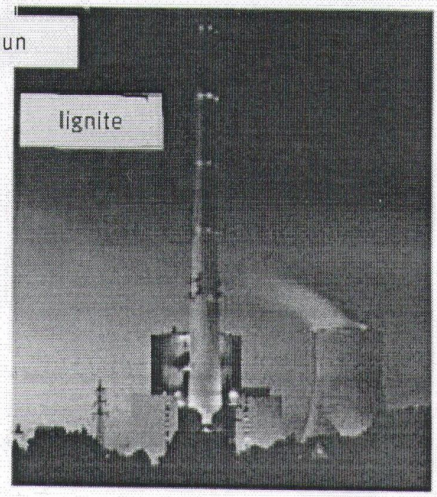
1 Introduction to the energy business

STARTER

Work with a partner. Sort the fuels and energy sources below into the correct category. Can you add any more to the lists?

fossil fuel(s)	renewables	nuclear fuel(s)

(hard) coal | wind | oil | sun | uranium | gas | biomass | lignite



Now answer these questions.

1 What fuels and sources are used at your company, or the companies you do business with?
2 Which one is used most?
3 Where do these fuels come from?
4 Which are imported?

1 Match these different power plants to their descriptions.

1 hydro power plant
2 solar power plant
3 nuclear power plant
4 wind power plant
5 gas-fired power plant
6 run-of-river power plant
7 coal-fired power plant
8 lignite-fired power plant
9 pump-storage power plant

a a traditional type of power plant which burns a solid, black fossil fuel
b a power plant which pumps water back uphill into a reservoir during periods of low demand
c a plant which uses the flow of water from a reservoir to generate electricity
d a power station utilizing the natural flow of water in a river for generating power
e type of power plant that uses uranium as its primary fuel
f a power plant which uses the natural flow of air to generate electricity
g a fossil fuel power plant which burns a solid, dark brown fuel
h a power plant that generates electricity utilizing energy from the sun
i a power station which burns gas as its primary fuel

AUDIO 2

2 Listen to a phone call between a journalist, Colin Maitland, and the public relations officer of the company ELEC, Maria Berger. Complete the journalist's notes.

ELEC'S fossil fuel use

_____ 1 and _____ 2

Power plants and loads

Lignite-fired plants for _____ 3 load

Gas-fired plants for _____ 4 and peak-load ranges

Gas plants also used to supply _____ 5

Technology to protect environment

ELEC say they have _____ 6 equipment installed in their plants.

Altrath plant, near Berlin

Commissioned in _____ 7 but has been _____ 8 since then.

Wind generation

Company building more power stations, but difficult to get _____ _____ 9 in some countries. ELEC views criticism that these _____ 10 the countryside as 'exaggerated'.

What other questions would you expect the journalist to ask?

3 Match the two parts to make phrases from the dialogue. Then listen again to check your answers.

1 base	a equipment
2 company	b fuels
3 electricity	c heating
4 energy	d mix
5 fossil	e policy
6 power	f production
7 district	g station
8 state-of-the-art	h load

Match the expressions you have just formed to the following definitions.

9 _____ _____ = the generation of electrical power

10 _____ _____ = energy sources such as gas, oil and coal but not water and wind

11 _____ _____ = the power level at which basic demand and consumption is covered

12 _____ _____ = apparatus of the latest technological level

13 _____ _____ = the different primary fuels and sources used for energy production

14 _____ _____ = a plan of action chosen by a business or firm

15 _____ _____ = a plant in which electricity is produced

16 _____ _____ = a system of distributing heat in one centralized location, often linked to a power plant

4 Work with a partner. The journalist Colin Maitland needs further information about ELEC's power plants, but the public relations officer is away. Use the information in the Partner Files to prepare information for his call. Use phrases from the box below.

PARTNER FILES Partner A File 1, p. 56 Partner B File 7, p. 57

TELEPHONING FOR INFORMATION

Introductions
Hello ... . This is ... speaking.
Good morning. Is that ...?
Hi ..., it's ... here.

Asking for information
I need some information about ...
I'd like to have some (more) information about ...
Can/Could you give me more information about ...?
Can/Could you please tell me (about) ...?
Who/What/When/Where/Why/How ...?
What about ...?

Asking for repetition
Sorry, I didn't quite catch that.
Would you mind repeating that?

Positive response
Sure.
No problem.
I'd be happy to.

Negative response
I'm afraid I can't help you there.
I'm afraid not.

DID YOU KNOW?

In English-speaking cultures, being polite is very important; this particularly applies to communication in business. For example, the phrase 'I was wondering ...' can be used for requests, as in 'I was wondering if you could send the information again.' Phrases such as 'I'm afraid', 'Well actually', and 'Unfortunately' are used to introduce something negative or make complaints. Look at these examples:
May I smoke?
Well actually, it is forbidden in this building.
I'm afraid the last bill was not accurate.
Not using such phrases can be seen as being too direct.

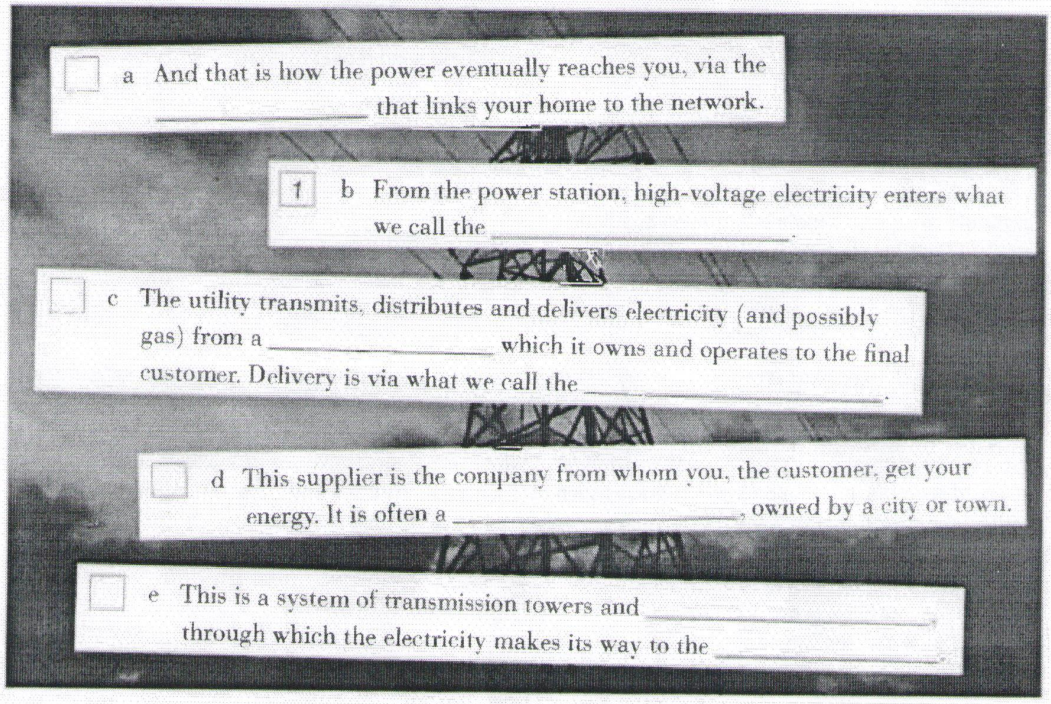
6 **Work with a partner. How do you rate these different types of power plant on a scale from 1 (good) to 6 (very poor/bad)? Use the phrases on page 8.**

Power Plant Type	Rating				
	Public perception	Effects on environment	Availability of primary fuel/source	Reliability	Efficiency
Hydro power plant					
Solar power plant					
Nuclear power plant					
Wind power plant					
Gas-fired power plant					
Lignite-fired power plant					
Biomass-fired power plant					

Compare your results with other students and give reasons for your rating.

7 **ELEC is creating some basic educational publicity material. Complete these statements with expressions from the box, and then number the statements in the correct order.**

connection • distribution network • facility • municipal utility • overhead lines • supplier • transmission network •



8 Complete this text from ELEC's website with the correct form of the verb.

The Players of the Power Business

About ELEC → | Energy supply → | How it works → | Keyword search

From generator to supplier to customer

Electricity *is generated* [1] (generate) by power stations and _____ [2] (feed) into the high-voltage transmission network. Via transmission towers and overhead lines it _____ [3] (transport) to the local supplier, an organization which _____ [4] (own) by the municipality or the regional subsidiary of a larger power company. This local supplier is normally the first point of contact for the customer. Connections _____ [5] (organize) by this company, and power _____ [6] (deliver) to the customer.

Customer choice and the role of the regulator

In some countries the supplier can _____ [7] (choose) by the customer as some markets _____ [8] (liberalize). In order to ensure that there is fair competition, some states have set up regulators. Their main task is to ensure that there is non-discriminatory third-party access. The grid fees that the operators charge for using the networks _____ [9] (also control). When prices _____ [10] (increase) by the supplier, this _____ [11] (also monitor) by the regulator.

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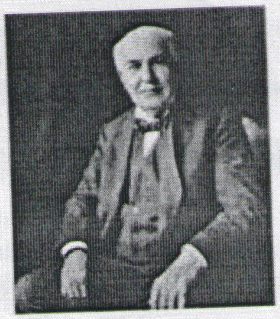
DID YOU KNOW?

The first practical generator was built by Thomas Edison, the famous inventor. He used it to provide electricity for his laboratory and then later to generate power for the first New York street to be illuminated by electric lamps. Unlike most AC (alternating current) generators of today, Edison's apparatus produced DC (direct current).

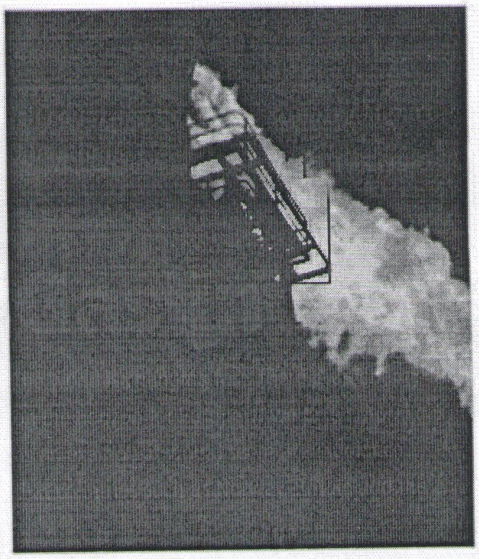


OUTPUT **Which countries does your country import its gas from? Read this newspaper article and discuss the questions.**

Issues

Gas in Crisis?

The world is changing fast. There is an energy crisis on the horizon for Europe. If we take natural gas as an example it would seem at first glance that countries such as Norway, Britain and the



Netherlands have sufficient gas reserves to supply Europe for some time to come. However, this is misleading; most of these reserves will be used up over the next ten to twenty years. Even if more deposits are found in the North Sea or the Atlantic Ocean the problem will still not be solved. The continent must turn to Russia where there are huge quantities of gas underground. This country is in the happy position of being the gas giant of the world.

Other nations are also approaching Moscow to cover their energy requirements. The economies of countries such as China and India are expanding dramatically and they are going to need massive amounts of energy, which includes gas. Will there be enough of this commodity to satisfy the needs of Asia and Europe? This is by no means certain, and the consequence could be a shortage of gas imports, which could lead to power cuts in some European countries in the future.

There is one other source of gas – LNG, liquefied natural gas. This is transported by ship from such places as the Arabian Peninsula. Nevertheless, it is questionable if these supplies can ever be a realistic alternative to gas which is imported by pipeline; the simple fact is that the volumes shipped would never meet demand.

People are therefore right to be worried. Political leaders and companies must tackle this issue; we need a secure and reliable supply of gas for the long term. This inevitably means that wholesale prices will soar, but this is still better than the nightmare scenario of freezing in our homes or having no power for our industry.

OVER TO YOU

- Is there really a gas crisis? What do you think?
- What about oil and coal? Do you think there will be enough reserves for the future?
- How do you think China will develop its economy and how will it power its industry?
- How can your country ensure gas supplies?

4 Complete the sentences using one of the verbs below in the correct tense. Use each verb once.

find get ~~do~~ take travel ~~finish~~ go stop enjoy have save visit not get

A What a will you do when you b finish the exams?

B I'm not sure. If I c ..... good enough results, I d ..... to university.

A Me too, but if I can, I e ..... a year off to work and then I f ..... for six months.

B Where to?

A That depends. If I g ..... enough money, I h ..... Australia and the Far East.

B Won't you find it difficult to study again if you i ..... for a year?

A I don't think so. I reckon I j ..... my studies more if I k ..... a break first.

B Anyway, unless you l ..... a job first, you won't have enough money to travel.

A I know. I'll start to look for work straight away when we finish here in June.

B Well, you might be lucky. Come on, unless we do some studying now, we m ..... places at university.

5 Complete the sentences using the conditional with *will*.

a You should work hard, or you won't pass the exam.
If you study hard, you'll pass the exam.

b You shouldn't speak to the teacher like that or you'll get into trouble.
If you .....

c Dave should go to football training tonight or he won't play on Saturday.
Unless Dave .....

d You should be careful who you give your e-mail address to, or you'll get a lot of spam.
If you .....

e You should go to bed early or you'll be tired tomorrow.
Unless you .....

f Sue should study something technical or she won't get a job when she leaves school.
Unless Sue .....

g You should fix your computer or you won't be able to use the Internet.
If you .....

h You shouldn't go out this weekend or you won't have time to study.
If you .....

i We should leave now or we'll miss the start of the film.
Unless we .....

6 Read the text and then complete the sentences using the prompts.

Global warming: what are the consequences?

What are the consequences of global warming? These are some predictions.

A rise of only a degree or two in the temperature of the planet will cause floods in many parts of the world. This is because the melting of the ice caps will cause a big rise in sea level. We will lose a lot of important farmland, and people will have to leave some of the world's biggest cities.

Some deserts are growing so fast that we can see and measure the changes. Some scientists believe this is because of human activity (mainly cutting down trees), but others think that it is an effect of global warming. Good agricultural land is being changed into desert.

Animals adapt to survive in the climate of the area where they live. If the climate changes, it will become too hot for some animals and too cold for others. Insects like mosquitoes will move to new areas and take malaria with them. Some crops won't grow and many people will starve.

Some scientists believe that nature will absorb the effects of greenhouse gases. For example, carbon dioxide dissolves easily in sea water. Shellfish use it to produce their shells. One theory is the shellfish will be able to absorb the extra carbon dioxide in the atmosphere.

Plants also absorb carbon dioxide. We know that the rainforests use carbon dioxide to photosynthesize and produce oxygen. This is why the rainforests are so important. If we don't protect them, the level of carbon dioxide will increase.

a If temperatures go up by a degree, the sea will flood many parts of the world.

b If the polar ice caps melt, the level .....

c We will lose a lot of farmland if the level .....

d If mosquitoes move to new areas, they .....

e Many people will starve if .....

f If there is extra carbon dioxide in sea water, shellfish .....

g The level of carbon dioxide will increase unless .....

GLOSSARY

EXTENSION ACTIVITY

Complete the sentences with your own words.

a If it rains this afternoon, ...

b If I get enough money, ...

c I have my hair cut if .....

e We put on warm clothes if .....

f Unless there is a problem, ...