

## **Taxi Licensing Scrutiny Review**

### **Estimated Emissions from Taxis in York**

Vehicle type and fuel data has been collected for the taxi fleet in York (inclusive of hackney carriages and private hire vehicles). A total of 750 vehicles have been considered.

Where possible each vehicle has been assigned an emission rate in g/km for NO<sub>x</sub> and CO<sub>2</sub> based on information taken from the vehicle registration documents. These figures are representative of the manufacturing standard for the vehicle when it was new, not the in-use emissions for the vehicle which are likely to be considerably higher. In use emissions are dependant on a number of factors including how well the vehicle is maintained, how it is driven and the length and type of journey.

Where data for individual vehicles could not be obtained it has been assumed that the vehicle would have the maximum emission rate allowable for its data of manufacture.

For pre-Euro III vehicles (before January 2000) it has not been possible to obtain NO<sub>x</sub> emission rates as there were no limits in place before these dates. In these cases it has been assumed that the vehicles have the maximum allowable Euro III emission level. This is likely to be an underestimate of the true emissions from pre-Euro III vehicles of which there are 35 in the data set.

The requirement to publish CO<sub>2</sub> emission rates for vehicles did not come into force until September 2005. The requirement is only to publish data, not to meet a specific standard. There were 92 vehicles for which no CO<sub>2</sub> data was available. In these cases the vehicle was assigned a figure of 175g/km which was the average emission from the remainder of the vehicles (same figure assumed for diesel and petrol at this stage)

The tables below provide an overview of the age and fuel type of the current taxi fleet. Estimates have also been made of the total emissions from the whole fleet assuming each vehicle travels a set distance. It has not been possible in the timescale available to obtain actual annual mileages for individual taxis.

## Fleet composition

Euro standard	Number of vehicles	Number of petrol	Number of diesel	Number of gas conversion	Number of hybrid electric
Pre-Euro 1	1	1	0	0	0
Euro 1	2	1	1	0	0
Euro 2	32	11	21	0	0
Euro 3	358	137	221	1	0
Euro 4	333	58	275	0	0
Euro 5	24	0	23	0	1
<b>Total</b>	<b>750</b>	<b>208</b>	<b>541</b>	<b>1</b>	<b>1</b>

## Estimated emissions

The figures in the table below assume that every vehicle in the fleet travels the specified mileages shown per annum so represent a predicted emission for the fleet per year. For a more accurate estimate of emissions annual mileage for individual vehicles is required but this type of information is not currently readily available within CYC.

Assumed mileage per vehicle per annum (miles)	Estimated NO <sub>x</sub> emission from taxi fleet (tonnes)	Estimated CO <sub>2</sub> emission from taxi fleet (tonnes)
20,000	4764	3173586
30,000	7146	4760379
40,000	9527	6347172

**Average emission (g/km) per vehicle type** - This table shows the average g/km emission per vehicle for each vehicle class.

Note:

- Higher NO<sub>x</sub> emissions from diesel than petrol vehicles
- Trend towards purchase of new diesel vehicles = greater NO<sub>x</sub> emissions (of which an increasing proportion is primary NO<sub>2</sub>)
- Hybrid vehicles offer a considerable reduction in NO<sub>x</sub> and CO<sub>2</sub> emissions per km

	<b>Number of vehicles</b>	<b>Average NO<sub>x</sub> emission (g/km)</b>	<b>Average CO<sub>2</sub> emission (g/km)</b>
<b>Pre-Euro 1 diesel</b>	<b>0</b>	<b>-</b>	<b>-</b>
<b>Pre-Euro 1 petrol</b>	<b>1</b>	<b>0.15 (estimated)</b>	<b>175 (estimated)</b>
<b>Euro 1 petrol</b>	<b>1</b>	<b>0.15 (estimated)</b>	<b>175 (estimated)</b>
<b>Euro 1 diesel</b>	<b>1</b>	<b>0.5 9 (estimated)</b>	<b>175 (estimated)</b>
<b>Euro 2 petrol</b>	<b>11</b>	<b>0.15 (estimated)</b>	<b>175 (estimated)</b>
<b>Euro 2 diesel</b>	<b>21</b>	<b>0.5 (estimated)</b>	<b>175 (estimated)</b>
<b>Euro 3 diesel</b>	<b>221</b>	<b>0.41</b>	<b>167.9</b>
<b>Euro 3 petrol</b>	<b>137</b>	<b>0.27</b>	<b>187.43</b>
<b>Euro 3 gas</b>	<b>1</b>	<b>0.005</b>	<b>161</b>
<b>Euro 4 petrol</b>	<b>58</b>	<b>0.04</b>	<b>188.44</b>
<b>Euro 4 diesel</b>	<b>275</b>	<b>0.285</b>	<b>172.7</b>
<b>Euro 5 petrol</b>	<b>0</b>	<b>-</b>	<b>-</b>
<b>Euro 5 diesel</b>	<b>23</b>	<b>0.231</b>	<b>172.3</b>
<b>Euro 5 electric hybrid</b>	<b>1</b>	<b>0.005</b>	<b>92</b>