**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)