

**Modified Enlarged 24pt  
OXFORD CAMBRIDGE AND RSA EXAMINATIONS**

**Monday 23 May 2022 – Afternoon**

**A Level Economics**

**H460/01 Microeconomics**

**Stimulus Material Insert**

**Time allowed: 2 hours  
plus your additional time allowance**



## **Changing consumer trends in the UK?**

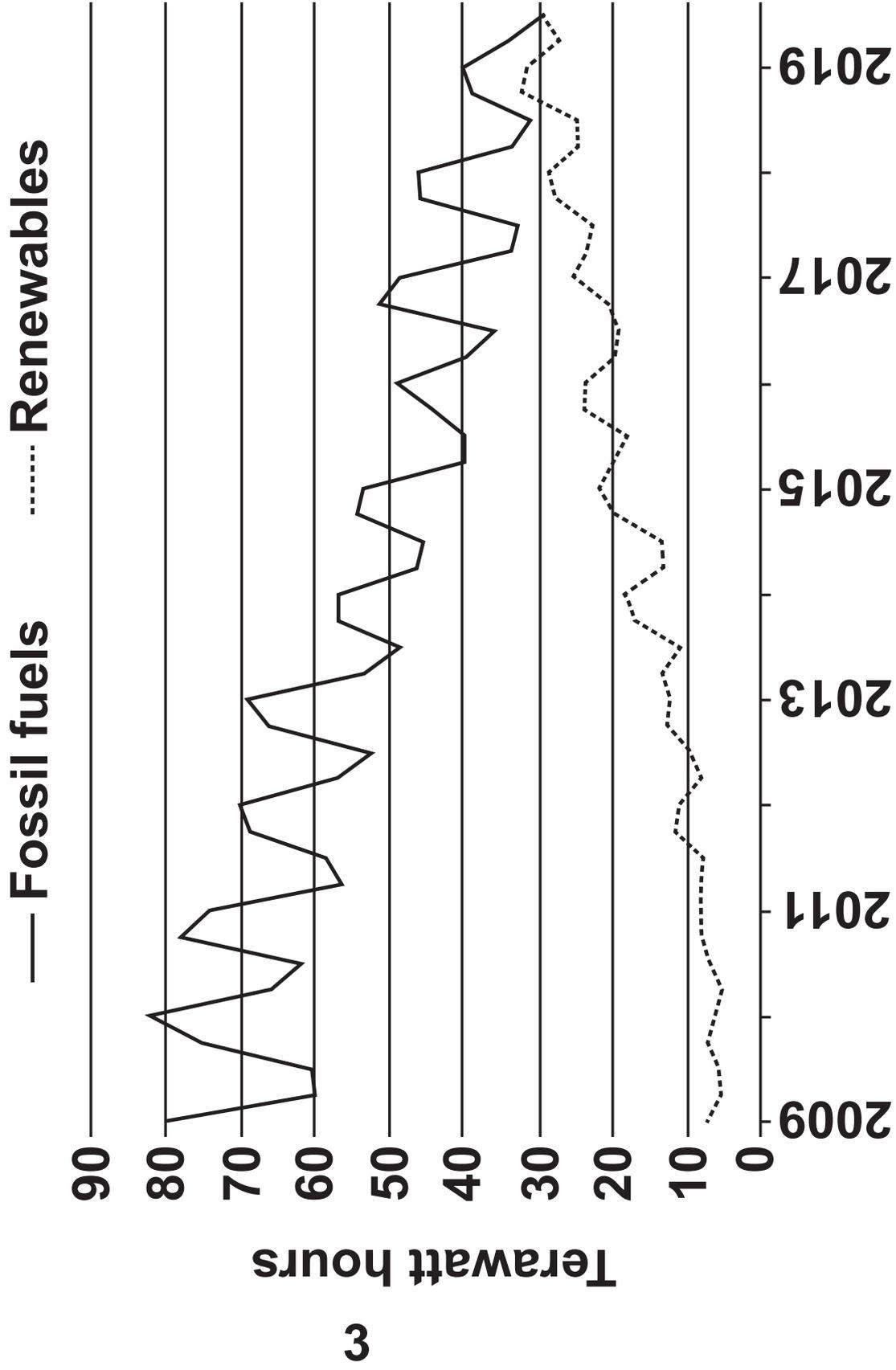
**Renewable energy sources, including wind, solar power and biomass, now provide more electricity to UK homes and businesses than fossil fuels, such as coal and gas. This was first achieved in the third quarter of 2019, see Fig. 1 (Source: CarbonBrief).**

**Coal is now used for less than 1% of electricity generation in the UK, with only four coal-powered plants remaining, ahead of a ban in 2025. Gas is the largest fossil fuel (38%) in the UK energy system. In terms of renewable energy sources, wind power is the UK's largest, making up 20% of the UK's electricity, followed by 12% from biomass and 6% from solar power. Nuclear power provides the remainder of the UK's electricity.**

**Kwasi Kwarteng, the government minister for energy and clean growth, said the renewables record is, "...yet another milestone on our path towards ending our contribution to climate change altogether by 2050. We've cut**

**FIG. 1**

**UK electricity generation per quarter (measured in Terawatt hours)**



emissions by 40% while growing the economy by two thirds since 1990. Now, with more offshore wind projects on the way at record low prices we  
30 plan to go even further and faster in the years to come.”

One of the largest firms in the UK is Shell, a multinational company. It provides 10% of the UK’s oil and gas,  
35 employs about 6,000 people and serves over 5 million customers every week at more than 1,000 fuel service stations. It has the third largest number of fuel service stations, behind Tesco and BP.

40 However, Shell now faces the prospect of no more petrol cars, lorries running on liquid gas, and solar or wind powered homes and businesses. Even the fuel service station is changing,  
45 with most now seen as a retail outlet where people can do their food shopping, pick up a parcel or drink a coffee. Managers at Shell have taken all of these changes very seriously, as  
50 they attempt to reinvent the company which is also faced with new climate change targets. Some experts have

**compared the changes to a new industrial revolution.**

**55 Shell's managers have already taken some big decisions. Shell has bought a company which makes electric vehicle (EV) charging points for homes and workplaces. It has also bought**  
**60 a supplier of electricity and gas in the UK. Shell's managers see a time when the business will supply all of an individual's energy needs.**

**65 Shell is trying to take the lead in EV charging points for battery-powered cars. At present, less than 2% of cars on UK roads are battery-powered. However, by 2040 a third of all vehicles could be electric. Shell believes it is**  
**70 well placed to take advantage of this growing market, as it has already launched a 'rapid recharge service' which uses 100% renewable energy. It announced the opening of its 50<sup>th</sup> EV**  
**75 charging station in October 2019. Given its large number of fuel service stations and its strong position in the market, Shell plans to install hundreds more charging stations around the UK.**

80 The growth in EV charging stations will  
be necessary if the UK government's  
'Road to Zero' strategy, to ban the sale  
of new petrol cars by 2030, is to be  
successful. As part of this strategy,  
85 more taxes may be imposed to change  
the marginal private cost of using  
petrol cars, so that the price paid is  
closer to the marginal social cost  
inflicted on society. Once the price of  
90 battery-powered cars falls to a level  
closer to that of petrol cars, the use of a  
subsidy may also be beneficial.

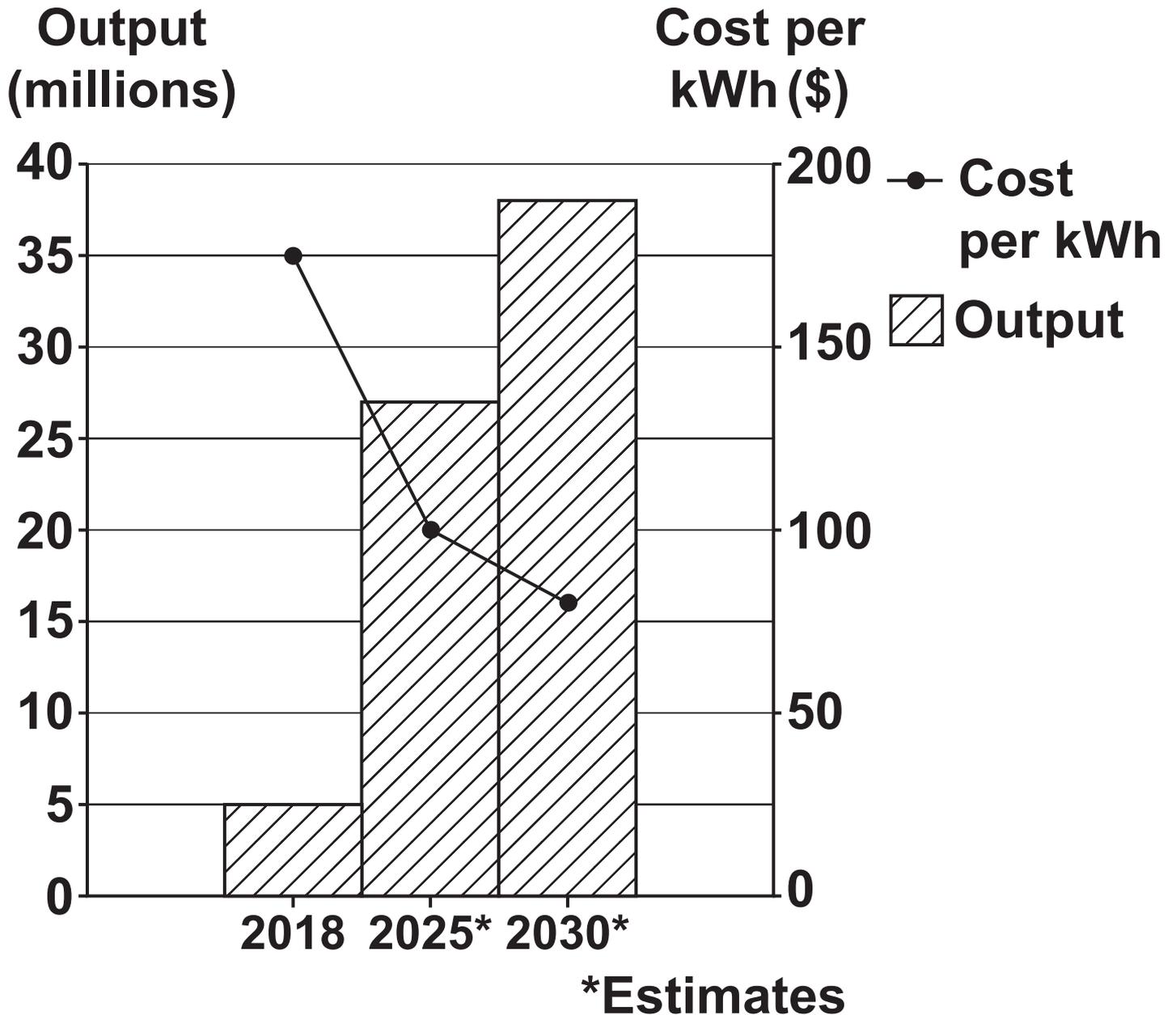
One of the largest costs of running a  
petrol car is the petrol. The demand  
95 for petrol appears to be significantly  
price inelastic. A 2019 review of over  
100 pieces of research about the price  
elasticity of demand for petrol found it  
to have a value of  $-0.26$  in the short run  
100 and  $-0.58$  in the long run.

Another limit on the growth of  
battery-powered cars is the cost of  
producing the batteries. Many experts  
say that a battery-powered car cannot  
105 be price competitive until the cost of

a battery falls below \$100 per kilowatt hour (kWh), see Fig. 2.

**FIG. 2**

**Global car battery production**



**Source: Daily Telegraph**

**Some experts argue that the structure of this market will affect progress as, along with the energy and power generation markets, it is really a natural monopoly.**



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