Visit to Smith Electric – 12 October 2011

Present: Cllrs Miller, A. Wright, Bonallie, Porthouse and I. Richardson.

Background

Smith Electric is based in Washington and the organisation currently employs 350 staff. This has grown by 290 employees over the past three years which demonstrates the growth of the company and in particular the acceleration of demand for electric vehicles (EVs).

Smith Electric has vehicles operating in many European countries as well as Asia and the USA. The largest concentration of electric vehicles in the UK currently is in London, thought to be due to the large concentration of companies in the vicinity of the M25 as well as the fact EVs are exempt from the London congestion zone.

Vehicles

There are 4 vehicles in Smith's range;

- Edison Chassis Cab (3.5 ton – 4.6 ton);
- Edison Panel Van (3.5 ton – 4.1 ton);
- Edison Minibus (3.5 ton – 4.1 ton); and
- Newton (7.5 ton – 12 ton).

The two most popular vehicles are:

Edison – Ford Transit
The vehicle has a range of 60-120 miles and a top speed of 50mph. Any derivative of the ford transit chassis can be used to meet the customers needs. The vans are bought complete, and then modified to become an electric vehicle. The engines are then sold back to the supplier.

Newton – LGV
The vehicle has a range of 40-130 miles and a top speed of 50mph. This vehicle arrives at Smith's ready to be fitted out with the battery, which accounts for 50% of the build material.

The benefits of Electric Vehicles include;

- Air quality;
- CO2 emissions; and
- Longer useful vehicle life

Customers

Smith's is involved with the Low Carbon Vehicle Procurement Programme (LCVPP), which supports a trial of over 200 electric and low emission vans in a range of public fleets

During phase 1, Smith's was the largest supplier (43 vehicles) and the only company that delivered on time and reliably. The average daily mileage was 75, with some vehicles recording a 120 mile range.

Some of Smith's biggest customers include:

- Pepsi Co
- Transport for London
- Gateshead County Council (commercial vehicle fleet);
- Essex County Council (transportation of residents with learning disabilities);
- John Lewis (transportation of customers);
- DHL (delivery of goods);
- Sainsburys (delivery of internet grocery shopping);
- TNT Express (delivery of goods);
- Royal Mail (parcel and post distribution); and
- Balfour Beatty.

Smith's has worked with local authorities to introduce EVs in Council fleets including Gateshead, Newcastle, Islington and Camden. Wakefield University has also taken up the use of an electric minibus to transport students between campuses. Smith's advocate the use of EVs for use within Councils fleets as they tend to cover static routes over small geographical areas which are well within the range of the vehicle.

To support this Smith's carried out an audit of vehicle usage across the 12 North East local authorities. The results found that the average daily mileage of each type of vehicle was 67 miles or under. This demonstrates that the range of EVs should be sufficient to the City Council's needs.

Case Study – Fleet Analysis for 12 local authorities in North-East England

	Panel Van	Tipper	Minibus	LGV	HGV	OTHER	TOTAL
Total North-East Fleet	1016	653	572	324	381	2404	5350
% of total fleet	19%	12%	11%	6%	7%	45%	100%
Av daily mileage	31	45	67	22	55	N/A	N/A

*OTHER includes cars, small vans, tractor units, refuse vehicles, street cleaning vehicles and gritters

Vehicles can be tailored to meet the requirements of the customer in terms of range, speed and payload. Vehicle range is dependant on the weight of the payload and how well the vehicle is driven. Training is provided to ensure optimum efficiency of the vehicle, and analysis undertaken has proved that the vehicles driven by fully trained drivers had a range of almost 30% more, than those that were not .

Charging of Vehicles

EVs must be returned to base to be recharged overnight. Members queried whether a driver could take the vehicle home to charge and were informed that whilst it is possible to charge from an employees home it may become complicated in terms of the driver re-charging the organisation for the electricity used. It is the customer's responsibility to develop a charging solution that works for them.

Members queried the use of charging points and were informed that they were unnecessary for the vehicles Smith's produce, in effect all that would be needed is access to an electric sockets. EVs require half the power of an electric oven to charge and a simple socket can be fitted for approximately £100. Members felt that if the council were to adopt electric vehicles into its fleet, the management of the vehicles would be crucial and there would need to be a full understanding of how EVs work and the consequences if they are not used appropriately.

Vehicle Performance

Information was requested regarding vehicle failure (i.e breakdowns). There is a 95% breakdown rate for EVs which is comparable to the Internal Combustion Engine (ICE). Generally issues are around misuse of the vehicles or lack of driver training.

Members asked about the possibility of technological change in the future, such as the use of solar panels on vehicles to power them but were informed that the technology was such that this was not likely to happen in the near future.

Addressing the concerns regarding EVs.

Research undertaken has confirmed that the biggest fear in moving to EVs is the initial high capital cost, which can deter organisations from purchasing an EV. Members confirmed this was also the case for individuals. It was considered important to have a longer term view past the initial costs of purchasing a new EV. For example, at the current cost of fuel, a Newton would be as cost effective as a diesel powered vehicle after 3 years of use and an Edison would become cost effective after 4-5 years. A vehicle used for a 10 year period could bring savings of £200 per month. Members strongly felt that it was the ten year time period that would prove the most attractive to organisations, it would give the most incentives to switch to EVs.

Smith's has been aware for some time that many organisations would only consider EVs, if there were appropriate opportunities for leasing or financing arrangements. Members agreed that a lease option may be more appropriate for Sunderland City Council given the difficult financial constraints within which it is now working. A number of partners in the financial sector are now signed up to assisting potential customers in this area.

The Second Life of the Battery

After a 10 year life span, EVs require a replacement battery. Although the battery is no longer fit to power a vehicle, it still has a residual value which can be used for other means. There are many opportunities to give these batteries a 'second life'. New industries are emerging to make use of the old batteries, rather than simply recycling them. The batteries can be used as energy stores for wind farms, back up generators or to power ships. It is thought that as the popularity of EVs increased there will be more opportunities to re-use batteries in many different ways, which will lead to increased employment in a new industry.

Safety and Maintenance

Members raised the concern about the increased chance of road accidents due the greatly reduced noise of the vehicles. It was clarified that EVs to do not operate silently so there wouldn't be a risk of increased pedestrian related accidents in comparison to those operating an ICE. That being said, a noise generator can and has been fitted to an EV to make them more easily heard by pedestrians.

Due to the lack of information and knowledge regarding accidents involving EVs, Northumbria Police and Gateshead College have begun to investigate the possible outcomes of road accidents involving EVs.

From a servicing and maintenance viewpoint, Smith's has 90 mobile service engineers, with some only 20 minutes away from Sunderland to provide a fast service. Members queried the possibility of a courtesy vehicle where breakdowns occurred to ensure there was no disruption to the service and were informed that this was an option should a leased vehicle require repair.

Partnership working

Smith's has an apprenticeship programme in conjunction with Gateshead College to train local young people in EV production. Smith's is committed to training and building a skilled workforce for the future, and as such have taken on 6 local young people as part of its apprentice scheme. They are keen to build on this by recruiting 6 more the following year. They feel it is important to take on local people in this newly evolving industry as it could greatly boost the local economy.

Smith's also works with University of Sunderland in regard to innovation in engineering.

Carbon Footprint
During previous evidence gathering activities the Scrutiny Committee have raised the issue of the carbon footprint involved in making EVs.

It was confirmed that currently there is no industry standard (i.e. those producing electric vehicles have different operations, supply chain etc), however a standard is expected to be established by the Office for Low Emission Vehicles later in 2012.

Smith's continuously monitor it's carbon footprint. From information currently available Smith's understand that to make the Washington plant carbon neutral it needs to produce and have running 200 vehicles. The plant currently produces in excess of 200 vehicles per year therefore is carbon neutral. Smith's also works with its supply chain producers to further reduce emissions.

Conclusion

This is the first site visit as part of the evidence gathering process for the Environment and Attractive City Scrutiny Committee's policy review into Low Carbon Vehicles – the Delivery of Public Services in Sunderland.

Members are requested to note the contents of the report and provide further feedback as necessary.

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