Task 1: Process Diagram

Subject: The diagrams below show how geothermal energy is used to produce electricity.

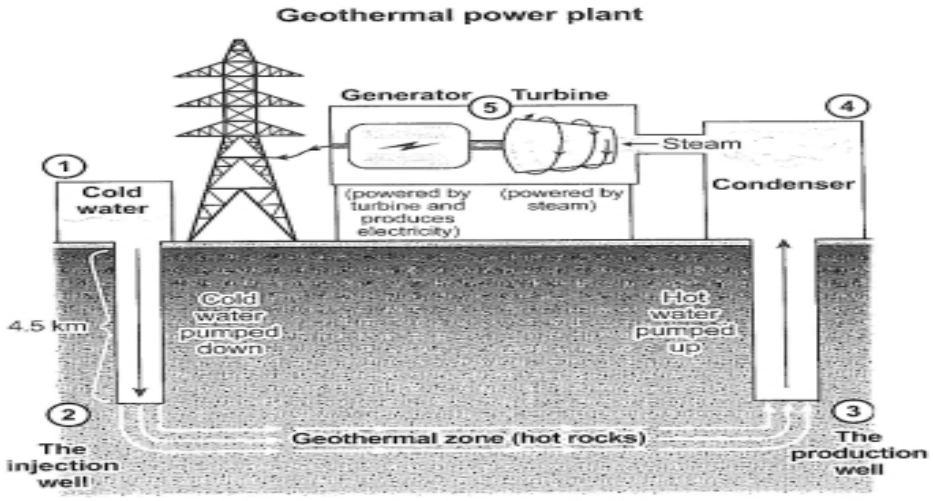
WRITING TASK 1

You should spend about 20 minutes on this task.

The diagram below shows how geothermal energy is used to produce electricity.

Summarise the information by selecting and reporting the main features, and make comparisons where relevant.

Write at least 150 words.



Model Answer #1

Response:

The diagram gives information about how electricity is produced from geothermal energy.

Overall, the process of producing electricity involves five stages, beginning with the injection of cold water deep into the earth and culminating in the production of electricity via a turbine and generator. The main phases include the introduction of cold water into the geothermal zone, the extraction of heated water, the utilization of steam to power a turbine, and subsequent electricity generation.

Looking at the diagram in more detail, the process commences with cold water being pumped down to a depth of 4.5 kilometers. This injection of cold water into the geothermal zone allows it to be heated by the naturally occurring hot rocks located in this area.

The next step is when the heated water is extracted and channeled upwards. The resulting steam, generated by the hot water, is then directed towards a turbine. The force of the steam powers the turbine, which in turn drives a generator. Finally, the generator produces electricity, which is then distributed through the electricity grid.

Evaluation:

Overall Band Score: 9

Task Response (9): Excellent response to the task. All aspects of the visual information are accurately described in a well-organized manner.

Coherence & Cohesion (9): The report is exceptionally well-structured and easy to follow. The logical flow of ideas is seamless.

Lexical Resource (8.5): A wide range of sophisticated vocabulary is used precisely and appropriately. The lexical choices enhance the clarity and precision of the report.

Grammatical Range & Accuracy (9): The report demonstrates a wide range of grammatical structures with flawless accuracy and control. The writing is grammatically impeccable.

Model Answer #2

Response:

The diagram illustrates the process of producing electricity using geothermal energy. Overall, the system involves five key stages, starting from pumping cold water underground to generating electricity with a turbine and generator.

Initially, cold water is injected 4.5 kilometers below the surface through an injection well. This water reaches the geothermal zone, where it comes into contact with hot rocks. The heat from the rocks warms the water, transforming it into hot water.

Next, the heated water is pumped back to the surface via the production well. Once above ground, the hot water releases steam, which drives a turbine. The turbine, powered by the steam, rotates and activates the generator, which produces electricity.

Finally, the steam is cooled down in a condenser, turning it back into water. This water can then be reused in the cycle, making the process sustainable.

This method of electricity generation effectively utilizes natural heat from the Earth, offering a renewable and environmentally friendly energy source.

Evaluation:

Overall Band Score: 9

Task Response (9): Excellent summary of the provided diagram. All the main features are accurately described and compared where relevant. The response is well-structured and fulfills all the requirements of the task.

Coherence & Cohesion (9): The report is exceptionally well-organized and easy to follow. The logical flow of ideas is seamless, and the use of cohesive devices is highly effective. Paragraphing is skillfully managed, enhancing the overall clarity and readability.

Lexical Resource (9): The report demonstrates a wide range of sophisticated vocabulary, used accurately and appropriately. The lexical choices are precise and enhance the overall quality of the writing.

Grammatical Range & Accuracy (9): The grammar is impeccable throughout the report. A wide range of grammatical structures is used accurately and flexibly, demonstrating excellent control of the language.

Model Answer #3

Response:

The diagrams illustrate the process by which geothermal energy is harnessed to generate electricity.

Overall, the process consists of five distinct stages where in cold water is transformed into steam, ultimately yielding electrical energy for use.

Initially, cold water is introduced into the system via an injection well, descending to a depth of 4.5 kilometers where it reaches the geothermal zone, characterized by hot rocks that elevate the water's temperature. Upon absorption of heat, the water transitions into a heated state and is subsequently pumped up through the production well. In this stage, the now heated water transforms into steam, which is a critical component in the electricity generation process.

The steam generated from the heated water then powers a turbine, effectively converting thermal energy into mechanical energy. This turbine is connected to a generator, which is responsible for producing electricity. Following this, the steam is cooled in a condenser, reverting back to cold water, which is then reinjected into the geothermal reservoir, thereby completing the cycle and ensuring the sustainability of the geothermal energy production process.

Evaluation:

Overall Band Score: 9

Task Response (9): Excellent response to the task. All aspects of the process are clearly described.

Coherence & Cohesion (9): The report is exceptionally well-organized and easy to follow. The flow of information is seamless.

Lexical Resource (8.5): A wide range of sophisticated vocabulary is used accurately and appropriately.

Grammatical Range & Accuracy (9): The grammar is impeccable. A wide range of structures is used with complete accuracy and fluency.

Model Answer #4

Response:

The diagram delineates the process of electricity generation through geothermal energy.

Overall, the process comprises five sequential stages, commencing with the injection of cold water and culminating in the generation of electricity via a generator.

In the initial phase, cold water is introduced into an injection well, descending through a pipe that extends 4.5 kilometers into the geothermal zone, where it encounters heated geological formations. As it traverses this region, the water experiences a significant temperature elevation due to the thermal energy emanating from the hot rocks surrounding it.

Subsequently, the heated water is channeled into the production well, where it undergoes a further transformation into steam. This steam ascends to a turbine, which harnesses its kinetic energy to drive a generator, thus facilitating the conversion of thermal energy into electrical energy. The produced electricity is then conveyed to a condenser, where the steam is transformed back into water, completing the cycle as it returns to the reservoir for re-injection.

Evaluation:

Overall Band Score: 9

Task Response (9): The report accurately describes all the stages of the process and provides a clear and concise overview of how geothermal energy is used to generate electricity.

Coherence & Cohesion (9): The report is well-structured and logically organized, with clear transitions between paragraphs and sentences. The information flows smoothly and effortlessly.

Lexical Resource (9): The report demonstrates a wide range of vocabulary, using precise and sophisticated language to describe the process. The vocabulary is used accurately and appropriately throughout.

Grammatical Range & Accuracy (9): The report exhibits a wide range of grammatical structures, including complex sentences and varied sentence lengths. The grammar is accurate and error-free.

Model Answer #5

Response:

The provided diagrams illustrate the process of utilizing geothermal energy for the generation of electricity.

Overall, the process involves the extraction of hot water and steam from deep within the earth's surface to drive a turbine connected to a generator, resulting in the production of electricity.

Initially, cold water is injected through the injection well and travels to a depth of 4.5 km into the geothermal zone with hot rocks. The water then heats up and transforms into hot water, which is subsequently pumped up through the production well. This hot water is converted into steam, which is utilized to power a turbine that, in turn, drives a generator to produce electricity.

Following the electricity generation process, the steam produced in the turbine moves towards a condenser where it undergoes cooling and condensation back into cold water. This treated water is then circulated back to the injection well to complete the closed-loop system of the geothermal power plant, ensuring a sustainable and renewable energy generation process.

Evaluation:

Overall Band Score: 9

Task Response (9): The report provides a detailed and accurate overview of how geothermal energy is used to produce electricity, addressing all key components and stages depicted in the diagrams.

Coherence & Cohesion (9): The report is well-structured with clear paragraphing and logical progression of ideas. Transition words are effectively used to connect sentences and ideas, enhancing the overall coherence.

Lexical Resource (9): The vocabulary used is precise and demonstrates a wide range of terms related to geothermal energy production. The language is sophisticated and effectively conveys the information.

Grammatical Range & Accuracy (9): The report showcases a variety of grammatical structures used accurately. There are no errors in punctuation or grammar, contributing to the overall clarity of the response.