INFORMATION NOTE

SHEFFIELD AND ROTHERHAM CLEAN AIR ZONES

BLACK CAB NOX EMISSIONS

IDENTIFICATION TABLE	
Project	Sheffield and Rotherham Clean Air Zones
Title of Document	Black Cab NO_X Emissions
Type of Document	Information Note
Date	03/06/2018

1. INTRODUCTION

1.1.1 This note details the NOX emissions characteristics of Black Cabs as specified in the latest EFT (v8.01b) which has been made available for use on the Clean Air Zone (CAZ) studies. This is in turn consistent with COPERT 4v11.3.

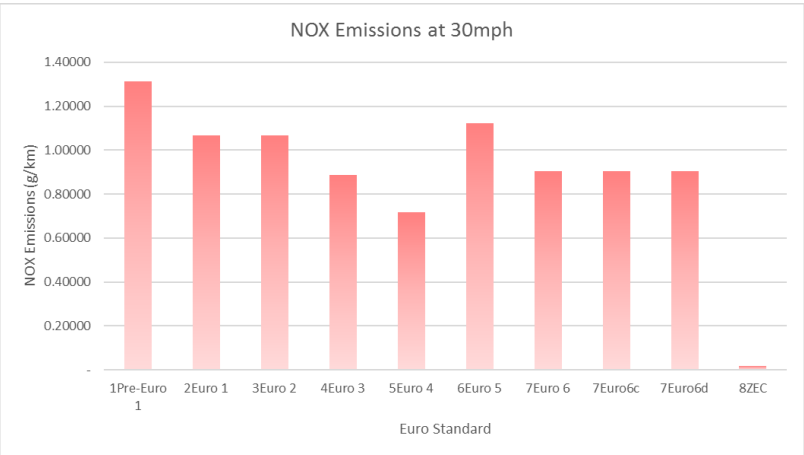
1.1.2 It shows the emissions at various different speeds and also how the emissions change based on the Euro standard of the black cab.

1.1.3 It should also be noted that the content of this note is specifically describing black cabs and doesn't relate to car-based taxis or any other forms of private hire vehicles. It also should not be confused with the term 'Hackney Carriage' which refers to a particular form of licensing agreement by a local authority (and which can be delivered by a combination of black cabs, 'standard' cars, people carriers, small minibuses etc).

2. NO_X EMISSIONS

2.1 Changes by EURO Standard

2.1.1 The figure below shows the NO_X emissions in grams per Km for different Euro standards of taxi at 30mph (ie regular urban driving conditions)



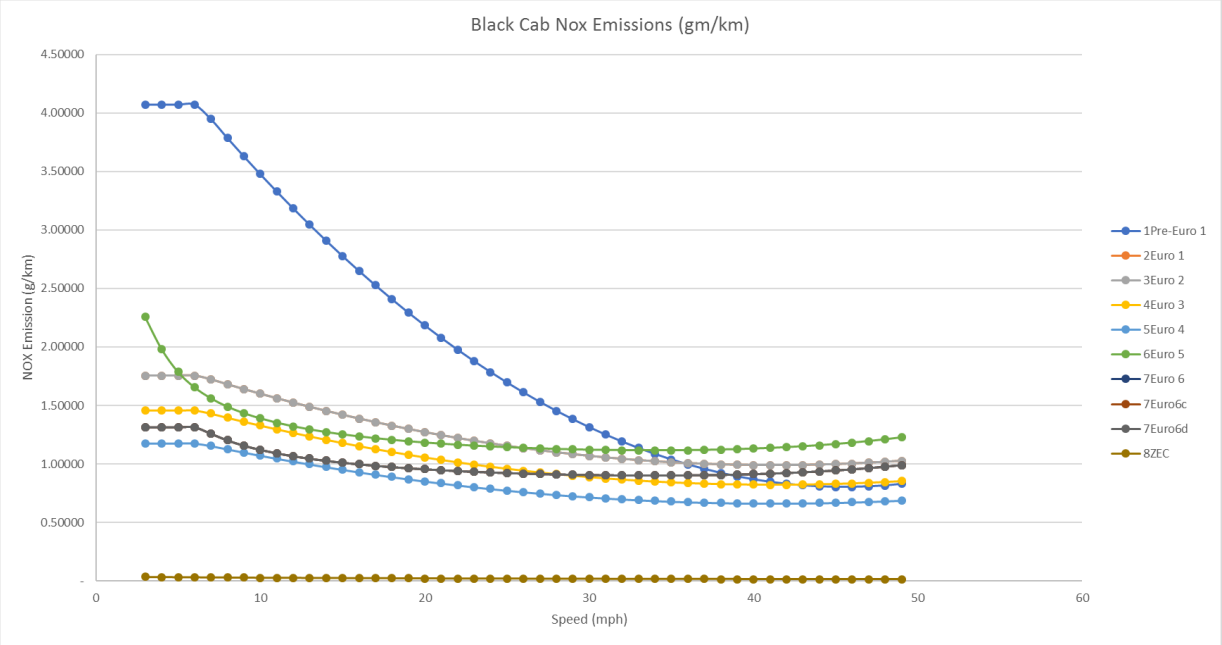
2.1.2 The main things to note are that the main EURO 6 categories are not significantly cleaner (from a NO_X emissions perspective) at 30mph that any of the previous categories, apart from the very oldest (pre-EURO 1) and indeed are likely to emit more NO_X per Km than a EURO 4 model.

2.1.3 Only when we reach the Zero Emission Cabs (ZEC) standard, do we see any significant reduction in NO_X emissions from black cabs.

2.1.4 What this implies is that in a bid to improve Air Quality as a result of NOX emissions in urban areas there is no point trying to replace Euro 4 cabs with Euro 5 or Euro 6 cabs as it will not improve the situation[1], rather there should be a push to alternative fuels (LPG / Electric).

2.2 Speed Distribution by Euro Class

2.2.1 The chart below shows how the average NO_X emissions per km of Black Cabs are predicted to vary with speed.



2.2.2 This shows that the emissions-speed curve is relatively flat for everything from EURO 1 onwards, but with the highest emissions always occurring at low speeds. Therefore, one way of reducing emissions from Black Cabs would be to reduce the time they spend travelling at low speeds, for example in congested traffic conditions. This might be achieved by reducing the frequency with which Black Cabs get caught up in congestion, either by reducing the incidence of congestion on the network or by proving more priority measures for Black Cabs, where possible.

[1] Assuming the COPERT / EFT values are accurate

APPROVAL					
Version	**Name**		**Position**	**Date**	**Modifications**
1	Author	Chris Robinson	Associate	20/05/2018	
	Checked by	David Connolly	Director	03/06/2018	
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