ENVIRONMENT AND ATTRACTIVE CITY SCRUTINY COMMITTEE

24 OCTOBER 2011

LOW CARBON TRANSPORT IN THE DELIVERY OF PUBLIC SERVICES IN SUNDERLAND POLICY REVIEW 2011/12:

LOW CARBON PUBLIC TRANSPORT

REPORT OF THE CHIEF EXECUTIVE

Strategic Priority: SP5 - Attractive and Inclusive City

Corporate Priorities: CI01 – Delivering Customer Focused Services, CI04 – Improving Partnership Working To Deliver 'One City'

1. PURPOSE OF THE REPORT

1.1 To provide members of the Scrutiny Committee with an overview of low carbon public transport in Sunderland.

1.2 The presentations delivered by Nexus and Go NorthEast, will inform the Scrutiny Committee's policy review for 2011/12 into Low Carbon Vehicles in the Delivery of Public Services in Sunderland.

2. BACKGROUND

2.1 At its meeting on 13 June 2011 the Scrutiny Committee agreed to focus on Low Carbon Transport in the Delivery of Public Services in Sunderland as the Policy Review for 2011/12 and agreed the aim of the review and terms of reference at its meeting on 26 July 2011.

2.2 At a subsequent meeting on 13 September 2011 members of the Scrutiny Committee agreed the proposed approach to the policy review. The plan included seeking evidence from Nexus and bus companies operating in the city in regard to current and future use of low carbon public transport in the city.

2.3 One of the five goals of the Local Transport Plan 3 2011-2021 (LTP3) transport strategy is;

'To reduce carbon emissions produced by local transport movements, and to strengthen our networks against the effects of climate change and extreme weather events'

2.4 The carbon plan for the UK shows how the Government will deliver the vision of a low carbon economy, which includes addressing climate

change and building a green economy. It notes that one of the most critical issues for addressing climate change is the way people travel.

2.5 In considering the way people travel, the issues of providing better public transport, reducing emissions from petrol and diesel engines and movement towards alternative technologies with electric vehicles will need to be addressed.

2.6 As outlined in the Scene Setting report received by the Committee on 25 July 2011, transport is a major contributor to the UK's energy demand and greenhouse gas emissions (as well as other polluting emissions). Addressing climate change is therefore a key national and regional priority. There are two separate aims:

- Reducing greenhouse gas emissions which contribute to climate change; and
- Mitigating against the effect of climate change.

2.7 The LTP3 strategy sets out how transport in Tyne and Wear should contribute to the UK's goal of a 34% reduction in carbon emissions by 2022. These reductions are taken from a 1990 baseline.

2.8 By 2050 the region must reduce road transport CO2 emissions from a projected level of 5,591,032 tonnes down to 1,107,857 tonnes – less than a quarter of present-day levels. Emissions are predicted to rise over the period 2005-2050, if things remain as they are. In order to meet regional contributions to national targets and avoid dangerous climate change, the region must reduce CO2 emissions to 7.7m tonnes by 2050.

2.9 Bus emissions are assumed to remain broadly constant over the period to 2030. This is consistent with other analysis and reflects gains in vehicle efficiency which will be offset by additional bus mileage.

3. CURRENT POSITION

3.1 Information on the current and future use of low carbon public transport in the city, including background, opportunities and barriers to usage will be presented to the Scrutiny Committee for consideration.

3.2 A written submission of evidence from Go NorthEast can be found at (Appendix A).

3.3 The presentation will contribute principally to the following terms of reference for the Policy Review;

(c) To investigate the progress made to date and future plans in the council and across partners in regard to the introduction of low carbon vehicles to deliver public services.

4. CONCLUSION

4.1 Members are asked to receive presentations from; Bernard Garner (Director General, Nexus) and Kevin Carr (Operations Director, Go NorthEast.

5. RECOMMENDATION

5.1 That Members consider and comment on the information provided.

6. BACKGROUND PAPERS

- Minutes of the Environment and Attractive City Scrutiny Committee 25 July 2011 and 12 September 2011.

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Appendix A

ENVIRONMENT AND ATTRACTIVE CITY SCRUTINY COMMITTEE

Brief notes on Low Carbon Vehicles, CO2 Emissions etc - the delivery of public services in Sunderland

Go North East (part of the Go Ahead Group) operate a fleet of over 686 vehicles in Tyne and Wear, Durham and parts of Northumberland. These vehicles operate from seven core depots, namely, Winlaton, Percy Main, Gateshead, Deptford, Washington, Chester-le-Street and Stanley. The fleet consists of 152 double deck, 425 single deck, 15 coaches, 90 minibuses and 4 articulated vehicles. 208 of these are based in the Sunderland area with a number of additional vehicles passing through the borough dependent on their service pattern. All vehicles are diesel engine powered using bio-fuel (ULSD), to EN 590, with a 95/5 blend.

Our fleet of vehicles do change frequently with new vehicle investment or upgrades following vehicle transfers within the Group, enhancing our profile.

For example, within the last twelve months we have further increased the quantity of Euro 5 vehicles with notable contracts such as the Quaylink service in Newcastle and Gateshead and the Npower Rainton Bridge/Red Arrows service. We will shortly be operating our first hybrid diesel/electric buses for the City of Sunderland and the University of Sunderland from October this year.

At present our policy is to purchase new vehicles to the latest European standards, diesel powered, with emissions to Euro 5 specification, but this will change to Euro 6 from January 2013. All vehicles purchased from 2000 onwards have had constant regeneration traps fitted (CRT's) as standard, this removes particulate matter and raises the emission standard on the vehicle to the next level in this respect.

Nevertheless, we are constantly looking at changing technologies and alternate vehicle fuels which will provide low carbon and more fuel efficient operation, examples would be gas buses (CNG), fuel cells, hybrids (diesel/electric), electric drives, bio-fuel 70/30 blend, fuel additives and ethanol. Trials are ongoing or about to start on a number of these initiatives within the Group.

Each of the alternatives have pros and cons - in the case of hybrids the cost premium of purchase is prohibitive, even taking into account an improvement in fuel consumption of anywhere between 15 and 20%. The premium dependent on specification is around £100k, and for this reason support for the product is essential and partnerships are a clear way forward.

Electric vehicles have limitations in terms of operational range and therefore infrastructure costs need to be part of any justification. Gas has issues with vehicle fill

time, but hopefully the trials we are conducting will iron out some of the issues and enable us to determine the best way forward from all perspectives.

Over the last three years we have expended over £6million each year on new vehicles, and at £150k per single deck and £190k per double deck, you can see the returns that are needed to justify this investment. Therefore, fleet replacement timescales are lengthy.

Our current fleet profile identifying the various Euro standards is attached as Appendix 1.

Clearly, our long term strategy of fleet investment is an important ongoing process, and this will bring significant reductions in emissions, whether it be NOx, CO, CO2, PM and HC, but we have recognised the need to continually look at existing vehicle fuel consumption and site energy which both contribute significantly to our carbon footprint.

Therefore, our emphasis this year and in future years will be to achieve a 20% reduction in CO2 per passenger journey by 2015, through a combination of investment, new technologies, improving fuel usage, monitoring driver performance through vehicle telematics, reducing site energy while growing passenger numbers.

Energy Forums with energy champions are in place at each location, focussing on consumption and CO2 reduction through local initiatives, and engaging staff to take ownership and develop a team ethos to tackle these issues.

Site energy has been addressed leading to reductions in fuel, gas and electricity consumption. Simple housekeeping measures such as “Switch Off!” campaigns have complemented investment in smart lighting systems and energy management systems.

Telematics equipment is now fitted to our vehicles to monitor engine idling, over-revving, harsh acceleration, harsh braking and overspeeding, and provides warning lights to drivers whilst recording individual performance.

Fuel reduction benefits have been achieved by reducing idling and more frequent tyre pressure checks. We now aim to reduce consumption by 2% in the coming year and are actively exploring measures such as:

1. Tyre technology for improvement in rolling resistance.
2. Wheel/axle alignment.
3. Automatic idle shut off.
4. Acceleration limiter fitment.
5. Vehicle performance matching route topography.
6. The installation of a spill free fuel system.
7. An evaluation of hybrid technologies and new engine cooling systems.
8. Reviewing fuel specifications and their energy content.
9. Reducing vehicle weight through the application of composite materials, a long term process working with manufacturers.

To date a significant reduction in CO2 has so far been achieved. Since 2007/8 emissions per passenger journey have reduced by 3%. At present we have achieved 0.822g/km of CO2 per passenger journey, and are targeting a further reduction of 0.144g/km of CO2 per passenger by 2015.

Appendix 1

Table 1 **EU Emission Standards for HD Engines, g/kwh**

TIER	DATE	CO	HC	NOx	PM
Euro 1	1992 <85kw	4.5	1.1	8.0	0.612
	1992 >85kw	4.5	1.1	8.0	0.36
Euro 2	1996.10	4.0	1.1	7.0	0.25
	1998.10	4.0	1.1	7.0	0.15
Euro 3	2000.10	2.1	0.66	5.0	0.10
Euro 4	2005.10	1.5	0.46	3.5	0.02
Euro 5	2008.10	1.5	0.46	2.0	0.02
Euro 6	2013.01	1.5	0.13	0.4	0.01

Table 2 **Go North East Fleet Emission Standards (includes CRT upgrade)**

TIER	NUMBER OF VEHICLES
Euro 2	92
Euro 3	219
Euro 4	271
Euro 5	104

Table 3 **Sunderland Fleet Emission Standards (includes CRT upgrade)**

TIER	NUMBER OF VEHICLES
Euro 2	11
Euro 3	38
Euro 4	101
Euro 5	58

NB: These figures are constantly changing with fleet movement, investment and so on.