**Unit 4 The Environment II**

**Task 1 Carbon footprint**

1. **Brainstorm some of the impacts you think your generation’s energy consumption is having today and on tomorrow’s future generations.**
2. **How many planets would we need if everybody lived like you?**

**Design a carbon footprint questionnaire. Consider the following:**

* Food
* Travel
* Stuff you buy/own
* Home

(<https://footprint.wwf.org.uk/#/>)

**Task 2 Collocations**

**What is the one word that collocates with all the adjectives and verbs below?**

abundant scarce plentiful sufficient renewable (in)exhaustible

finite **?**  to conserve

 untapped sustainable human natural to lack to exploit to use up

**Task 3 Video**

**What are some examples of energy decisions you make every day?**

<https://ed.ted.com/lessons/a-guide-to-the-energy-of-the-earth-joshua-m-sneideman>

1. What does it mean when we say that there is a “finite” amount of energy in our universe?

………………………………………………………………………………………………………

1. What are the Earth´s physical systems?

………………………………………………………………………………………………………

1. What happens during energy transfer?

………………………………………………………………………………………………………

1. Where does the planet´s energy come from?

………………………………………………………………………………………………………

1. How do greenhouse gases affect the energy flow?

………………………………………………………………………………………………………

1. How do humans release food energy?

 ……………………………………………………………………………………………………. 7. How does energy flow in the food chain?

………………………………………………………………………………………………………

1. What kind of energy do fossil fuels contain?

 ………………………………………………………………………………………………

1. How do we generate electricity?

…………………………………………………………………………………………………

1. Why does access to energy matter?

…………………………………………………………………………………………………

**Task 4 Exam practice – Gap fill**

**Complete the gaps with verbs in suitable forms.**

***aid convert derive heat produce take utilise***

Geothermal energy is (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by harnessing the Earth's natural geological heat source and (2) \_\_\_\_\_\_\_\_\_ it into a source that can (3) \_\_\_\_\_\_\_\_ a domestic property.

The Earth is normally around 55°F (12.8°C) and this heat can be (4) \_\_\_\_\_\_\_\_\_\_\_ by ground source heat pumps.

Certain geological characteristics (5) \_\_\_\_\_\_\_\_\_\_ the production of geothermal power such as geysers or hot underground magma deposits.

Iceland (6) \_\_\_\_\_\_\_\_\_\_advantage of the country's unique geological make up to use geothermal power to great effect. Currently 17% of Iceland's total electricity production is (7) \_\_\_\_\_\_\_\_\_\_ from geothermal energy.

(source of the text: http://www.cus.net/renewableenergy/subcats/geothermal/geothermal.html)

**Task 5 PROS AND CONS OF WIND FARMS**

1. **The use of wind turbines for the generation of green electricity is often an emotive subject and there are persuasive arguments for and against this form of renewable energy generation. Sort the arguments into those FOR and AGAINST.**
2. Land-based wind energy has the potential of covering six times the world´s electricity consumption, or the world´s total energy consumption. The energy consumption for production, installation, operation and decommission of a wind turbine is usually earned back within three months of operation.
3. Siting wind farms offshore raises issues such as dangers to navigation.
4. There is a perception that wind farms are noisy and are eyesores.
5. More recent wind farms have their turbines spaced further apart, due to the higher capacity of the individual wind turbines. They no longer have the cluttered look of the early wind farms.
6. It is possible to hold a conversation directly underneath a modern wind turbine without any difficulty whatever and without raising one´s voice. The modern turbine is quieter than its predecessors owing to improvements in the blade design.
7. Studies show that the number of birds and bats killed by wind turbines is negligible when compared with other human activities such as traffic, hunting and high-rise buildings.
8. The construction of a large wind energy facility requires straight flat roads, a large hole filled with tons of steel and concrete to secure each giant assembly, clearing of trees in wooded areas and a transformer and power lines for each turbine.
9. An important complaint is that wind turbines kill many birds and bats. Siting generally takes into account bird flight patterns, but most paths of migration, particularly for birds that fly by night, are unknown.

**B) Agreeing and Disagreeing**

**Make collocations by matching words from the left with words on the right.**

 be agree into an argument in complete agreement

 tend to see enter agree a compromise sb´s opinion

 reach share sb´s point up to a point/ entirely / to disagree

**C) Discussion**

The government plans to build a wind farm near the coast and you are in a town meeting to discuss the issue. Each person should take one of the roles below and think about their position. Which arguments will you use to support your point and convince the others you are right?

1. You are a wind farm owner who wants to build a new wind farm here.
2. You are a government official whose task is to find ways to reduce oil consumption.
3. You are an environmentalist who wants the government to act decisively to reduce pollution.
4. You are a resident in the area where the government is proposing to build a wind farm. You love the peaceful atmosphere of the area and are worried about the decline of seabirds in your country.

(Task 5 adapted from Lane, S. *Instant Academic Skills.* CUP, 2011)

**Task 6 Exam practice - Passive**

**Rewrite the sentences into passive.**

1. They demolished the building in only two days.

The building ……………………………………………………

1. They are destroying large areas of forest every day.

Large areas of forest ……………………………………………

1. They will not announce the findings until next week.

The findings ……………………………………………………..

1. The city council authorities should ban traffic from the city centre.

Traffic ………………………………………………………………

1. She told the student to submit her essay by Friday.

The student …………………………………………………….

1. Someone explained the procedure to me.

The procedure ………………………………………………….

1. The committee has approved of the project.

The project ……………………………………………………..

1. They are developing a new drug to combat asthma in small children.

A new drug ………………………………………………………