Electric cars 1970 to 2015

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In 1973 I was working for the Eastern Electricity Board at their headquarters in Wherstead near Ipswich when I first became involved with electric cars. The then nationalised electricity industry was seeking additional night load to improve the load factor on the their substantial nuclear generating capacity, they had had considerable success in increasing the night load by marketing storage heating and water heating systems and it was thought that vehicle charging would add to this.

The Electricity Council's research facility at Capenhurst was asked to look into the characteristics of electric cars and battery development. As part of this program 65 Enfield 8000 two-seater battery electric city cars were purchased from the Enfield Automotive company which was owned by Greek millionaire Giannis Goulandris. 120 of these cars were built on the Isle of Wight. Powered by an 8 bhp (6 KW) electric motor and lead acid batteries the car was supposed to have a top speed of around 48 mph and a range of around 40 miles. These 65 cars were spread round the various Area Boards throughout the country for evaluation, and as a result two ended up in the technical section of Eastern Electricity's commercial department where I was a member.

Enfield 8000 in Hyde Park

Trials with these vehicles soon identified their shortcomings which were a limited range, far below the 40 miles projected by the manufacturer and also a limitation on their top speed. I well remember taking one of these vehicles with a colleague for a drive from Wherstead down to Pin Mill a well-known pub on the River Orwell, a distance of about 5 miles. When we emerged from the pub after a pint and a Cornish pasty we switched on and to our consternation could only return at a walking pace, my colleague who was well-versed in the performance of lead acid batteries said that with frequent stops to nurse the battery we should make it back to Wherstead, which we did taking a three-hour lunch break!

The most significant thing that emerged from the national trials was the failings of the lead acid batteries in meeting the needs for an electric car, so

Capenhurst decided to see whether improvements could be made. So in conjunction with the Chloride Company, they thought the best avenue for development was the sodium / sulphur battery, which if successful, would meet a car's needs with a battery weight of at least 50% of an equivalent lead acid battery. Unfortunately, when it was working it generated a significant amount of heat. One of our cars was converted and I remember it was like driving in a greenhouse. Whilst this battery eventually was considered unsuitable for cars it has found many uses in industrial applications.

My next clash with electric vehicles was many years later when I headed the commercial operations in Seeboard. The industry, at national level, decided to support Clive Sinclair when in 1985 he invented and introduced the C 5 electric tricycle. Each Area Board was encouraged to purchase a small number for demonstration purposes. Seeboard bought four. Unfortunately, this machine was an unmitigated failure. It was

underpowered, the driver had little protection from the elements, the driver's closeness to the ground raised safety issues and the need to regularly use the supplementary pedals meant that the driver was effectively running a recumbent cycle. Only 17,500 units were sold by direct mail before Sinclair Motors located in the Hoover's works at Merthyr Tydfil, was put into receivership in October 1985. I well remember driving one of these around Hove and finding out for myself some of the vehicles idiosyncrasies. Eventually our models were sold to staff and it is interesting to see that, today in the hands of enthusiasts they sell for about £5000 each.

Fired by battery development and government subsidy electric cars today are beginning to become more common. The once wholly used lead acid traction battery is being replaced by nickel-metal hydride, nickel-cadmium, lithium-iron and zinc-air batteries, which have weight and power density advantages. Many manufacturers such as BMW, Citroen, Fiat, Ford, Honda, Mitsubishi, Nissan,

Renault and Volkswagen to mention a few, now have an electric vehicle in their range, though not all are available in this country. It is remarkable how far the design of electric cars has progressed in the last 30 years and it will be interesting to see whether further advances will be made in the years to come particularly with the reduction in oil prices.

One exciting development that could well affect the future for electric vehicles is the use of hydrogen powered fuel cells to produce electricity to drive the car's electric motor. Hydrogen is readily available, but to use it effectively it has to be stored in a high-pressure tank in the car which would need to be refilled at gas charging stations again requiring considerable capital investment. Can you imagine cars producing no pollution, just a dribble of water from the exhaust?!