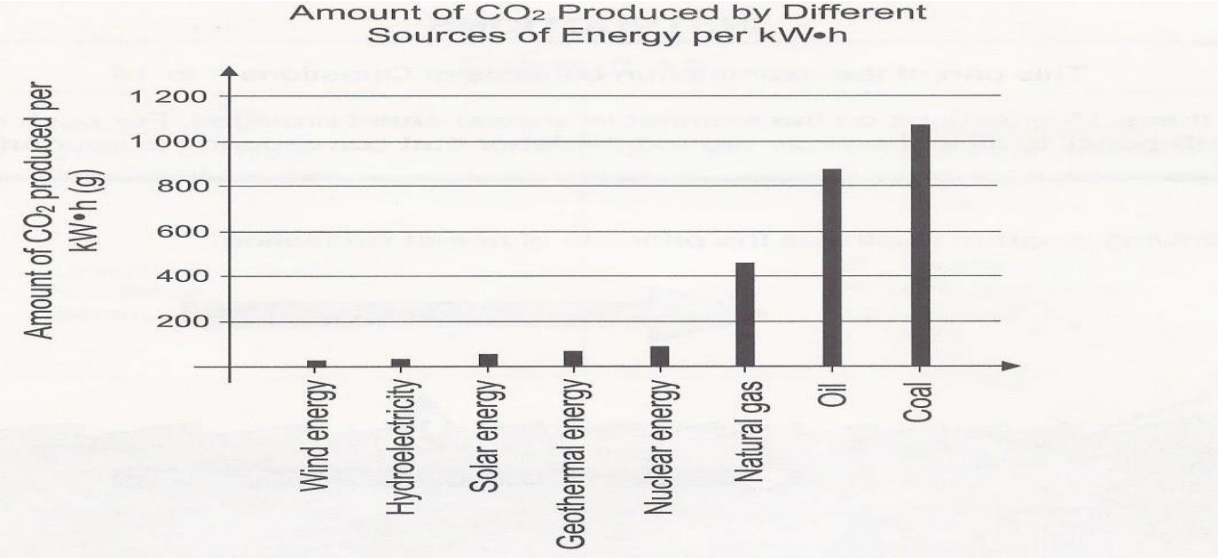
Energy Types Questions

1. The use of energy sources generates greenhouse gas emissions. The graph below shows the amount of greenhouse gas, CO_2, produced by different sources of energy per kilowatt-hour.



According to this graph, which of the following statements is true?
A) Coal produces less greenhouse gas than all the other fossil fuels combined.
B) Only renewable energy sources produce less than 200 g of CO_2 per kilowatt-hour.
C) Each energy source from the lithosphere produces more than 400 g of CO_2 per kilowatt-hour.
D) Solar energy produces less greenhouse gas than the main energy source from the atmosphere.

Answer: A

2. Which of the following choices provides accurate information about one of the types of power plants listed?

	Type pf power plant	Renewable or non-renewable energy	Quantity of greenhouse gases produced
A	Geothermal	Non-renewable	Large amounts
B	Hydroelectric	Renewable	Little or none at all
C	Nuclear	Renewable	Large amounts
D	Tidal	Non-renewable	Little or none at all

Answer: B

3. Different types of electric power plants are listed in the table below.

Types of Power Plants
Wind, Geothermal, Hydroelectric and Tidal

Which statement is true about all these types of power plants?
A) They produce few air pollutants.
B) They can be set up anywhere in Canada.
C) They all use water as the primary source of energy.
D) They use non-renewable resources.

Answer: A

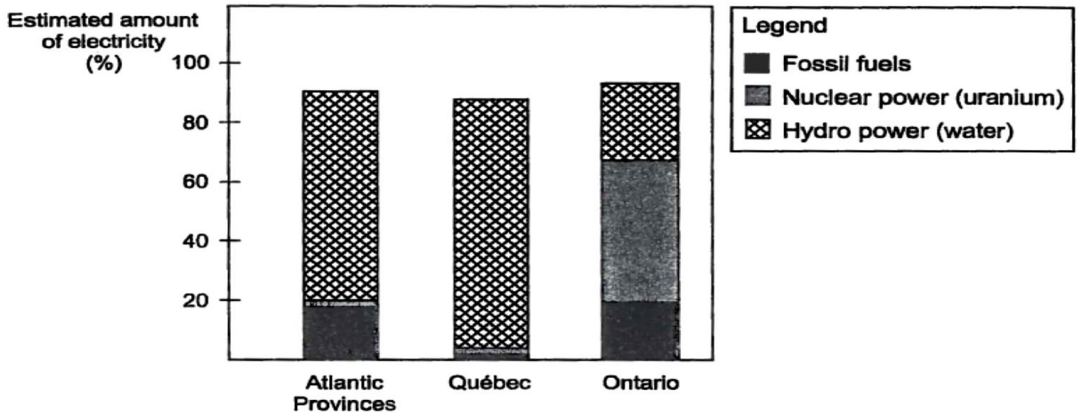
4. Listed below are different facilities that use energy resources as well as negative consequences that may result from operating these facilities. Which choice correctly matches each facility with its consequence?

	Facilities	Negative consequences
A)	Coal-fired power plant	Noise produced
B)	Nuclear power plant	Greenhouse gas emissions
C)	Wind turbines	Greenhouse gas emissions
D)	Water turbines	Can negatively affect the migration patterns of aquatic species

Answer : D

5. The following graph shows different sources of electricity in three major regions in Canada.

Graph 1 -Proportion of Electricity Produced From Different Sources in Three Major Regions in Canada.



Given the information in this graph and your knowledge of energy resources, which conclusion is TRUE?
A) Electricity production has little impact on the environment in these three regions, since they all mainly use hydro power
B) Air pollution caused by electricity production is greater in Ontario than in Quebec, since Ontario has more thermal power plants.
C) Greenhouse gas emissions related to electricity production are greater in Ontario than in the Atlantic Provinces, since Ontario has more nuclear power plants.

D) Electricity production has a major impact on the environment in the three regions, since they use no renewable energy.

Answer: B

6. Which of the following choices (A, B, C or D) correctly indicates the location of the energy resource and one of its advantages?

	Energy resources	Location of the resource	Advantage
A	Fossil energy	Lithosphere	Renewable energy
B	Geothermal energy	Hydrosphere	Clean energy
C	Tidal energy	Hydrosphere	Little or no greenhouse gas emissions
D	Nuclear energy	Lithosphere	Produces a small amount of energy

Answer: C

7. Which of the following choices correctly matches a form of energy with its corresponding characteristics?

	Form of energy	**Characteristics**
A)	Nuclear energy	• Produces radioactive waste • Produces high levels of greenhouse gases
B)	Wind energy	• Is a non-renewable resource • Produces very low levels of greenhouse gases
C)	Hydroelectric energy	• Requires the flooding of certain areas • Produces very low levels of greenhouse gases
D)	Fossil energy	• Is a renewable resource • Produces very low levels of greenhouse gases

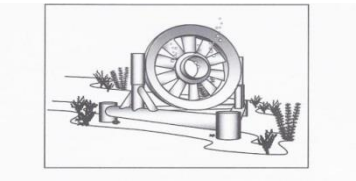
Answer : C

8. In Europe, a lot of electricity is produced by nuclear power plants, with uranium as the source of energy.

a) Where is this source of energy located? Atmosphere, hydrosphere or lithosphere
b) Is this a renewable or non-renewable energy source?

Answer: a) lithosphere B) non-renewable

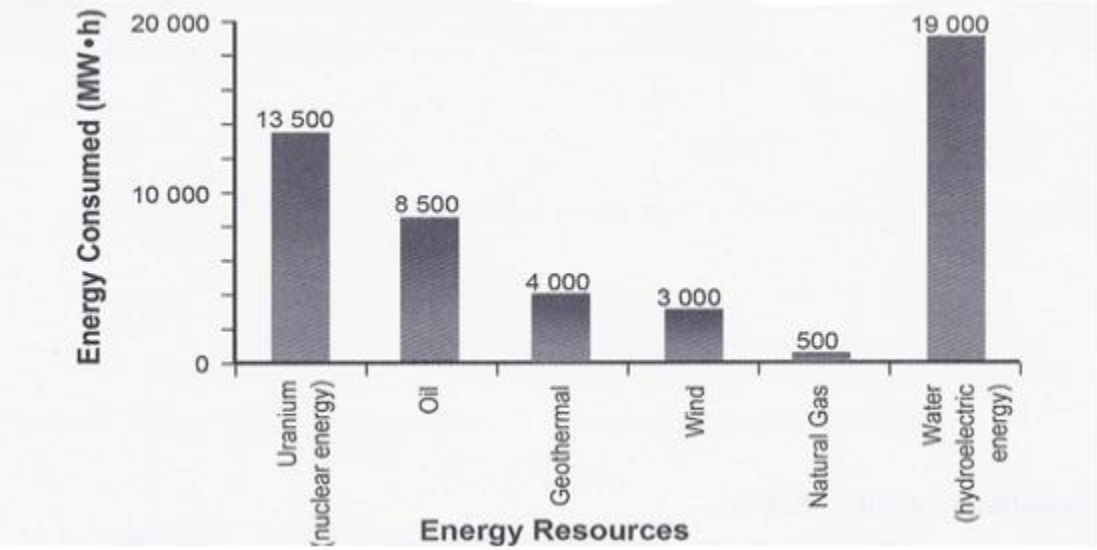
9. There are plans to put underwater turbines in the Gulf of the St. Lawrence. This technology uses the energy of deep currents to produce electricity.



a) Is the source located in the lithosphere, hydrosphere or atmosphere?
b) Give two advantages of producing electricity with underwater turbines rather than wind turbines.
c) Indicate a possible negative consequence of using the underwater turbines.

Answer : a) hydrosphere
b) more reliable, no noise pollution, do not use land
c) Dissrupts migration patterns of marine life

10. The following graph shows a town's electrical energy consumption profile.



Refer to the data in the graph. Indicate how much of the electrical energy consumed comes from energy resources… (all answers will be in MW•h)
a) … that emit carbon dioxide (CO_2) when burned
b) … found in the lithosphere

Answer: a) 9 000 (oil + natural gas)
b) 26 500 (uranium + oil + geothermal + natural gas)