



The Environment

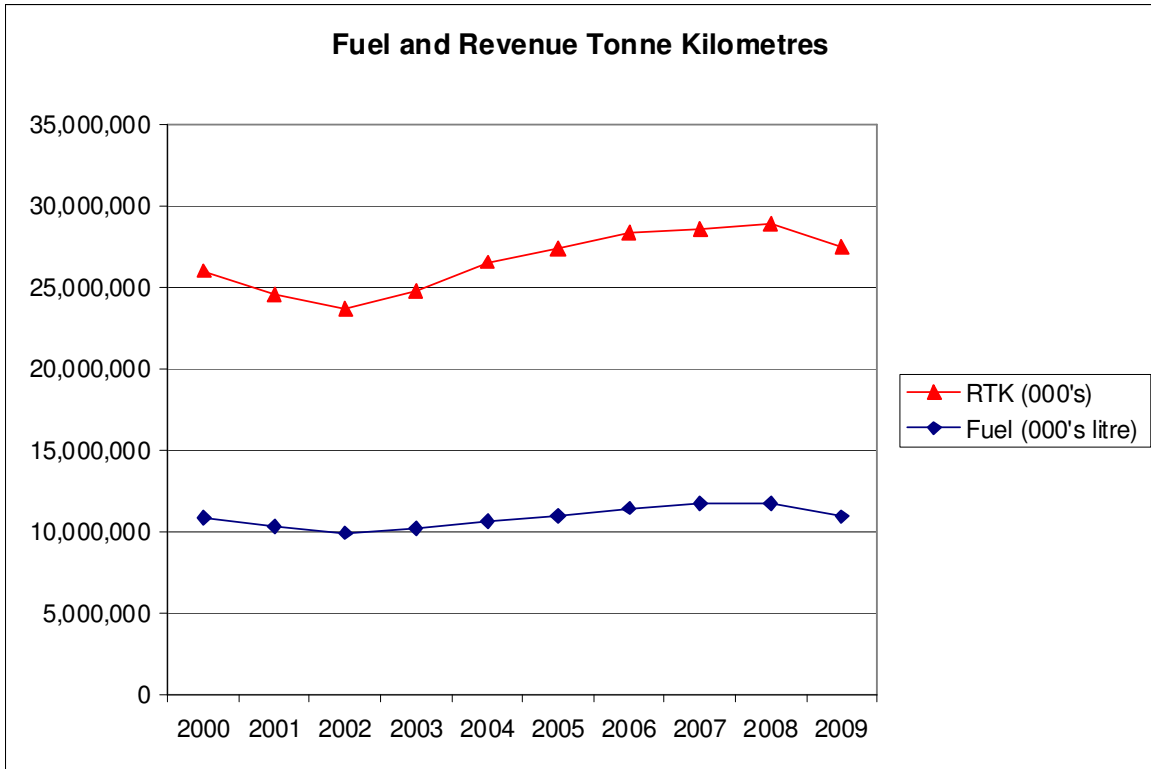
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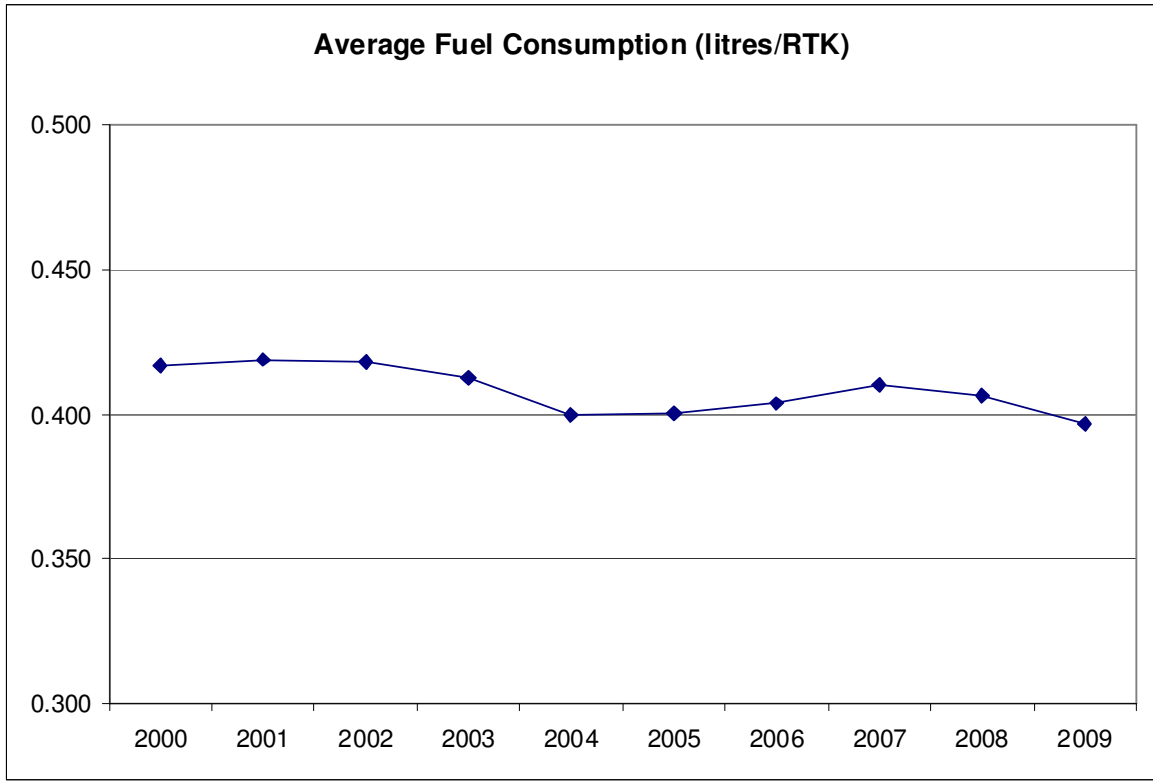
Fuel and Fuel Efficiency

The following table and charts show the aggregate results for six BATA airlines which have data back to 2000. The results cover aircraft operations only.

| Year | Fuel Burnt litres 000's | Revenue tonne kms 000's | Average Consumption litres/RTK |
|------|-------------------------------|-------------------------------|--------------------------------------|
| 2000 | 10,850,026 | 26,036,015 | 0.417 |
| 2001 | 10,309,341 | 24,606,444 | 0.419 |
| 2002 | 9,931,110 | 23,741,196 | 0.418 |
| 2003 | 10,241,800 | 24,813,859 | 0.413 |
| 2004 | 10,614,407 | 26,560,844 | 0.400 |
| 2005 | 10,981,344 | 27,428,186 | 0.400 |
| 2006 | 11,457,853 | 28,376,011 | 0.404 |
| 2007 | 11,709,934 | 28,562,550 | 0.410 |
| 2008 | 11,764,211 | 28,942,021 | 0.406 |
| 2009 | 10,923,426 | 27,527,723 | 0.397 |

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UK CO₂ Emissions 2008

Global Context

Carbon dioxide is the main man-made contributor to global warming. The UK contributes about 2 per cent to global man-made emissions, which, according to the Intergovernmental Panel on Climate Change (IPCC), were estimated to be 38 billion tonnes carbon dioxide in 2004.

Carbon dioxide accounted for about 85 per cent of the UK's man-made greenhouse gas emissions in 2008.

UK Context

In 2008, 39 per cent of carbon dioxide emissions were from the energy supply sector, 22 per cent from road transport, 16 per cent from business and 15 per cent from residential fossil fuel use. Since 1990, emissions from road transport have increased by 7 per cent, while emissions from the energy supply industry have reduced by 14 per cent and business emissions have reduced by 21 per cent.

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UK Domestic Aviation

Between 2007 and 2008, total emissions from domestic aviation decreased, by 5 per cent from 2.3 to 2.2 million tonnes CO₂ equivalent. Domestic aviation is estimated to have produced 2.1 million tonnes of carbon dioxide in 2008, compared to 2.3 million tonnes in 2007 and 2.4 million tonnes in 2006 (a drop of 8.7 per cent and 12.5 per cent respectively).

UK International Aviation

Emissions from international aviation and shipping can be estimated from refuelling from bunkers at UK airports and ports (whether by UK or non-UK operators). In 2008, total emissions from international aviation fuel use were estimated to be 34.4 million tonnes carbon dioxide equivalent (or 34.1 million tonnes of carbon dioxide).

Between 2007 and 2008, total emissions from UK international aviation decreased by 3.8 per cent from 35.76 to 34.4 million tonnes CO₂ equivalent. International aviation is estimated to have produced 34.1 million tonnes of carbon dioxide in 2008, compared to 35.42 million tonnes in 2007 and 35.56 million tonnes in 2006 (a drop of 3.7 per cent and 4.1 per cent respectively).

Under the guidelines agreed for the United Nations Framework Convention on Climate Change, (UNFCCC), reporting emissions from international aviation and shipping are not included in the UK's emissions total, but these estimates are reported as memo items in national greenhouse gas inventories. Parties to the UNFCCC are required to act to limit or reduce emissions from international services working through the International Civil Aviation Organisation (ICAO) and International Maritime Organisation (IMO).

UK Target

The Government has recently set a new target for carbon dioxide emissions from UK aviation, which requires them to be no higher than 2005 levels in 2050. This target incorporates emissions from both domestic and international aviation. In 2008, these emissions were 3.7 per cent below 2005 levels.

[Taken from Statistical Release – UK Climate Change Sustainable Development Indicator: 2008 Greenhouse Gas Emissions, Final Figures, published by the Department for Energy and Climate Change (DECC) on 2 February 2010]

UK CO₂ Emissions By Sector 2008 (MtCO₂)

CO₂ Emissions by Source 2006 - 2008

| | 2006 | | 2007 | | 2008 | |
|--------------------------|-------------------------|----------------|-------------------------|----------------|-------------------------|----------------|
| Sector | MtCO₂ | % Share | MtCO₂ | % Share | MtCO₂ | % Share |
| Energy Supply | 219.8 | 39.84% | 216.2 | 39.74% | 209.9 | 39.38% |
| Business | 89.9 | 16.29% | 88.2 | 16.21% | 85.5 | 16.04% |
| Road Transport | 120.4 | 21.82% | 121.6 | 22.35% | 117.3 | 22.00% |
| Domestic Aviation | 2.4 | 0.43% | 2.3 | 0.42% | 2.1 | 0.39% |
| Rail | 2.2 | 0.39% | 2.2 | 0.40% | 2.2 | 0.41% |
| Other Transport* | 8.9 | 1.61% | 8.3 | 1.52% | 8.8 | 1.65% |
| Public | 10.4 | 1.88% | 9.6 | 1.76% | 10.2 | 1.91% |
| Residential | 81.5 | 14.77% | 78.2 | 14.37% | 80.7 | 15.14% |
| Agriculture | 4.4 | 0.79% | 4.2 | 0.77% | 4.2 | 0.78% |
| Industrial | 13.2 | 2.39% | 14.6 | 2.68% | 13.7 | 2.57% |
| Waste Management | 0.4 | 0.07% | 0.5 | 0.09% | 0.4 | 0.07% |
| Land Use Change | -1.9 | | -2.0 | | -2.0 | |
| Total UK Domestic | 551.6 | 100 | 543.9 | 100 | 533 | 100 |
| | | | | | | |
| International Aviation | 35.56 | | 35.42 | | 34.10 | |
| International Shipping | 6.69 | | 6.74 | | 7.46 | |
| Total UK | 593.85 | | 586.06 | | 574.56 | |

*Includes shipping, military, aircraft support vehicles

Sources:

UK Domestic: Defra/NAEI/AEA Energy & Environment: UK Climate Change Sustainable Development Indicator: 2008 Greenhouse Gas Emissions, Final Figures

Bunkers: Greenhouse gas emissions arising from use of fuels from UK 'international bunkers' 1990-2008

Aviation Emissions as a Proportion of UK CO₂ Emissions (2008)

UK Domestic Aviation

0.39% of UK domestic emissions

All UK Aviation

6.30% of total UK emissions

Conversion Factors

1 tonne of fuel (kerosene) = 1250 litres.

1 UK gallon = 4.54609 litres.

1 UK gallon = 1.2 US gallons.

Burning 1 tonne of kerosene produces 3.15 tonnes of CO₂.

1 tonne of carbon emissions is equivalent to 3.67 tonnes of CO₂.

Burning 1 tonne of kerosene produces 0.858 tonnes of carbon.