CLIMATE FRIENDLY BRADFORD ON AVON
Meeting 21 JULY 2025

ELECTRIC SHOCK: Why is the car industry doing a handbrake turn?

Our speaker, Phil Maguire, could not have been better qualified to speak on the subject, having been involved in the car industry in various countries for much of his working life.

He first tackled the question of how cars contribute to climate change where there is some surprisingly positive news: nitrous oxides, carbon dioxide and particulates, and especially the first two of these, have reduced dramatically. Petrol and diesel engines are more efficient so that fuel consumption has markedly improved. That and the removal of lead from fuel and the introduction of catalytic converters have all resulted in cleaner vehicles. Now, with the advance of electric vehicles (EVs), the internal combustion engine is no longer the object of research; the focus being increasingly on EVs.

Considering global energy consumption: coal, oil and gas dominate, though renewables are advancing steadily. Consumption of 'stuff' in the UK has also increased greatly. The UK produces 0.8% of all global emission but those of China, India and the rest of Asia have grown proportionately, owing to the decline of industry in the UK and its export to developing countries.

Cars produce 7% of global emissions. EU transport emissions are 60% from cars, 27% trucks. 0.4% railways; cars in the UK are responsible for 20% of our greenhouse gases.

When considering the impact of cars the focus must be on production and recycling as well as the use phase. EVs are more expensive to manufacture but around half as expensive to run.

There were many early attempts to build electric vehicles. EVs are simpler in their construction: the battery powers an electric motor which must then be controlled. The battery has evolved from lead acid to lithum-ion. The battery is the largest and heaviest element of an EV and generally weighs around half a ton. Because electric cars are significantly heavier, there is more wear and tear on their tyres and brakes. This results in an increased production of harmful particulates.

Hydrogen and biogas alternatives have been mooted but Phil see no future for these in cars. Phil elaborated on the difference between a plug-in hybrid, a full hybrid, a fully electric vehicle and the advantage of regenerative braking. EVs are relatively simple and easy to manufacture. Batteries deteriorate about 2% per year but what to do with spent batteries remains a problem. On average, it take two years to break even financially on the purchase and use of an EV.

People may suffer from ‘range anxiety’ though this is becoming less with more chargers being installed, but is perhaps being replaced with ‘charger anxiety’. Phil also touched on the shortcomings of the UK’s electricity grid which was designed for a very different economy and needs serious updating.

Phil gave us a thorough and well illustrated presentation without promoting electric cars but comprehensively setting out the background and facts. However, he is clearly excited about the rapidly evolving technology.

Roger Jones