



Economics Questions By Topic:

Subsidies (1.4.1)

A-Level Edexcel Theme 1

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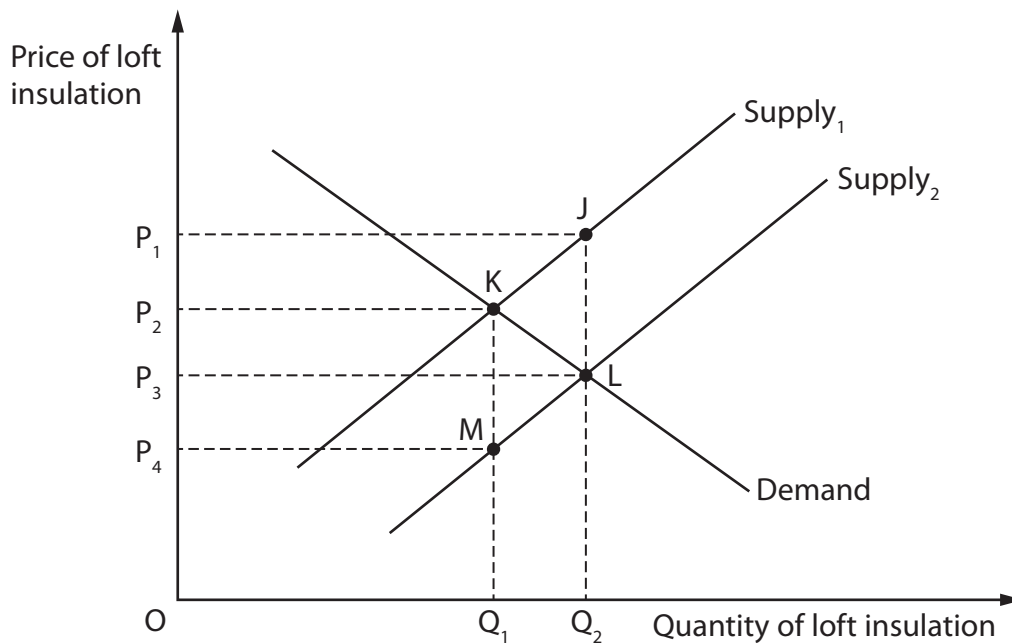
Section A	Page 1
Section B	Page 9

Section A

Write your answers in the spaces provided.

- 1** The 'Energy Company Obligation' is the government's term for its programme to make houses in the UK more energy efficient.

In the diagram below, the government grants a subsidy to energy suppliers to install loft insulation. This shifts the market supply curve for loft insulation from Supply₁ to Supply₂.



The total amount spent by the government on subsidies is represented by the area: (1)

- A** OP_1JQ_2
- B** OP_3LQ_2
- C** P_3P_1JL
- D** P_4P_2KM

(Total for Question 1 = 1 mark)

2 In 2015 the UK government cut subsidies for the installation of solar energy panels.

(a) Define the term 'subsidies'.

(1)

(b) The most likely effect of cutting subsidies for the installation of solar panels is to:

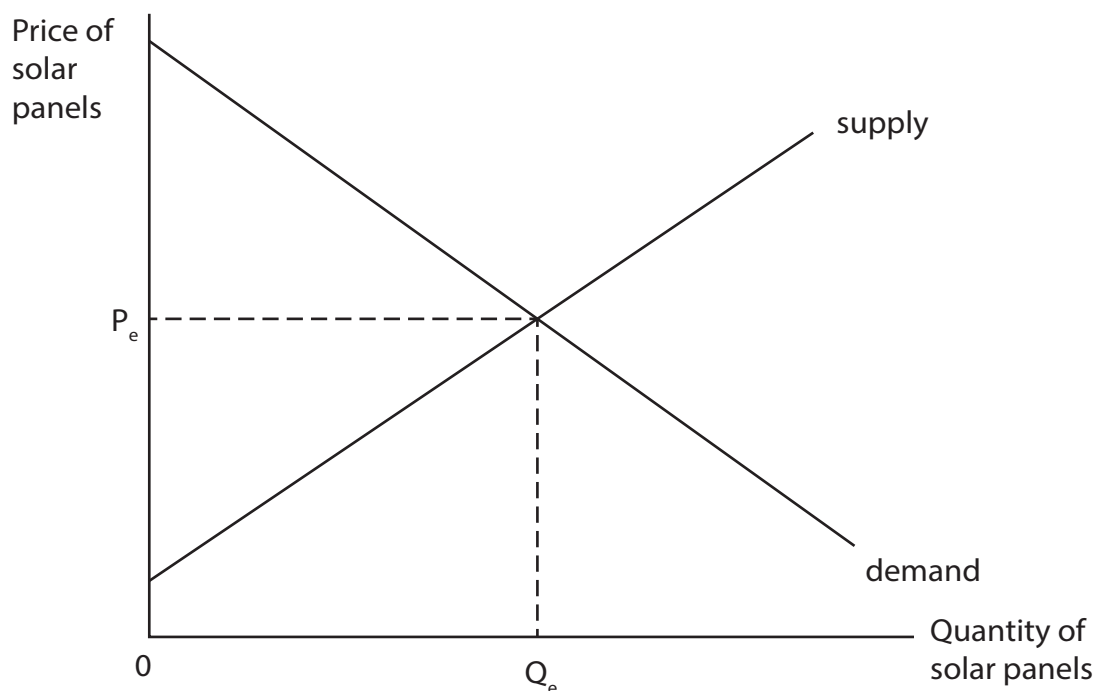
(1)

- A increase producer surplus
- B decrease the provision of public goods
- C decrease consumer surplus
- D increase government expenditure

(c) Annotate the diagram below to show the effect of removing the solar panel installation subsidy on the equilibrium price and quantity.

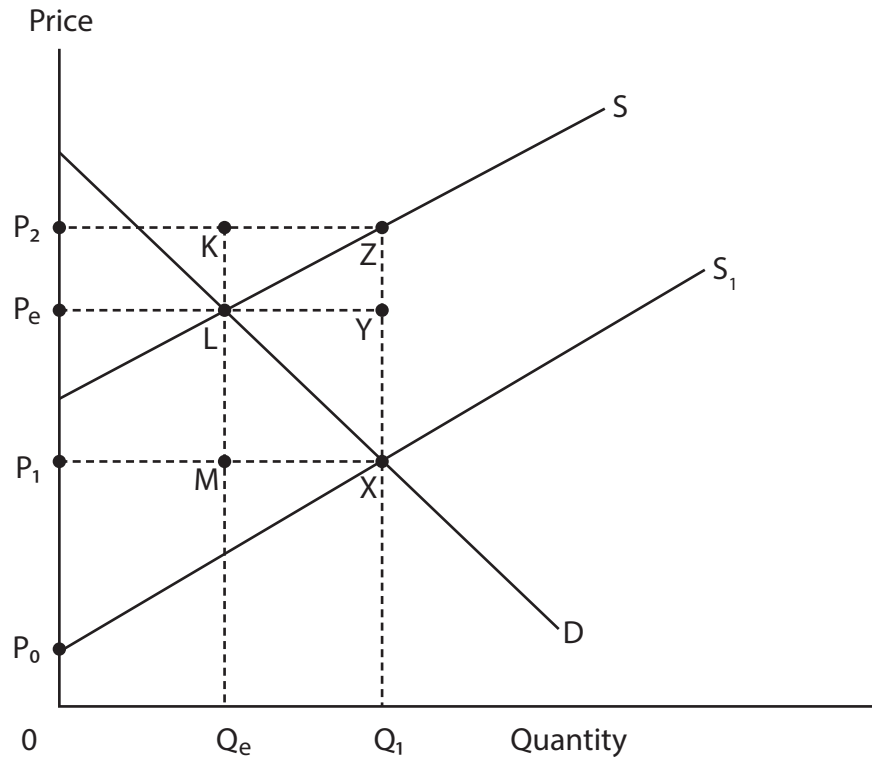
(2)

Solar panel installation market diagram



(Total for Question 2 = 4 marks)

3



The diagram shows the impact of a unit subsidy on the market for bus travel. Which **one** of the following is correct?

(1)

- A The total cost of the subsidy is P_1P_2ZX
- B The producer surplus increases to P_0XYP_e
- C The producer subsidy exceeds the consumer subsidy
- D The consumer surplus increases to P_2P_1XZ

Answer

Explanation

(3)

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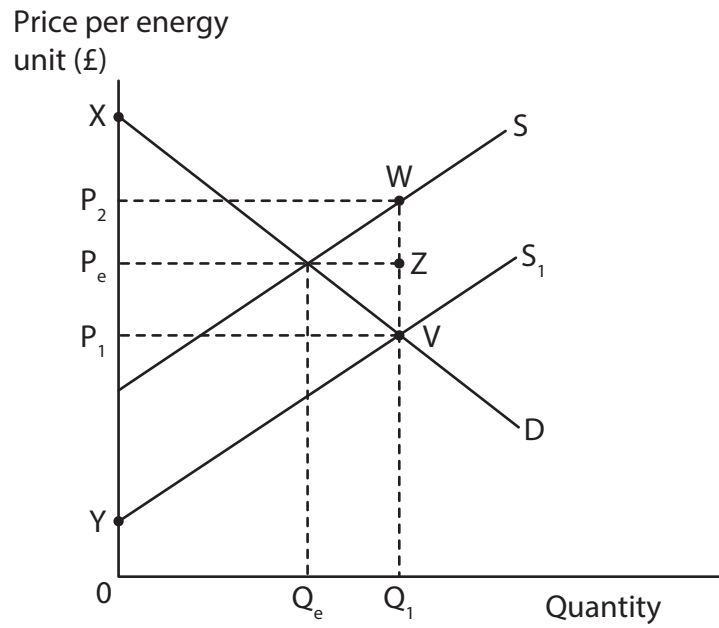
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(Total for Question 3 = 4 marks)

4



The diagram shows the effect of a government subsidy to producers of solar power. The total government expenditure on the subsidy will be

(1)

- A OP_2WQ_1
- B P_2P_eZW
- C P_1VZP_e
- D P_1VWP_2

Answer

Explanation

(3)

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(Total for Question 4 = 4 marks)

5 In 2011 the European Commission proposed the removal of all government subsidies to train operating companies. The most likely effect of implementing such a policy would be to

(1)

- A** decrease external costs from motoring
- B** increase the price of train services
- C** increase demand for train services
- D** decrease air fares in Europe

Answer

Explanation

(3)

(Total for Question 5 = 4 marks)

6 In 2011 the UK Government introduced a unit subsidy of £5000 for new electric powered cars such as the Nissan Leaf and Mitsubishi i-MiEV. The most likely effect is to increase: (1)

- A** the demand for petrol powered cars.
- B** carbon emissions from non-electric powered cars.
- C** the demand for bus transport.
- D** the supply of electric powered cars.

Answer

Explanation (3)

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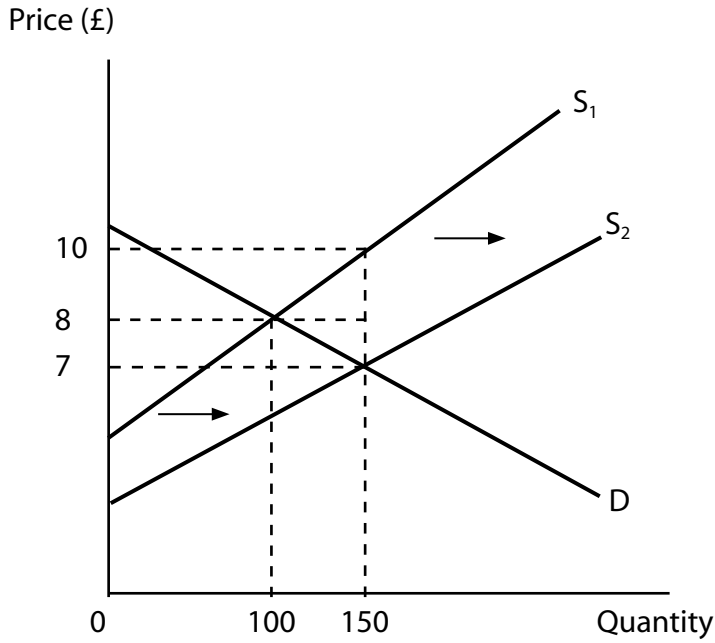
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(Total for Question 6 = 4 marks)

7



The diagram illustrates the effect of a government subsidy on a good. The total government expenditure on the subsidy will be:

(1)

- A £100
- B £150
- C £450
- D £1,050.

Answer

Explanation

(3)

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END OF SECTION A

(Total for Question 7 = 4 marks)

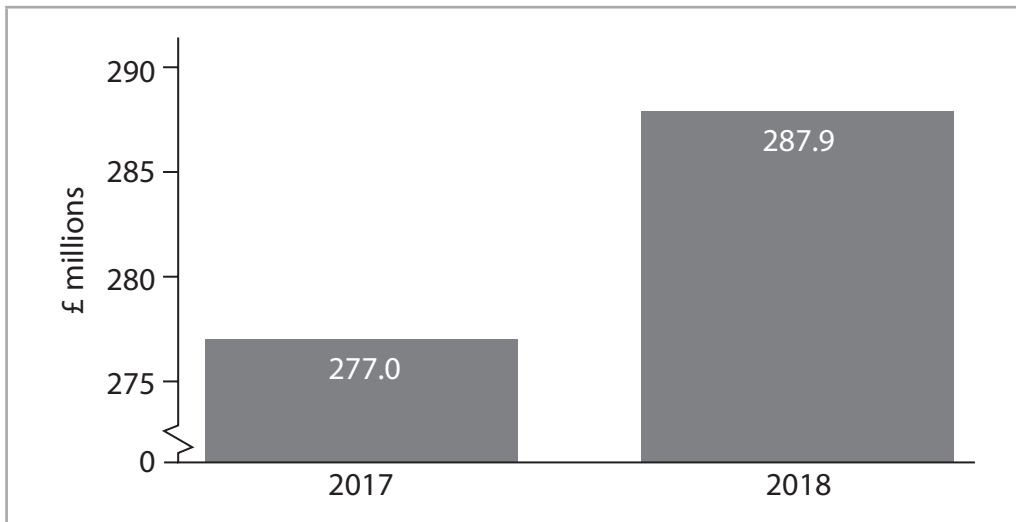
SECTION B

Write your answers in the spaces provided.

Question 8

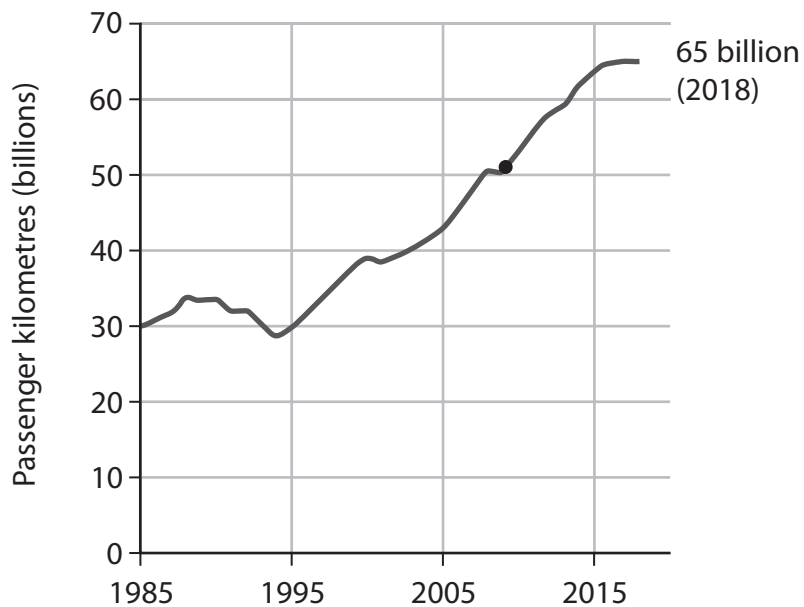
The UK Rail Industry

Figure 1: UK government subsidy to Northern, a train operating company in Northern England



(Source adapted from: <https://www.theyworkforyou.com/wrans/?id=2018-10-18.181280.h>)

Figure 2: Rail passenger kilometres travelled per year in the UK, billions



(Source adapted from: fullfact.org)

Figure 3: Price of a single off-peak train journey, Edinburgh to Leeds Saturday 22nd December 2018 19:00 hours

Adult	Young Persons (16–25) Railcard
£105.30	£69.50

(Source: <https://www.lner.co.uk/buy-tickets/booking-engine>)

Extract A

The case for nationalisation

Privatisation has not made the rail industry cheaper to operate, despite the promise from one government source that it would see private companies bringing: “more competition, greater efficiency and a wider choice of services”.

One reason, suggest the critics, is fragmentation. Instead of pushing British Rail into the private sector as a single supplier the government chose to break it into three components of track, train operators and rolling stock i.e. the trains and carriages. This has encouraged each part of the rail industry to prioritise its own profits rather than collaborating to improve the system. 5

Privatisation, meanwhile, never really worked. The rail network of 2 500 stations and 32 000 km of tracks was renationalised in 2001. This has encouraged the government’s transport secretary, a supporter of private sector involvement, to argue that the state Network Rail monopoly should be removed so that companies can bid to build new rail lines to upgrade the railway. 10

The privately-owned train operators are now the subject of fierce criticism, due to overcrowding and cancelled services. Private companies are supposed to compete to win a bid to be the train operator for a region for a short number of years. However in recent years the number of private companies bidding or renewing their contract as rail operators has fallen. In May 2018 the government rescued the East Coast line by renationalising it. The line had been run by the private rail operator Virgin Rail, which was suffering lower passenger numbers and revenue than forecast. 15
20

Some argue that there is a simple solution: reunite track and train in the only feasible manner, nationalisation.

(Source adapted from: <https://www.ft.com/content/d82848ca-f7ba-11e7-88f7-5465a6ce1a00>)

Extract B

Southern Rail boss paid £495 000

The Chief Executive of Southern Rail, the private-sector train operator that has become associated with delays, losses, cancellations and strikes, was paid £495 000 last year. This increased calls for nationalisation and a maximum wage for executives at companies with government contracts. In contrast the average base pay for a train driver in the UK is £47 705, although they can earn up to £63 000. 5

Nearly a third of Southern Rail trains were late in 2016 as it tried to deal with a labour dispute that involved extensive strike action. The rail trade unions are opposed to planned changes to the role of train guards, which they claim will put passenger safety at risk. 10

(Source adapted from: Rob Davies, The Guardian 10 April 2017
<https://www.theguardian.com/business/2017/apr/10/southern-rail-boss-double-pay-rise>)

8 Refer to Figure 1. Explain the likely effect of the change in subsidy levels between 2017 and 2018 on rail fares.

Include a supply and demand diagram in your answer.

(5)

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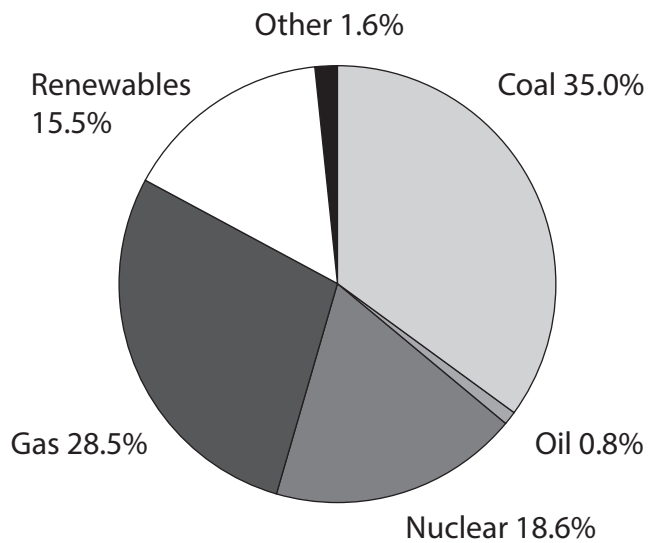
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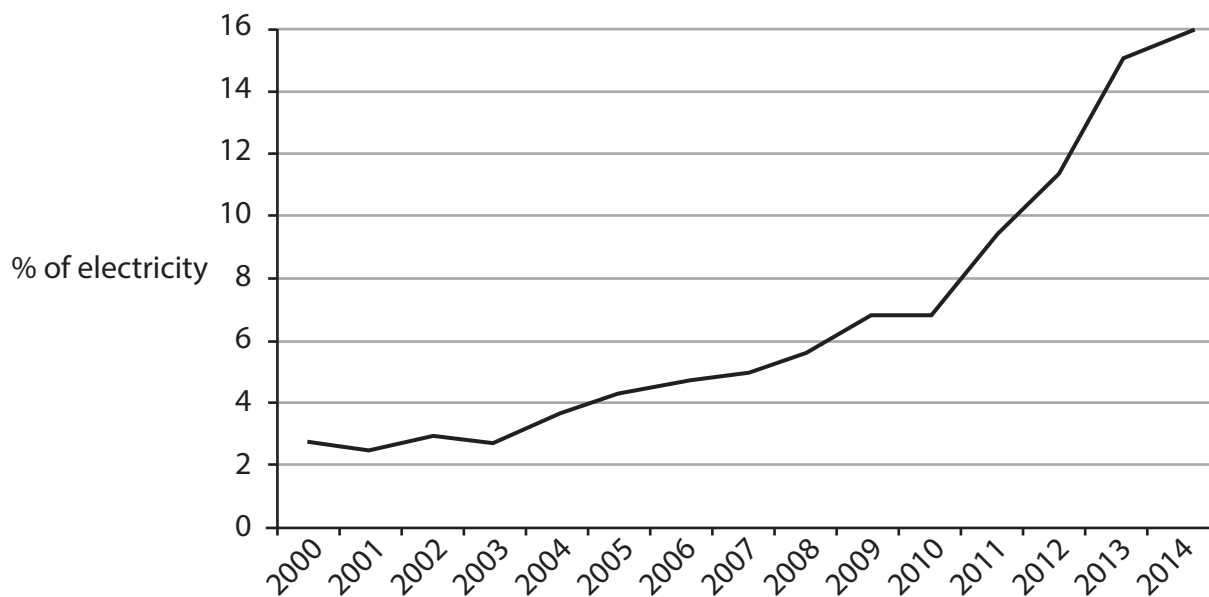
9 Renewable energy in the UK

Figure 1 UK Electricity generation from different sources: (April–June 2013)



(Source: UK Renewable energy roadmap update 2013; Department of Energy and Climate Change, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255182/UK_Renewable_Energy_Roadmap_-_5_November_-_FINAL_DOCUMENT_FOR_PUBLICATION_.pdf)

Figure 2 Electricity generation from renewable sources as a proportion of total UK electricity production (2000-2014)



(Source: <https://www.gov.uk/government/statistics/renewable-sources-of-energy-chapter-6-digest-of-united-kingdom-energy-statistics-dukes>)

Extract 1 Growth of renewable energy in the UK

Renewable energy currently makes up around 16% of UK electricity supply. More than half of this comes from wind power – the UK has more wind potential than any other country in Europe. Production of renewable energy is set to increase significantly over the next fifteen years to exceed 30% of total electricity generation. Most coal power stations are set to be phased out by 2030 helping to reduce carbon emissions whilst gas supplies appear unreliable in the current political climate. 5

Wind, wave and tidal power currently provides employment for 34 500 people in the UK and is expected to create a further 70 000 jobs over the next decade. The economic benefits from such growth will be spread across the UK. The German company Siemens, for example, has announced plans to invest £160 million in building a wind turbine factory in Hull, in the north of England. Its partner in the project, Associated British Ports, will invest a further £150 million in local infrastructure. Together, they will directly create 1 000 jobs in a city hit hard by unemployment and poverty. Hull will become one of the world’s leading locations for the production of wind turbines. The work involves many types of specialist jobs such as designers, engineers, welders, electricians and truck drivers. 10 15

(Source: adapted from ‘Siemens to add 1000 UK jobs in wind turbine production’, *The Guardian*, 25th March, 2014, <http://www.theguardian.com/business/2014/mar/25/siemens-wind-turbine-production>)

Extract 2 Lack of competition in awarding subsidies for renewable energy

Renewable energy requires subsidies to make it profitable. The Government has been criticised for awarding subsidies to renewable energy projects without any competition, undermining the interest of consumers. This refers to contracts worth £16.6 billion being awarded to companies involved in five offshore wind power and three biomass projects.

However, Energy and Climate Change Secretary, Ed Davey, said: “This government has been dealing with a legacy of chronic under-investment and neglect in our energy system. To keep the lights on in British homes and businesses we needed to move quickly to secure new capacity and give investors confidence – fast.” Without the investment there is a danger of power cuts in the near future as demand exceeds supply. 5

(Source: adapted from ‘Consumers not getting the best value for renewable energy subsidies, say MPs’, *The Guardian*, 3rd October 2014, <http://www.theguardian.com/environment/2014/oct/03/consumers-not-getting-best-value-for-renewable-energy-subsidies-say-mps>)

Extract 3 The costs of renewable energy

The private costs of electricity generated from renewable energy sources are far greater than those from fossil fuels. The uncertainty of the weather also means renewable energy from wind and solar power is unreliable.

There are also external costs associated with the generation of renewable energy, especially wind power. These include the negative effects on the environment, homes and tourism. Industrial scale wind turbines exceed 450 feet tall to the tip of their blades. There are currently 680 onshore wind farms and 23 offshore wind farms in the UK. These figures are set to increase rapidly over the next twenty years. 5

(Sources: <http://www.renewableuk.com/en/renewable-energy/wind-energy/onshore-wind/index.cfm> and <http://www.nowind.org.uk/>, <http://www.nowind.org.uk/> and replace with <http://repealtheact.org.uk/blog/campaign-support-the-now-charter-www-nowind-org-uk>)

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Handwriting practice area with 25 horizontal dotted lines.

(Total for Question 9 = 14 marks)

10 North Atlantic fishing



Extract 1 EU and mackerel fish quotas

North Atlantic fish stocks are collapsing through mismanagement by governments. A breakdown in the agreement over the size of fish catches between the European Union (EU), Norway, Iceland and the Faroe Islands means the last great stock of mackerel is under threat. The quantity of mackerel caught has risen by almost 50% this year and is now well beyond the level required to remain a sustainable resource. If mackerel disappear, so do the many links in the food chain which depend on them. The fish catches need to be small enough to maintain breeding stocks for future generations.

5

Global warming has caused mackerel to migrate further north to the seas around Iceland and the Faroe Islands and these two countries are massively exceeding the agreed fish catches, known as quotas. Both of these non-EU countries are catching over 150 000 tonnes of mackerel this year – over-fishing in excess of their agreed limit of 100 000 tonnes – whilst the EU countries have maintained their fish catches. More than a third of the mackerel caught by Icelandic fishing boats is fed to animals and farmed fish or turned into fertiliser. It is an astonishing waste. Other fish stocks in Iceland’s waters such as whiting and herring have been wiped out.

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To make matters worse, the EU fish quota system means that over 30% of fish catches are thrown back into the sea. Fishing boats are not allowed to land or sell more than their allowances, otherwise they risk severe fines.

(Source: adapted from George Monbiot, © Guardian News and Media Ltd, 8th August 2011)

Extract 2 Protecting fish stocks

A Royal Commission on Environmental Pollution recommended that the UK government prevents all fishing in 30% of the UK's coastal waters. Fish could then reproduce safely, greatly increasing the size of stocks. However, fish swim where they want – they do not remain in any one country's coastal waters.

Another way to protect the fish stocks is for the UK government to subsidise the development of fish farms, which currently account for a third of all fish directly consumed. Many believe this has relieved pressure from wild fish stocks as well as creating thousands of jobs in remote communities.

5

Fish farming does have its critics. For example, disease spreads rapidly in overpopulated fish farms and the local wild fish population can be contaminated. Furthermore, when large numbers escape from the farms, this affects the overall gene pool.

10

(Source: adapted from George Monbiot, © Guardian News and Media Ltd, 8th August 2011)

10 Evaluate the use of government subsidies to fish farms. Use an appropriate diagram in your answer.

(14)

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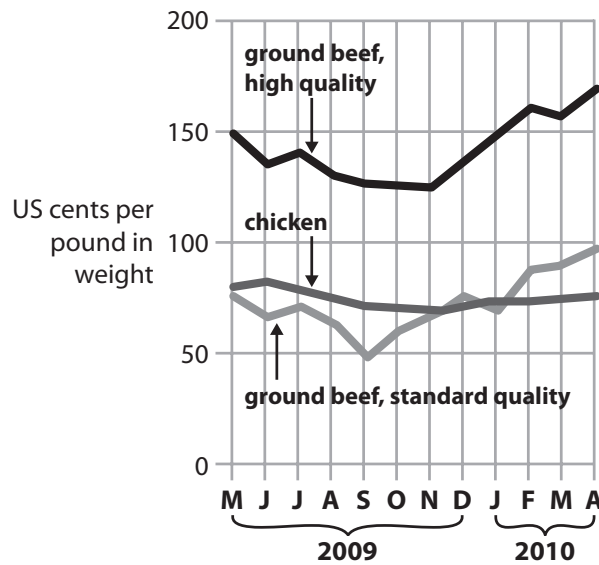
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A large rectangular area with rounded corners, containing numerous horizontal dotted lines for writing.

(Total for Question 10 = 14 marks)

11 The price of beef

Figure 1 The price of beef and chicken for fast food restaurants 2009 – 2010



Extract 1 Rising price of beef

It is **not** a happy time in American fast food restaurants. Rising beef prices have reduced profit margins at the McDonalds, Burger King and Wendy chains. They have found it difficult to pass on higher beef prices to their customers through the sale of burgers such as the 'Big Mac' and 'Whopper'. Instead, the fast food restaurants have responded by promoting sales of chicken burgers and fish fillets.

5

Beef prices have risen due to higher costs for cattle feed and severe drought conditions in Australia and New Zealand (the main suppliers of beef for American fast food restaurants).

However, there is some good news. The fast food restaurants have benefited from the recession as consumers made savings by switching from eating at expensive restaurants to cheaper burger bars.

10

(Source: © *The Times* 'Increase in meat prices has burger lovers asking: where's the beef?', Alexandra Freen, 24th May 2010)

Extract 2 Cattle farms damaging the rainforest

Deforestation in Brazil releases an estimated 400 million tonnes of carbon dioxide into the atmosphere every year, making the country one of the biggest emitters of the gas in the world. An average of 7,330 square miles of rainforest has been lost each year since 1995. The destruction of rainforest has accelerated over the past few years due to soaring beef and soya prices. Farmers are burning more rainforest to turn land into cattle ranches and into fields for growing crops.

5

However, the President of Brazil announced plans to reduce deforestation by subsidising sustainable development projects. These include replanting trees and creating eco-friendly tourism as alternative means of providing employment and income for local communities. The amount of funds made available has not been revealed.

10

The proposals also include an increase in the policing of forested areas and severe penalties for those breaking the law through illegal logging and farming.

(Source: © Guardian News & Media Ltd 2008, adapted from 'Brazil sets target to slow Amazon deforestation', by David Ljunggren)

11 Discuss the possible economic effects of the government providing subsidies to support sustainable development projects such as those referred to in Extract 2.

(14)

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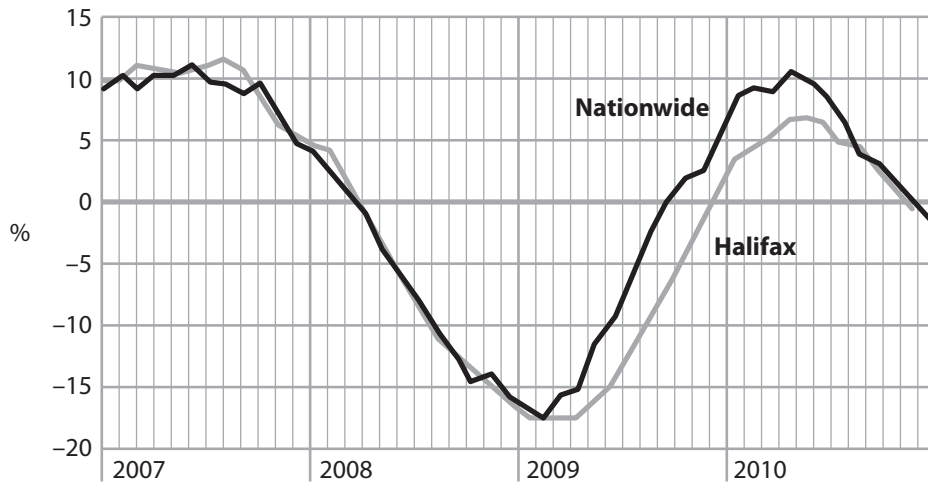
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Handwriting practice area with 25 horizontal dotted lines.

(Total for Question 11 = 14 marks)

12 Difficult times for house builders and first time buyers

Figure 1 UK house prices, year on year % change



(Source: © Halifax & © Nationwide Building Society)

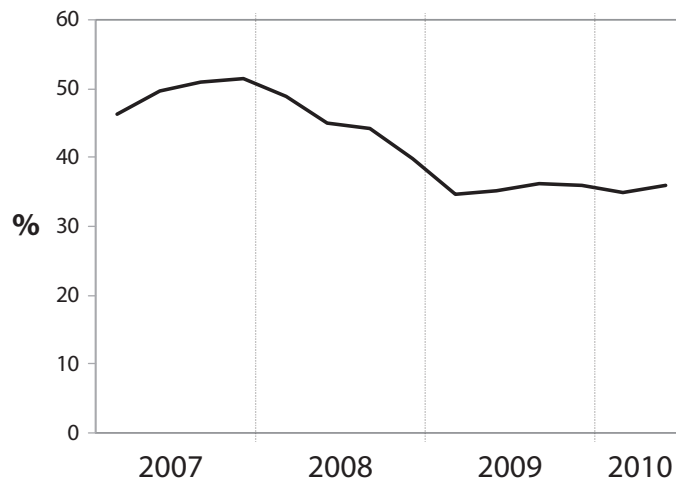
Figure 2 Share prices of the seven largest UK house builders, percentage change

Company	% change (Jan 1st–Nov 5th 2010)
Berkeley Group	+2.9
Redrow	-16.2
Bovis Homes Group	-18.8
Persimmon	-23.0
Bellway	-31.7
Barratt Developments	-32.9
Taylor Wimpey	-32.9

(Source: Investing 5th November 2010

<http://www.fool.co.uk/news/investing/2010/11/05/a-harsh-winter-for-housebuilders.aspx>)

Figure 3 Affordability of UK property for first-time buyers
Mortgage payments as a % of average take home pay for first-time buyers



(Source: © Nationwide Building Society)

Extract 1 Falling house prices

There are fears of a housing market crash following the largest ever recorded monthly fall in house prices in September 2010. According to Halifax Bank, over £6000 (3.6%) was wiped off the average house price.

More than £1 billion has been knocked off the stock market value of Britain's seven leading house building firms between January and November 2010, over a period when share prices generally have increased by nearly 20%. The fall in house prices has caused the supply of new housing to fall sharply. Builders' profits and employment have suffered.

5

Howard Archer, Chief economist at Global Insight, believes house prices will continue to fall by 10% in 2011. He added that a combination of factors was affecting house prices, including: high (and rising) unemployment, limited wage growth, deteriorating consumer confidence and difficulties in getting a mortgage.

10

(Source: © Guardian News & Media Ltd 2010)

Extract 2 First-time buyers

The number of new mortgages (loans which enable people to buy a property) dropped in September to its lowest level for more than a decade. Despite falling house prices, there are immense challenges for first-time buyers to get on to the property ladder. Lenders have increased the cash deposit required to gain a mortgage and refused to pass on interest rate cuts to this group of buyers due to the risk involved. The outlook is further worsened by rising unemployment and soaring student debt. A 30% cut in government subsidies for new-build affordable homes was also announced in the government spending review.

5

However, Figure 3 shows that housing has become more affordable for first-time buyers over recent years if they can provide a cash deposit. The alternative is to rent property. The Royal Institution of Chartered Surveyors report an increase in demand for rental properties and in rents charged over the latter part of 2010.

10

(Source: © Guardian News & Media Ltd 2010 adapted from 'Clouds over the housing market create a perfect storm for first-time buyers', by Simon Bowers)

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Handwriting practice area with 25 horizontal dotted lines.

(Total for Question 12 = 14 marks)

13 Road congestion and road pricing in Great Britain

Figure 1: Road transport statistics

	1996	2001	2006
Number of licensed private cars (millions)	21.2	23.9	26.5
Private cars vehicle traffic (billion vehicle km travelled)	359.9	382.8	402.4
Public roads in use (km)	387,000	391,000	398,000

Figure 2: The cost of travel by motor vehicle, rail and bus

Index 1996 = 100	1996	2001	2006
Motoring (cars)	100	114.8	119.0
Bus fares	100	120.2	146.6
Rail fares	100	116.6	136.3
Retail Price Index	100	111.5	129.7

Figure 3: Household income and bus travel

	1996	2001	2006
Average gross weekly household income (£ current prices)	£397	£541	£615
Bus travel (billion vehicle km travelled)	5.0	5.2	5.4

(Source of Figures 1–3: Annual Abstract of Statistics 2008.)

Extract 1 Case for a national road pricing scheme

A national road pricing scheme could reduce congestion on Britain's roads by fifty per cent according to a government report on 'The future of Britain's transport system' published today. The Chair of the report, Sir Rod Eddington, said charging motorists could reduce carbon emissions and save the economy up to £28 billion in wasted time delays by 2025.

5

It recommended that motorists pay more at peak times and in congested areas, up to £1.30 per mile. The funds raised could then be re-invested into improving the nation's road and rail network, particularly in heavily congested areas.

A national scheme would operate by installing satellite boxes in each car, with varying rates set at a 'per mile' basis for all roads depending on congestion and time of day.

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Sir Rod Eddington commented: "I am in no doubt that by setting prices to reflect both the congestion and environmental costs of travel, the transport system can be used more efficiently; it will support UK competitiveness and will contribute to reduced emissions. I believe there is no attractive alternative to road pricing. Without a widespread scheme by 2015, Britain will require very significantly more road transport infrastructure".

15

(Source: 'Report calls for road pricing to ease congestion', by James Sturcke, *The Guardian*, 1st December, 2006.)

Extract 2 Case against road pricing

The government has postponed plans for a national road pricing scheme following an online petition with 1.8 million signatures objecting to it. The Minister for Transport, Ruth Kelly, stated that such a scheme raised concerns over privacy and fairness. Road pricing would affect motorists in different ways according to their income. There is also a huge cost involved and some uncertainty over the effectiveness of implementing a nationwide road pricing programme. Currently, more than a million motorists evade paying road tax.

5

Instead, the government favours car-sharing lanes, a tax on workplace parking and converting hard shoulders on motorways into extra lanes. According to the Department for Transport, converting hard shoulders into motorway lanes costs just £6 million per kilometre compared to £25 million per kilometre for widening schemes. A recent pilot scheme which used the hard shoulder on the M42 motorway proved to be successful.

10

Road pricing has not been completely abandoned. The government intends to introduce smaller schemes for selected lanes on motorways by 2015.

15

(Source: 'Road pricing scheme stalled', by Dan Milmo, *The Guardian*, 4th March 2008.)

13 Evaluate the likely benefits of an increased subsidy for bus and rail travel. Use an appropriate diagram to support your answer.

(10)

A large rectangular area with rounded corners, containing 25 horizontal dotted lines for writing an answer.

(Total for Question 13 = 10 marks)

END OF SECTION B