
Topic Two: How Energy is Produced

Lesson Objectives:

By the end of this topic, students should be able to:

1. Describe how different forms of energy are produced, using appropriate vocabulary and grammar.
2. Analyze and describe diagrams related to energy production.
3. Summarize processes involved in energy conversion and distribution.
4. Communicate effectively when discussing energy production methods.

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1. Discovering Language (Language Outcomes)

1.1 Grammar and Pronunciation

- **Present Simple vs. Present Continuous**:
  - *Present Simple*: Used to describe processes that happen regularly.
    - *Example*: "Solar panels **convert** sunlight into electricity."
  - *Present Continuous*: Used to describe actions happening currently.
    - *Example*: "The wind turbine **is generating** electricity right now."
- **Past Simple**:
  - *Example*: "The energy plant **was built** last year."
- **Passive Voice**:
  - *Example*: "Electricity **is generated** by the wind turbines."
- **Sequencers**: First, next, then, finally.
  - *Example*: "First, water is heated. Then, steam is generated, which powers the turbine."
- **Pronunciation**: Final -ed and strong/weak forms of 'was' and 'were'.
  - *Example*: "Produced" /t/, "was" strong /wɒz/ and weak /wəz/.

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2. Vocabulary

- **Energy-related Vocabulary**:
    - *Examples*: turbine, generator, combustion, conversion, renewable energy.
    - Definitions: "A turbine is a device that converts kinetic energy into mechanical energy."

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3. Developing Skills (Skills and Strategies Outcomes)

3.1 Functions

- **Drawing and Labeling a Diagram of an Energy Production Process**:
    - Activity: Draw and label a diagram of how a hydroelectric dam produces electricity.
- **Describing Energy Production Processes**:
    - Example:
        - "First, water flows through the dam. Next, it turns the turbines. Then, the turbines generate mechanical energy, which is converted into electricity by a generator."
- **Changing Directions into Descriptions**:
    - Activity: Provide step-by-step instructions on how wind energy is produced, and students convert it into a process description.

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4. Listening & Speaking

4.1 Listening Activity:

- **Listening for Specific Information**:
    - Audio about how solar panels produce energy.
    - Question: "At which stage is sunlight converted into electricity?"

Answer: "Sunlight is converted into electricity when it hits the photovoltaic cells in the solar panel."

4.2 Speaking Activity:

- **Discussing Energy Production**: Explain how wind energy works.

  Example:

  - "Wind turns the blades of the turbine, which powers a generator to produce electricity."

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5. Reading & Writing

5.1 Reading Activity:

- **Skimming and Scanning**:
  - Read a passage on geothermal energy production. Identify the key stages in the process.

  Passage:

  - "Heat from the Earth's core is absorbed by water, turning it into steam. The steam powers a turbine, which generates electricity."

  Answer:

  - Key stages: Heat absorption → Water turns to steam → Steam powers turbine → Electricity generated.

5.2 Writing Activity:

- **Describing the Process of Energy Production**: Write about how electricity is produced in a coal power plant.

Example Answer:

- "Coal is burned to produce heat. The heat converts water into steam, which powers a turbine. The turbine generates mechanical energy, which is converted into electricity by a generator."

Exercises

Exercise 1: Passive Voice Practice

Convert the following sentences into passive voice:

1. Engineers produce solar panels.
2. The workers installed the wind turbines.

Answers:

1. *Solar panels are produced by engineers.*
2. *The wind turbines were installed by the workers.*

Exercise 2: Sequencers Practice

Fill in the blanks using the correct sequencers (first, next, then, finally):

1. _____, coal is burned to produce heat.
2. _____, the heat converts water into steam.
3. _____, the steam powers a turbine.
4. _____, electricity is generated.

Answers:

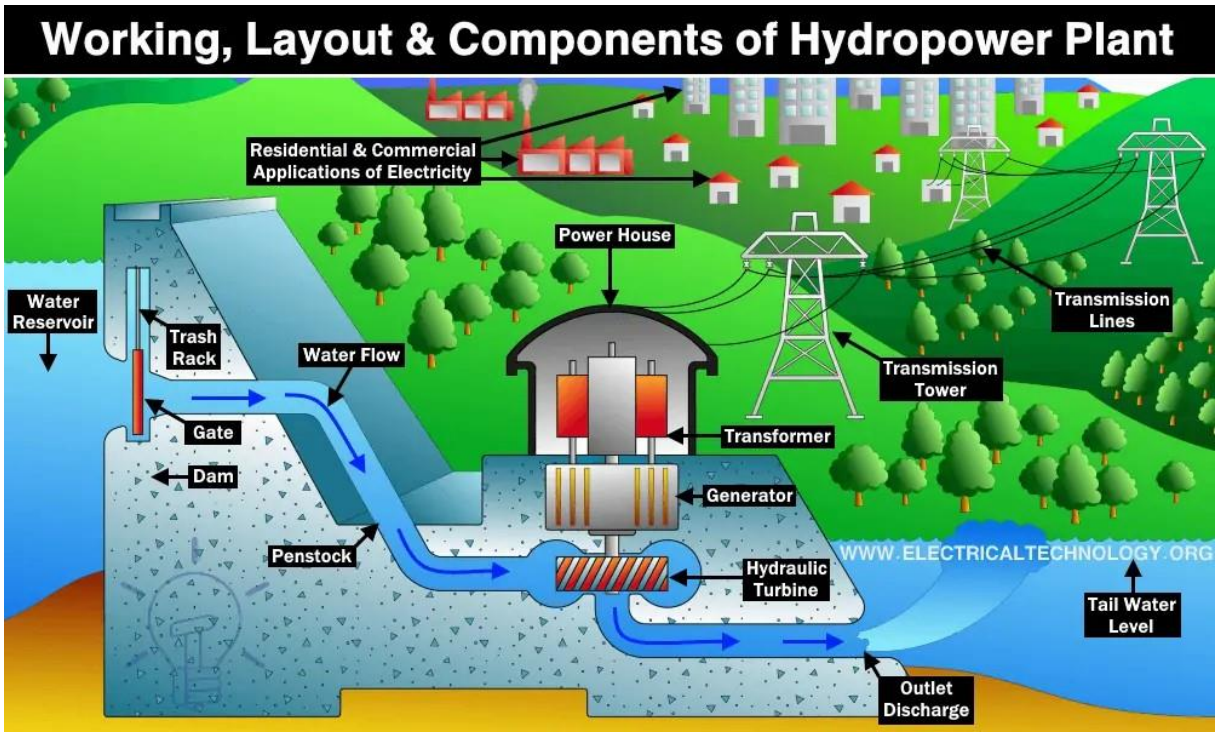
1. *First*, coal is burned to produce heat.
2. *Next*, the heat converts water into steam.
3. *Then*, the steam powers a turbine.

4. *Finally*, electricity is generated.

Exercise 3: Diagram Description

Look at the diagram of a hydroelectric dam process. Describe the process using sequencers.

Diagram:



- Water flows through dam → Water turns turbines → Turbines generate energy → Electricity is produced

Example Answer:

- "First, water flows through the dam. Next, the water turns the turbines. Then, the turbines generate mechanical energy. Finally, this energy is converted into electricity by a generator."

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