ENVIRONMENT AND ATTRACTIVE CITY SCRUTINY COMMITTEE

27 FEBRUARY 2012

LOW CARBON VEHICLES IN THE DELIVERY OF PUBLIC SERVICES REVIEW 2011/12: LOW CARBON SECTOR

REPORT OF THE CHIEF EXECUTIVE

Strategic Priority: SP5 - Attractive and Inclusive City

Corporate Priorities: CIO1 – Delivering Customer Focused Services, CIO4 – Improving Partnership Working To Deliver 'One City'

1. Purpose of Report

1.1 This report provides information to the Scrutiny Committee in relation to the low carbon sector in the region. This report contributes to the evidence for the Committee's policy review for 2011/12; Low Carbon Vehicles in the Delivery of Public Services.

1.2 Representatives from ElecScoot, Avid Technologies and Inova Power will be in attendance to give the Committee the opportunity to have a discussion with those working in the sector.

2. Background

2.1 Following the initial scoping of the Policy Review on 25 July 2011, members have commenced evidence gathering in relation to Low Carbon Vehicles – the Delivery of Public Services in Sunderland.

2.2 In November 2011, the Committee visited the University of Sunderland's Automotive Manufacturing Advanced Practice. At that visit the Committee were alerted to several smaller companies operating within the low carbon vehicle sector in the North East and issued an invitation to those mentioned to give evidence as part of the Policy Review.

3. Current Position

3.1 Aim 2 of the Economic Masterplan (EMP) seeks to establish Sunderland as a leading UK city for low-carbon technology and production and to support the wider region in developing a sustainable, low carbon economy. Sunderland City Council therefore has an indirect responsibility to promote and improve consumer take-up of low carbon vehicles and supporting those developing and selling low carbon vehicles and technologies.

3.2 This is also true at a regional level; the city operates within a region that is positioning itself at the forefront of low carbon industry. Increased activity in this sector will stimulate growth and increase employment.

3.3 Throughout the evidence gathering for the Policy Review, the Committee has recognised the importance of retaining and attracting those companies operating in low carbon sector and supporting local suppliers whenever possible in any procurement of low carbon vehicles

More detailed information on each of the companies presenting evidence to the Committee can be found at **Appendix 1**.

3.4 This evidence contributes to the following terms of reference:-

(d) To explore the financial and non-financial future implications of the increased use of low carbon vehicles in the delivery of council services;

(g) To consider to what extent future technologies will enable the council and partners to increase the use of low carbon vehicles.

4. Recommendation

4.1 That members of the Environment and Attractive City Scrutiny Committee discuss and comment on the information provided, seeking further information from the representatives present at the meeting.

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Appendix 1

Inova Power/The Hydrogen and Fuel Cell Co-operative (Mark Nailis)

Inova Power has developed a revolutionary hydrogen generation system which is designed for vehicle and stationary use. Recognising the demands of the consumer in terms of extending the range of electric vehicles, it is collaborating with a large EU consortium of companies in France, the UK and Spain to utilise the technology in a major fuel cell vehicle demonstration on a project called HyVan, which will produce 50-100 electric and fuel cell range extended vehicles.

Inova will work with Smith Electric Vehicles to produce the vehicles. A network has been developed, which includes County Councils (across the country), a major multiple super market chain and a port, all of which will take part as the end users of the vehicles in the UK. The project will run for 24 months and will involve the construction of a chain of H2 refuelling stations across the 3 main countries. An estimated start date for this programme will be the end of 2012.

The Hydrogen and Fuel cell Co-operative is a not for profit venture made up of 6 SME companies and Sunderland University's AMAP Institute. The Co-operative has come together as a supply chain which can deliver a hydrogen infrastructure. There are two projects currently in place, linked to building a Hydrogen Corridor to Scotland.

Inova will collaborate with Gateshead College and will be run by Aberdeen City Council. The project is part of a North Sea Interreg (an EU-funded programme that helps Europe's regions form partnerships to work together on common projects). The Co-operative is positioning itself with others to influence policy in the UK and Europe, ensuring the North East region is in the best position to influence and win funding and contracts.

In addition Inova is developing a modular design for a new type of portable refueling station and a renewable energy storage system for both wind and solar. This is linked to organisations in Canada, Scotland, Norway and the Co-operative is hoping to utilise technology from a North East Blue chip based in the Team Valley.

Elecscoot

Elecscoot Ltd was established in 2007.

The original idea was to source vehicles from the Far East and retail them here in the UK and Europe.

Unfortunately, the vehicles brought into the UK were of very poor quality and all vehicles were returned. It was therefore necessary for the business to move to developing its own product. Over the past 4 years we have carefully observed and studied the power train/battery choices of other companies, and through our own experience gained a lot of information/experience.

We now have a power train that to date has a zero failure, meaning the company has gone from 100% return to zero returns. Elecscoot has had a brand new scooter designed and developed here in the North East, and will also be completing the Controller and BMS (what does this stand for?) in the near future which is hoped will be the best in the world market to date.

Elecscoot feels there is a lot more that they could cover, but from the brief introduction it is evident they are now a major player in the EV industry and situated in the North East which aims to be the “Centre of Excellence” in the world of EVs.

From its experience Elecscoot also recognised there was little or no training available to enable people to extend their current trade or to enter into the world of EVs. As a result of that Elecscoot has written a course which is currently being evaluated for an accreditation.

Elecscoot works with contacts in many areas including the unemployment sector and will be offering this course to those currently unemployed, particularly aiming at those aged 16 to 25. Participants can sit the course from the very start and come away with certificates allowing them to work on EVs and in any sector of this industry. Once they have sat the courses and passed guarantee placements will be made available for them, thus bringing the unemployment levels down.

Elecscoot feels courses like these are invaluable to organisations such as the City Council and its garage maintenance teams. Participants can do the courses on day release, and then become certified to work on High Voltage EV systems, again a huge bonus for councils having qualified staff to service and repair electric vehicles.

Elecscoot also runs a basic introduction course which they highly recommend to anyone interested in the EV world and the demand there will be for qualified personnel in the very near future.

The basic course will cover the history of EVs, different types of power train, film footage of caring for the environment, older EVs and current models available, and some practical work where participants can observe a power train at work. The end of the course would outline what training is available, what areas will bring highest demand and the opportunity to book courses in advance.
Elecscoot’s EV range is also extending to the 4 wheel market, particularly the commercial vehicles.

Elecscoot feels its pricing structure is geared up to be very competitive. It will be retailing 1 particular truck, with many different applications available from £18,000 plus vat, where other companies in the sector are charging £90,000 for a medium sized commercial vehicle.

To summarise Elecscoot is a company that has grown on demand, and although a smaller company, it will be a major player in the commercial and training sectors.

Avid Vehicles (Chris Baylis)

The AVID Technology Group Ltd is an engineering business that designs and manufactures low and zero emission vehicle technology products and specialist electric vehicles.

AVID Vehicles Ltd was set up with colleagues in ComeSys Europe Ltd with the intention of creating products for ComeSys to manufacture. The company has built a range of electric vehicles including Range Rover, sports cars, CUE-V City car, Electric UTV and supported many other projects in its first year.

There are 3 companies operating in the group; AVID Technology making components, AVID Inovations managing client projects and AVID Electric Vehicles building production electric vehicles. Chris is now focusing on business and IPR development for the group.

Avid Vehicles

AVID Electric Vehicles manufactures an affordable, practical, zero emission vehicle; the eBear. This type of vehicle is known as a UTV which stands for Utility All Terrain Vehicle. UTVs are designed to go on and off road, and be used for a wide variety of applications. The global market for UTV's is around 1 million units per year.



Petrol and diesel UTVs can be noisy with poor exhaust emissions, high fuel consumption and are expensive to run. By applying AVID's unique M3 powertrain technology the eBear is a quiet and clean Zero Emission UTV with performance and price comparable to that of a diesel.

eBear uses less than 1 pence of electricity per mile and also benefits from free road tax and 100% enhanced capital allowance (in the UK). It is now on sale to fleet users in the commercial and industrial sector and has many inner urban applications. It can be fitted with a range of attachment options such as snow ploughs and grit spreaders as well as different body options.

With a wide range of applications such as clearing snow, moving people and equipment around industrial sites, urban parcel courier, a highly visible promotional tool it is a versatile vehicle which can go everywhere.

Avid Inovation

AVID Inovation licences technology and provides engineering development services for leading global vehicle manufacturers and tier 1 suppliers. It helps customers develop the vehicles and powertrain the components of tomorrow; providing expertise, knowhow and IP in control systems, electric vehicles and hybrid vehicles.

Avid Technology

AVID Technology makes products and systems that control vehicle emissions and improve fuel efficiency with a team of specialists in the areas of drive-by-wire controls, thermal systems and mobile electronics. The drive by wire controls can be found on construction machinery, trucks, buses and niche vehicles from leading global brands helping customers to meet ever more demanding government legislation for exhaust emission quality.

AVID's advanced thermal systems are used by bus manufacturers and operators to reduce fuel consumption and emissions, and by hybrid and electric vehicle manufacturers to control the temperature of the sensitive power electronics.

Smiles Engineering (NE) Ltd

Introduction

Smiles specialises in engine and emission control systems for commercial vehicles predominantly for bus and coach operators. The business activity focuses on the engineering and development of bus engine repowers and its unique selling point is the ability to remove an existing engine and insert a new engine in its place.

Background and History

The business has 30 years of experience initially specialising in the machining and remanufacture of engines for a wide range of applications. During this time the company gained a wealth of knowledge, experience and workforce skill sets. In 2009, the business was acquired by Gordon Mockett with a view to developing the existing scope of the company.

Products and Services

The company offers a range of services including engine repowers, chassis refurbishment, emissions control systems and diesel particulate filter cleaning (car/bus).

- Emissions Control Systems

Exhaust emissions are harmful to air quality and various after market systems have been designed and marketed to fit older vehicles, which have no emission control fitted as standard.

The purpose of the emissions control process is to maintain the system and clean the particulate filters. To do this the company has invested in equipment which cleans the filters by a baking process, as recommended by the major filter substrate manufacturers. The procedure tests the filter before cleaning; clean the filter; and re-test it. Tests are compared to determine how efficient the cleaning has been and if the filter is fit for further use. Smiles customers have included Go Ahead, Arriva, Stagecoach and Travel London, amongst others, and the bus operators find this process to efficient and economical.

- Engine Repowers

The ability to remove a Euro 3 or below engine and repower with a Euro 4, 4+ or 5, gives bus operators huge potential in terms of providing an economical alternative to purchasing a brand new bus and comply with European legislation. Engine repowers can improve fuel consumption by up to 80%, with the lowest improvement 15-20%.

Future Business

Stagecoach, East Scotland have provided a bus for repower and will monitor fuel economy, performance and reliability ‘in-service’. After an appropriate time, an evaluation will be carried out to determine whether the repower has achieved the expected efficiency of 1.5 to 2 miles per gallon. The data gathered from this will be used to market the repower to other prospetive customers.

As the business grows there will be a requirement to recruit a skilled workforce of technical employees to support the engineering design and development.