



**GCE AS/A LEVEL**

**2520U20-1**

**MONDAY, 20 MAY 2024 – MORNING**

**ECONOMICS – AS unit 2**

**Economics in Action**

**2 hours plus your additional time allowance**

## **ADDITIONAL MATERIALS**

**In addition to this examination paper, you will need:**

- a calculator;
- a WJEC pink 16-page answer booklet.

## **INSTRUCTIONS TO CANDIDATES**

**Use black ink, black ball-point pen or your usual method.**

**Answer ALL questions.**

**Write your answers in the separate answer booklet provided.**

## **INFORMATION FOR CANDIDATES**

**The number of marks is given in brackets at the end of each question or part-question.**

**You are reminded of the necessity for good English and orderly presentation in your answers.**

**(Turn over)**

**Answer ALL questions.**

**1. REDUCING THE THREAT OF CLIMATE CHANGE**

**5** In April 2019, the Welsh Government declared a climate emergency. A government minister said: “Tackling climate change is not an issue which can be left to the free market. It requires collective action and the government has a central role in making that collective action possible.”

**10** Climate change is causing severe weather and rising sea levels which are affecting people and their property in developed and developing countries. It can also worsen the threat of food and water scarcity.

**15** Governments have been implementing measures to reduce climate change for many years. The UK’s carbon emissions fell by 47.3% between 1990 and 2021. The main reason for this downward trend has been lower emissions from power stations. The UK is increasingly using gas and renewable energy sources. As a result, carbon dioxide emissions from the energy sector fell by **20** 66.9% between 1990 and 2021.

(Turn over)

**In 2022, more than a third (34.7%) of the UK's electricity was generated by renewable energy sources including wind farms, solar panels and hydroelectric power plants. Wind power alone**  
25 **generated 28.9% of the UK's electricity over the year.**

**In December 2022, the UK Government promised to remove restrictions on building onshore wind farms in England. However, producing wind power**  
30 **does have some drawbacks. The production process for wind turbines involves large amounts of steel and concrete, which some say has caused extensive water and soil pollution in countries where they are produced. Additionally, large**  
35 **numbers of birds are killed by the operation of wind turbines.**

**The European Union's emissions trading system (EU ETS) began in 2005. The EU ETS limits carbon dioxide emissions from more than 11 000 high**  
40 **energy-using power stations, industries and airlines operating within the EU. The EU ETS works in the same way as a system of tradeable pollution permits.**

45 On leaving the EU, the UK had two main options  
as to how it could continue to reduce carbon  
emissions:

- Create its own emissions trading scheme (UK ETS).
- Replace the EU ETS with a carbon tax,  
50 where firms are charged a set amount per  
tonne of carbon dioxide emissions they  
produce.

A carbon tax would rely on data supplied by  
emitters of carbon dioxide. Firms could be fined  
55 if they failed to comply with the carbon tax  
requirements.

Some carbon taxes introduced in other countries  
have been controversial. Many people say that  
they have led to rising fuel prices and a higher  
60 cost of living, because firms have passed on the  
carbon tax to consumers. The tax's burden also  
falls more on lower-income households, and  
those who have fossil fuel-based heating for their  
homes, or who live outside of city centres and rely  
65 on a car. Perhaps for these reasons, the UK chose  
not to introduce a carbon tax and instead an  
emissions trading scheme (UK ETS) went live on  
1st January 2021.

(Turn over)

- 1 (a) 'Tackling climate change is not an issue which can be left to the free market' (lines 3–4). Briefly outline ONE reason why the free market has led to climate change. [2 marks]
- (b) To what extent do the external benefits of wind power outweigh the external costs? [10 marks]
- (c) Discuss the likely effectiveness of a tradeable carbon emissions permits scheme, (EU ETS or UK ETS), in reducing carbon emissions. [8 marks]
- (d) Explain how a carbon tax could correct the market failure caused by carbon emissions. Illustrate your answer with an appropriate diagram. [8 marks]
- (e) To what extent might UK Government policies to tackle climate change cause conflicts with their macroeconomic policy objectives? [12 marks]

## **2. A NEW COAL MINE IN THE UK**

**In September 2022, the UK Government gave permission for a new coal mine at Whitehaven in Cumbria. This will be the first new coal mine in the UK for 30 years.**

**5 It will mean:**

- **an estimated private sector investment of £165 million**

**10**

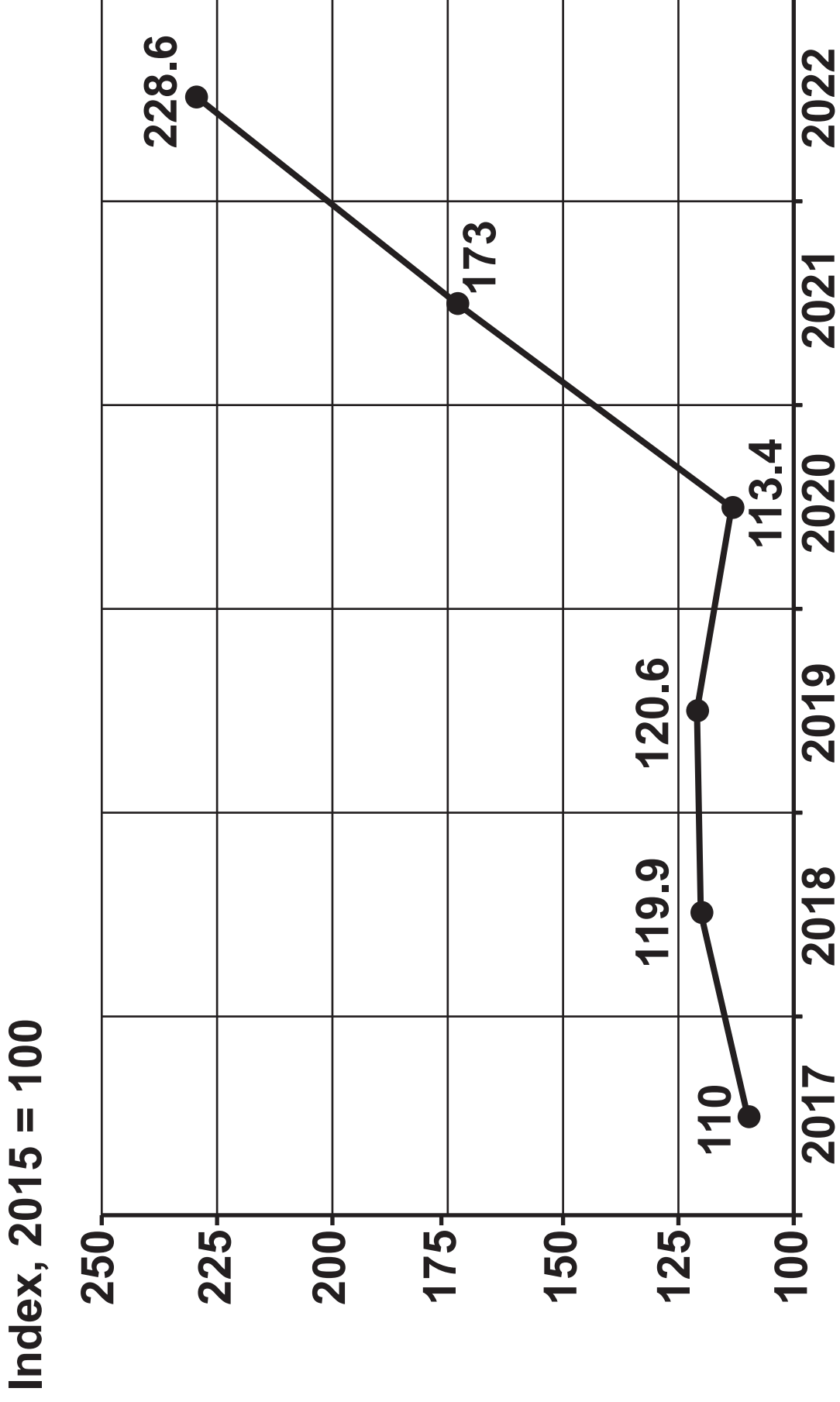
- **the creation of about 500 direct jobs and an additional 1500 jobs in the wider community**

- **the production of 2.8 million tonnes of coal a year**

**15**

**Most of the coal from the mine will provide fuel for steelmaking. In 2021, UK steelmakers sourced nearly half of their coal from Russia. However, the UK no longer imports coal from Russia. This led to a significant increase in the price of steel in the UK.**

**CHART 1: Steel price index in the UK, 2017 to 2022 (2015 = 100)**



**STEEL PRODUCTION**

- 20
- **Most steel production involves heating coal to high temperatures and combining it with iron.**
  - **It takes about 770 kg of coal to make one tonne of steel.**
- 25
- **In 2022, the UK produced 7.4 million tonnes of steel.**

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However, the UK Government's advisory Climate Change Committee has said that 85% of the coal produced by the new mine is likely to be exported to the EU. This is because most UK steelmakers have rejected the use of this type of coal for their steel-making processes. Two of the largest steel producers in the UK said that they had already found alternatives to Russian coal supplies from mines in Wales, the USA and Canada. A former CEO of British Steel said the UK steel industry should invest instead in green alternatives to coal, such as hydrogen.

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Indeed, many European steelmakers are turning away from the use of coal and adopting green production methods instead, such as using

(Turn over)

electric furnaces and hydrogen. In 2022, 41% of European steel was produced using electric furnaces, while hydrogen was used in 10% of global production.

The company building the mine said that it will add £1.5 billion to UK GDP and provide £2.4 billion worth of exports over the first ten years of the mine's operation. It is forecast to pay more than £800 million in corporation tax to the UK Government over the mine's lifetime.

The average salary for workers at the coal mine is expected to be £43 875 per year, which is approximately £10 000 more than the UK's median salary. Economic analysis has shown that a very large proportion of employees' income will be spent locally. The company has committed to filling 80% of the jobs in the mine with people living within a 30 km radius. It has also promised to source all major equipment and machinery from within the UK.

- 2 (a) Describe the likely impact of the new coal mine on the UK Government's budget/fiscal balance. [4 marks]**
- (b) Outline how the 'estimated private sector investment of £165 million' (lines 6–7) to build the new coal mine will create a multiplier process in the UK economy. [4 marks]**
- (c) With reference to the data and Chart 1, discuss the possible effects of the new coal mine on the steel market in the UK. [10 marks]**
- (d) Assess the likely impact of the new coal mine on the exchange rate of the pound to the euro. Illustrate your answer with an exchange rate diagram. [10 marks]**
- (e) Evaluate the view that the new coal mine will 'add £1.5 billion to UK GDP ... over the first ten years of the mine's operation' (lines 47–49). Illustrate your answer with an aggregate demand and aggregate supply (AD/AS) diagram. [12 marks]**