



A-level ECONOMICS

Paper 3 Economic principles and issues

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DO NOT WRITE ANY ANSWERS IN THIS INSERT. YOU MUST ANSWER THE QUESTIONS IN THE ANSWER BOOKLET PROVIDED.

The World Energy Market

Questions 31 to 33

- **Extract A:** What is OPEC?
- **Extract B:** The market for energy is changing
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- **Extract E:** Crisis? What crisis?

Extract A: What is OPEC?

OPEC is an organisation of 13 oil-producing countries. In 2015, OPEC accounted for an estimated 42% of global oil production and 73% of the world's 'proven' oil reserves, enabling OPEC to influence the price of oil. The current members of OPEC are: Algeria, Angola, Ecuador, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela.

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OPEC is often cited as a classic example of a cartel, a group of independent producers who collude to increase their collective profits by limiting supply to raise prices. However, OPEC's power is reduced by the expansion of non-OPEC energy sources and by the temptation for individual OPEC countries to exceed production ceilings.

Source: News reports, April 2017

Extract B: The market for energy is changing

The energy industry is going through a period of profound change. Concerns about carbon emissions and global warming have led to policies that are shifting production away from coal towards natural gas and renewable energy. On the demand side, weaknesses in the global economy have meant that energy consumption has only grown slowly, but that will change if global economic growth picks up. The supply of energy has been affected by technological advances that have altered the range, availability and relative cost of producing different fuels. In the US, the shale revolution, allowing oil and gas to be extracted from shale by fracking, has opened up vast, new supplies of these fossil fuels. Other improvements in technology have stimulated growth in the output of renewable energy, particularly wind and solar power. The flip side of this is a fall in the demand for coal.

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Changes in the supply and demand for different fuels have significant effects on relative prices. Price changes play a key role in promoting adjustments in energy markets which affect the pattern of consumption and investment in energy.

Source: News reports, April 2017

Extract C: Trends in the world market for energy**Figure 1** Energy consumption by fuel, million tonnes

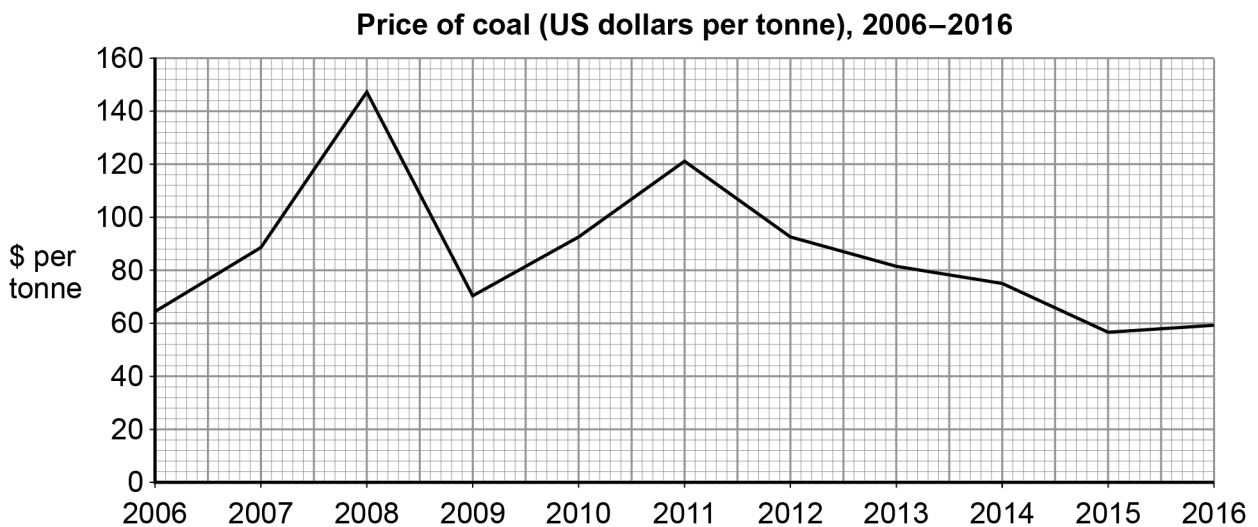
	2006	2009	2012	2015	2016
Oil	3 984	3 956	4 176	4 341	4 418
Natural gas	2 573	2 676	2 997	3 147	3 204
Coal	3 294	3 476	3 817	3 785	3 732
Nuclear energy	635	614	559	583	592
Hydroelectricity	688	737	832	883	910
Other renewables	93	144	239	367	420
Total	11 267	11 603	12 620	13 106	13 276

Note: Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent
 Oil, natural gas and coal are fossil fuels
 Other renewables include energy generated from the following renewable sources: wind, solar, geothermal, biomass and waste

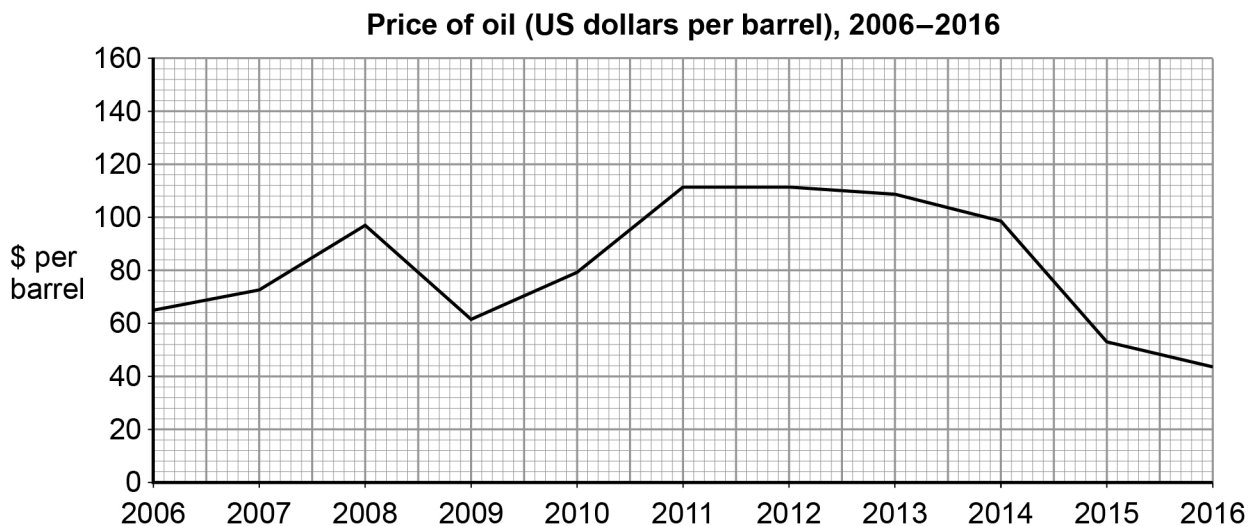
Source: BP statistical review of world energy 2017

Figure 2 Average cost of producing oil (US dollars per barrel), March 2016

	Cost (\$)
UK	44.33
Nigeria	28.99
Venezuela	27.62
US shale	23.35
US non-shale	20.99
Saudi Arabia	8.98

Figure 3 The price of coal

Source: BP statistical review of world energy 2017

Figure 4 The price of oil

Source: BP statistical review of world energy 2017

Extract D: Falling oil prices hit the oil-exporting countries hard

In 2014, despite the rapid fall in the price of oil, Saudi Arabia and the other OPEC countries did not cut production. Some believe that they wanted to make shale oil production in the US unprofitable to weaken a growing threat to OPEC's domination of the world oil market.

A fall in oil prices leads to a contraction of the oil sector in oil-exporting countries and also has other effects on their economies. For example, in the Middle East and North Africa, oil-based revenues often account for more than half of government revenue. A significant loss of government revenue may require a substantial reduction in public spending. A decline in oil prices reduces export revenues, leading to a deterioration in the current account of their balance of payments, usually causing a depreciation in their exchange rates. This is an important mechanism through which the economy can adjust, but it makes imports more expensive, adds to inflationary pressures and is likely to reduce living standards. It may also make it difficult to attract capital inflows and to finance both the balance of payments and budget deficits. 5 10

The Nigerian economy has been hit hard by low oil prices and falling oil production. The country went into recession in 2016, with real national income contracting by 1.5%. The annual inflation rate doubled to 18.6%, reflecting the weakness of the Nigerian currency. Even after cuts in capital spending, the budget deficit increased from 3.5% of GDP in 2015 to 4.7% of GDP in 2016. 15

Venezuela derives over 95% of its export earnings and almost half of government revenue from oil-related sectors. Falling oil prices aggravated Venezuela's economic crisis and it is estimated that the economy contracted by 10% in 2016 after a similar fall in real GDP in 2015. In 2016, its inflation rate was around 275%. Worsening shortages of food, medicines and other consumer goods are a symptom of the country's very fragile economy. Deteriorating public finances mean that Venezuela is a high-risk debtor, making it hard for the country to attract foreign capital. These difficulties are not all down to the fall in the price of oil. Nevertheless, a fall in the oil price makes it harder to deal with problems that are common to many less economically developed countries. 20

Source: News reports, April 2017

Extract E: Crisis? What crisis?

In December 2016, the members of OPEC and 11 non-OPEC countries, including Russia, agreed to cut production to 'stabilise' the oil market and raise prices. The initial agreement was for six months but has since been extended for a further nine months. So far, compliance with the production cuts has been very high at 90% and oil prices have stabilised.

The fall in the price of oil has driven some US fracking companies out of business but it has not been as damaging as predicted. Many companies have learnt how to extract more shale oil from each rig, reducing the cost per barrel. Increases in productivity reduce the break-even price of extracting oil from shale by fracking. If oil prices rise, output and investment in the industry are likely to increase again. 5

Recently, growth in the world economy has picked up. This will boost the demand for oil and put upward pressure on oil prices. In the long run, developments in technology that lower the cost of supplying renewable energy and producing electric cars, buses and lorries will reduce the demand for oil. A high price for oil should incentivise such developments. 10

Source: News reports, June 2017

END OF EXTRACTS