

**TRANSPORT FOR LONDON**  
**SAFETY, HEALTH AND ENVIRONMENT ASSURANCE COMMITTEE**

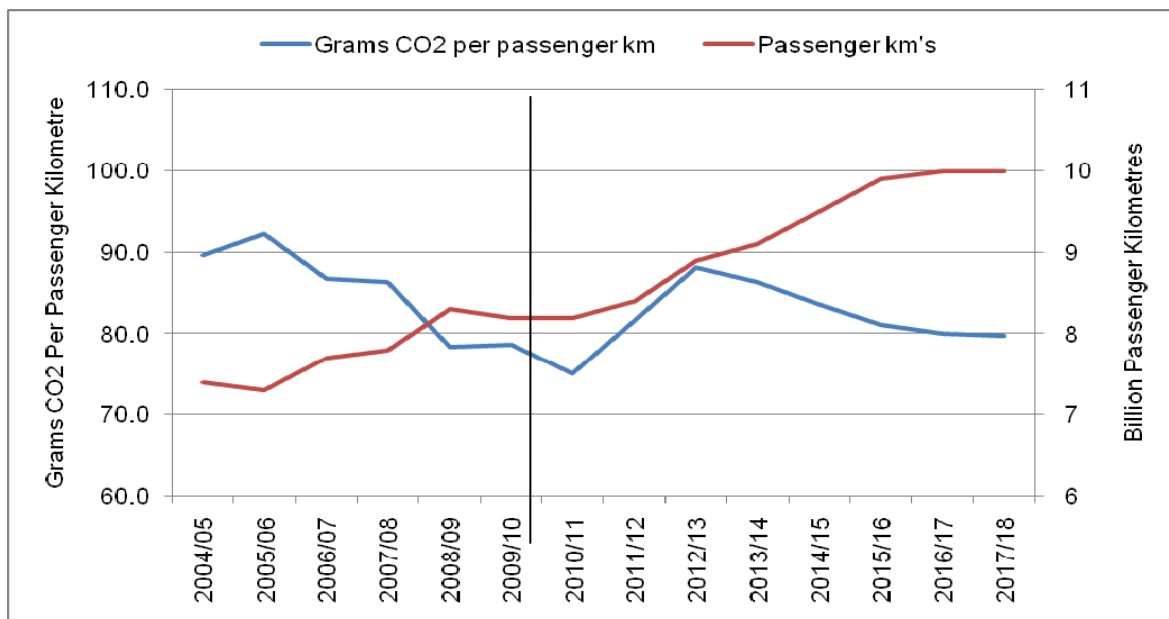
**SUBJECT: LONDON UNDERGROUND CARBON EFFICIENCY**

**DATE: 7 OCTOBER 2010**

**1 PURPOSE**

- 1.1 At its meeting on 20 July 2010 the Committee requested London Underground (LU) to provide an outline of LU's carbon efficiency projections.
- 1.2 The Committee is asked to note the paper.

**2 CARBON EFFICIENCY TREND AND PROJECTION**



- 2.1 As the graph shows, over recent years LU has achieved an improving trend in carbon efficiency, measured in grams of CO<sub>2</sub> per passenger kilometre. This is due primarily to passenger kilometres carried rising faster than the number of train kilometres operated.
- 2.2 The projected reversal in this trend over the next two years is due to the 'pause' in passenger journey growth due to the economic recession and the approximately coincident timings of the progressive introduction of the following, all of which consume more electrical power:

- (a) More, faster, new trains (09 stock) on the Victoria line;
- (b) Automatic Train Operation (ATO) on the Jubilee and Northern lines allowing more existing trains to travel faster and closer together than before;
- (c) New faster, air-conditioned trains (S stock) as part of the Sub-surface line upgrade; and
- (d) New, larger ventilation fans on the Victoria line for tunnel cooling.

2.3 This adverse trend in carbon efficiency is then reversed in the five year period following 2012/13, because the service capacity increases enabled by the Line Upgrades lead to higher passenger numbers. In addition, carbon efficiency also improves slightly due to:

- (a) A higher proportion of traction energy sourced from renewable generation; and
- (b) The continued beneficial impact of operational energy savings such as the Energy Stations Challenge and the 'escalator switch off' programme.

### **3 CONCLUSION**

3.1 Improvements in LU's carbon efficiency will remain significantly dependent on growth in passenger numbers and the continuation of the investments that enable this.

### **4 RECOMMENDATION**

4.1 The Committee is asked to NOTE the paper.

### **5 CONTACT**

5.1 Contact: Mike Strzelecki, LU Director of Safety  
Number: 020 7928 3323  
Email: [Mike.Strzelecki@tube.tfl.gov.uk](mailto:Mike.Strzelecki@tube.tfl.gov.uk)