Good morning,

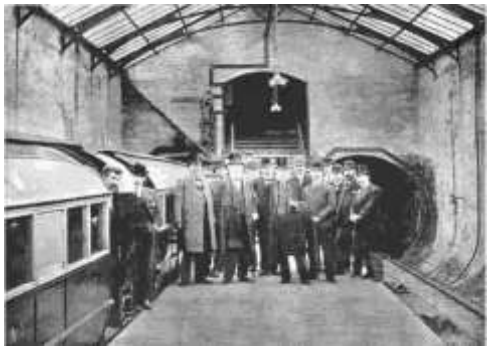
My subject in this debate is point 5, Green public transport, cycling and walking. This is primarily because I was too late to get one of the more interesting points!

I'll be arguing that green public transport, cycling and walking are good things – it really is hard to find any negative points, unless you are a major shareholder in fossil fuel companies.

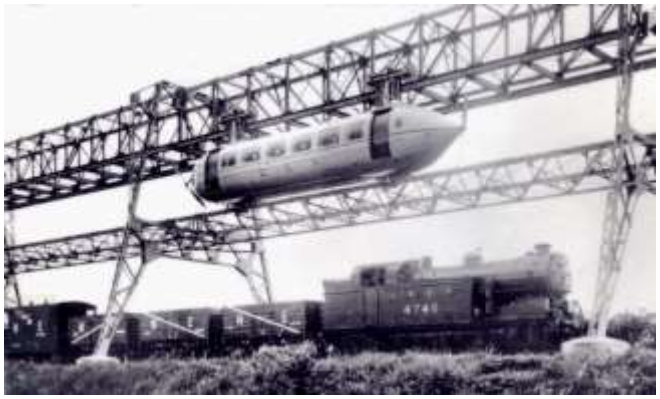
There is no doubt that the world will have to use fossil fuels for some time to come, for less advanced economies where the cost of alternative power sources is high.

We have been using "green" power sources for many centuries, such as windmills and water mills for direct power, then more recently to produce electricity, such as large-scale hydro-electric dams and most recently solar and wind farms.

It seems therefore that electrical power is the way to go for public transport. Public transport has the unique advantage of being able to use electric power direct from the grid, especially in the case of train and tram systems, where we seemed to go backwards for a while. I recall going to school in Glasgow by electric tram in the 1950s. The first electric trams were introduced in Glasgow in 1898 – so green public



transport 122 years ago. Also in Glasgow is the subway opened in 1896 originally powered by a steam driven cable system, but converted to electric third rail in 1935. In 1960 the 3-coach electric Blue Trains (303 class) were introduced on the suburban lines running as far as Balloch on Loch Lomond, and Helensburgh on the Firth of Clyde. An oddity



near Glasgow was the Bennie rail plane, (picture) designed to travel above existing rail lines at 150 mph using an aviation propellor powered by an electric motor. It ran on a 200-yard test track in 1930 but the idea was never developed commercially (fortunately) and it was scrapped in 1956. When I saw it as a boy it looked very futuristic.

Thus, my memories of public transport were of comfort, speed and convenience. Electric motors produce high torque and fast acceleration from a standing start, reducing the time taken at each station, and are therefore particularly suited to suburban lines. Disadvantages of the tram system are the infrastructure cost and lack of flexibility of route.

In Exeter horse drawn trams were converted to electricity in 1903, but the service stopped in 1930 because the streets were (and still are!) too narrow to cope with trams and other traffic.

Trolley buses require less costly infrastructure, are a potential solution where some of the limitations of overhead wiring can be overcome using a hybrid solution of battery power when off-grid. One example where this could have been used is the Cambridge guided bus, which runs on a dedicated track outside the city centre, then reverts to non-guided in the centre. The guided section could have had overhead wires, and battery use in the city. However there have been problems with the co-existence of 56mph buses and an adjacent cycle lane, with a cyclist dying in 2018 and a pedestrian in 2021.

Initially of course, diesel buses will have to be replaced by battery powered buses. These could have induction charging on the route to reduce the battery capacity required, and possibly be convertible to trolley systems. Several European cities use induction charging. The picture shows a bus in Madrid.

However, batteries are not exactly a green means of storing electricity, with lithium mining (picture) being costly to the environment. This is another reason for promoting the use of green public transport compared to electric car use.

There are other means of propulsion such as hydrogen gas which produces no harmful emissions but this is expensive to produce, either by electrolysis or from methane to give “blue” hydrogen but this process produces carbon dioxide as well as hydrogen, thus requiring some form of carbon capture (Barry is talking about that).

Another argument for public transport is that electric car charging for those living in urban areas will be difficult and the bus and tram can provide the green transport.

Other forms of public transport include air and sea. I will not discuss these as they are covered under point 6, and good luck to whoever has to discuss that.

For all public transport, integration of the train, tram and bus systems is essential to ensure the highest possible usage. Interchange hubs and through-ticketing all help.

So now to cycling – this seems like a no-brainer for a green solution, but the recent battery improvements are now creating motorised bicycles with the consequent environmental battery costs, and power requirements. So now cycling is going to be less green unless it displaces cars for commuting. We may also lose the health benefits of pedal power. The extension to electric bikes which you can at least pedal occasionally is the electric scooter which is positively dangerous.

When I think back to my working days in Glasgow, I used to cycle, in good weather, 5 miles from Bearsden into the centre of the city partly via canal towpath and riverbank. In those days you had a cycle cape to keep you completely dry. I’ve still got it and get envious glances on the Exeter canal path when it rains.

So cycling with pedals is good for you, and the environment. Battery power has questionable green credentials. However, more destinations need to have plenty of bike racks. As an example, take the EGCC – last month I cycled here but got the last space in the rack. A bit of redundancy is required.

Walking is a bit slower than cycling, but for those who are reasonably fit at any age but without painful knees, hips or feet it is a good way to get about. No worry about parking your bike or scooter and often quicker for point-to-point commuting than buses since no waiting time is involved. I find that it is quicker to get to the RD&E hospital from Alphington on foot than to go by bus as I can walk the pleasant two-mile route over the canal and river - and know that I will arrive on time for my appointment. Whereas by bus, there is the stress of waiting, not knowing when it is going to arrive, or will be delayed en-route.

For the older walkers, occasional seating is helpful, if not essential. Sheltered areas in town centres help to keep pedestrians dry.

Walking (and cycling) routes must be identified and linked to transport hubs. Google maps is quite good (but not foolproof) in this respect as it can identify suitable routes and time for car, public transport and cycles

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