Attenzione: gli allievi hanno risposto usando il colore verde.
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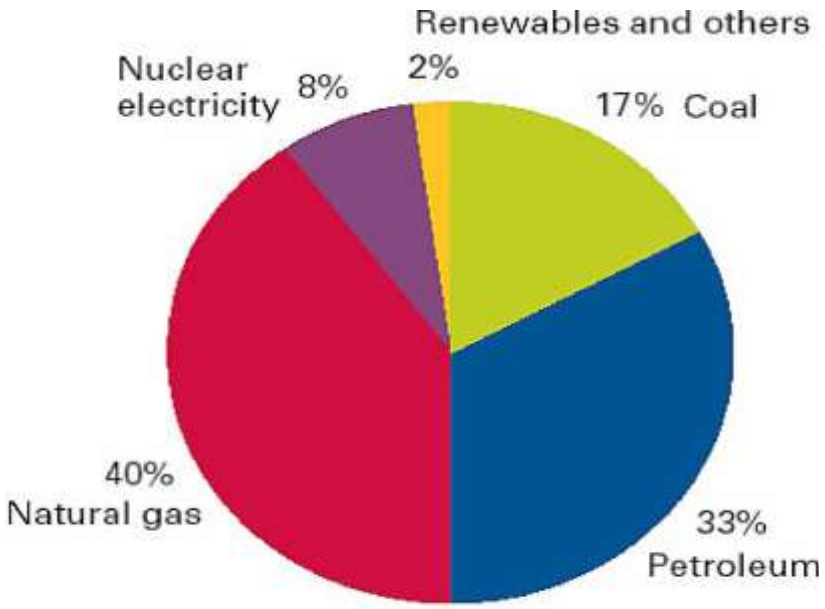
1. Pie chart reading

This is a pie chart about energy sources in the U.K. in 2005. Examine it.

1. What percentage of fossil fuels did the U. K. consume that year ?
   The percentage of fossil fuel consumed in the U.K. in the year 2005 was 90%
2. Do you find that renewable sources played an important role in the country? Why?
   No, because renewable sources were only 2%.
3. Comparing the British situation to what you know about Italy, what was peculiar in the U.K.?
   The U.K. used nuclear electricity. Italy doesn’t produce nuclear electricity. The U.K uses more natural GAS than Italy.
4. Does the pie chart give us enough information about the production of renewable and non-renewable energy sources ? Why?
   No, the pie chart doesn’t give enough information about renewable sources.
5. Explain in about three lines what the pie chart shows.
   The pie chart shows what energy sources are used: for example, natural gas (40%) and petroleum (33%). We also understand that there is a production of nuclear energy (8 %).



Source: DTI, DUKES 2005

Dep. of Trade and Industry of the U.K.,
Digest of United Kingdom Energy Statistics

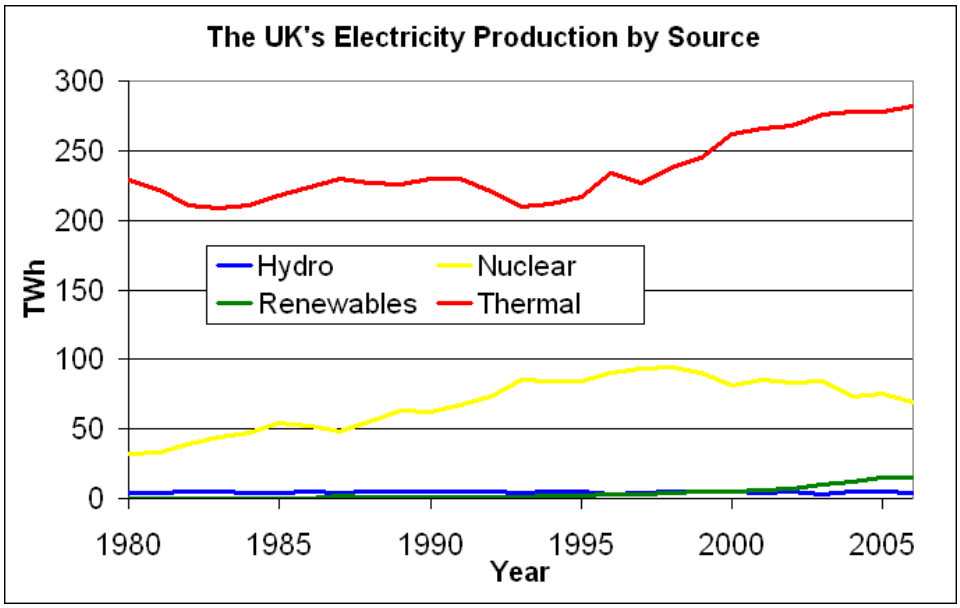
2. Now take into consideration the following graph.

1. When did the electricity production from nuclear energy reach its peak ?
a. in 1985 b. in 1998 c. in 2000 d. there are no peaks

2. How did the production of electricity change between 2000 and 2005 ?
Thermal and renewable increased, hydro and nuclear decreased.

3. What additional information does the definition of “conventional thermal” provide ?
The definition provides the percentage of the components of thermal generation.

Electricity production in the UK



From Wikipedia

Conventional Thermal
(…) conventional thermal plants provide the bulk of the electricity supply in the UK. According to DTI, conventional thermal generation in 2004 consisted of natural gas (53 percent), coal (44 percent), oil (2 percent), and other (1 percent).

Source: EIA

3. Read the following statements.

Country Analysis

- With its significant North Sea reserves, the United Kingdom is a major European oil and natural gas producer.
- The UK is the largest oil producer in the EU, but production has declined since peaking in 1999.
- The UK is one of the largest natural gas producers in the world.
- Most UK coal consumption is for power generation.
- Natural gas-fired power stations are replacing coal as the principle source of the UK power supply.

Source : EIA International Energy Annual

NOW COMPLETE

1) In this context POWER is the synonym for:

a) influence b) electricity c) energy

2) What type of reserves has the U.K. got?
The U.K. has got oil and natural gas.
3) What type of fuel production is the U.K. the leader in?
The U.K. is leader in oil production.
4) Was the production of oil stable between 1999 and 2005?
No, because the production has declined since peaking in 1999.
5) Which statement/s let/s us understand why the U.K. didn’t need to develop renewable energy production until 2005? Highlight it/them in blue.

6) Find the statement that gives one of the reasons why the U.K. has recently changed its energy policy. Highlight it in green.

7. Underline all the words/expressions belonging to the energy domain. Look up in a bilingual and a monolingual dictionary and complete the chart:

word/expression	grammatical category (noun, adjective,verbs…)	pronunciation	definition (in English)	examples of use	Italian equivalent
RESERVE	NOUN	[rɪ'zɜ :v]	What is reserved, stored; stock extra supply	In England there are large coal reserves.	Riserva

RENEWABLE	ADJECTIVE	[rɪ'nju:ə l]	It is capable of replacing itself after it has been used, destroyed, or lost.	Energy systems are often based on renewable resources.	Rinnovabile
PRODUCER	NOUN	[prə 'dju:sə]	A company, country, or person that provides a large supply of something	Russia is the main crude oil producer in the world.	Produttore
SUPPLY	NOUN	[sə plaɪ]	The amount of a commodity that can be produced	European countries need large supplies of energy.	Forniture
ENERGY	NOUN	['enə dʒ i]	The power from electricity, coal, wind, etc that makes machines work.	Wood is an efficient source of energy.	Energia
POWER	NOUN	['pauə *]	Energy obtained by burning fuel or by using the wind or sun, especially when it is used to make a machine work.	He has planned to use wind as power for his machine.	Energia
NATURAL	ADJECTIVE	['nætʃ rə l]	To describe things that are not made or caused by people, but found in nature and in the world around us.	Scientists have found synthetic substitutes for natural materials.	Naturale
PRODUCE	VERB	[prə 'dju:s]	To produce	The sun	Produrre

			something is to cause it to happen	produces light and heat.	
CONSUME	VERB	[kə n'sju:m]	To use an amount of fuel, energy, time; to use it up.	The ship consumed a lot of fuel.	Consumare

8. Which dictionary has been useful to give definitions? The monolingual dictionary.
9. Which one for the grammatical categories ? In the bilingual and in the monolingual dictionaries.

4. Look at the tables of consumption of R.E.S. in EU nations and the targets they are obliged to reach by 2020 (Annex I of the Directive of the European Parliament and of the Council of the Promotion of the use of energy from renewable sources).

R.E.S: renewable energy sources

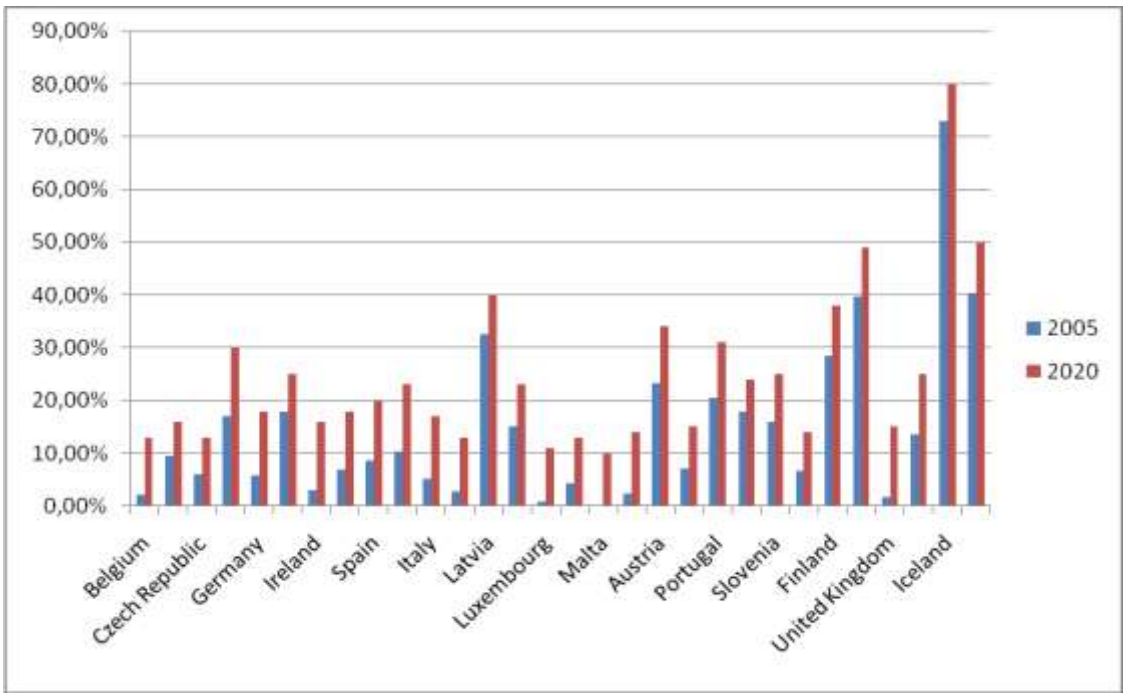
EU NATIONS	Share of energy from RES in 2005	Target for share of energy from RES in 2020
Belgium	2,2%	13,0%
Bulgaria	9,4%	16,0%
Czech Republic	6,1%	13,0%
Denmark	17,0%	30,0%
Germany	5,8%	18,0%
Estonia	18,0%	25,0%
Ireland	3,1%	16,0%
Greece	6,9%	18,0%
Spain	8,7%	20,0%
France	10,3%	23,0%
Italy	5,2%	17,0%
Cyprus	2,9%	13,0%
Latvia	32,6%	40,0%
Lithuania	15,0%	23,0%
Luxembourg	0,9%	11,0%
Hungary	4,3%	13,0%
Malta	0,0%	10,0%
The Netherlands	2,4%	14,0%
Austria	23,3%	34,0%
Poland	7,2%	15,0%
Portugal	20,5%	31,0%
Romania	17,8%	24,0%
Slovenia	16,0%	25,0%
Slovak Republic	6,7%	14,0%

Finland	**28,5%**	**38,0%**
Sweden	**39,8%**	**49,0%**
United Kingdom	**1,7%**	**15,0%**
Turkey	**13,6%**	**25,0%**
Iceland	**73,0%**	**80,0%**
Norway	**40,4%**	**50,0%**

1. Compare data referring to Italy and the U.K. Which country used more R.E.S. ?
Italy used more R.E.S. than the UK in 2005.
2. How would you define the British situation ?
In the UK the consumption of RES will have increased in 2020 comparing to that of 2005, when it was poor.
3. What E.U. countries used more R.E.S.? Could you say why ?
The countries that used a lot of RES : Finland, Sweden, Iceland and Norway. Iceland uses a lot of geothermal energy. The others use biomass (wood).

4. Establish the percentage of R.E.S. the countries have to cover to meet the target fixed. Then create a BAR GRAPH showing:

- what was their production in 2005;
- their target for 2020;
- the percentage of consumption they have to cover.



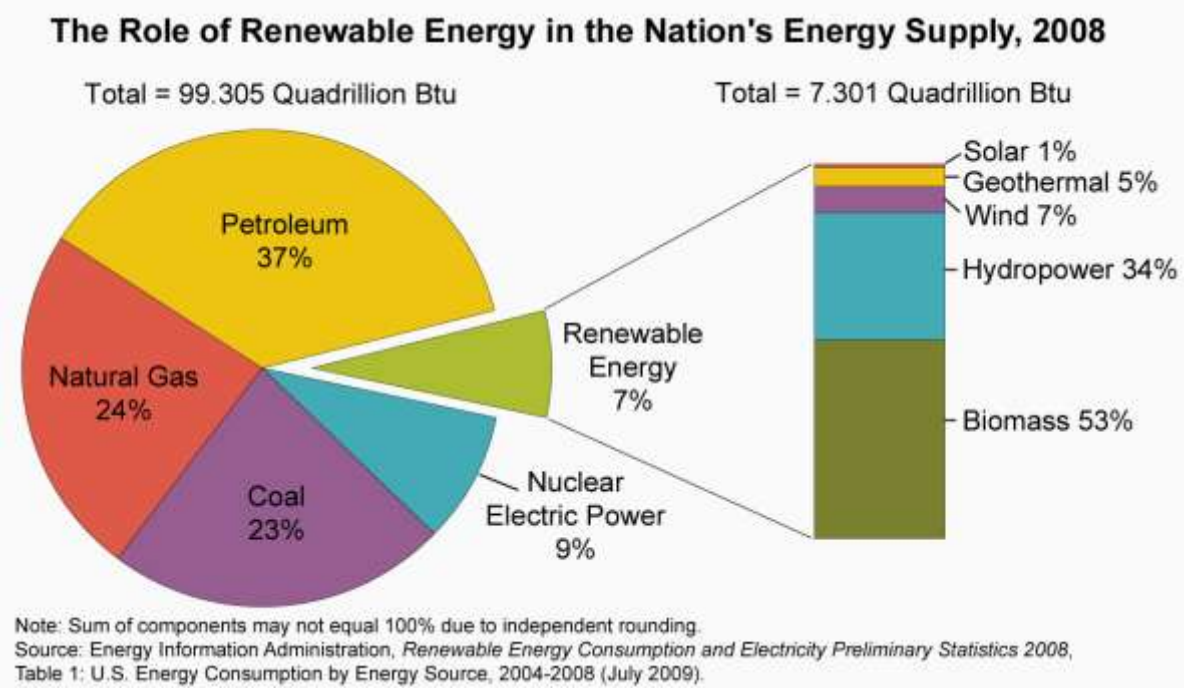
5. Read the text.

THE EVOLUTION OF RENEWABLE ENERGY CONSUMPTION IN THE USA

The use of renewable energy is not new. More than 150 years ago, wood, which is one form of biomass, supplied up to 90% of our energy needs. As the use of coal, petroleum, and natural gas expanded, the United States became less reliant on wood as an energy source. Today, we are looking again at renewable sources to find new ways to use them to help meet our energy needs.

In 2008, consumption of renewable sources in the United States totalled 7.3 quadrillion Btu — 1 quadrillion is the number 1 followed by 15 zeros — or about 7% of all energy used nationally.

The Role of Renewable Energy Consumption in the Nation's Energy Supply, 2008



Btu: British thermal unit

Over half of renewable energy goes to producing electricity. About 9% of U.S. electricity was generated from renewable sources in 2008. The next largest use of renewable energy is the production of heat and steam for industrial purposes. Renewable fuels, such as ethanol, are also used for transportation and to provide heat for homes and businesses.

Renewable energy plays an important role in the supply of energy. When renewable energy sources are used, the demand for fossil fuels is reduced. Unlike fossil fuels, non-biomass renewable sources of energy (hydropower, geothermal, wind, and solar) do not directly emit greenhouse gases.

Source: *tonto.**eia**.doe.gov/**kids***

1. GIVE A TITLE TO THE TEXT

2. FIND IN THE DOCUMENT

a. Taking into consideration only renewable resources, what was the position of the wind in 2008?
The wind was the third (7%).
b. How much biomass was consumed in Btu ?
3879 Btu.
c. Why was biomass the first among renewable resources? Find a reference in the text.
Because wood is a form of biomass.
d. How much energy from renewable sources was used in the U.S.A. in 2008 ?
Renewable energy was used up to 7%.
e. What was energy from renewable sources used for ?
Energy was used for the production of electricity.
f. Why is the use of renewable energy important ?
Because renewable energy doesn't emit greenhouse gases.

WRITING

Now exploiting the data offered by the texts you have read, write a short report on **Energy sources in the U.K.**

- Start by choosing the most important points of the "Country analysis"
- Use information from the pie chart and the graph and add statements so that you will have a complete picture of the production of energy and electricity
- Focus on the state of renewable resources
- Compare data/ add you remarks

Use ***and, in addition, besides, moreover*** at the beginning of the sentences to add information.
Use ***but, in contrast*** and ***on the contrary*** to express contrast.
Use ***because*** or ***as a consequence*** to express the cause and the consequence.

The U.K. is the most important oil and natural gas producer in the world, but oil production has declined since 1999. Natural gas is used for power supply. In addition, natural gas is the most important energy source, followed by petroleum, coal, nuclear electricity. Renewable resources are only 2%, but their use is going to increase in the next years, as a consequence of the need to find new sources of energy to be used more and more times. In contrast, traditional energy sources will be progressively less used because their supply is going to decline in the future.