

IELTS Academic Reading Sample 145

Prompted by the oil crises of the 1970s, a wind-power industry flourished briefly in the United States. But then world oil prices dropped, and funding for research into renewable energy was cut. By the mid 1980s US interest in wind energy as a large-scale source of energy had almost disappeared. The development of wind power at this time suffered not only from badly designed equipment, but also from poor long-term planning, economic projections that were too optimistic and the difficulty of finding suitable locations for the wind turbines.

Only now are technological advances beginning to offer hope that wind power will come to be accepted as a reliable and important source of electricity. There have been significant successes in California, in particular, where wind farms now have a capacity of 1500 megawatts, comparable to a large nuclear or fossil-fueled power station, and produce 1.5 per cent of the state's electricity.

Nevertheless, in the U.S., the image of wind power is still distorted by early failures. One of the most persistent criticisms is that wind power is not a significant energy resource. Researchers at the Battelle Northwest Laboratory, however, estimate that today wind turbine technology could supply 20 per cent of the electrical power the country needs. As a local resource, wind power has even greater potential. Minnesota's energy commission calculates that a wind farm on one of the state's south western ridges could supply almost all that state's electricity. North Dakota alone has enough sites suitable for wind farms to supply more than a third of all electricity consumed in the continental US.

The prevailing notion that wind power is too costly results largely from early research which focused on turbines with huge blades that stood hundreds of meters tall. These machines were not designed for ease of production or maintenance, and they were enormously expensive. Because the major factors influencing the overall cost of wind power are the cost of the turbine and its supporting systems, including land, as well as operating and maintenance costs, it is hardly surprising that it was thought at the time that wind energy could not be supplied at a commercially competitive price. More recent developments such as those seen on California wind farms have dramatically changed the economic picture for wind energy. These systems, like installations in Hawaii and several European countries, have benefited from the economies of scale that come through standardized manufacturing and purchasing. The result has been a dramatic drop in capital costs: the installed cost of new wind turbines stood at \$1000 per kilowatt in 1993, down from about \$4000 per kilowatt in 1980, and continues to fall. Design improvements and more efficient maintenance programs for large numbers of turbines have reduced operating costs as well.

The cost of electricity delivered by wind farm turbines has decreased from about 30 cents per kilowatt-hour to between 7 and 9 cents, which is generally less than the cost of electricity from conventional power stations. Reliability has also improved dramatically. The latest turbines run more than 95 per cent of the time, compared with around 60 per cent in the early 1980s. Another misconception is that improved designs are needed to make wind power feasible. Out of the numerous wind turbine designs proposed or built by inventors or developers, the propeller-blade type, which is based on detailed analytical models as well as extensive

experimental data, has emerged as predominant among the more than 20,000 machines now in commercial operation world-wide. Like the gas-driven turbines that power jet aircraft, these are sophisticated pieces of rotating machinery. They are already highly efficient, and there is no reason to believe that other configurations will produce major benefits. Like other ways of generating electricity, wind power does not leave the environment entirely unharmed.

There are many potential problems, ranging from interference with telecommunications to impact on wildlife and natural habitats. But these effects must be balanced against those associated with other forms of electricity generation. Conventional power stations impose hidden costs on society, such as the control of air pollution, the management of nuclear waste and global warming. As wind power has been ignored in the US over the past few years, expertise and commercial exploitation in the field have shifted to Europe. The European Union spends 10 times as much as the US government on research and development of wind energy. It estimates that at least 10 per cent of Europe's electrical power could be supplied by land-based wind-turbines using current technology. Indeed, according to the American Wind Energy Association, an independent organization based in Washington, Denmark, Britain, Spain and the Netherlands will each surpass the US in the generating capacity of wind turbines installed during the rest of the decade.

Glossary

fossil fuel: coal, oil and natural gas

kilowatt: 1,000 watts; a watt is a unit of power

kilowatt-hour: one kilowatt for a period of one hour

megawatt: one million watts

wind farm: a group of wind turbines in one location producing a large amount of electricity

wind turbine: a machine which produces energy when the wind turns its blades

Questions 1 - 5

Complete the summary below using words from the box. Write your answers in boxes 1-5 on your answer sheet

NB There are more words or phrases than you will need to fill the gaps. You may use any word or phrase more than once

Example

The failure during the late 1970s and early 1980s of an attempt to establish a widespread wind power industry in the United States resulted largely from the **...(1)...** in oil prices during this period. The industry is now experiencing a steady **...(2)...** due to improvements in technology and an increased awareness of the potential in the power of wind. The wind turbines that are now being made, based in part on the **...(3)...** of wide-ranging research in Europe, are easier to manufacture and maintain than their predecessors. This has led wind-turbine

makers to be able to standardize and thus minimize **...(4)...** . There has been growing **...(5)...** of the importance of wind power as an energy source.

criticism	success	design costs	production costs	failure
Stability	operating costs	fall	growth	recognition
Skepticism	decisions	effects	decline	results

Questions 6 - 10

Look at the following issues (Questions 6-10) and the list of implications below (**A-C**). Match each issue with the correct implication. Write the correct letter A-C in boxes 6-10 on your answer sheet.

N.B. You may use any letter more than once.

Example

The current price of one wind-generated kilowatt Answer **A**

Issues

6.	The recent installation of systems taking advantage of economies of scale ...
7.	The potential of meeting one fifth of current US energy requirements by wind power ...
8.	The level of acceptance of current wind turbine technology ...
9.	A comparison of costs between conventional and wind power sources ...
10.	The view of wind power in the European Union ...

Implications

A	provides evidence against claims that electricity produced from wind power is relatively expensive.
B	supports claims that wind power is an important source of energy.
C	opposes the view that wind power technology requires further development.

IELTS Academic Reading Sample 146 - Hard Disk Drive Technology

You are advised to spend about 20 minutes on Questions 28 - 40.

HARD DISK DRIVE TECHNOLOGY

A few years ago, a query about the health of a person's hard disk drive would have been met with a blank stare. Nowadays, almost everyone is aware of this remarkable electronic storage medium that is part of every modern computer, even though most users remain ignorant of the complexity of hard drive



technology.

In the early days of computing, an information record of a computer's memory content was kept on punched cards similar to the way in which an automated piano stores the keynote sequences on a piano roll. Later, magnetic tape was used to store electronic signals, and is still the favoured means of economically backing up the contents of hard drives. However, accessing information sequentially stored on tape is slow since the electronic data must be input through a fixed head in a single pass.

Hard disk drives solve this problem by incorporating a spinning platter on which magnetic data can be made accessible via a moving head that reads and writes information across the width of the disk. It is analogous to the way in which a person can choose to play a particular track on a CD player by causing the arm to move the head across the disk. The CD player is, in fact, necessarily similar in design to a hard drive, although there are significant differences in speed of data access.

Most modern hard drives incorporate several platters to further reduce the time spent seeking the required information. Also, some newer drives have two heads; one for reading, and a second head for writing data to disk. This separation of tasks enables much higher densities of magnetic information to be written on the platter, which increases the capacity of the hard drive.

There are three important ways in which the capacity of hard disks has been increased. First, the data code itself has been tightened with express coding techniques. Second, as previously noted, the head technology has been improved; and third, the distance between the heads and the platters has been greatly reduced. It is hard to believe, but the head can be made to pass over the magnetised platter at distances of less than 1 microinch (the width of a typical human hair is 5000 microinches). This is achieved by means of a special protective coating applied to the platter. Each of these three improvements enables speedier access to the data.

Hard drives are more commonplace than tape recorders these days, but it must be remembered that they are much more fragile. Treated with respect they may last a number of years, but they are quite easily damaged,

often with disastrous consequences for the user, whose precious data can become lost forever. Dropping a drive is almost always fatal, as is passing an incorrect electrical current through one (by faulty connection). Dust and even extremes of temperature can cause failure. Yet, no physical damage can ever result from the input of data via the keyboard or mouse. Of course, over time the magnetised coating on the platters will erode, yet this is almost entirely independent of the amount of use.

There are serious questions being raised about the direction of the future of electronic storage media. Some researchers claim that it would be wiser to invest more time and money in setting up systems for streaming data across networks of computers from centralised banks of information storage. This would avoid the need for each personal computer user to have his or her own copy of a software program resident on a local hard drive. Personal data files could be kept at a central storage unit, and be suitably protected from disaster by a failsafe backup system.

As the Internet becomes ever more pervasive, and the speed of access to other machines increases across our telephone lines, it might be possible to do away with local storage systems altogether.

Glossary:

backing up	-- duplicating
sequential(ly)	-- in sequence (or one after the other)
platter	-- circular disk or plate
Streaming data	-- sending or broadcasting information as data

Questions 29 - 31

You are advised to spend about 5 minutes on Questions 29-31.

Refer to Reading Passage 30 "Hard Disk Drive Technology" and the diagram below.

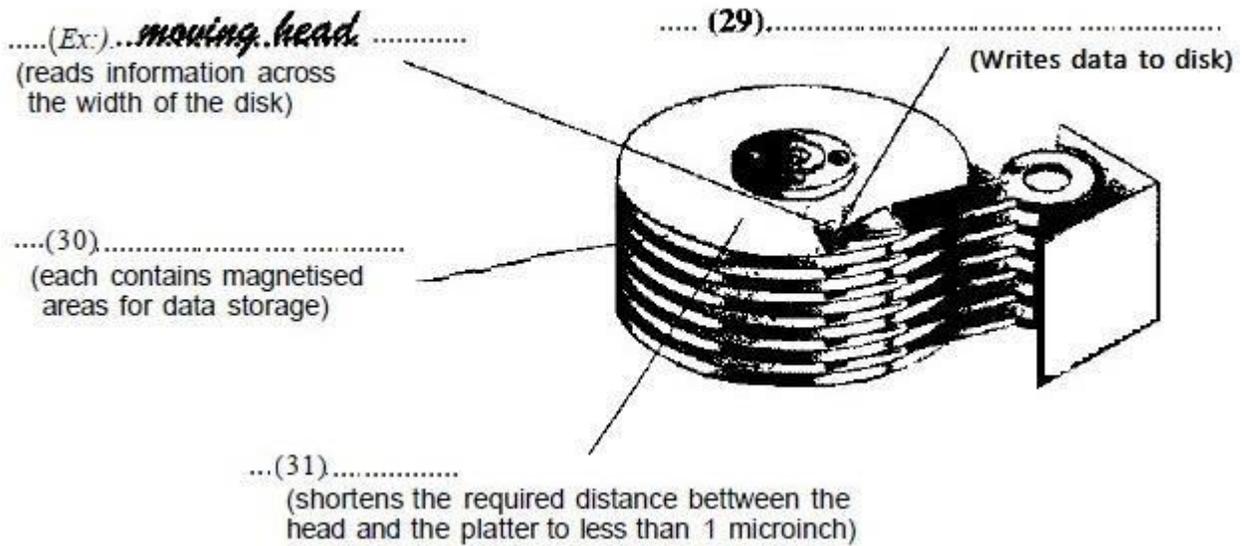
Choose from the words and phrases in the given list, and label the diagram with the correct name of each part of the hard drive.

Write your answers in boxes **29 - 31** on your Answer Sheet. The first one has been done for you as an example.

Note that you will not need to use every word or phrase in the list.

List of Parts:

CD player	second head	magnetic tape
moving head	date code	platter
electric current	special protective coating	



Refer to Reading Passage 30 "Hard Disk Drive Technology", and decide which of the answers best completes the following sentences. Write your answers in boxes 32 - 36 on your Answer Sheet.

The first one has been done for you as an example.

Example: Nowadays, hard disk drive technology is:

- a) less complex
- (b) part of every modern computer**
- c) expensive
- d) not difficult to understand

Q32. Magnetically-coated disks are one of many types of:

- a) sequential access information systems
- b) information storage solutions
- c) tape storage solutions
- d) CD players

Q33. Connecting a hard drive incorrectly usually:

- a) results in excess temperature
- b) erodes the magnetised material on the platters
- c) damages the keyboard or mouse
- d) destroys the drive

Q34. Keyboard or mouse use can easily cause:

- a) incorrect electrical currents

- b) the magnetised coating on the platter to wear out
- c) physical damage to the hard disk drive
- d) none of the above

Q35. In the future, a computer user might be able to access personal data files from:

- a) a central storage unit
- b) a local hard drive
- c) a software program
- d) the local bank

Q36. Centralised banks of storage information could:

- a) offer better protection of a user's data files
- b) stream data across telephone lines
- c) mean the end of local storage systems
- d) all of the above

Questions 37-40

You are advised to spend about 8 minutes on Questions 37 - 40.

The following following text is a summary of part of Reading Passage 30.

Complete each gap in the text by choosing the best phrase from the box below the summary.

Write your answers in boxes **37 - 40** on your Answer Sheet.

Note that **there are more phrases to choose from than are required**. The first one has been done for you as an example.

Hard disk drives are exceedingly complex and fragile pieces of equipment, but **(Ex:)**..... The cheapest way to store computer information is**(37)**..... However, it is slow to read back stored information in this way.**(38)**....., on the other hand, consists of one or more spinning platters coated with magnetised material holding data made accessible by two moving heads. Modern advances in disk technology have increased the**(39)**..... of hard disks. This has been accomplished**(40)**.....

- A.** storage capacity
- B.** on magnetic tape
- C.** most computer users know that a hard disk drive is complex
- D.** a CD player is faster than a disk drive
- E.** A hard disk drive
- F.** few computer users are aware of this
- G.** in three ways
- H.** cost
- I.** increasing the size of the platters used
- J.** size of the heads

Answer:

29. second head 30. platter 31. special protective coating 32. b 33. d 34. d 35. a 36. d 37. B 38.
E 39. A 40. G

IELTS Academic Reading Sample 147

DEER FARMING IN AUSTRALIA

Paragraph A

Deer are not indigenous to Australia. They were introduced into the country during the nineteenth century under the acclimatization programs governing the introduction of exotic species of animals and birds into Australia. Six species of deer were released at various locations. The animals dispersed and established wild populations at various locations across Australia, mostly depending upon their points of release into the wild. These animals formed the basis for the deer industry in Australia today.

Commercial deer farming in Australia commenced in Victoria in 1971 with the authorized capture of rusa deer from the Royal National Park, NSW. Until 1985, only four species of deer, two from temperate climates (red, fallow) and two tropical species (rusa, chital) were confined for commercial farming. Late in 1985, pressure from industry to increase herd numbers saw the development of import protocols. This resulted in the introduction of large numbers of red deer hybrids from New Zealand and North American elk directly from Canada. The national farmed deer herd is now distributed throughout all states although most are in New South Wales and Victoria.

Paragraph B

The number of animals processed annually has continued to increase, despite the downward trend in venison prices since 1997. Of concern is the apparent increase in the number of female animals processed and the number of whole herds committed for processing. With more than 40,000 animals processed in 1998/99 and 60,000 in 1999/2000, there is justified concern that future years may see a dramatic drop in production. At least 85% of all venison produced in Australia is exported, principally to Europe. At least 90% of all velvet antler produced is exported in an unprocessed state to Asia.

Schemes to promote Australian deer products continue to have a positive effect on sales that in turn have a positive effect on prices paid to growers. The industry appears to be showing limited signs that it is emerging from a state of depression caused by both internal and external factors that include: (i) the Asian currency downturn; (ii) the industry's lack of competitive advantage in influential markets (particularly in respect to New Zealand competition), and; (iii) within industry processing and marketing competition for limited product volumes of venison.

Paragraph C

From the formation of the Australian Deer Breeders Federation in 1979, the industry representative body has evolved through the Deer Farmers Federation of Australia to the Deer Industry Association of Australia Ltd (DIAA), which was registered in 1995. The industry has established two product development and marketing companies, the Australian Deer Horn and Co-Products Pty Ltd (ADH) and the Deer Industry Projects and Development Pty Ltd, which trades as the Deer Industry Company (DIC). ADH collects and markets Australian

deer horn and co-products on behalf of Australian deer farmers. It promotes the harvest of velvet antler according to the strict quality assurance program promoted by the industry. The company also plans and coordinates regular velvet accreditation courses for Australian deer farmers.

Paragraph D

Estimates suggest that until the early 1990s the rate of the annual increase in the number of farmed deer was up to 25%, but after 1993 this rate of increase fell to probably less than 10%. The main reasons for the decline in the deer herd growth rate at such a critical time for the market were: (i) severe drought conditions up to 1998 affecting eastern Australia during 1993-96 and (ii) the consequent slaughter of large numbers of breeding females, at very low prices. These factors combined to decrease confidence within the industry. Lack of confidence saw a drop in new investment within the industry and a lack of willingness of established farmers to expand their herds. With the development of strong overseas markets for venison and velvet and the prospect of better seasons ahead in 1996, the trends described were seen to have been significantly reversed. However, the relatively small size of the Australian herd was seen to impose undesirable restraints on the rate at which herd numbers could be expanded to meet the demands for products. Supply difficulties were exacerbated when the supply of products, particularly venison, was maintained by the slaughter of young breeding females. The net result was depletion of the industry's female breeding herds.

Paragraph E

Industry programs are funded by statutory levies on sales of animals for venison, velvet antler sales and the sale of live animals into export markets. The industry has a 1996-2000 five year plan including animal nutrition, pasture quality, carcass quality, antler harvesting, promotional material and technical bulletins. All projects have generated a significant volume of information, which complements similar work undertaken in New Zealand and other deer farming countries.

Major projects funded by levy funds include the Venison Market Project from 1992 to 1996. This initiative resulted in a dramatic increase in international demand for Australian venison and an increase in the domestic consumption of venison. In an effort to maintain existing venison markets in the short term and to increase them in the long term, in 1997 the industry's top priority became the increase in size and production capacity of the national herd.

Questions 33-37

Read the passage about Deer Farming in Australia again and look at the statements below.

In boxes 33-37 on your answer sheet write:

TRUE if the statement is true

FALSE if the statement is false

NOT GIVEN if the information is not given in Reading Passage 29

33 Until 1985 only 2 species of the originally released Australian deer were not used for farming.

34 Since 1985 many imported deer have been interbred with the established herds.

- 35 The drop in deer numbers since 1997 led to an increase in the price of venison.
- 36 Only a small amount of Australian venison production is consumed domestically.
- 37 Current economic conditions in Asian countries have had positive effect on the Australian deer industry.

Questions 38-40

Complete each of the following statements (Questions 38 -40)with words taken from Reading Passage 29.

Write **NO MORE THAN THREE WORDS** for each answer.

Write your answers in boxes **38 -40** on your answer sheet.

- 38 A stringent.....allows the Australian deer industry to maintain their excellence of product.
- 39 Herd stock expansion was made difficult by the killing ofto continue product supply.
- 40 Foreign and home markets for Australian venison increased due to the

IELTS Academic Reading Sample 148

You should spend about 20 minutes on Questions 1 – 14 which are based on Reading Passage 148 below.

Cleaning up The Thames

The River Thames, which was biologically “dead” as recently as the 1960s, is now the cleanest metropolitan river in the world, according to the Thames Water Company. The company says that thanks to major investment in better sewage treatment in London and the Thames Valley, the river that flows through the United Kingdom capital and the Thames Estuary into the North Sea is cleaner now than it has been for 130 years. The Fisheries Department, who are responsible for monitoring fish levels in the River Thames, has reported that the river has again become the home to 115 species of fish including sea bass, flounder, salmon, smelt, and shad. Recently, a porpoise was spotted cavorting in the river near central London.

But things were not always so rosy. In the 1950s, sewer outflows and industrial effluent had killed the river. It was starved of oxygen and could no longer support aquatic life. Until the early 1970s, if you fell into the Thames you would have had to be rushed to hospital to get your stomach pumped. A clean-up operation began in the 1960s. Several Parliamentary Committees and Royal Commissions were set up, and, over time, legislation has been introduced that put the onus on polluters-effluent-producing premises and businesses to dispose of waste responsibly. In 1964 the Greater London Council (GLC) began work on greatly enlarged sewage works, which were completed in 1974.

The Thames clean up is not over though. It is still going on, and it involves many disparate arms of government and a wide range of non-government stakeholder groups, all representing a necessary aspect of the task. In London’s case, the urban and non-urban London boroughs that flank the river’s course each has its own reasons for keeping “their” river nice. And if their own reasons do not hold out a sufficiently attractive carrot, the government also wields a compelling stick. The 2000 Local Government Act requires each local borough to “prepare a community strategy for promoting or improving the economic, social and environmental well-being of their area.” And if your area includes a stretch of river, that means a sustainable river development strategy.

Further legislation aimed at improving and sustaining the river’s viability has been proposed. There is now legislation that protects the River Thames, either specifically or as part of a general environmental clause, in the Local Government Act, the London Acts, and the law that created the post of the mayor of London. And these are only the tip of an iceberg that includes industrial, public health and environmental protection regulations. The result is a wide range of bodies officially charged, in one way or another, with maintaining the Thames as a public amenity. For example, Transport for London -the agency responsible for transport in the

capital - plays a role in regulating river use and river users. They now are responsible for controlling the effluents and rubbish coming from craft using the Thames. This is done by officers on official vessels regularly inspecting craft and doing spot checks. Another example is how Thames Water (TW) has now been charged to reduce the amount of litter that finds its way into the tidal river and its tributaries. TW 's environment and quality manager, Dr. Peter Spillett, said: "This project will build on our investment which has dramatically improved the water quality of the river.

London should not be spoiled by litter which belongs in the bin not the river." Thousands of tons of rubbish end up in the river each year, from badly stored waste, people throwing litter off boats, and rubbish in the street being blown or washed into the river. Once litter hits the water it becomes too heavy to be blown away again and therefore the rivers act as a sink in the system. While the Port of London already collects up to 3,000 tons of solid waste from the tideway every year, Thames Water now plans to introduce a new device to capture more rubbish floating down the river. It consists of a huge cage that sits in the flow of water and gathers the passing rubbish. Moored just offshore in front of the Royal Naval College at Greenwich, south-east London, the device is expected to capture up to 20 tons of floating litter each year. If washed out to sea, this rubbish can kill marine mammals, fish and birds. This machine, known as the Rubbish Muncher, is hoped to be the first of many, as the TW is now looking for sponsors to pay for more cages elsewhere along the Thames.

Monitoring of the cleanliness of the River Thames in the past was the responsibility of a welter of agencies - British Waterways, Port of London Authority, the Environment Agency, the Health and Safety Commission, Thames Water - as well as academic departments and national and local environment groups. If something was not right, someone was bound to call foul and hold somebody to account, whether it was the local authority, an individual polluter or any of the many public and private sector bodies that bore a share of the responsibility for maintaining the River Thames as a public amenity. Although they will all still have their part to play, there is now a central department in the Environment Agency, which has the remit of monitoring the Thames. This centralisation of accountability will, it is hoped, lead to more efficient control and enforcement.

[Source: US Water News 2000]

Questions 1 -6

Some of the actions taken to clean up the River Thames are listed below.

The writer gives these actions as examples of things that have been done by various agencies connected with the River Thames.

Match each action with the agency responsible for doing it. Write the appropriate letters (**A-G**) in boxes **1-6** on your answer sheet.

Actions to Clean up the River Thames

- A Operating the Rubbish Muncher
- B Creating Community Strategies
- C Monitoring the Cleanliness of the River Thames
- D Monitoring Fish Levels
- E Collecting Solid Waste from the Tideway
- F Creating Enlarged Sewage Works
- G Controlling the River Thames ' Traffic

Example

The Fisheries Department

Answer

D

- 1 The Environment Agency
- 2 Transport for London
- 3 The Greater London Council
- 4 Thames Water
- 5 Port of London
- 6 Local Boroughs

Questions 7 -14

Do the following statements agree with the views of the writer of the reading passage on Cleaning up the Thames ?

In Boxes 7 -14 write:

- YES** if the statement agrees with the writer
- NO** if the statement doesn't agree with the writer
- NOT GIVEN** if it is impossible to say what the writer thinks about this

- 7 The Thames is now cleaner than it was in 1900.
- 8 Swimming in the Thames now poses no health hazards.
- 9 It is now mainly the responsibility of those who pollute the Thames to clean their waste up.
- 10 All local London boroughs are now partly responsible for keeping the Thames clean.
- 11 Transport for London now employs a type of River Police to enforce control of their regulations.
- 12 Rubbish Munchers are now situated at various locations on the Thames.
- 13 Previously no one department had overall responsibility or control for monitoring the cleanliness of the Thames.
- 14 British Waterways will no longer have any part in keeping the Thames clean.

