

Learning Activity

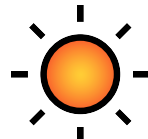
Name: _____

Group: _____

Date: _____

Geography Secondary 1 and 2

Which Energy Source Would You Choose?



Student Booklet – A

Read the scenario and fill in the table in your student booklet below. You will need to identify the characteristics, advantages, and disadvantages of each energy source.

Scenario – The City of Sivetia

The city of Sivetia is located at the foot of a mountain range crossed by hundreds of streams and rivers. The city's population is growing rapidly, and new schools, hospitals, and industries are being developed. As a result, the existing hydroelectric plants can no longer meet the city's energy needs.

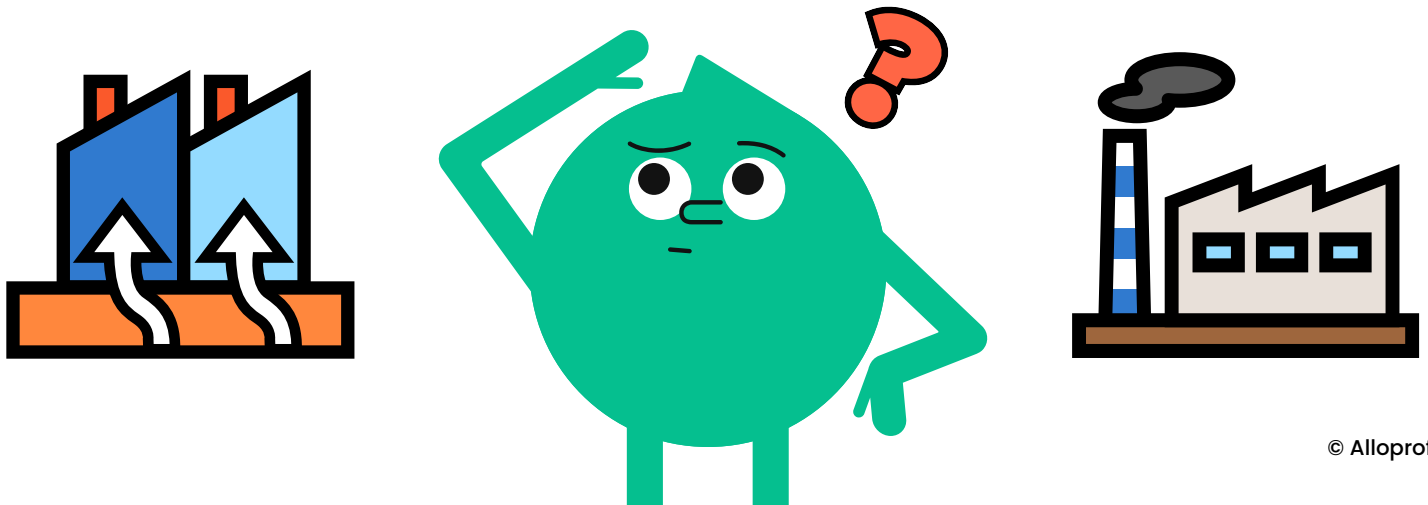
Unfortunately, there are no more rivers with a flow large enough to add additional hydroelectric plants. The city must therefore find a new source of energy.

Sivetia has an important natural resource: less than three kilometres below the surface, there is a very hot groundwater reservoir recently identified by geologists. It releases enough heat to supply a geothermal power plant that could be used to generate electricity. Because the reservoir is relatively close to the surface, construction costs would be lower.

The city is also located near a major oil sands deposit. Many see this as a golden opportunity to meet the region's growing energy demand and to enrich the population. Exploiting these oil sands would provide the fuel needed to operate a thermal power plant. Any surplus production could be sold. However, many questions are raised regarding the environmental impacts of such development.

Both energy sources are located near the city, making them practical for supplying energy to the population.

The city council is debating whether to invest in a geothermal power plant or to focus on developing the oil sands and building a thermal power plant?



City of Sivetia

Important Information

The city's needs:

Energy sources:

Constraints faced by the city:

Energy Source 1

-
- ☐ Renewable energy
☐ Non-renewable energy

Energy Source 2

-
- ☐ Renewable energy
☐ Non-renewable energy

Required Infrastructure

Required Infrastructure

Advantages

Advantages

Disadvantages

Disadvantages

Which energy source do you think Sivetia should choose? Support your answer with the information from your table.

I believe the best source of energy for the city of Sivetia is

Because:

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