

# Fact sheet



**Friends of  
the Earth**

## Why travelling by rail is better for the environment

Despite the recent problems faced by the rail industry, passenger numbers have displayed a rapid increase in the last few years, this is partly due to the booming economy but also the worsening congestion on our roads. The consequences of relentlessly increasing road traffic are adverse effects on human health and both the local and global environment. Although railways still have environmental impacts they are considerably less than both road and air travel. A substantial shift of passengers and freight from road and air to rail would benefit everyone through reduced congestion and less damage to the environment.

### **Climate change - Personal Travel**

All motorised transport produces Carbon Dioxide (CO<sub>2</sub>) one of the so called “greenhouse gases” that contribute to climate change. Trains are an energy-efficient carrier of people and goods and hence produce relatively less CO<sub>2</sub> emissions per passenger than other modes. Travelling by rail reduces your contribution to climate change. Emissions of CO<sub>2</sub> per passenger/Km are, on average, approximately half that of travel by car.<sup>1</sup> In 1998 rail produced only 1% of the U.K.’s total emissions, road transport meanwhile accounted for 23%<sup>2</sup>

### **Climate change - Freight Transport**

The majority of our freight in the UK travels by road. Switching some of this to rail would result in a dramatic reduction in CO<sub>2</sub> emissions. Carrying freight by rail results in an 80% cut in CO<sub>2</sub> emissions per Kilogram carried compared to road haulage.<sup>3</sup>

### **Public Health**

Up to 24,000 vulnerable people are estimated to die prematurely each year because of poor air-quality and transport is a major contributor to this problem through engine exhaust emissions<sup>4</sup>. Although rail carries 7% of U.K traffic it emits only 0.2% of Carbon Monoxide, 2% of Nitrous Oxide, 1% of Volatile Organic Compounds and 2.5% of Sulphur Dioxide emissions<sup>5</sup>. Electric trains are also pollution free at point of use, and do not contribute to localised air quality problems in urban centres. Electricity can also be generated by emission free renewable energy sources such as wind and solar.

### **Saving Energy**

Rail is a relatively energy efficient transport mode. Rail transport uses far less energy per passenger kilometer than road. A rail passenger travelling by high speed train, even at 200Km/hr, typically uses only 0.8 - 1.0 MJ of energy compared to 1.4 - 2.8MJ for a car driver/passenger<sup>6</sup>. In 1999 UK road transport consumed 80 times as much energy as rail, while the distance travelled by road passengers and freight was only 15 times as much<sup>7</sup>.

### **Noise**

Road noise affects the quality of life of many people in the UK, as a result, 32 million residents are exposed to greater than 55dB, the comparative figure for rail being only 1 million<sup>8</sup>. In its 1980 recommendations The World Health Organisation stated:- “a level of less than 35dB is recommended to preserve the restorative process of sleep”<sup>9</sup>. The cost of noise damage from road traffic in the UK is 25 times that of rail<sup>10</sup>.

## Safety

Despite recent accidents rail is still a far safer mode of transport than road: you are 9 times more likely to be killed travelling by private car and 2.5 times more likely by air<sup>11</sup>.

## Less Lorries

Lorries are a major source of noise, vibration and harmful particulates in the form of black smoke emissions, one freight train can carry 1000 tonnes of freight replacing 50 lorry movements<sup>12</sup>.

## Environmental Cost

It has long been recognised that road users do not pay the true financial cost of the environmental damage that they cause. A recent consultants report calculated that the costs of environmental damage, accidents and congestion per passenger kilometre travelled are 3-10 times higher for road than for rail<sup>13</sup>.

## Space Saving

Britain is a crowded island with the 3<sup>rd</sup> highest population density in the EU<sup>14</sup>. Rail makes more efficient use of space: a double track railway can carry up to 10 times the number of people per hour than a 2-lane road<sup>15</sup>.

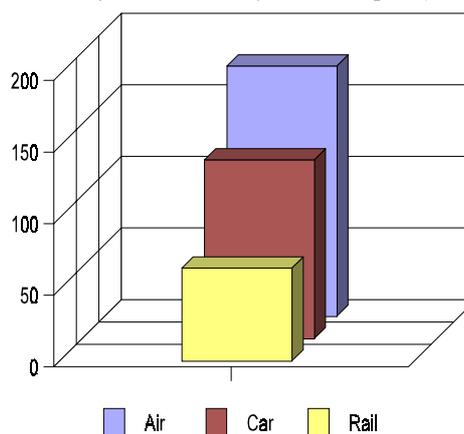
## Visual Intrusion

Despite recent improvements in the landscaping of new roads, railways are far less visually intrusive. Much of the rail network, constructed in the 19<sup>th</sup> century has had time to blend in to the landscape and in many cases arguably, actually enhances it.

### Notes:

1. Railtrack - "Benefits of rail"
2. DETR - "Transport Statistics" 1998 edition
3. The Railway Forum - "Rail and the Environment"
4. DETR - "A New Deal For Transport" 1998
5. The Railway Forum - "Rail and the Environment"
6. The Railway Forum - "Rail and the Environment"
7. DETR - "Transport Statistics" 2000 edition
8. The Railway Forum - "Rail and the Environment"
9. WHO - "Guidelines for Community Noise"
10. The Railway Forum - "Rail and the Environment"
11. Rail Safety - "Annual Safety Report" 2000/1
12. The Railway Forum - "Rail and the Environment"
13. The Railway Forum - "The Wider Impacts Of Rail And Road Investment"
14. Whitakers - 2000 Edition
15. The Railway Forum - "Rail and the Environment"

Estimated Specific CO2 Emissions by Mode (EU average 1995)



grams/passengerKm

Source:- EU - "Transport in Figures 2000"

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