

Energy Projects

1 analyse, using the principles of energy transformations, a technology that involves the transfer and transformation of thermal energy

(e.g., a power station, an air conditioner, a fuel cell, a laser printer)

2 assess, on the basis of research, how technologies related to nuclear, thermal, or geothermal

energy affect society and the environment

(e.g.,

thermal regulating units,

radiopharmaceuticals,

dry-steam

power plants,

ground-source heat

pumps) [IP, PR, AI, C]

Sample issue: With the rising economic and environmental costs of heating homes using conventional methods, geothermal technologies are an increasingly popular alternative.

However, tapping geothermal heat sources involves placing kilometres of tubing containing

antifreeze in the ground, which constitutes a potential environmental hazard.

Sample questions: How is the nuclear technology known as receptor binding assay used to

monitor the toxicity of shellfish? How does this technology benefit consumers? How can nuclear

explain the energy transformations that

occur within a nuclear power plant, with reference to the laws of thermodynamics (e.g.,

nuclear fission results in the liberation of energy, which is converted into thermal energy;

the thermal energy is converted into electrical energy and waste heat, using a steam turbine)