincentive”

[Short Commuters, London]

“That’s an insignificant benefit to passengers for a massive environmental cost”

[Short Commuters, London]

“I think it would be really expensive to build and run and we would end up paying. It would have to cut the journey time by over an hour for me to use it.”

[Short Commuters, Glasgow]

In fact, the consensus of opinion was that these statistics build a good case for not investing in new high-speed lines but rather feeding the money into development of the existing infrastructure.

Bald statistics on the relative environmental impact of various modes of transport are not felt to be very exciting to respondents or especially easy for them to understand and digest. However, there were consistent indications from the research that this type of information could potentially be re-packaged to create a more exciting and motivating story for rail passengers and also to communicate to current non-users to encourage reappraisal of current behaviour with regard to modal choice. For example, if it is possible to provide a 'carbon calculator' for planned journeys, this could potentially be promoted as a way of highlighting the relative environmental advantages of travelling by rail.

4. Conclusions & Recommendations

In conclusion, whilst environmental issues are currently very much in the limelight, they are a low priority for passengers when selecting their modal choice of transport. Rarely are they factored into the decision-making to exert a positive influence on rail travel, but they can sometimes be seen as a negative factor, not least planes which are currently seen as quite polluting. In any case, rail users already perceive the train as a fairly environmentally friendly mode of transport.

Commuters tend to hold the opinion that basic improvements in the rail service (such as those highlighted in the sister research project on Rail Improvements) will lead to more usage of the railway, thus will be better for the environment. However, all are against any kind of green tax on rail travel.

Whilst this research amongst rail passengers has uncovered a general lack of excitement about the greenness of trains, it could of course be that non-users of rail hold entirely different views. Thus, it is our feeling that the green argument could be leveraged to provide incentive for non-users to consider rail travel as an alternative to cars in particular, as well as domestic air travel. However, the problem with the green message for the rail industry is that it is unlikely to be promoted by the media since it is essentially a good news story.

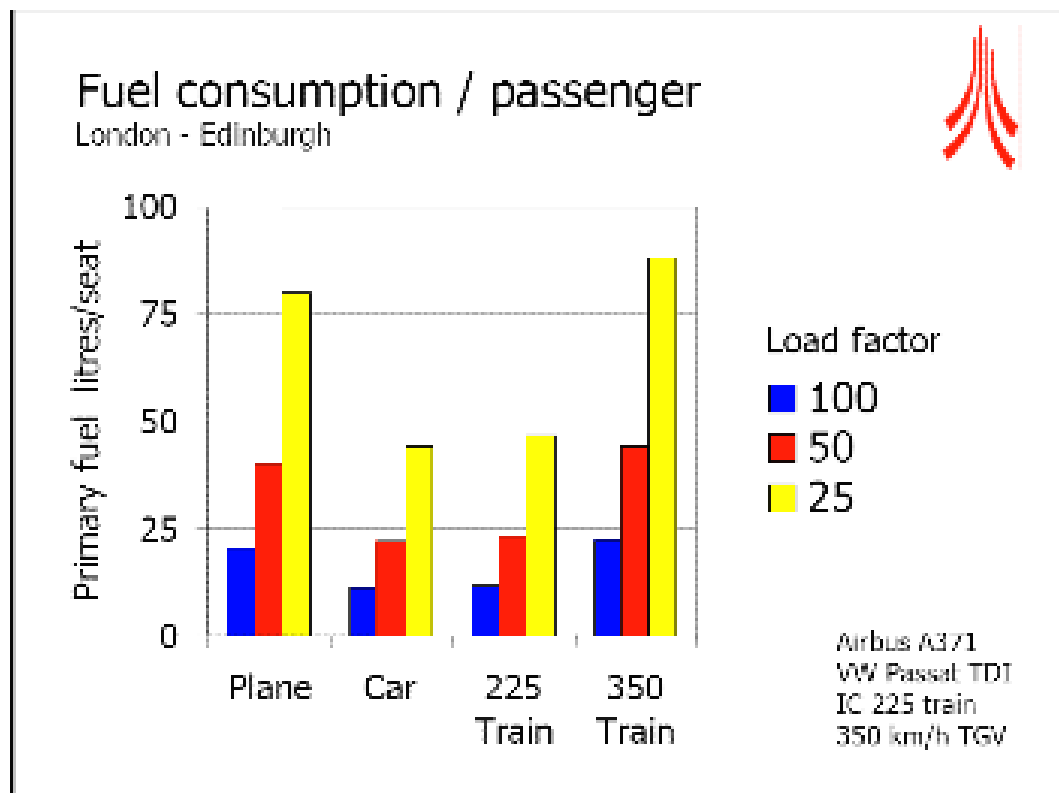
Based upon this research, our recommendations to Passenger Focus would be as follows:

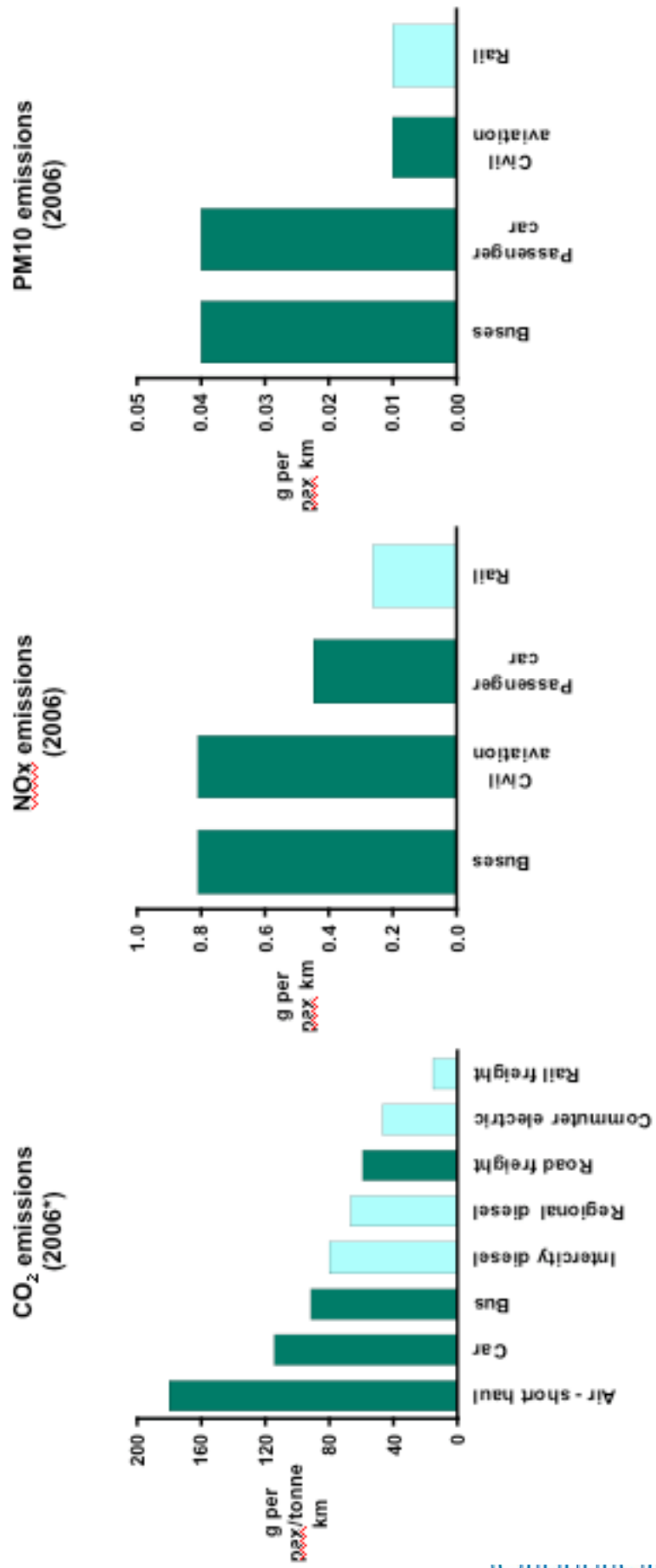
- **Quick wins for the rail industry are implementing smaller green measures on trains such as recycling bins, low energy bulbs, appropriate temperature, cycle facilities etc.**
- **The industry also needs to decide on a positive message to communicate to the wider public about rail travel.**
- **Our feeling is that there is opportunity for incremental journeys for existing rail passengers if the rail industry communicates the environmental advantages of rail travel in conjunction with key improvements highlighted in the sister project on Rail Improvements.**

5. Appendix

Below is the stimulus material utilised in this research (all from Department for Transport):

For moderator reference only:





A high speed train service (similar to the Eurostar in terms of speed) between London and Edinburgh would save you 15% of your journey time compared to the current train journey times on this route.

A high speed train service (similar to the Eurostar in terms of speed) between London and Edinburgh would consume 90% more energy than the current train services on this route.

Improving passenger comfort, improving crashworthiness of trains and improving access for those with mobility impairments can all have an impact on the amount of energy consumption (per seat kilometre and per passenger kilometre).