

The electricity and gas supply chain

'There is always someone in the supply chain who wins and someone who loses.' John Felmy, Chief Economist, American Petroleum Institute

In the energy sector, which part is 'winning' at the moment and which is 'losing'? Was it the same 10 years ago?

1.1 Label the photos of stages in the energy supply chain. Use these words.

LNG terminal ■ wind turbines ■ central heating boiler ■ trading room ■ utility bill ■ gas field
large industrial customer ■ gas meter ■ electricity substation ■ high voltage lines



1 high voltage lines



2 _____



3 _____



4 _____



5 _____



6 _____



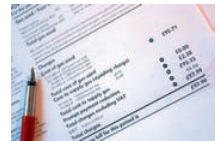
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8 _____



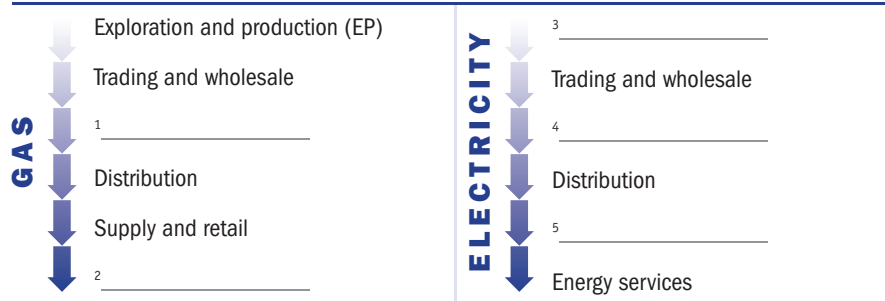
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10 _____

1.2 Complete the gas and electricity supply chains. Use these words.

Energy services ■ Transport and storage ■ Transmission ■ Generation ■ Supply and retail



PRONUNCIATION



2.1 Listen and underline the stress in these words.

What is the general rule for:

- words that end *-ion*?
- words of three or more syllables?
- nouns with two syllables?

generation	retail	industrial	transmission
industry	production	storage	customer
turbine	utility	exploration	meter
distribution	service	energy	terminal

2.2 Listen again and repeat.

GRAMMAR

Further grammar practice
The passive page 82

The passive is formed with the verb **be** + past participle.

Gas **is extracted** from underground reservoirs.

3 Complete the sentences about the supply chain. Use the passive form of the verbs.

- 1 Most electricity **is still generated** (still / generate) by burning fossil fuels like coal and gas.
- 2 The problem with electricity is that it _____ (cannot / store).
- 3 In most countries the transmission grid _____ (own and operate) by one company.
- 4 If a country doesn't have its own reserves, the gas _____ (must / source) from abroad.
- 5 On a day-to-day basis, energy _____ (trade) on the spot markets.
- 6 If a company _____ (vertically / integrate), it means it both produces energy and sells it to the end user.
- 7 I buy my gas from one company, but my electricity _____ (supply) by another.
- 8 Local distribution networks need _____ (maintain) constantly.
- 9 Energy services, like maintenance of hot water boilers, _____ (generally / provide) by external companies.

GRAMMAR

Further grammar practice
Comparison of regular adjectives
page 83

Superlatives are formed with adjective + **-est** (one and some two-syllable words) or **most** + adjective (some two-syllable words and those of three or more).

cheap → the **cheapest** lucky → the **luckiest**

expensive → the **most expensive** secure → the **most secure**

4.1 Complete the questions about the supply chain. Use the superlative form of the adjectives.

- 1 Which part of the supply chain is _____ ? (profitable)
- 2 Which part of the supply chain is _____ ? (risky)
- 3 Which part of the supply chain is _____ ? (stable)
- 4 Which part of the supply chain is _____ ? (capital intensive)
- 5 Which part of the supply chain is _____ ? (labour intensive)
- 6 Which part of the supply chain is _____ ? (new)

4.2 Now write your own answers.

LISTENING



4.3 Listen to the Vice-Chairman of ABC Energy speaking about his business and make notes about his answers to the six questions in 4.1. Compare his answers with yours.

LISTENING



4.4 Listen again to a part of the passage and write one word in each space.

It's much more difficult to say with the rest of the chain because it depends on ¹_____ and demand at a particular moment. If you are only a ²_____ and the cost of energy is low, then you can make a lot of money. But if it is high, then your ³_____ obviously will be affected. On the other hand, if you are a ⁴_____ integrated company then it doesn't matter if the cost of energy rises, because you will make more money at the ⁵_____ end of the chain, even though you make less ⁶_____.

For how long do you think this traditional model of the supply chain will continue? When it is replaced by a new model, what will that model be?

The organisation of the market

Which activities in the supply chain does your company manage? Is your company independent or part of a larger group?

1.1 Complete the description of how the energy sector has changed in the last 20 years. Use these words.

regulated ■ entrants ■ capital ■ state ■ house ■ open
historical ■ wires ■ subcontractors ■ competitors

Twenty years ago, the energy business was dominated by ¹_____ -owned monopolies which controlled everything from the power plant to the domestic meter. Nowadays, companies operate in a market divided between ²_____ activities, such as transmission and distribution, and activities ³_____ to competition, like electricity generation or energy retail. Often the ⁴_____ and pipes that transport the electricity and gas are still owned by the ⁵_____ supplier, but in other areas there are many new ⁶_____ to the market. In production these tend to be large, established energy companies because the ⁷_____ expenditure needed is so great. But in retail and supply there is a variety of ⁸_____. There are also more ⁹_____ doing jobs like maintenance, metering or construction, activities that in the past were done in-¹⁰_____.

PRONUNCIATION



CD TRACK 5

1.2 Listen to the completed passage in 1.1 and underline the stress in these words.

dominated domestic historical competitors maintenance
monopoly regulated expenditure subcontractors construction

PRONUNCIATION



CD TRACK 6

1.3 Listen and repeat the words in 1.2.

2.1 Before reading the text in 2.2, match words 1–7 with meanings a–g.

- | | |
|-------------------|-----------------------------------|
| 1 unbundle ____ | a remove government controls |
| 2 deregulate ____ | b sell products more cheaply than |
| 3 end user ____ | c everything owned by a company |
| 4 border ____ | d consumer |
| 5 incumbents ____ | e historical companies |
| 6 undercut ____ | f separate |
| 7 assets ____ | g frontier |

2.2 Now read about the European energy market. What are your views on the EU energy policy?

BIG IS BEAUTIFUL



Despite the efforts of the European Commission to create a single European market for energy, cross-border sales between countries in Europe are relatively few. Moreover, within each country energy is in the hands of a few national giants: EDF and GDF Suez in France, E.ON and RWE in Germany, and so on.

As a result, energy prices can vary from one European member state to another by up to 100%. The European Commission has been trying to deregulate the market but, according to Dieter Helm of the University of Oxford, it has

been doing things the wrong way round. He thinks it should have forced the integrated national companies to unbundle their activities first. Instead, it tried to encourage new entrants which were non-integrated companies to compete with the old monopolies. But these new competitors, whether they were producers or retailers, found it expensive and complicated to get access to the networks.

Finally the European Commission demanded that the national giants separate the transport and distribution networks from the other parts of their businesses. But the

incumbents thought that separation of energy production and transmission assets would make them less competitive and not necessarily bring lower prices to customers. What is the point of introducing competition, they argued, if it does not benefit the consumer?

They were also worried that, if they were broken up, the

different parts of their business would be vulnerable to takeover by foreign firms which are not subject to EU rules, such as the Russian company Gazprom. Such companies could 'superbundle' the different parts of the energy supply chain and undercut competitors by being involved in every activity from the gas well to the end user.

2.3 According to the text, are these statements true (T) or false (F)?

- 1 There is now a single market for energy in Europe.
- 2 The amount people pay for energy is very different from one European country to another.
- 3 You have to separate integrated companies before you can have real competition.
- 4 The big energy giants agree that unbundling will benefit consumers.
- 5 Companies from outside the EU could benefit if member states are forced to unbundle.

GRAMMAR

Further grammar practice
Linking words page 83

There are many different ways to link ideas. The form of the sentence depends on which words and phrases you use; for example:

It's cheap to buy **and** it's efficient. → **In addition to being** cheap to buy, it's **(also)** efficient.

3 Complete the second sentence so that it expresses the same idea as the first.

- 1 Despite the European Commission's efforts, there are still very few cross-border sales.
Although the European Commission has made efforts, there are still very few cross-border sales.
- 2 There is greater competition, but prices have not come down.
Despite _____.
- 3 They have relaxed regulation and encouraged more competition.
As well as _____.
- 4 In addition to exporting gas to Europe, Russia also exports to China.
Russia exports gas _____.
- 5 In theory, there is an open market. However, prices still vary a lot from one country to another.
Although _____.
- 6 The plan failed because there was not enough support for it.
The plan failed owing to _____.

4.1 These words describe mergers and acquisitions. What is the difference in meaning between each pair?

- 1 to take over / to merge
- 2 to sell off / to spin off
- 3 a merger / a joint venture
- 4 to acquire / to buy a stake in
- 5 a takeover bid / a leveraged buyout

LISTENING



CD TRACK 7

4.2 Listen to an industry analyst talking about future trends in the energy sector. What will happen about these things?

- a big mergers and acquisitions
- smaller scale acquisitions
- spin-offs

Do you agree with the predictions? What other predictions can you make for the structure of the industry?

The different players

**What role does the government have in the energy sector in your country?
Is it an important role or just a minor one?**

1.1 Complete the table.

Verb	Activity	Person / Type of company
to explore	1 _____	an EP company
to ² _____	production	a ³ _____
to trade	4 _____	a trader
to wholesale	wholesale	a ⁵ _____
to retail	6 _____	a retailer
to store	storage	a ⁷ _____
to ⁸ _____	supply	a supplier
to subcontract	9 _____	a ¹⁰ _____
to regulate	regulation	a ¹¹ _____
to consume	12 _____	a consumer

PRONUNCIATION



CD TRACK 8

1.2 Listen and repeat the words from the table. Note that the syllable stress sometimes changes between the verb and the noun.

GRAMMAR

Further grammar practice
Modal verbs page 84

We use these modal verbs to express obligation, prohibition and necessity:

must for an obligation

mustn't for a prohibition

should / shouldn't for something which it is right / not right to do

don't have to for something which is unnecessary.

You **don't have to** pay immediately, but you **must** pay within 30 days. You **mustn't** be late.

You **should** listen to the advice of your colleagues. You **shouldn't** ignore it.

2 Make sentences about the roles of the different players in a competitive energy market. Use the modal verb you think is most appropriate.

- 1 Energy companies / subcontract work involving the safety of their installations to subcontractors.
- 2 Electricity companies / be allowed to cut off the supply to a customer who doesn't pay his/her bill.
- 3 The generation of nuclear power / remain under government control
- 4 The regulator / control the price of energy to the final consumer.
- 5 The regulator / ensure there is fair competition in the market.
- 6 The regulator / encourage the network operators to become more efficient.
- 7 Consumers / be able to change their energy supplier as often as they like.
- 8 Consumers / reduce their energy consumption if they don't want to.

3.1 Read the mission statement opposite of OFGEM, the UK regulator, and answer the questions.

- 1 Which types of company does OFGEM especially aim to regulate?
- 2 How does it help to ensure security of supply to users?
- 3 Which types of consumer does it especially aim to protect?



Promoting choice and value

for all gas and electricity customers

Protecting consumers is *OFGEM's first priority. We do this by promoting competition, wherever appropriate, and regulating the monopoly companies which run the gas and electricity networks.

Other priorities and influences include:

- helping to secure Britain's energy supplies by promoting competitive gas and electricity markets – and regulating them so that there is adequate investment in the networks, and
- helping the gas and electricity industries to achieve environmental improvements as efficiently as possible, and
- taking account of the needs of vulnerable customers, particularly older people, those with disabilities and those on low incomes.

*Ofgem = Office of the Gas and Electricity Markets

3.2 What is the role of the regulator in your country? In what way is its mission similar or different?

4 Complete the descriptions of customers in different market segments. Use these words.

firms ■ intensive ■ multi ■ public ■ householders

- 1 Large business customers: especially energy-_____ industries.
- 2 Local government authorities: they are in charge of _____ buildings like hospitals or universities.
- 3 Small or medium-sized enterprises: some of these are in a single location. Others are _____-site customers.
- 4 Business or non-residential customers: this group includes small _____ of 3–15 people, like lawyers, accountants and so on.
- 5 Residential customers: these are sometimes called _____.

LISTENING



CD TRACK 9

5 You will hear an energy retailer describing the types of offer available to different segments of the market. As you listen, match statements 1–6 with the correct market segment (a–c). Sometimes more than one segment is possible.

- 1 They like to have energy-saving advice. _____
- 2 They take out insurance against failure of equipment. _____
- 3 They want information that will help them to monitor their consumption. _____
- 4 They tend to take fixed-price contracts. _____
- 5 They want flexible contracts. _____
- 6 They take gas contracts with interruptible supply. _____

- a large business customers
- b small business customers
- c residential customers

One group not mentioned above consists of the consumer associations who protect consumer interests. How strong are these groups in your country? How do they influence energy companies?

Electricity generation

How does your country generate its electricity? What is the biggest source of power? And the newest?

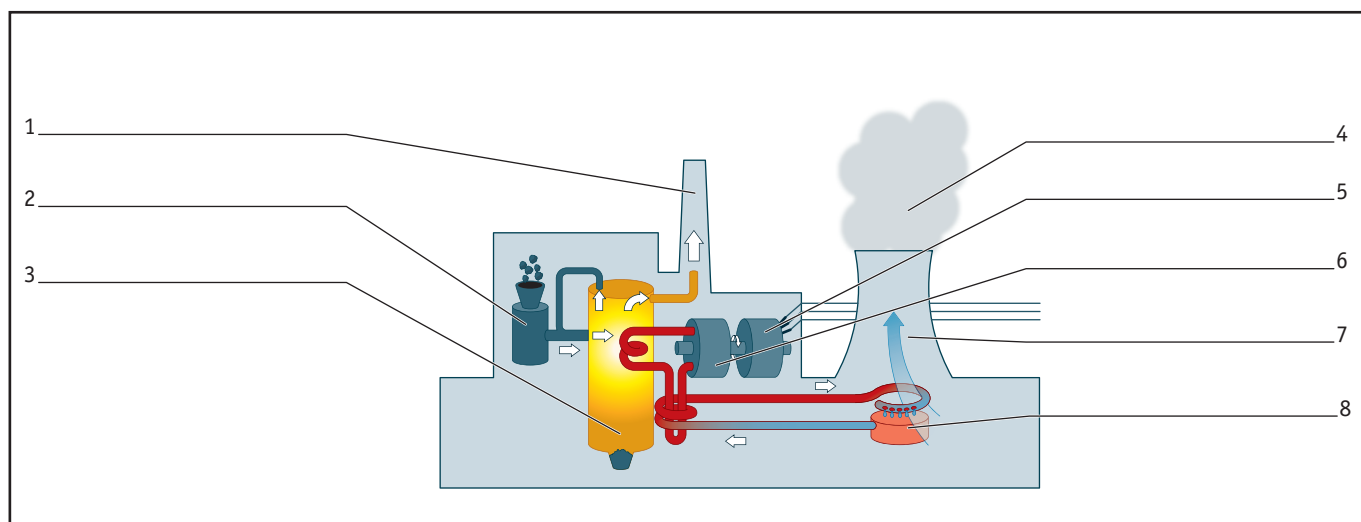
1 Complete the table of energy sources and generating plants. Use these words.

renewables ■ hybrid ■ electric ■ coal ■ fuel ■ farm ■ thermal ■ cycle ■ fired ■ heat

Primary energy source		
Fossil fuels	² _____	Other
oil, gas, ¹ _____	hydro, wind, solar, biomass, geothermal	nuclear ³ _____
Plants		
Conventional ⁴ _____ plant	Alternative energy plants	Other
oil-fired plant gas-fired plant coal- ⁵ _____ plant combined ⁶ _____ gas plant	hydro- ⁷ _____ plant wind ⁸ _____ solar power plant biomass power plant tidal power station	nuclear power plant ⁹ _____ plant (e.g. solar + thermal) CHP plant (combined ¹⁰ _____ and power)

2.1 Label the diagram of a coal-fired plant. Use these words.

generator ■ furnace ■ steam ■ condenser ■ turbine ■ chimney ■ cooling tower ■ mill



PRONUNCIATION



CD TRACK 10

2.2 Listen and repeat the words in 2.1.

3.1 Complete the sentences about electricity generation. Use these words.

efficient ■ large-scale ■ abundant ■ saved ■ put ■ build ■ main

- 1 It will take two years to _____ the plant.
- 2 Our first nuclear reactor was _____ into service in 1963.
- 3 The process is very _____.
- 4 The oil generator is used as the _____ energy source for the hospital.
- 5 The plant is suitable for _____ generation of electricity.
- 6 A lot of heat is _____ in this process.
- 7 Coal is a(n) _____ fuel in some countries.

3.2 Now write the opposite of the sentences in 3.1.

E.g.: 1 It will take two years to dismantle the plant.

GRAMMAR

Further grammar practice
Comparison of irregular adjectives
page 85

The comparison of most adjectives is made by adding *-er* / *-est* to the end of the adjective, or by putting *more* / *most* in front of it. But some adjectives are irregular.
good → *better* → *the best*.

4 Complete the table of irregular adjectives.

Adjective	Comparative	Superlative
good	better	the best
bad	1 _____	2 _____
little	less	3 _____
many	4 _____	the most
far	5 _____	the furthest



5.1 Each type of power station has good points and bad points. Choose the correct words to complete the list of advantages and disadvantages of hydro-electric power stations.

Advantages

- Energy source more *reliable* / *reliant* than wind or solar
- Produce almost no *waste* / *rubbish*.
- Can be brought *until* / *up to* full capacity quickly
- *Exploitation* / *Operating* costs relatively low.
- Can be used for both *base* / *basic* and peak load demand

Disadvantages

- *Barriers* / *Dams* very expensive to build
- To create a reservoir you have to *water* / *flood* a large area
- Expensive to put *on board* / *on line* because they are often far from the transmission grid
- Negative impact *on* / *to* biodiversity in the area

5.2 Now make a list of advantages and disadvantages for coal-fired power stations.

LISTENING



5.3 Listen to an interview between a journalist and an energy company spokesperson about plans to build a new coal-fired power station. Compare your list in 5.2 with the points you hear.

What do you think are the potential advantages and disadvantages of distributed (on-site) power for the big electricity companies?

The nuclear debate

Are people in your country generally in favour of nuclear power, or are they opposed to it? What are their reasons? What about you?

1 Complete the information about the French nuclear industry. Use the words in the lists.

under ■ in ■ output ■ site ■ installed ■ fresh ■ constraints

- France is the largest producer of nuclear energy in the world, with 59 reactors _____ operation.
- That means over 430 TWh of _____ capacity.
- The water-cooled reactors use _____ water from rivers or lakes for cooling.
- Regulatory _____ on the use of this water mean that in hot summers _____ can be affected.
- France has a new generation of reactor, the EPR, currently _____ construction at Flammanville.
- Another similar plant has also been approved, but the exact _____ is yet to be decided.

reprocessing ■ decommissioning ■ high-level ■ lifetime ■ storage ■ disposal ■ closed

- The _____ of these new plants is expected to be over 50 years.
- France uses a _____ fuel cycle, which means that used fuel is sent for _____.
- One of the aims of this policy is to reduce the amount of _____ radioactive waste.
- The right long-term solution for the _____ of nuclear waste is still being investigated.
- At the moment highly radioactive waste is vitrified and put in temporary _____.
- France has already begun _____ some its earliest reactors.

2.1 Write the missing nouns.

Verb	Noun
to leak	a ¹ _____
to contain	containment
to proliferate	² _____
to transport	³ _____

Verb	Noun
to crack	a crack
to threaten	a ⁴ _____
to dispose of	⁵ _____
to contaminate	⁶ _____

2.2 Complete the top six concerns about nuclear power. Use nouns from the list in 2.1.

- A radiation _____ caused by a _____ in the containment vessel of the reactor
- _____ of the local water supply
- The _____ of a terrorist attack
- _____ of nuclear weapons using know-how gained in civil nuclear programmes
- Long-term _____ of nuclear waste
- An accident involving _____ of fuel or waste

3 Read the text about a nuclear accident in Europe in 2008 and answer the questions.

- Find a word which means 'accident'.
- What was the danger to the reactor?
- What did the operators do?
- What danger was there to the public?
- Find a verb which means 'caused something to begin'.

On Wednesday afternoon there was an incident at the Krsko nuclear power plant in Slovenia, 75 km from Austria and 130 km from the Italian border. The Krsko power plant, built by Westinghouse and using one pressurised water reactor of 600 MWE, was brought into service in 1981.

There was a loss of coolant liquid from the reactor and the plant was immediately shut down. A spokesman said there was no threat of contamination. However, the incident triggered the EU's 'Ecurie' early warning system for nuclear emergencies and all 27 member countries were alerted.

GRAMMAR

Further grammar practice
Qualifiers
page 85

When making comparisons, we can use qualifiers to emphasise that a difference is big or small.

Nuclear plants are **much safer** than they used to be.

4 Choose the right words to complete the sentences.

- France is by *more / far* the most reliant on nuclear power of any nation.
- The technologies used today are only *slightly / rather* different from those of 20 years ago.
- The power produced by modern nuclear plants is *more / much* greater than in the past.
- Public opposition to nuclear power is not *nearly / by far* as great now as it was in the 1970s, when it was at its height.
- Even environmentalists are *a little / quite* less opposed to nuclear power nowadays.
- The positions of Germany and Spain towards nuclear power are *nearly / quite* similar.

LISTENING



5.1 Listen to the first part of an interview with an industry analyst about the efficiency of nuclear plants and complete the comparisons with other forms of generation.

- Nuclear is _____ concentrated form of energy.
- This makes plants _____ to operate compared _____ other thermal plants.
- In terms of thermal efficiency, they do _____ worse than other conventional thermal plants.
- But in terms of cost efficiency, they do _____.
- Plants in the US now operate at an average of 90% capacity, which is _____ gas-fired plants.

LISTENING



5.2 Listen to the second part of the interview and complete the list of issues the speakers mention.

- _____ cost / _____ investment
- _____ and _____ for investors
- _____ of a plant
- _____ costs
- _____ and threat of _____
- disposal of _____

5.3 Listen again to the second part and complete the sentences making comparisons.

- Construction takes _____ than with other thermal plants.
- On the upside, the life of these plants is not _____ it used to be.
- They are quite different _____ those of 50 years ago.
- As far as waste is concerned, we're really no _____ forward _____ we were 20 years ago.

PRONUNCIATION



6 Look at how some words in these phrases are linked together. Listen and repeat.

/j/
The initial investment

/j/
the viability of a project

An economic uncertainty

the threat of a terrorist attack

Operate at an average of 90%

/w/
there was also a loss of coolant

'Waste is the Achilles heel of the nuclear industry.' What does this statement mean to you? Do you agree with it?

Gas exploration and production

What are the main problems and risks in the gas EP business? Are they technical, political, business risks or something else?

1.1 Match the newspaper headlines with the extracts.

A US lifts ban on drilling in Arctic

B Japan and China resolve territorial differences

C Russia faces enormous technical challenge

D India's resources untapped because of legal obstacle

E Big 3 not interested in exploration rights

F GAS COMPANY REJECTS TAKEOVER BID

G Gulf facing a gas shortage

H RIG EVACUATED OVER FIRE

1 The platform was not yet over a producing reservoir, but only drilling an exploration well. A spokesman said, 'The well remained under control during the incident and no environmental damage has been reported.' The company is now working with the safety authorities to investigate the cause.

4 The world's most hydrocarbon-rich region does not seem to have enough gas. It is estimated that by 2015 the shortfall will reach 7,000bn cubic feet. Gas is much needed by energy-intensive industries such as aluminium and fertilisers, and also for power generation.

7 Up to now, most resources are unexploited because they have only been surveyed by geological and seismic analysis. Geophysical and geo-chemical mapping would reveal more accurately what is deep under the

2 The two countries have been in intense negotiations about how they can jointly develop the natural gas fields in the disputed waters of the East China Sea.

5 Even though the US President has now given permission for companies to exploit oil and natural gas reserves in these remote areas, no-one knows the extent of the reserves. They are not proven because the fields were surveyed in the 1980s and the technology used at the time is no longer considered accurate.

ground. But there is another problem. At the moment the law does not guarantee an exploration company the right to a mining lease when they have made a discovery.

3 North Sea gas exploration is suffering because of rising costs and a shortage of skilled labour. Companies are instead looking at less mature fields in Africa and Russia where the risk-reward ratio is better. When the government recently offered 150 exploration licences in the North Sea, none of the majors – BP, Exxon and Shell – applied for them.

6 Big sources of gas are locked on the Yamal Peninsula and on the Arctic coast but high winds, bad soil, and ice make bringing it onstream a logistical nightmare. Moreover, the offshore reserves are up to 500 km from the coast.

8 Shareholders voted against the deal because it did not take into account the true value of the company's reserves of coal seam gas. Natural gas found in coal deposits – also called coal bed methane – has attracted interest recently because of rising commodity prices

1.2 Find words or phrases in the extracts with these meanings.

- | | |
|--|---|
| 1 active (<i>extract 1</i>) | 6 far away from developed areas (<i>extract 5</i>) |
| 2 in partnership (<i>extract 2</i>) | 7 sure (<i>extract 5</i>) |
| 3 not enough (<i>extract 3</i>) | 8 connecting it to the transport network (<i>extract 6</i>) |
| 4 younger; newer (<i>extract 3</i>) | 9 precisely (<i>extract 7</i>) |
| 5 the amount which is lacking (<i>extract 4</i>) | 10 a fixed-term contract to extract oil or gas (<i>extract 7</i>) |

2.1 Write the opposite of the adjectives. Use these words.

shallow ■ low ■ reduced ■ random ■ thick ■ mature ■ depleted ■ abandoned

- | | |
|-------------------------------|------------------------------|
| 1 an active well _____ | 5 a thin layer of rock _____ |
| 2 a high cost _____ | 6 deep reserves _____ |
| 3 an increased risk _____ | 7 a new field _____ |
| 4 an untapped reservoir _____ | 8 targeted drilling _____ |

2.2 Add the prefix *un-* or *in-* to the adjectives to form the opposites.

- | | |
|--|---------------------------------------|
| 1 an <i>efficient</i> method _____ | 5 an <i>accessible</i> area _____ |
| 2 a <i>successful</i> drilling operation _____ | 6 <i>proven</i> reserves _____ |
| 3 <i>reliable</i> information _____ | 7 a <i>profitable</i> operation _____ |
| 4 <i>accurate</i> data _____ | |

PRONUNCIATION

CD TRACK 15

2.3 Listen and repeat the phrases from 2.1 and 2.2.**3 Read this press release about a recent drilling operation. Which factors are likely to make this a successful operation?**

The company is happy to report the successful drilling of three horizontal wells in the Scarab field where proven gas reserves are yet untapped. The Scarab field borders the Pachnoda field, which is already producing. A total of six wells will be drilled from the onshore base to reach reservoirs six kilometres from the coast and two kilometres deep.

This operation has been made possible by developments in seismic imaging, which has enabled more clearly targeted drilling, and therefore greater accuracy in horizontal wellbore trajectories. The wellbores run through gas and oil reserves several hundred metres long and ten metres thick.

Extended reach drilling from onshore has the advantage that drilling can be done more cheaply than for offshore operations.

**GRAMMAR**

Further grammar practice
Prepositions of place
page 99

4 Write the missing preposition in each sentence. Use these words.

in ■ on ■ at ■ to ■ from ■ under ■ off ■ in ■ on ■ at

- The platform is situated _____ the coast of Scotland in the North Sea.
- The reserves are too deep _____ the ground to make extraction economic.
- 'Wildcat' drilling refers to drilling done over three miles _____ the nearest producing well.
- When the gas arrives _____ the treatment facility, all the contaminants are removed.
- All reservoirs leak, essentially _____ a vertical direction.
- We have recorded high hydrocarbon values _____ the surface of the soil.
- Gas is exported from Abu Dhabi _____ Kuwait.
- The problem is that the field lies _____ a geological fault line.
- The wells are mostly _____ the desert.
- One of the biggest dangers is fire _____ the wellhead.

LISTENING

CD TRACK 16

5.1 Many people say we have already reached 'peak oil', that is, the world's stocks of oil are now in decline. Is it the same for gas? Listen. What is the geologist's conclusion about peak gas?**5.2 Listen again and complete the sentences.**

- The two types of gas mentioned at the beginning are associated gas and unassociated or _____ gas.
- _____ m³ of associated gas was wasted in 2006.
- Companies are beginning to capture associated gas because it is economically _____.
- The problems with recovery of unconventional gas are that it is _____ and _____.
- Sour gas (with a high sulphur content) is a problem because it is _____.
- 'The Stone Age did not _____ because of a _____ of stone.'

What is the future for the EP industry? Do you think gas will be replaced by other sources of energy?

Electricity transmission

What factors does a transmission system operator need to take into account when forecasting electricity demand each day?

1.1 Label the photos. Use these words.

dispatching centre ■ substation ■ pylon ■ live-line workers ■ meters
underground cables ■ overhead lines ■ insulators



1 _____



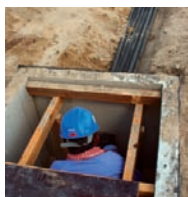
2 _____



3 _____



4 _____



5 _____



6 _____



7 _____



8 _____

PRONUNCIATION



GRAMMAR

Further grammar practice
The '-ing' form and infinitive
page 86

1.2 Listen and repeat the words from 1.1.

Look at the use of the -ing form and infinitive in these sentences.

It is easy **to make** mistakes when you are tired.

Would you mind **closing** the door?

There are many verbs, adjectives and phrases in English which are followed by the -ing form or infinitive, and which you will need to learn case by case; for example:

avoid **doing**, be willing **to do**, be permitted **to do**, without **doing**, etc.

2 Complete the sentences. Use these verbs in the -ing form or infinitive.

monitor ■ carry out ■ withstand ■ get ■ read ■ repair ■ transmit ■ lay ■ lower ■ fit

- These days it is difficult _____ permission to build new lines.
- High-voltage overhead lines are designed _____ electric currents over 30 kV.
- The most efficient solution for _____ a meter is remote reading.
- Environmental laws require us _____ underground cables in areas of natural beauty.
- Substations are generally used _____ the voltage.
- The dispatching centre is in charge of _____ the flows of electricity across the grid.
- We recommend _____ polymer insulators, not traditional ceramic ones.
- Live-line working enables us _____ damaged lines without interrupting supply.
- Pylons have to be able _____ wind speeds of above 150 kph.
- Live-line working involves _____ maintenance while the line is still active.

3 Complete the table of the duties of a transmission system operator (TSO). Use these words.

implement ■ minimise ■ respond to ■ take into account ■ maintain ■ carry out ■ guarantee

1 _____	consider	protect	... the interests of all parties
renew	2 _____	upgrade	... electric lines
3 _____	deal with	cope with	... emergencies
schedule	plan	4 _____	... work on the line
assess	manage	5 _____	... risks
develop	come up with	6 _____	... cost-effective solutions
7 _____	improve	prioritise	... system security

4 Read the text about the responsibilities of the UK TSO. Then answer the questions.

The British Electricity Trading and Transmission Arrangements specify the systems and methods of sale, purchase and transmission of wholesale electricity. A principle of the arrangements is that electricity should be traded bilaterally between willing buyers and sellers at prices under terms agreed between the counter-parties. Trades are carried out primarily 'Over the Counter' (OTC) and on the Power Exchanges.

However, the characteristics of electricity mean it is almost inevitable that quantities of energy generated and consumed will deviate from the quantities for which contracts have been agreed in advance. Consequently, central arrangements are required to: meter the quantities produced and consumed by each party; compare these with the quantities covered by bilateral contracts, and provide financial settlement for the differences (known as 'imbalances').

The arrangements also include a 'balancing mechanism'. The National Grid Company (NGC) has a licence obligation to manage the Transmission System

and may anticipate that more energy will be generated than consumed, or vice versa. Unchecked, this would result in system frequency falling or rising to an unacceptable degree. The balancing mechanism provides a means by which NGC can buy or sell additional energy close to real-time to maintain energy balance, and also to deal with other operational constraints of the Transmission System.

Specifically, the balancing mechanism allows electricity companies/traders (if they wish) to submit Offers to sell energy (by increasing generation or decreasing consumption) to the system and Bids to buy energy (by decreasing generation or increasing consumption) from the system, at prices of the company's choosing. NGC accepts Offers and Bids as necessary to balance the system and seeks to do so at the least cost by taking the lowest-priced Offers and accepting the highest-priced Bids consistent with factors such as transmission system constraints.

It is the job of the TSO to:

- 1 *balance / equal / suit* supply and demand.
- 2 *read / meter / supervise* the quantities produced and consumed by each party.
- 3 provide financial *compensation / settlement / advice* for differences between what is contracted and what is actually supplied or consumed.
- 4 anticipate differences between supply and demand and maintain system *frequency / level / tension*.
- 5 buy and sell electricity in *real / true / actual* time to maintain this balance.
- 6 buy electricity at the lowest price offered and sell it to the highest *consumer / bidder / third party*.
- 7 be aware at the same time of the *restrictions / difficulties / constraints* on the transmission system.

LISTENING



5.1 How has the job of the TSO changed with the introduction of competition? Listen to a spokesperson for an independent TSO and compare your answers with his.

5.2 Listen again and complete the sentences. Put one word in each space.

- 1 We are a _____ and financially separate entity.
- 2 All our customers must be treated _____ and _____ for third _____ access.
- 3 These include the cost of maintaining and _____ the network.
- 4 We add an agreed margin for our own profits on a _____-_____ basis.
- 5 They ask us to _____ our cost forecasts and _____ pressure on us to reduce these.
- 6 We use a _____ stamp system.
- 7 The price depends on the _____ that is transmitted, not the distance it _____.

What other ways are there to charge for the transport of electricity across the grid, apart from the 'postage stamp' system? Are they any fairer?

Gas transport and storage

How does your company's gas arrive in the transport network? Is the company dependent on one main source or does it source gas from a variety of places?

1.1 There are essentially three sources of gas for the distribution network: by pipeline direct from the gas field, via LNG tanker, or from underground storage. Label the pictures. Use these words.

LNG terminal ■ gas liquefaction plant ■ underground gas storage facility
LNG tanker ■ underground gas pipes ■ gas pipeline



1 _____



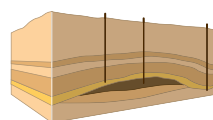
2 _____



3 _____



4 _____



5 _____



6 _____

1.2 Match a–f below with facilities 1–6 in 1.1.

- | | |
|-------------------------------|--------------------------|
| a a compressor station ____ | d an injection well ____ |
| b a regasification plant ____ | e supercooling ____ |
| c a trench ____ | f a fleet ____ |

PRONUNCIATION



CD TRACK 19

2 Listen and repeat these words. Notice the pronunciation of the letters *-age* /ɪdʒ/.

storage	manage	village	marriage	percentage	package
shortage	damage	advantage	encourage	voyage	voltage

LISTENING



CD TRACK 20

3.1 Listen to an interview with the manager of a transport company about the amount of gas lost during transportation. Answer the questions.

- Which is the bigger problem: technical or non-technical losses?
- How are they reducing technical losses?
- What are the three types of non-technical loss he mentions?

3.2 Listen again and fill in the figures.

- The compressor stations are situated every _____ miles.
- The gas is pressurised to _____ psi.
- Technical losses are at _____ %.
- Parts of the system were built in the _____.
- The target for technical losses is _____ or _____ %.
- The biggest pipes are _____ inches in diameter, or _____ mm.
- The smallest pipes are _____ inch.
- Non-technical losses are _____ % of the gas transported.

PRONUNCIATION



CD TRACK 21

3.3 Listen and repeat these figures.

1	the 1960s	1989	2012	2020
2	16%	12.5%	300 mm	2000 km
3	0.5 cm	0.75 cm	1.5 cm	15.15 cm

GRAMMAR

Further grammar practice
Irregular verbs
page 88

As we saw in Unit 1, the past participle of regular verbs is formed by adding **-ed**.
But many common English verbs are irregular.

Some gas **is lost** through leaks. If bills **are not paid**, action **will be taken**.

4.1 Complete the description of different types of underground gas storage facility. Use the past participle of the verbs. Some are irregular, some are not.

Gas storage

Gas storage is important for two reasons. The first is because demand for gas is seasonal – more is ¹ _____ (consume) in winter than in summer. This means that gas is ² _____ (inject) into storage facilities during the summer and then ³ _____ (withdraw) during the winter. The second reason for having storage is in case the supply of gas through the pipelines is ⁴ _____ (cut) off – an insurance against a shortfall in supply. Gas storage facilities can be ⁵ _____ (split) into two types: those that are ⁶ _____ (need) to cover base load requirements and those used for peak load. For base load, two types of underground storage facility are ⁷ _____ (make) use of: depleted gas reservoirs and aquifers. For peak load gas, salt caverns are usually ⁸ _____ (choose) because the gas can be ⁹ _____ (take) out quickly and the storage facility can also be ¹⁰ _____ (replenish) quickly.

4.2 Find words or phrases in the text above that mean the **opposite** of 1–5.

- | | |
|-----------------------------------|--------------------------|
| 1 constant through the year _____ | 4 base load _____ |
| 2 to put in or inject _____ | 5 a full reservoir _____ |
| 3 an excess _____ | |

5 Read the extract from an article about the LNG business. What is the main trend identified in this market?

A LIQUID MARKET?

THE OLD CONSTRAINTS of gas supply are beginning to disappear. Customers that were once reliant on the existing continental pipeline networks are finding they have more options. As more investment is made in LNG – both tankers to carry the liquefied gas and terminals to receive it and store it – the gas market is becoming more flexible. Gas can

be delivered at short notice to where buyers will pay the highest price. So the long-term bilateral contracts of the past, where a supplier agreed to pipe or ship gas to a customer for a period of 15 years, are slowly being replaced by a more liquid market, similar to the oil market. LNG tankers are travelling halfway around the world from the Gulf of Mexico to deliver gas to the energy-hungry industrial countries of east Asia.

GRAMMAR

Further grammar practice
Uses of the present continuous
page 88

The present continuous tense is formed with **to be + verb + -ing**. We can use it to describe ongoing trends.

The market **is becoming** more flexible. Old constraints **are beginning** to disappear.

6 Complete the sentences describing trends in the gas industry. Use the present continuous tense.

- Consumers _____ (become) more energy-conscious.
- Gas companies _____ (invest) more money in big infrastructure projects.
- In western Europe domestic consumption _____ (level) out after years of increase.
- Use of gas for power generation _____ (increase).
- Oil and gas companies _____ (focus) more on gas and less on oil than in the past.

Make two more sentences of your own describing trends you can observe in the energy industry.

Electricity and gas distribution

Who owns the distribution networks in your country? How old are the networks? Are they in good condition or in need of upgrading?

GRAMMAR

Further grammar practice
Question forms
page 88

1.1 You are going to hear an interview with the manager of an electricity distribution network. Before you listen, complete the interviewer's questions. Use these words.

What ■ How long ■ What kind ■ Why ■ Who
How often ■ What ■ How much ■ How many

- 1 _____ owns the network?
- 2 _____ is the lease?
- 3 _____ are your main responsibilities?
- 4 _____ is the contract reviewed?
- 5 _____ guarantees do you have that the concession will not be taken away from you?
- 6 _____ do you invest in the network each year, on average?
- 7 _____ people work in the company?
- 8 _____ of jobs do they do?
- 9 _____ is meter reading not one of their jobs?

LISTENING



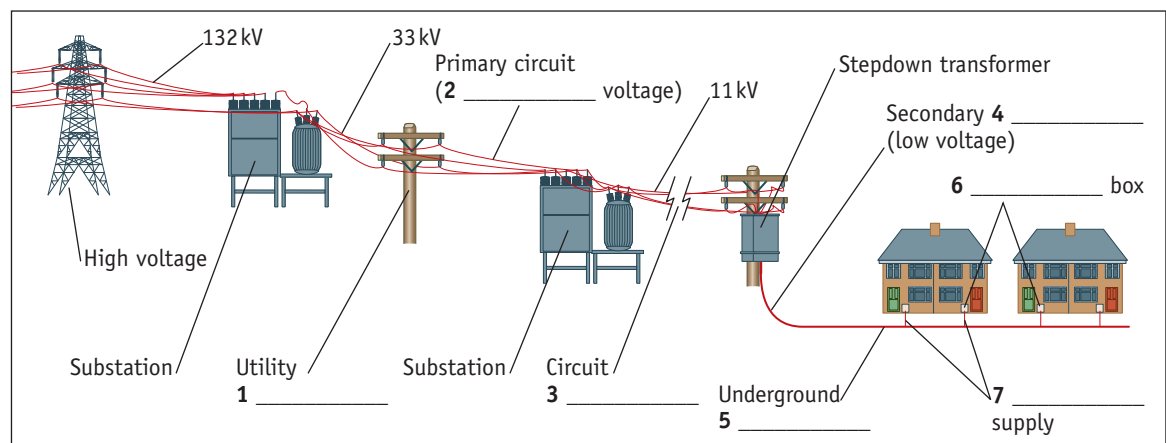
1.2 Listen to the interview and check your answers.

1.3 Listen again and complete these answers to the questions in 1.1 with the correct verb.

- 1 The network is _____ to them by the local authority.
- 2 The lease _____ 30 years.
- 3 Their job is to _____ and maintain the network.
- 4 The contract is reviewed annually to ensure they _____ their obligations.
- 5 The concession will _____ as long as there are no major problems.
- 6 The amount of the investment _____ from year to year.
- 7 The company _____ 700 people.
- 8 The company's employees don't _____ meters.
- 9 Meter reading is _____ to a subcontractor.

2.1 Complete the labels on the diagram. Use these words.

medium ■ fuse ■ circuit ■ breaker ■ pole ■ mains ■ cable



PRONUNCIATION



2.2 Listen and repeat the words from 2.1.

2.3 Match 1–6 with a–f to make sentences about problems with the electricity network.

- | | | | |
|------------------------|------------------------------|--------------------|----------------------------|
| 1 The voltage ____ | 4 A pole ____ | a ... blew. | d ... failed. |
| 2 The fuse ____ | 5 The substation ____ | b ... caught fire. | e ... cut through a cable. |
| 3 The transformer ____ | 6 A construction worker ____ | c ... fell down. | f ... dropped. |

LISTENING



3.1 Listen to an engineer who works in gas distribution describing the different jobs he has had in his career. Answer the questions.

- How many jobs has he had?
- What did he have to do in order to become a network planner?
- What did he decide to do about the job in the control room? Why?

3.2 Look at these phrases from the listening and try to remember or guess the missing verbs. Then listen again to the engineer and check if you were right.

- | | |
|--|--|
| 1 to _____ new homes to the mains supply | 4 to _____ a joint (between two pieces of metal) |
| 2 to _____ a leak | 5 to _____ the work when it is under way |
| 3 to _____ a trench | 6 to _____ any problems |

4.1 What are the main obligations of a distribution company to the users of the network? Make a list.

4.2 Read the extract from a distribution company's customer charter. Match gaps 1–5 with a–e below.

Disconnection

We prefer not to disconnect you, but sometimes we have no choice. The reasons could be: in case of an emergency; for planned maintenance; ¹_____ (e.g. for non-payment of your bill).

Compensation payments

In certain cases we can offer you financial compensation for inconvenience: if you experience more than 20 hours of unplanned, sustained

interruptions in a year; ²_____ ; if we are more than 15 minutes late for an appointment.

Unplanned interruptions

Unplanned outages are occasionally unavoidable. They can occur in the following situations: there are storms; a tree falls on the line; birds or animals make contact with power lines; ³_____.

Your obligations to us

Your obligations are: ⁴_____ ; to keep all

vegetation and building structures well clear of electric lines; to inform us of loads connected or planned to be connected to the distribution system.

Connections

When connecting you to the mains electricity supply, we promise: to connect you within one business day of receiving a request from your retailer; ⁵_____ ; to advise you or your electrician of our requirements for your new electrical installation.

- to provide, install and maintain standard metering equipment
- not to tamper with any equipment belonging to the distribution company
- at the request of your retailer
- if a power surge or dip (sudden voltage variation) damages your appliances
- vital equipment fails

GRAMMAR

Further grammar practice
The -ing form and infinitive
page 86

We form a negative infinitive by putting *not* before *to* + verb.

not to do / not to be doing not to have done / not to have been doing

We prefer **not to disconnect** you. I am disappointed **not to have been consulted**.

5 Are the sentences right or wrong? Correct the wrong ones.

- | | |
|--|---|
| 1 I not told him to worry. | 4 It is important to attempt the repair not yourself. |
| 2 Our aim is not money to waste. | 5 I would prefer not to speak about this. |
| 3 They are not instructed to take risks. | 6 It was wrong of him to not have called. |

In your company, what operational experience is ~~it~~ necessary for senior managers to have?

Energy pricing and billing

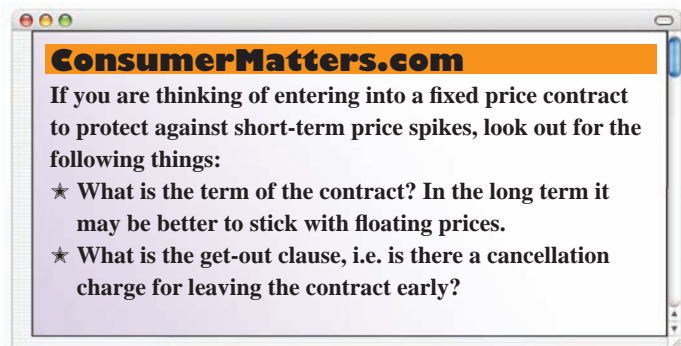
Do you have a universal energy tariff for residential customers, or many different types of tariff? What does the tariff depend on, e.g. quantity consumed, level of power delivered, method of payment?

1.1 Match the different types of tariff 1–6 with the needs of customers a–f.

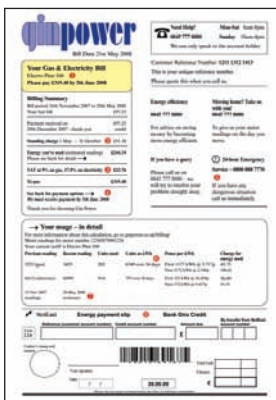
- | | |
|----------------------------|---|
| 1 Dual fuel tariff ____ | a Wants to use energy from renewable sources. |
| 2 Pre-payment meter ____ | b Wants paperless billing and a cheaper tariff. |
| 3 Online tariff ____ | c Wants to know exactly how much they will pay for their energy over a given period. |
| 4 Fixed price tariff ____ | d Wants to pay a cheaper rate for electricity used at night (e.g. to power storage heaters). |
| 5 Green energy tariff ____ | e Wants to buy gas and electricity from the same supplier (usually at a discount). |
| 6 Off-peak tariff ____ | f Wants a 'pay as you go' option to avoid getting a big bill after they have consumed the energy. |

1.2 Read the extract from a website offering advice to energy consumers on fixed price contracts. Then match the words in *italics* in 1–5 below with the meanings a–e.

- 1 short-term price *spikes* ____
 - 2 the *term* of the contract ____
 - 3 to *stick* with ____
 - 4 *floating* prices ____
 - 5 *get-out* clause ____
- | | |
|----------------|------------|
| a stay | d length |
| b escape | e variable |
| c sudden rises | |



2.1 Power companies in the UK are trying to make their bills easier for customers to understand. Look at the example bill on page 116 and match items 1–8 with the notes of explanation a–h below.



Understanding your bill

- a You can send a cheque, pay online or telephone us with your credit card details. Or you can set up a monthly direct debit arrangement with your bank. ____
- b This is the consumer tax you must pay. ____
- c This is the tariff you have chosen. ____
- d Detach this from your bill and send it to us with a cheque stating the amount you are paying. ____
- e For this period we have estimated your energy use. Please call us with the actual reading, if you can. ____
- f This is the number to call if you have a gas leak or a power failure. ____
- g This is a two-tier tariff: you pay a cheaper rate after you have consumed a certain amount of gas and electricity. ____
- h This is a fixed service charge for your connection to the electricity network. ____

2.2 Now answer these questions about the bill on page 122.

- 1 What are the four possible payment options mentioned?
- 2 What do they mean when they say 'the actual reading'?
- 3 What is the rate of consumer tax?
- 4 What does 'quote this when you call us' mean at the top of the bill?
- 5 What is the deadline for payment?

LISTENING

CD TRACK 25

3 Listen to a call from a customer to a call centre operator and answer the questions.

- 1 What is the problem with the woman's bill?
- 2 What is the operator's explanation for the mistake?
- 3 What solution does the operator propose?
- 4 What does the customer have to do when she receives the bill? Why?

4 Read the article about intelligent (smart) meters and answer the questions.

- 1 What advantages will smart meters bring to the consumer in terms of:
 - a energy consumption?
 - b microgeneration of electricity?
 - c payment?
- 2 What are the benefits to the supplier in billing?

SMART METERS

Within the next ten years suppliers will roll out smart meters to 25 million homes for both gas and electricity.

Suppliers will install two-way communication systems that will display real-time information for consumers on energy use in the home. The nature of the display will be a competitive market issue and will allow suppliers to differentiate themselves in the market.

In addition:

- Smart meters will enable suppliers to introduce flexible tariffs that measure consumption over fixed time periods.
- Automatic and actual meter readings will bring an end to estimated bills.
- Smart meters will have the capability for import and export, which will facilitate microgeneration technology.
- Suppliers will cater for both credit and debit customers for electricity (in other words a customer will be able to switch between credit and pre-payment) and the same benefits could apply to gas customers.

**PRONUNCIATION**

CD TRACK 26

5 Listen and repeat these words. Notice the pronunciation of the letters 'au' /ɔ:/.

automatic cause taught launch authority fraud daughter auction

GRAMMAR

Further grammar practice
Future forms page 89

We often use the future form *will* for making predictions, but there are other possibilities, depending on how sure we are of the prediction.

6 Look at the predictions. Which is the most confident and certain? Which is the least?

- 1 I think prices will rise next year.
- 2 Prices are going to rise next year.
- 3 Prices could rise next year.
- 4 I'm sure prices won't stay the same.

Make three predictions (either confident or less certain) about what you think will happen to energy prices in the next two years.

Energy retail and customer relationship management

What is the priority for your retail customers these days? ~~To have a good price? Good quality of service? Green (renewable) energy? Advice and help with energy efficiency?~~

LISTENING



CD TRACK 27

1.1 Listen to a manager from the retail division of an energy company talking about how they try to develop their business. Answer the questions.

- 1 What does the company focus on?
- 2 For what two reasons will people switch their supplier?
- 3 What does the company monitor closely for selling opportunities?
- 4 What channels do they use to approach new customers?

1.2 Listen again and complete the sentences. Put one word in each space.

- 1 Our main focus is on keeping our _____ customers _____.
- 2 People are prepared to pay a _____ for good service.
- 3 Our efforts are focused on _____ added _____ from them by selling other services.
- 4 We hope to pick up some new customers simply by _____ of _____.
- 5 Our strategy here is to work _____ _____ installers of gas and electricity equipment.
- 6 Finding new _____ is much more difficult.
- 7 We do a lot of _____ calling and _____ mailing of potential customers.
- 8 But the _____ is relatively low.

2.1 Choose the right words to complete the list of actions and counter-actions between customer and supplier.

The customer ...		The supplier ...
1 moves / changes house	→	makes / does an appointment for a new connection
2 does / makes a complaint	→	manages / handles the complaint
3 swaps / switches supplier	→	loses / drops a customer
4 is not at / in home	→	guesses / estimates the meter reading

The supplier ...		The customer ...
5 invoices / credits the customer	→	pays / pays for the bill
6 proposes / offers boiler insurance	→	takes in / out boiler insurance
7 advertises / advances a new tariff	→	signs into / up for a new tariff
8 carries out / makes a satisfaction survey	→	gives / tells their opinion

PRONUNCIATION



CD TRACK 28

2.2 The ending *-es* is pronounced /ɪz/ after *ch*, *sh*, *s*, *z* and a soft *g*. Listen and repeat these verbs from 2.1.

manages	switches	loses	guesses
advertises	invoices	changes	proposes

3 What channels does your company use to communicate with customers? Complete the description of communication channels. Use these prepositions.

by ■ in ■ on to ■ in ■ with ■ in ■ by ■ on

In the old days customers used to visit our agencies ¹_____ person to pay their bill or ask a question. Nowadays most communication is ²_____ phone using call centre staff. Bills are generally sent out ³_____ the post and then the customer telephones to pay ⁴_____ a credit card. (Some people prefer to pay ⁵_____ cheque.) Younger customers tend to go ⁶_____ the web to view their account or make a payment online. We advertise ⁷_____ TV, the internet, and ⁸_____ newspapers and magazines.

4.1 When you phone a call centre, what are the things which make it a good or bad experience? Make a list.

4.2 Now complete the list of criteria used by companies when setting targets to measure call centre efficiency. Use these words.

spent ■ referred ■ hangs ■ Turnover ■ Average ■ Speed ■ resolution ■ Overall

Call centre efficiency evaluation

- ¹_____ of answer
- ²_____ call handling time
- ³_____ customer satisfaction
- First call ⁴_____
- Call abandon rate (customer ⁵_____ up during call)
- ⁶_____ of staff
- Time ⁷_____ on after-call work
- Number of calls ⁸_____ to specialists



GRAMMAR

Further grammar practice
Embedded questions
page 89

Embedded questions can be used to sound more polite in English. Look at these examples.

Direct

When did he arrive?
Has he arrived?

Embedded

Can you tell me when he arrived?
Could you tell me **if / whether** he has arrived?

Notice the change in word order:

Can you tell me **when he arrived?** **NOT** Can you tell me when did he arrive?)

5 Correct the underlined mistakes in these sentences.

- 1 Can anyone tell me how long does it take on average to deal with a call?
- 2 Who knows what is the answer to this customer's question?
- 3 Do you always ask yourself would it be better to pass the customer on to a specialist?
- 4 Are you aware of how long do you spend answering each call?
- 5 Can you say when is the best moment for the operator to update the customer's records?
- 6 Can you tell me when did a customer last get angry with you, and what was the reason?
- 7 Can anyone explain why is there such a high turnover of staff in this activity?
- 8 Do you know what are the incentives that companies use to keep call-centre staff?

What are the three most common reasons for a customer to call your company? Are they related to billing, new products and services, quality of supply, or something else?

Energy in the home

How conscious these days are consumers about energy saving in the home? Is it the same for other sectors, for example small businesses and small industry?

1.1 Label the household appliances. Use these words.

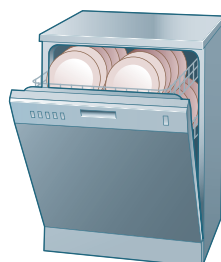
kettle ■ TV ■ radiator thermostat ■ microwave oven ■ tumble dryer
iron ■ dishwasher ■ fridge freezer ■ light bulb ■ washing machine



1 _____



2 _____



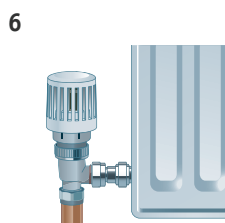
3 _____



4 _____



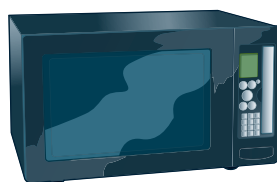
5 _____



6 _____



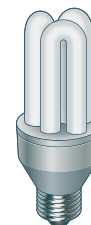
7 _____



8 _____



9 _____



10 _____

1.2 Choose the right word to complete these sentences about energy saving.

- 1 You can *win / save* on average £60 per year by using *small / low* energy light bulbs.
- 2 Most large appliances like washing machines come with an energy efficiency *mark / rating* from A to G.
- 3 You can waste a lot of energy by leaving your television on *standby / back-up*.
- 4 Always remember to *extinguish / switch off* the light when you leave the room.
- 5 Another way to reduce your electricity bill is to *switch / turn* down the thermostat on your radiators.
- 6 Never *load / fill* your kettle with more water than you need.
- 7 Never *let / leave* an iron on when you are not using it.
- 8 Tumble dryers have very high energy *consumer / consumption*.

PRONUNCIATION



CD TRACK 29

2 The sound /ʌ/, as in *but*, can be produced by the letter *u*, *o* or *ou*. Listen and repeat these words.

bulb	study	reduction	money	young
tumble	hurry	oven	income	country
consumption	cut	company	government	enough

LISTENING



CD TRACK 30

3.1 Make a list of what you consider to be the top five ways to reduce your domestic energy bill. Then listen to a consumer adviser and compare your answers.

3.2 Complete the speaker's statements about energy efficiency measures.

- 1 _____ the _____ and walls.
- 2 Make sure there are no _____ from doors, and _____ your windows.
- 3 _____ your old _____ with a more efficient one.
- 4 _____ all the _____ with low-energy _____.
- 5 _____ the _____ down by one or two degrees.

3.3 Listen again and answer the questions.

- 1 What can your own supplier offer for energy efficiency?
- 2 Why are home microgeneration solutions not always a good option?
- 3 What can you do at the Energy Savings Trust website?
- 4 What can you get if you are old or on a low income?

4 Read the description of SSE's Better Plan and answer the questions.

- 1 What incentive does it offer people to save energy?
- 2 In what way is the tariff a 'green' one?

Get paid to save energy with SSE!

Join our **Better Plan**. All the hints and tips in this leaflet will help you save energy and money. But we've come up with an even better plan to help you save money and help the planet – we pay you for being more energy efficient. Incredible, but true!

We give you cash credits, special bonuses and lots of great discounts – just for using less energy. Plus we give you 100% cleaner, greener hydro-electricity at no extra cost.

- Up to £25 cash credit for cutting your bill
- Free eco-monitor worth £45. (It makes saving energy easy.)
- Free Better Plan booklet full of hints and tips
- £10 cash credit for switching to online billing
- Exclusive discounts on energy-saving appliances

Notes

- 1 We guarantee that for every unit of electricity used by **Better Plan** customers we'll put a unit of hydro-electricity into the national grid.
- 2 Get £25 credited to your bill when you reduce your energy use by 20%. Get £15 credited to your bill when you reduce your energy use by 10%.

GRAMMAR

Further grammar practice
Time clauses
page 90

Note the form of the verbs in these sentences with *if* and *when*.

If you **want**, we **can do** a complete check of all the wiring in your house ... for free!
When you **join** SSE, you **will receive** a booklet with energy-saving advice.

5.1 Look back at the Better Plan text and complete these sentences.

- 1 If you reduce your energy use by 20%, you will _____.
- 2 You will receive £15 credit if you _____.
- 3 When you sign up, you will _____ worth £45.
- 4 You will get £10 cash credit if you _____.
- 5 If you buy energy-saving appliances from them, you can _____.

5.2 Complete these other offers. Put the verbs into the right tense.

- 1 If you _____ (recommend) a friend, we _____ (give) you £30 credit.
- 2 If you _____ (be) worried about the condition of your boiler, you _____ (call) us to arrange a free safety check.
- 3 We _____ (send) our catalogue of green products when you _____ (sign) up for our green tariff.
- 4 We _____ (give) you a free no obligation quotation if your home _____ (need) insulating.
- 5 When you _____ (buy) a new boiler from us, we _____ (install) it free of charge.

What does your government do to help people save energy in the home?
Are there programmes to develop eco-homes / energy-efficient homes?