

### The costs and benefits of business activity

When businesses produce and sell products or services it is relatively easy for them to see the costs involved and the benefits they will gain. These costs are known as PRIVATE COSTS. They might include such things as the wages paid to employees, the cost of an advertising campaign or the purchase of raw materials. The PRIVATE BENEFITS to the business and its owners include the total revenue earned from sales, any resulting profit and the dividends paid to shareholders.

A business may find, however, that it creates other costs. Take a factory producing cement which is located in a small 'scenic' town. The firm may dispose of some of its waste in a local river or discharge dust into the atmosphere. Lorries making deliveries to the factory may disturb the local residents. The factory may be sited close to a local beauty spot, ruining the view. These are all examples of spillover effects or EXTERNALITIES. So the costs to the whole of society, the SOCIAL COSTS, are made up of the private costs of the business plus **negative externalities** (the costs to the rest of society). Social and environmental audits take into account the social costs of business activity.

There may also be **positive externalities** which result from the business. It may create other jobs in the area for companies producing components or design a factory that complements the landscape. The firm may create skills which can be used for other jobs in the area. We can say that SOCIAL BENEFITS to society are the private benefits to business plus positive externalities (the benefits to the rest of society).

There are obvious problems that result from negative externalities. Many externalities affect the environment. Furthermore, when firms set their prices these usually only reflect the private costs of production. Prices will not, therefore, reflect the cost of pollution, noise etc. As a result of this firms may not be concerned about negative externalities as they do not have to pay for them. For example, a chemical company may produce toxic waste from its production process. It might be faced with two choices - disposing of this waste in a nearby river without treating it, or treating it and removing any toxins. The first measure would cost next to nothing, but the second measure could be relatively expensive. The rational choice for the firm, assuming this is legal, is to dispose of the waste untreated in the river. However, for other users of the river, such as anglers and water sports enthusiasts, this decision would have serious effects.

In order to assess the impact of business activity, cost - benefit analysis is sometimes used, particularly for large projects.

### Environmental costs

There are many different types of negative externality that may result from business activity. Some are dealt with in other units,

e.g. consumer exploitation and employee exploitation. This section will focus on environmental costs.

**Air pollution** This is pollution from factories, machines or vehicles emitting poisonous gases into the atmosphere. We need only look into the sky above some factories to see evidence of this. Other forms of air pollution may be catastrophes such as at the Chernobyl nuclear plant in 1986, when massive quantities of radioactive materials were released into the atmosphere and surrounding countryside. The results were seen in many countries in Europe.

What are the main causes of air pollution?

- Acid rain. Thousands of acres of forests have been destroyed by acid rain, as a result of sulphur dioxide emissions into the atmosphere.
- Chlorofluorocarbons (CFCs). The use by some firms of CFCs in aerosols and refrigerators has contributed to the breakdown of the earth's ozone layer. The ozone layer acts as a filter for the sun's rays. Without it, exposure to sunlight can increase the risk of skin cancer.
- Carbon dioxide (CO<sub>2</sub>) and other gases. There has been a growing awareness that the release of CO<sub>2</sub>, and other gases such as methane and nitrous oxide, into the atmosphere is causing a 'greenhouse effect'. The build-up of these gases is associated with the rise in the use of cars and with the generation of electricity with fossil fuels such as coal.

Scientists argue that the 'greenhouse effect' could result in the earth's atmosphere warming up (**global warming**) to such an extent that the polar ice caps melt. This could lead to significant areas of land being submerged by rising sea levels. The

### Question 1.

In 1991 Shell, the owner of the Brent Spar oil platform, was looking for ways to dispose of the structure. With the approval of the UK government, it decided to sink it in a deep part of the Atlantic. Sinking it in its place of operation in the North Sea would have caused a hazard to shipping and would have caused further environmental damage to an already polluted area. In 1995 the platform was towed to the Atlantic for sinking. Pressure from groups such as Greenpeace led to Shell abandoning the plan to dump the platform. In 1998 Shell decided to dismantle the platform and use the parts to construct a ferry quay in Norway. Shell had already spent £20 million preparing the platform for sinking. It would cost £26 million for the recycling of the structure.

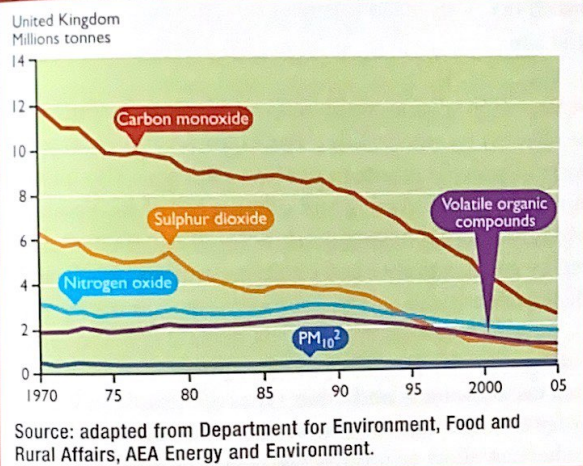
Using examples from the article, outline the possible:

- private costs;
- negative externalities;
- positive externalities;

of the proposed methods of disposal of the Brent Spar oil platform.



Figure 1: Air pollutants



'greenhouse effect', many scientists believe, has also been responsible for the climatic extremes experienced in parts of the world.

Figure 1 shows the emissions of air pollutants in the UK. It suggests that concern over their effect on the environment has led to an effort to cut emissions.

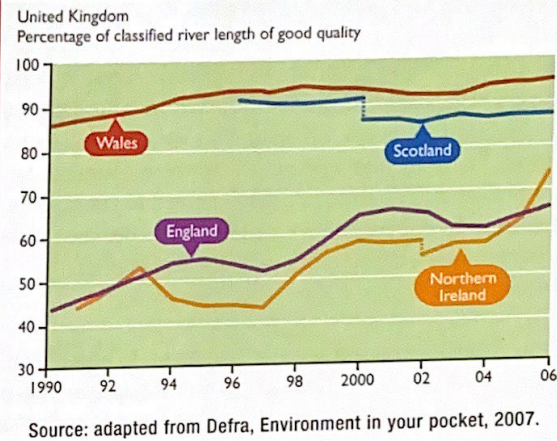
**Water pollution** Water pollution can occur in a number of ways. Many industries, such as brewing and chemical manufacturing, use water in production. Their plants are usually located by rivers and it is fairly easy, therefore, for them to dispose of waste into nearby water. It is also possible for our drinking water from reservoirs to be polluted by chemicals used in agricultural production. People are starting to drink bottled water or have water filters fitted to their water supply in the home as a result.

The sea has also been polluted over many years. Industries sited near to the coast have used the sea as a dump for their waste. The effluence and cargo of ships are also sometimes dropped into the sea. The North Sea, for example, is one of the most polluted seas in the world as a result of years of discharges from a variety of industries. These have included sewage and the by-products of chemical production. A number of beaches in the UK are unsafe for bathing, according to the European Union, which grades the quality of beaches. Figure 2 shows that there has been an improvement in river quality in the UK since 1990.

**Congestion and noise** Business activity has resulted in more roads becoming congested with traffic. For example, many firms now transport their goods by rail rather than road. Recent estimates have put the cost of this congestion on British roads as high as £15 billion.

Some business activity can also result in noise pollution. For example, a decision by an airport to open a new runway would affect noise levels experienced by local residents.

Figure 2: River water quality



**Destruction of the environment** One example of this is logging and associated industries, which have been responsible for the destruction of sections of the Amazonian rainforests. Another example might include the effects of new buildings in a rural area. A new housing estate in a village, for example, may deprive villagers and visitors of previously unspoilt countryside. It may also increase noise and congestion levels in the village.

**Waste disposal** Many business operations result in waste products. This may be in the form of waste chemicals resulting from the manufacture of plastics or waste materials from the manufacture of wooden products. The packaging used in products can also be waste and needs to be disposed of.

It has been suggested that some water operators in the UK impose external costs. If a company does not maintain its pipes and leaks occur, this can result in hosepipe bans. It also means that it has to take more water from reservoirs and rivers because of the waste water it has created by leakages.

The impact on the environment of business is not always negative. In derelict urban areas, for example, businesses have converted rundown buildings into office space and have landscaped waste land around the site. Also, some of the buildings may be thought to have architectural merit.

### Controlling environmental costs

Because of concern about the impact of business on the environment, attention has been focused on how pollution, congestion and other environmental costs can be controlled. There is a number of ways this can be done.

**Government regulation** Various pieces of legislation exist in the UK and Europe to prevent the pollution of the environment by business activity. For example, in the UK The Environment Act, 1995 set up the Environment Agency to monitor and control pollution. It also set up regulations concerning



## Unit 126

contaminated land, abandoned mines, national parks, air quality and waste. EU directives often become regulations in the UK. For example, the Air Quality Limit Values Regulations, 2003 sets targets for reductions in levels of ozone in the air by 2010.

Some countries have government bodies designed to control pollution. For example, in the US the Environment Protection Agency attempts to ensure US businesses do not contravene legislation. There are also agreements between countries to control pollution. The Kyoto Protocol agreed to cut greenhouse gas emissions by 5.2 per cent from 1990 levels between 2008 and 2012. In certain cases voluntary agreements between governments and manufacturers also take place.

**Taxation** The aim of taxation in this context is to ensure that the social cost of any pollution caused by a firm is paid for. This means that the government must estimate the actual cost to society of different types of pollution. As a result prices would more accurately reflect the true cost of using environmental resources. So, for example, a firm which produced a £5 product with 'environmentally unfriendly' packaging might be taxed 50p for this packaging, raising the price to £5.50. There are two advantages to this. First, the tax revenue might be used to minimise the impact of this packaging on the environment. Second, it might act as an incentive for the firm to produce more environmentally sensitive packaging, so that the tax is either reduced or removed.

In this example the consumer pays for the environmentally unfriendly packaging in the form of a price rise. Some would argue that the firm itself should pay for such costs. In this way, the price would remain at £5.00, but the firm would be taxed 50 pence for externalities created by its packaging. The consumer would not directly suffer as a result of the taxation.

Increases in fuel prices in the UK have been justified by governments on the grounds that consumers should pay prices

which accurately reflect the impact of car use on the environment. In the late 1990s the UK government introduced a **landfill tax**. This taxed business for dumping waste in a landfill site.

**Compensation** Firms could be forced by law to compensate those affected by externalities. For example, it is common for airports to provide grants to nearby residents. This allows them to purchase double glazing and other types of insulation, which provides protection from aircraft noise. Business may also be forced by court action to pay compensation to people affected by their actions.

**Government subsidies** This involves governments offering grants, tax allowances and other types of subsidy to businesses in order to encourage them to reduce externalities. Such subsidies can allow environmentally desirable projects, which otherwise might not be profitable, to go ahead. For example, a business may be given a grant so that it can build a recycling plant for plastics. This should encourage domestic and industrial users to recycle rather than dump plastic products.

Government subsidies could also be used to encourage more environmentally friendly habits amongst consumers. For example, many councils are attempting to encourage the use of bicycles through schemes such as setting up cycle lanes and giving grants to employees wishing to use bicycles for travelling to and from work.

**Road pricing and charges** Charging road users could be used to reduce pollution and congestion. There is a long history of charging for motorways in European countries such as France, Spain and Italy. In the UK the first toll motorway was opened in 2004, with travellers and business users paying to travel around

## Question 2.

Electricity prices in the UK could rise as a result of plans to cut carbon dioxide emissions beyond EU targets. The UK energy minister, Stephen Timms, said 'Our suggestion is that industrial electricity prices will increase ... by something like 6 per cent, not just in the UK but in major European industrial economies. The comparable figure for domestic bills would be about 3 per cent ...'.

The government had plans to cut carbon dioxide emissions by a fifth by 2010 in preparation for a new EU scheme on emissions trading to start in 2005. The initiative introduces caps on the amount of carbon dioxide emitted by industry. The scheme would force EU companies to pay to pollute. It will be mandatory for around 12,000 factories, of which 2,000 are in the UK. Under the scheme, the government would set emission limits on industry and allow companies to trade the right to produce emissions. Carbon emission limits for power stations have been cut so that, by 2007, their allocations will be 2.75 million tonnes of carbon dioxide below the government's updated energy projections for the sector..

Britain only imports around 2 per cent of its electricity and exports much less than that. The government said the fact that UK producers do not face competition from generators not affected by the EU

scheme means they are better placed to absorb the costs of reducing their emissions.

The overall number of allowances for UK industry have been set at a level beyond the Kyoto Protocol commitment. Industry voiced its displeasure at this. 'Emissions trading is the right approach, but if we go too far and other countries don't make similar commitments, we are going to put our hard-pressed manufacturers in an extremely difficult position in global markets' said Digby Jones, the director general of the Confederation of British Industry. But Friends of the Earth pointed out that the UK will not be introducing the toughest limits in Europe. It said some countries, such as Spain and Ireland, will have to take tougher action simply to meet Kyoto targets. Germany was also expected to follow the UK in going further than its Kyoto target.

Source: adapted from *The Guardian*, 19.1.2004.

- Explain the types of control on environmental costs mentioned in the article.
- Discuss to what extent the competitiveness of UK industry would be affected by these controls.



### Question 3.

Marks & Spencer, the UK high street retailer, has caught the mood of the moment by announcing yesterday that it would charge for carrier bags in its grocery departments from November. Bags will now cost 5p each. The Daily Mail and the Women's Institute immediately gave their support to the move. Both Gordon Brown, the Prime Minister, and David Cameron, the leader of the opposition, have said they would like to see retailers abandon giving away single use plastic bags.

Groundwork, an environmental charity which has been working with M&S, and which will receive all the revenues from the sale of M&S grocery plastic bags, said: 'Not only will this scheme reduce the amount of food carrier bags sent to landfill sites but it will also help improve the quality of life in towns and cities across the country.'

Adam Jones, UK sales director of Papier-Mettler, the company which supplies M&S with plastic bags, commented there was 'never a dull moment' in the world of plastic bags.

However, there is some controversy about the environmental impact of banning plastic bags. If it leads to far more paper bags being used, then paper bags are far more energy-intensive to produce than thin plastic bags.

The announcement by M&S led to other retailers giving reminders about their own initiatives. Aldi, the supermarket chain, already charges for bags. Tesco said its bags were degradable. Sainsbury said it was concentrating on encouraging recycling.

Charging for plastic bags, based on experience from the UK and

other countries, is likely to lead to a drop of at least 90 per cent in the number of bags used. Cynics have noted eliminating the use of plastic bags will add to company profits.

Source: adapted from *The Financial Times*, 29.2.2008.

- Why might the move by M&S to charge for grocery plastic bags be an example of effective marketing for the company?
- Evaluate whether it would benefit both businesses and the environment if the government banned the giving away of free plastic bags by retailers such as supermarket chains, clothes retailers, DIY stores and music shops.



Birmingham to reduce traffic on the M6. In 2003 a Congestion Charge was introduced on most vehicles entering the centre of London.

**Park and ride schemes** These are also designed to encourage a reduction in car use in city areas. They are often run by local authorities. Car users, for a fee, can park their cars outside the city areas and are taken by bus or rail into and out of the city. A single bus, if full, reduces traffic in the city area and also reduces the need for inner city car parking spaces.

**Pollution permits** In both the USA and the European Union, pollution permits have been introduced. These allow businesses a certain amount of emissions. If the business reduces its pollution below a certain level, it can save the allowance for later or even sell it. Some have argued that Western economies should adopt the same approach to developing countries as they pollute the atmosphere across the world.

**Working together** It may be possible for business and/or government to work together to control the effect of business action on the environment. Examples might be:

- the sharing of best practice on environmental controls;
- producing environmental codes of practice;
- developing waste strategies.

**Education** Governments and other agencies, such as charities,

could try to influence consumers and producers through educational and promotional campaigns.

**Consumer pressure** Consumers have forced a number of firms to consider the impact of their activities on the environment. There is evidence that a new breed of consumer is emerging, who considers factors other than price and quality when buying products. Such consumers take into account the effect on the environment and society of those products which they purchase. So, for example, such a consumer may not buy aerosols containing CFCs, furniture made from trees which have been chopped down in the Amazon rainforest or cosmetics which have been tested on animals.

Although this approach has influenced a wide range of firms, it does have one major problem. Consumers often do not have sufficient information with which to evaluate the impact of business activity upon the environment. Such information is often not disclosed to members of the public. Also, many firms have not been slow to realise that presenting themselves as being environmentally conscious can be very good for sales. However, the actual record of such firms with regard to the environment may well fall short of the claims which they make for themselves. For example, a battery producing company placed an environmentally friendly label on its products. However, this had to be removed when it was revealed that batteries use up more energy in their construction than they create in their use.



## Unit 126

**Environmental audits** An ENVIRONMENTAL AUDIT is one method by which consumers have a fairer chance of assessing the environmental impact of a firm. This could be much like the financial audits which all companies are at present required to have by law. An environmental audit can be one part of a wider social audit. This perhaps indicates the growing pressure put on firms to be concerned about their impact on the environment.

### Conservation

All businesses depend, to a greater or lesser degree, on the use of non-renewable resources. These are resources which cannot be replaced and which might in some cases, with current usage, run out within the next 100 years. Such resources range from raw materials, like oil, iron, copper and aluminium, to living creatures.

Conservation ranges from banning the use of such resources altogether, to encouraging businesses to use them sparingly. There is a number of measures which seek to conserve non-renewable resources.

- Recycling schemes. Bottle banks set up to help the recycling of glass are now a common sight in supermarket car parks. Not only do glass recycling schemes help to conserve natural resources, but they can be profitable for those companies involved. Recycling schemes also exist in the paper, plastics and aluminium industries.
- Multilateral agreements. These are agreements between a number of countries which seek to limit the use of natural resources. Agreements now exist which place limits on the amount of fishing and whaling which countries are allowed to carry out. In addition, some countries now have import bans on commodities such as ivory which come from endangered species.
- Government subsidies. These have been used to encourage farmers to conserve the countryside through retaining features such as dry stone walls and hedgerows, for example.

### The business response to environmental issues

Environmental issues offer both threats and opportunities to businesses. Businesses which stand to gain the most from growing environmental regulation are those selling pro-environmental and anti-pollution products. These businesses range from engineering companies selling equipment designed to reduce emissions, to service companies which advise other businesses on how they can comply with regulations, to businesses selling environmentally friendly products, such as managed wood.

Those which stand to lose the most are companies which are high polluters and who face competition from other businesses which don't face similar problems. For example, a specialist chemicals company may cease trading because there are many good substitutes to its products which have only a fraction of the environmental impact in production. Or a heavily regulated UK

company may face competition from a Third World producer whose government places little restriction on its activity.

**Marketing** Environmental issues can be a highly effective marketing tool for some businesses. Companies such as the Co-operative Bank and The Body Shop have made a particular point of pursuing environmentally friendly policies. Many businesses on their packaging or in their advertising claim to be environmentally friendly in some way. However, some businesses have found that environmental issues pose a marketing threat. Oil companies, for example, are accused by environment pressure groups such as Greenpeace or Friends of the Earth of harming the environment. In the 1990s, when Shell planned to dispose of a disused oil platform by sinking it in the middle of the Atlantic, environmental pressure groups organised a consumer boycott of Shell petrol stations in Germany. This anti-marketing pressure was successful enough to influence the business to abandon its plans. Perrier was one of the leading brands of bottled water in Europe in the 1990s and in the UK was the top brand by sales. However, a contamination scare affected the image of the brand. Such examples show that businesses must take quick and positive action when an environmental issue suddenly arises. It also shows that some businesses have to work constantly to improve their environmental image.

**Finance** In some cases, responding to environmental concerns or new laws and regulations can have a positive financial impact on a business. Energy saving measures, for example, can lead to a business having lower costs than before because of previous inefficiencies. In most cases, though, taking environmental action is likely to lead to higher costs. If all businesses in the industry also face these higher costs, prices are likely to rise to reflect the higher costs. Profits would then be largely unaffected. But if higher costs fall more heavily on one business than another, then some will gain a competitive advantage and others lose it. This in turn will have different impacts on profitability. Installing expensive new equipment will also have a negative impact on cash flow. In the nuclear power industry and the car industry, businesses must also make investment decisions knowing that there will be heavy costs at the end of a product's life. In the case of the nuclear power industry, this is in terms of decommissioning plant. For motor manufacturers, they have to take back old cars for recycling. This will affect the outcomes of appraisal methods like the payback method and discounted cash flow.

**Operations management** Pollution controls and other environmental measures could have an impact on how a product is made. This could range from changes in the type of materials used, to production methods to storage and after-sales service. For example, asbestos was widely used in industry years ago but its use today is severely restricted. Industries such as electricity generation and chemicals have had to introduce much cleaner production methods to reduce emissions. The landfill



tax encourages businesses to reduce the amount of waste they produce.

**Human resources** Environmental concerns and policies have human resource implications. Staff will need to be recruited and trained to deal with ever increasing government regulations concerning the environment. Some businesses may choose to outsource the guidance they need. Larger businesses are likely to put environmental policies in place. This could include an environmental audit where key measures relating to the impact of the business on the environment are audited each year and the results are made public. Implementing policies means that staff throughout the organisation are aware of the policies and what they must do to comply with the policies. As with any policy, unless there are good procedures and training in place to ensure compliance, staff will tend to interpret the policies as they see fit. Effective communication up and down the hierarchy is therefore essential. The very small minority of businesses which make environmental concerns an important business objective can use this as a way of motivating staff. Over time, it will tend to attract employees who are interested in this aspect of business. However, a tension between meeting financial targets such as profits targets and meeting environmental targets is

## KEYTERMS

**Environmental audit** – measures of performance of a business against environmental criteria, such as levels of CO<sub>2</sub> emissions.

**Externalities** – occur when private costs are different to social costs and private benefits are different to social benefits.

**Private benefits** – the benefit of an activity to an individual or a business.

**Private costs** – the cost of an activity to an individual or a business.

**Social benefits** – the benefit of an activity to society as well as to a business.

**Social costs** – the cost of an activity to society as well as to a business.

likely to arise. For a business to survive, it must at least break even. In this sense, financial targets tend to be more important than environmental targets. This tension between targets could demotivate staff who want to see environmental targets as the most important for the business.

## KNOWLEDGE

- Give an example of:
  - a private cost;
  - a positive externality;
  - a private benefit.
- State five examples of negative externalities that may be created by a business.
- Briefly explain the effect that:
  - a tax on a business;
  - a subsidy from government to a business;
- might have on the creation of negative externalities.
- Why might a business be concerned about the views consumers have about how it affects the environment?
- Briefly explain three consequences of following an environmentally friendly policy for a business.
- 'Conservation can be profitable for a business.' Explain this statement with an example.
- State five examples of businesses that may develop as a result of the growth of concern over the effect of businesses on the environment.