

# ENVIRONMENT AND ATTRACTIVE CITY SCRUTINY COMMITTEE

13 MARCH 2012

## LOW CARBON VEHICLES IN THE DELIVERY OF PUBLIC SERVICES REVIEW 2011/12: DRAFT FINAL REPORT

### REPORT OF THE CHIEF EXECUTIVE

**Strategic Priority: SP5 - Attractive and Inclusive City; SP1 – Prosperous City**

**Corporate Priorities: CIO1 – Delivering Customer Focused Services; CIO3 Efficient and Effective Council**

#### **1. PURPOSE OF THE REPORT**

- 1.1 The Policy Review report details the evidence, research and conclusions drawn throughout the review process and the Committee is asked to comment on this for relevance, clarity and accuracy.
- 1.2 The Policy Review into low-carbon vehicles in the delivery of public services has clear links to the council's Strategic Priorities of Attractive and Inclusive City and Prosperous City. The Review also links to the council's Corporate Improvement Priorities; Delivering Customer Focused Services and Efficient and Effective Council.

#### **2. BACKGROUND**

- 2.1 On 13 June 2011, the Environment and Attractive City Scrutiny Committee agreed to conduct a scrutiny review into 'Low-Carbon Vehicles in the Delivery of Public Services' for 2011/12 and at a further meeting of the Committee on 25 July 2011 it agreed the approach to the review and the terms of reference.
- 2.2 The approach to work planning for the Policy Review involved both evidence received in the formal committee setting as well as task and finish activities. All members of the Committee were invited to all of the arranged activities.

#### **3. THE DRAFT REPORT**

- 3.1 The draft report on Low-Carbon Vehicles in the Delivery of Public Services will present members with the facts and evidence that were gathered throughout the review process. As part of the review process evidence was obtained from a national, regional and local key witnesses and stakeholders. The report can be found at **Appendix 1**.
- 3.2 The report is divided into a number of sections which gives background information to the review, outline the methodology, and the conclusions and recommendations of the Scrutiny Committee. The findings from the review are summarised within the report as follows;

- Setting the Scene
- Partner Take-up of Low Carbon Vehicles
- Financial Implications
- Economic Impact
- Environmental Impact
- Technology/Suitability

#### **4. CONCLUSION**

- 4.1 The Environment and Attractive City Scrutiny Committee are to receive the draft copy of the policy review document for comment and amendment with the aim of producing a final draft report with recommendations for approval by the Committee.

#### **5. RECOMMENDATION**

- 5.1 That members of the Environment and Attractive City Scrutiny Committee provide comments on the draft report and that any agreed amendments are made.
- 5.2 That members of the Environment and Attractive City Scrutiny Committee receive a further final report at its meeting on 2 April 2012 to consider and agree.

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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 Innovation 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 prospective 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.