

Short Essay: Environmental Impacts of Fossil Fuels

Directions: Type your answers in the space below each question. Then compare your answer to the sample answer.

Questions

1. What is the major gas emitted when fossil fuels are burned, and what impact does it have on the atmosphere?
2. How does the combustion of fossil fuels affect Earth's carbon cycle?
3. What is flue gas? What harmful substances does it contain, and what is one way we can make it less harmful?
4. Some people argue that we can prevent the environmental harm caused by burning fossil fuels if we burn modern plant material instead of fossil fuels derived from ancient organisms. They say this would add no new carbon to Earth's atmosphere and would not disrupt the carbon cycle. Can you think why this might be true?

Sample Answers

1. The major gas is carbon dioxide; in the atmosphere it contributes to an enhanced greenhouse effect and global warming.
2. Combustion of fossil fuels puts large amounts of carbon into the atmosphere, disrupting Earth's natural carbon balance.
3. Flue gas is the billowing cloud of smoke that comes out of a power plant's smokestack. It contains carbon dioxide, sulfur compounds, and toxic mercury. We can spray it with limestone and water to remove sulfur and carbon dioxide.
4. Say, for example, that we grow a crop of palm trees. While the trees grow they will remove carbon from the atmosphere through photosynthesis. Then, suppose we harvest those palm trees and burn them as fuel in a power plant. They will then release carbon back to the atmosphere in the form of carbon dioxide gas, but the amount they release is offset by the amount they removed when they were growing. There is no net gain or loss of carbon in the carbon cycle. By contrast, because fossil fuels are derived from dead organisms, they do nothing to remove carbon from the atmosphere; they can only release carbon to the atmosphere. This makes for a net increase in environmental carbon dioxide.